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RG&E

SITE CHARACTERIZATION REPORT

Park Street Former MGP Site

Geneseo, New York

May 23, 2016

SITE CHARACTERIZATION REPORT

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ACRONYMS AND ABBREVIATIONS

ASP	Analytical Services Protocol
AU	attenuation units
BDL	below method detection levels
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
DER-10	Department of Environmental Remediation's *Technical Guidance for Site Investigation and Remediation*
DNAPL	Dense non-aqueous phase liquid
DOT	Department of Transportation
DUSR	Data usability Summary Reports
EDR	Environmental Data Resources, Inc.
ft/ft	feet/foot
IDW	investigation-derived waste
IRM	interim remedial measure
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MGP	manufactured gas plant
MtBE	Methyl tertiary butyl ether
NAPL	non-aqueous phase liquids
NTU	nephelometric turbidity units
NYSDEC	New York State Department of Environmental Conservation
PAHs	polycyclic aromatic hydrocarbons
PID	photoionization detector
PVC	polyvinyl chloride
RGE	Rochester Gas & Electric
RQD	rock-quality designation
SCOs	Soil Cleanup Objectives
SCR	Site Characterization Report
SCWP	Site Characterization Work Plan
SMP	Site Management Plan

SUNY	State University of New York
SVOC	semivolatile organic compounds
TAL	Target Analyte List
TCL	Target Compound List
Test America	Test America Laboratories
TLM	tar-like material
TPH	Total Petroleum Hydrocarbons
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
USEPA	United States Environmental Protection Agency
USTs	underground storage tanks
VOC	volatile organic compounds

1 INTRODUCTION

This *Site Characterization Report* (SCR) presents results from the Site Characterization activities completed at Rochester Gas & Electric's (RGE's) former manufactured gas plant (MGP) site located on Park Street in the Village of Geneseo, New York. The site is being investigated under the New York State Department of Environmental Conservation (NYSDEC) Voluntary Cleanup Agreement No. V00731.

The site characterization was conducted consistent with the NYSDEC-approved *Site Characterization Work Plan* (Arcadis, 2015) (SCWP). The SCWP includes a description of the characterization scope of work, along with detailed descriptions of the field techniques, sample collection methods and protocols, and safety monitoring requirements, along with reporting requirements. This SCR was prepared consistent with the requirements presented in the NYSDEC's Department of Environmental Remediation's *DER-10 Technical Guidance for Site Investigation and Remediation* dated May 2010 (DER-10).

The site characterization field activities included in the SCWP were completed from May 30 through September 4, 2015. In October 2015, preliminary results from the site characterization (tables and figures) were presented to the NYSDEC for discussion. Based on review of the preliminary data and subsequent discussion with RGE on October 30, 2015, additional gauging and sampling tasks were added to the site characterization activities. The additional characterization scope of work was described in an email correspondence to the NYSDEC dated November 17, 2016, and included:

- Conduct three gauging events at each monitoring well (MW-1 through MW-7) to document static fluid levels, fluid interface depths, and depth to bottom.
- Remove non-aqueous phase liquids (NAPL), where present.
- Collect a sample of NAPL for laboratory analysis of its physical properties.

The results from the additional gauging and sampling characterization tasks were provided to the NYSDEC on February 12, and subsequently discussed during a conference call on February 23, 2016. Based on the preliminary results, the NYSDEC issued a preliminary decision that no additional remediation is required at the site, and the site can be entered into the site management phase that will require additional monitoring and institutional controls. This SCR presents and fully discusses the information collected during the site characterization to support the conclusion that a remedial investigation is not required.

1.1 Site Characterization Objectives

The overall objectives of the site characterization were to:

- Gather sufficient data to evaluate whether MGP-related residuals are present in the subsurface.
- Determine whether MGP-related residual materials, if present, have a potential to pose a threat to public health or the environment.
- Determine whether a remedial investigation at the site is appropriate.

The balance of Section 1 presents the report organization, along with a site description and history, and a summary of previous environmental activities performed at the site.

1.2 Report Organization

The SCR has been organized into the following sections:

Section	Purpose
Section 1 – Introduction	Provides background information relevant to the development of the SCR and objectives of the site characterization.
Section 2 – Site Characterization Activities	Describes the environmental setting, preliminary planning, and field activities related to the characterization of soil, groundwater, and soil vapor.
Section 3 – Site Characterization Findings	Describes the field observations and laboratory results obtained during the site characterization.
Section 4 – Conclusions	Presents conclusions developed based on the site characterization results.
Section 5 – Recommendations	Presents recommendations for future activities for the site.
Section 6 – References	Presents a list of the references cited in the SCR.

1.3 Site Description and History

1.3.1 Site Description

The Park Street former MGP site is located at 6 Park Street in the Village of Geneseo, Livingston County, New York (**Figure 1**). The former gas works operations covered approximately ¾ of an acre that was located on what is now the eastern side of the State University of New York (SUNY) Geneseo campus (**Figure 2**).

The site property, which is owned by SUNY, is bound on the north by commercial buildings and School Street; on the west by a SUNY academic building complex (the Brodie Fine Arts building), by Park Street on the south; and on the east by a SUNY parking lot and commercial buildings along the west side of Main Street. The Park Street site straddles the boundary between the village commercial district and the SUNY campus. Most of the area occupied by the former MGP is either paved or located under buildings. The eastern portion of the site is a paved parking lot (L-Lot), and the western portion is covered by a campus access road, buildings, and small landscaped area.

The Brodie Fine Arts building is a square building complex that includes an inner courtyard and a high-rise tower at the east side of the complex. Based on correlation between current campus maps and historical Sanborn Fire Insurance (Sanborn) maps, the east side of the former gas production building was located under the parking lot and access road, and the west side of the gas house and the gas holder was under the east end of the Brodie Fine Arts building.

1.3.2 Site History

Based on review of historical reports, the Park Street MGP was built on Park Street in 1860 and most likely produced gas by the coal carbonization process until January 1906. During this time the plant

consisted of one building, which presumably housed the gas retorts, and one gas holder. The 1900 Sanborn map shows a small electric generating plant further northeast of the MGP, on School Street. The 1906 Sanborn notes a small lime house (lime was often used in gas purification), a paint shop on the north side of the gas house, and a coal shed to the northeast (it is possible that the coal house was associated with the electric generating facility). The 1913 Sanborn map shows that the gas house and gas holder were gone from the site. The electric generating building is identified as a hardware store on the 1930 through 1949 Sanborn maps, and this building still remains today. A survey map dated 1973 identifies this building as a book store. The approximate locations of the historical MGP-related structures are shown on **Figure 2**.

The western portion of the site was acquired first by SUNY; however, the date of the acquisition is unknown. SUNY acquired the eastern portion around 1973.

1.4 Summary of Previous Environmental Actions

No previous investigations have been conducted at the site; however, a remediation of MGP-related source materials was completed by SUNY during a Park Street entrance improvement program when the east side of the property was developed as a parking lot.

In September 2002 during final preparation for paving of the parking lot, a stone/brick containment structure was discovered approximately 4 feet below ground surface (bgs) that contained a black tarry material. Based on comparison of available information, the structure appears to have been located between the north side of the former MGP works building and the south side of the former coal house; however, the structure does not appear on any historical mapping. From September, 2002 to January, 2003 the NYSDEC oversaw the excavation and off-site disposal of the structure, liquid material inside and outside the structure, and the surrounding soil containing visible impacts. During excavation, sidewall samples were collected for laboratory analysis. When laboratory results indicated an exceedance of the cleanup objective of 500 milligrams per kilogram (mg/kg) total polycyclic aromatic hydrocarbons (PAHs) and/or 10 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX), or when visible coal tar was encountered, excavation continued. Excavation sidewall and bottom sampling results were presented in the *Report of Activities at LL-Lot* (SUNY, 2003). The report indicated that only one sidewall sample (located on the north excavation sidewall) did not meet the 500 mg/kg objective for PAHs (549.7 mg/kg were reported at that location).The final excavation depth was approximately 20 feet bgs, terminating at the top of the fractured bedrock. An area near the center of the excavation was excavated an additional 5 feet into the fractured bedrock to approximately 25 feet bgs. Approximately 800 tons of tar-impacted soil and 3,200 gallons of impacted water that accumulated in the excavation were sent off site for disposal. The approximate location of the coal tar structure and the areal limits of the excavation are also shown on **Figure 2**. Structural fill was placed into the excavation and compacted. The remedial excavation was considered to be an interim remedial measure (IRM) by the NYSDEC.

2 SITE CHARACTERIZATION ACTIVITIES

This section summarizes site characterization field activities that were implemented by Arcadis between May 2015 and February 2016.

2.1 Environmental Setting

Sanborn maps indicate that several businesses, including a filling station and an auto sales and service center historically existed adjacent to, and upgradient from, the eastern site boundary (i.e., at a higher topographic elevation). In addition, during preparation of the SCWP, Arcadis contracted Environmental Data Resources, Inc. (EDR) to perform a search of available state and federal environmental records for the site and surrounding area. Relevant findings were included in the SCWP and included:

- State records indicate that there were 30 leaking underground storage tank and spills sites located hydraulically upgradient within approximately 0.5 mile of the site; the closest being at the corner of Main Street and Route 20A (approximately 300 feet hydraulically upgradient from the site).
- A site with registered underground storage tanks (USTs) existed at the corner of Park Street and Main Street (128 Main Street) approximately 70 feet hydraulically upgradient from the site. Approximately 400 tons of petroleum impacted soil was removed during removal of three USTs and bioremediated onsite.
- Three additional sites located immediately upgradient and to the east and southeast of the site underwent investigations upon discovery of petroleum impacts in subsurface soil:
    - 119 Main Street – Encountered petroleum-impacted soil and subsequently removed approximately 500 to 1,000 tons of soil.
    - 120 Main Street – Encountered petroleum-impacted soil during a subsurface investigation near abandoned tanks. EDR search results did not indicate if impacted soil had been removed or remediated.
    - 137 Main Street – During service station upgrade activities, impacted soil was discovered during removal of two USTs. Impacted soil was removed, treated onsite, and disposed offsite.

Information from the EDR report was incorporated into the site characterization investigation strategy.

2.2 Locating Underground Utilities

Preliminary location of utilities was conducted during preparation of the base mapping associated with the SCWP. Prior to completing the base mapping surveys described below, NYS One Call (811) was contacted to identify and mark public utilities in the work area. In addition, SUNY Geneseo marked the locations of private underground utility lines the university had installed in and around parking Lot L (the anticipated area of subsurface investigation). These utilities were also located during the geophysical and site planimetric surveys described below, and included during the development of figures presented in this SCR.

NYS One Call (811) was contacted again to re-identify and re-mark public utilities in the work area prior to initiating any intrusive work associated with the site characterization.

2.3 Site Surveys

2.3.1 Geophysical Survey

As part of the development of the SCWP, a geophysical survey consisting of ground-penetrating radar and radio detection was conducted at the site from May 30 to 31, 2015 by Underground Services (SoftDig). The purpose of the geophysical survey was to locate subgrade public utilities and potential structures (e.g., former MGP structures), and confirm the locations of utility lines the university had installed and identified. The figure prepared by Underground Services (SoftDig) was included as Appendix I to the SCWP. The information has been compiled and incorporated into the site base map.

2.3.2 Site Planimetric Survey

A site survey was performed from May 31 to June 5, 2015 during the development of the SCWP to locate physical features and utilities within the anticipated investigation area with the intent of gathering information required to build a site base map. The survey was performed by Fisher Associates, a New York State-licensed surveyor. The survey area encompassed an area of approximately 7 acres, bounded by the east side of Main Street, the north side of School Street (extended), the south side of Park Street, and the western leg of College Circle. As stated above, prior to completing the base mapping survey NYS One Call (811) was contacted to identify and mark public utilities in the work area and SUNY Geneseo marked the locations of private underground utility lines the university had installed in and around the anticipated area of subsurface investigation. These utilities were also located by Fisher Associates. The site survey data were used to develop the figures presented in this SCR.

2.4 Soil Investigation

2.4.1 Soil Borings

Twelve soil borings were installed August 10 to 19, 2015 with seven soil borings completed as monitoring wells as shown on **Figure 3**. Four soil borings were advanced through the overburden to the top of competent bedrock (SB-1, SB-2, SB-3, and SB-5). The remaining seven soil borings were advanced through the overburden and up to 20 feet into competent bedrock, and completed as monitoring wells (MW-1 through MW-7). The purpose of the soil borings were to collect soil, bedrock, and groundwater data for assessing the presence of MGP-related impacts and to determine groundwater flow direction and gradient.

Soil borings in overburden materials at each location were advanced using a truck-mounted hollow-stem auger drilling rig with 6.25-inch inner diameter augers, and continuously sampled using 4-foot long by 2-inch diameter macrocore tooling in accordance with the procedures described in the SCWP. Soil recovered from each sampler was visually characterized for color, texture, moisture content, and headspace-screened with a photoionization detector (PID). The presence of visible staining, NAPL, and obvious odors observed in the soil was noted/recorded, if existing.

Soil borings were advanced to the top of competent bedrock which ranged from 8.3 to 18.5 feet bgs. Soil borings not completed as monitoring wells (SB-1, SB-2, SB-3, and SB-5) were abandoned by tremie-grouting to the surface; asphalt cold patch was used as the surface completion. Details regarding the installation and construction of monitoring wells is provided in **Section 2.4**. Installation logs for soil borings are provided in **Appendix A**. Top of competent bedrock contours are provided on **Figure 4**.

Drill cuttings from the installation of all soil borings were containerized in 55-gallon steel drums, staged onsite in secure containers (Conex boxes), and disposed as discussed in Section 2.8.

2.4.2 Laboratory Analysis of Soil Samples

Two soil samples were collected from each soil boing based on field observations during advancement. At each location, one sample was collected from the depth interval exhibiting visual/olfactory observations of MGP-related impacts (if observed) and/or the highest PID headspace reading. A second soil sample was collected from just above the soil/bedrock interface.

Soil samples were submitted under chain-of-custody to Test America Laboratories, Amherst, New York (Test America) for analysis of:

- Target Compound List (TCL) volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) SW-846 Method 8260B
- TCL semivolatile organic compounds (SVOCs) by USEPA SW-846 Method 8270C
- Target Analyte List (TAL) Metals by USEPA SW-846 Method 6010
- Total Cyanide by USEPA Method 9012A

In addition, one soil sample (from MW-3) that exhibited petroleum odors during drilling was collected for analysis of Total Petroleum Hydrocarbons (TPH).

Sample collection, handling, and shipping were completed consistent with SCWP requirements. The laboratory provided standard turn-around for reporting of NYSDEC Analytical Services Protocol (ASP) Category B-equivalent data packages.

2.5 Groundwater Investigation

2.5.1 Monitoring Well Installation

Seven soil borings were completed as monitoring wells (MW-1 through MW-7). The location of the monitoring wells are shown on **Figure 3**. Soil borings were first advanced to the top of competent bedrock and soil samples collected for laboratory analysis as described above. Once the top of competent bedrock was identified, the upper two feet was cored, logged, and reamed out with a 6-inch roller bit to create a 2-foot long socket in the bedrock into which 4-inch steel casing was set and grouted. Each location was cased with permanent 4-inch steel casing from approximately 0.5 feet bgs to 2 feet into bedrock to create a riser. The grouted 4-inch casing was allowed to set overnight before rock coring was continued. At each monitoring well location, bedrock was then cored using HQ coring tools to 20 feet below the bottom of the 4-inch casing (22 feet below the top of bedrock). Rock cores were logged in accordance with methods described in the SCWP, and cores were placed in core boxes for retention and storage by RGE.

With the exception of MW-5, monitoring wells were completed using open-hole construction (i.e., no screen or seal materials), cased using the 4-inch steel casing set 2 feet into the bedrock socket, and constructed with 20 feet of bedrock exposed in each well. Dense non-aqueous phase liquid (DNAPL) was identified in the bedrock at MW-5. Per the SCWP, MW-5 was constructed using 2-inch diameter, 20-foot long, Schedule 40 polyvinyl chloride (PVC), 0.020-inch slotted well screen from 20-30 feet bgs, # 2 silica sand from 19-30 feet bgs and 19.5 feet of 2-inch diameter, Schedule 40 PVC riser to just below ground surface. In addition, MW-5 was installed with a five foot long, 2-inch diameter, Schedule 40 PVC well sump grouted into bedrock. All monitoring well locations were completed at the surface with locking well caps and flush-mounted road boxes set into concrete. Construction details for the monitoring wells are provided in **Appendix A.**

2.5.2 Monitoring Well Development

Following installation, monitoring wells were developed by surging and pumping to remove fine-grained material that may have accumulated in the well during installation from recirculated drilling fluid and to ensure connection to the bedrock aquifer.

Groundwater was pumped from each location and, due to a high pumping rate versus recharging rate, was ultimately pumped dry. Locations were allowed to recharge and then pumped dry again. Turbidity measurements were collected at periodic intervals during development of each well. Readings were high and ranged from 2,000 attenuation units (AU) to exceeding the range of the meter (4000 AU). Turbidity AU are directly comparable to nephelometric turbidity units (NTU) with the only difference being the angle at which scattered light is measured (90° versus 180°, respectively). At turbidity levels higher than approximately 600 NTUs, AU's are the preferred unit of measure.

2.5.3 Fluid-Level Measurement

As required by the SCWP, two gauging events were conducted to measure static groundwater levels to confirm groundwater flow direction beneath the site and determine the presence/absence of NAPL. These two gauging events were conducted on August 31 and October 1, 2015. Contours of groundwater elevation data for these two events are presented on **Figure 5** and **Figure 6,** respectively. The figures show that groundwater flow direction during both events is to the west-northwest (toward the Genesee River) with a gradient of approximately 0.05 feet/foot (ft/ft) during both events. The groundwater flow direction is generally consistent with the slope of the bedrock surface.

During the October 1, 2015 (i.e., second) gauging event, 0.4 feet of tar-like material was observed in the sump at monitoring well MW-5. Based on discussions with the NYSDEC during an October 30, 2015 conference call to discuss the preliminary results from the site characterization, additional gauging and sampling tasks were added to the site characterization activities. Three additional site visits were subsequently conducted to gauge MW-5 and the remaining site wells over the following 6 week period, remove any NAPL present, and monitor whether NAPL continued to accumulate in MW-5. These three additional gauging visits were conducted December 17, 2015, January 5, 2016 and February 4, 2016. During the December 17, 2015 gauging event, a sample of NAPL was collected from MW-5 and submitted to PTS Laboratories, Inc. (PTS) located in Santa Fe Springs, CA for analysis of physical properties, including dynamic viscosity, density and surface and interfacial tension. A copy of the PTS report is included as **Appendix B**.

All groundwater and NAPL removed from MW-5 was containerized in a Department of Transportation-(DOT-) approved 5-gallon plastic bucket with ratchet-locking lid and staged in a secure area located on SUNY Geneseo campus for proper disposal by RGE.

2.5.4 Groundwater Sampling and Laboratory Analysis

Groundwater samples were collected from seven monitoring wells (MW-1 through MW-7) on August 31, 2015. Initially, the well headspace was screened with a PID and fluid levels and depth to bottom measurements were collected from each location. Wells were purged and sampled using a bladder pump via low-flow sampling procedures detailed in the SCWP. Once stabilization parameters had been met, groundwater samples were collected in laboratory supplied containers and submitted under chain of custody to Test America for analysis of:

- Total Petroleum Hydrocarbons by USEPA Method 310.13
- TCL VOCs by USEPA SW-846 Method 8260B
- TCL SVOCs by USEPA SW-846 Method 8270C
- TAL Metals by USEPA SW-846 Method 6000/7000
- Total Cyanide by USEPA Method 9013A
- Miscellaneous Geochemical Analyses by Various Methods

Sample collection, handling, and shipping were completed consistent with SCWP requirements. The laboratory provided standard turn-around for reporting of NYSDEC ASP Category B-equivalent data packages.

2.6 Soil Vapor Investigation

Soil vapor samples were collected on September 2, 2015 from seven locations (SV-1 through SV-7) around the vicinity of the former MGP structures. Specifically, soil vapor samples were collected along the exterior of the eastern facade of the Brodie Fine Arts building, along the west side of the Brodie Fine Arts building within the courtyard, and north of the area excavated by SUNY in 2002/2003. The locations of the seven soil vapor sampling locations are also shown on **Figure 3**.

2.6.1 Soil Vapor Point Installation and Sampling

Soil vapor sampling points were installed in borings created using a bucket auger to create an approximately 3 inch diameter boring to a depth of approximately 4 feet bgs. For each location, Teflon™-lined light density polyethylene tubing was attached to a 12-inch-long stainless-steel mesh screen (i.e., implant) that was positioned at the bottom of the borehole. Fine-grained sand (US Silica #2) was placed in the annulus of the hole around the screen, followed by 3-inches of US Silica #00 “choker” sand and hydrated bentonite chips that were emplaced in 6-inch lifts to the surface. At the surface, a shroud was placed over the location, sealed to the ground and around the sample tubing, filled with helium, and the sample point was purged and tested for evidence of short-circuiting (helium). Once the location was purged per procedures in the SCWP and any short-circuiting issues were corrected, the location was ready for sample collection.

At each soil vapor sampling location, a laboratory batch-certified 6-liter SUMMA® canister was connected to the sampling tube and canisters were run for approximately six hours or until the canister pressure read between -9 and -6 inches or mercury. Additional details regarding the soil vapor sampling procedures can be found in the SCWP; sample collection details are included on the soil vapor sample collection field logs provided in **Appendix C**.

2.6.2 Laboratory Analysis of Soil Vapor Samples

SUMMA canisters were submitted in one batch under chain-of-custody to Test America located in Burlington, Vermont for analysis of the project-specific analyte list:

- USEPA Compendium Method TO-15
- N-alkanes
- Isopropyl benzene
- Naphthalene
- Branched alkanes
- Indicator compounds

Sample collection, handling, and shipping were completed consistent with SCWP requirements. The laboratory provided standard turn-around for reporting of NYSDEC ASP Category B-equivalent data packages.

2.7 Equipment Decontamination

After each soil boring and monitoring well location was installed, drill stem equipment was decontaminated on a temporarily constructed decontamination pad by pressure stem cleaning. Drill tooling used for sample collection was decontaminated after each sample was removed and before it was use to collected the next interval.

Reusable groundwater sampling equipment (i.e., bladder pump) and soil vapor boring installation equipment (i.e., bucket auger, post hole digger) were decontaminated using procedures detailed in the SCWP.

Fluids generated as a result of equipment decontamination were containerized in 55-gallon steel drums.

2.8 Investigation-Derived Waste (IDW) Disposal

IDW generated during implementation of the SCWP were containerized in DOT-approved 55-gallon drums, labeled appropriately, and temporarily staged in a secure Conex-type container. RGE arranged to have KBH Environmental, LLC (KBH) collect waste characterization samples and drums were transported and disposed of off-site September 2, 2015.

DNAPL removed from MW-5 was containerized in a DOT-approved 5-gallon plastic bucket with ratchet-locking lid and staged in a secure area located on SUNY Geneseo campus. RGE also arranged for KBH to pick up and transport the bucket for off-site disposal.

2.9 Data Usability Summary Reports

The analytical data packages and associated Quality Assurance/Quality Control information for the soil, groundwater, and soil vapor samples were reviewed to determine if they met the project-specific criteria for data quality and data use as identified in the Quality Assurance Project Plan. The complete record of each of these samples' history were reviewed from the time of sample collection, to arrival at the laboratory, processing and analysis at the laboratory, and sample receipt and reporting. Upon completion of the data usability summary review, Data usability Summary Reports (DUSRs) were prepared. The DUSRs are included as **Appendix D**. The results from the data review have been incorporated into the analytical summary tables. The DUSRs indicate that the data collected during the site characterization are determined generally usable for the purposes of the site characterization.

3 SITE CHARACTERIZATION FINDINGS

This section presents a summary of the site characterization results.

3.1 Site Geology

Regional surficial geological maps indicate that native overburden material in the Geneseo area is likely glacial till (Cadwell, 1988). Bedrock beneath the site is mapped as middle to upper Devonian aged shale and limestone (Fisher et al., 1970). Depth and thickness ranges for stratigraphic units vary across the site and are a result of the grade elevation change across the site (difference in grade elevation between MW-3 and MW-7 is 17.7 feet) and the IRM excavation completed in 2003. The general stratigraphic profile consists of fill underlain by till deposits which are underlain by weathered bedrock and competent bedrock. Drilling completed during implementation of the SCWP indicates fill material at the site varies from less than 2 feet bgs to 9 feet bgs and is generally observed to be thicker near former MGP structures (SB-3 and SB-5). Beneath the fill is a medium to very dense till unit with varying amounts of clay and gravel from approximately 2 to 14.5 feet bgs. Bedrock at the site is shale with a weathered bedrock surface observed from approximately 8 to 18.5 feet bgs. The thickness of the weathered bedrock ranges from approximately 0.3 to 6 feet, depending on location. Generally, the upper 10 feet of competent bedrock was observed to be highly fractured with low rock-quality designation (RQDs) percentages (less than 50%). Bedrock below this depth exhibited RQDs generally above 85% and contained primarily horizontal jointing along bedding planes with few low angle joint sets (10-15 degrees) and few high angle joint sets (80 degrees to vertical). Some joints exhibited secondary mineralization or solution-widening. The bedrock surface slopes to the west-northwest at an approximate 5% slope.

3.2 Groundwater Flow

The depth to the water table beneath most of the site is approximately 10 to 15 feet bgs; however, where the grade elevation is substantially lower in the western portion off the site (i.e., near MW-7) the depth to the water table is approximately 6 feet bgs. Water-level gauging data indicate that the water table lies slightly above the top of competent bedrock, within the weathered bedrock or lower portion of the overburden. Given the relatively low RQDs observed in the upper approximately 10 feet of competent bedrock and the presence of a highly fractured weathered bedrock zone, it is reasonable to assume the that majority of groundwater flow beneath the site is within the weathered bedrock and upper 10 feet of competent rock. Gauging data collected during the August and October 2015 gauging events indicate that groundwater flow is to the west-northwest, in the direction of the Genesee River and slope of the bedrock surface. Based on review of the contours shown on **Figure 5** and **Figure 6**, the horizontal hydraulic gradient across the site is estimated at approximately 0.05 ft/ft. It is reasonable to assume that the surface topography of the bedrock exerts some control on shallow groundwater flow.

3.3 Observations of MGP Impacts

Observations of MGP impacts were limited. A small interval of soil containing tar-like material (TLM) was observed from 5 to 5.5 feet bgs at MW-1. The TLM was stiff and weathered (i.e., not ‘free-product’) and observed in soil that appeared to be re-worked and used as backfill for the IRM excavation completed in 2002/2003.

Trace oil-like material was observed in bedrock fractures at MW-5 at 20.2 feet bgs, 20.2 to 20.6 feet bgs, and 21.7 feet bgs. These fractures are located near the top of competent bedrock. It is assumed that the DNAPL accumulating in the sump installed at MW-5 is likely originating from these fractures.

3.4 Soil Quality

A total of 22 soil samples were collected from the 11 soil borings for laboratory analysis. Soil analytical results are provided in **Table 3** (detected results only). The complete list of the reported analytes for each laboratory analytical method is included in **Table 3a**. Results for each of the analyses are compared to the 6 NYSRR Part 375 Unrestricted Use Soil Cleanup Objectives (SCOs) and Restricted Commercial Use SCOs, where appropriate. For ease of reference when reviewing the summary table:

- Detected analytes are presented in bold font.
- Reported values that exceed Unrestricted Use SCOs have gray shading.
- Reported values that exceed Restricted Commercial Use SCOs have yellow shading.

Discussions of the analytical results are presented below.

3.4.1 VOCs

Results from the VOC analyses are presented on **Figure 9**. VOCs were detected in 20 of the 22 soil samples. Total VOC concentrations ranged from below method detection levels (BDL) for two samples to 23,840 micrograms per kilogram (µg/kg). None of the samples contained VOCs that exceeded Restricted Commercial Use SCOs. BTEX were the only VOCs that exceeded Unrestricted Use SCOs (toluene in one sample; ethylbenzene in two samples; benzene in three samples, and; xylenes in four samples). The two samples with the highest reported VOC concentrations were collected from SB-2 (7 to 9 feet bgs) and MW-3 (7 to 9 feet bgs). Both SB-2 and MW-3 are located hydraulically upgradient from the former MGP structures.

Methylcyclohexane, xylenes (total), and cyclohexane were the most prevalent VOCs detected in subsurface soil. Methylcyclohexane was detected in 13 of the 22 soil samples; xylenes (total) were detected in 12 of the 25 soil samples, and; cyclohexane was detected in 10 of the 25 samples. Methylcyclohexane, cyclohexane, and xylenes are commonly present in weathered gasoline. Methyl tertiary butyl ether (MtBE), an octane enhancing gasoline additive used since 1979 to help prevent engine knocking, was detected in soil samples collected from MW-3 and MW-6.

3.4.2 SVOCs

Results from the SVOC analyses are presented on **Figure 10**. SVOCs were detected in 12 of the 22 soil samples. Total SVOC concentrations ranged from BDL for 12 samples to 741,900 µg/kg in the soil sample collected from MW-1 (5 to 7 feet bgs). Monitoring well MW-1 is believed to be located within the backfill of the former excavation area. This sample was the only sample to exceed the 500 mg/kg (500,000 µg/kg) total SVOCs excavation objective defined during the 2002/2003 IRM.

Six soil samples collected from four soil boring/monitoring well locations (MW-1, MW-4, MW-5, and SB-5) contained SVOCs that exceeded Unrestricted Use SCOs; five of these six samples also contained at least

one analyte that exceeded Restricted Commercial Use SCOs. Fluoranthene, phenanthrene, and pyrene were the SVOCs detected in the highest relative concentrations in subsurface soil. PAHs represent a significant percentage of the total SVOCs reported. The highest concentrations of SVOCs/PAHs were detected within or adjacent to the western side of the former IRM excavation area; the lowest concentrations of SVOCs/PAHs were reported in soil samples collected from the eastern side of the excavation.

3.4.3 Metals and Cyanide

Analytical results for metals and cyanide are summarized in **Table 3**. Metals were detected in all 22 samples and total cyanide was detected in 6 of the 22 samples. Six metals (arsenic, cyanide, lead, mercury, nickel, and zinc) were detected at concentrations above Unrestricted Use SCOs. Two metals (arsenic and cyanide) were also detected above Restricted Commercial Use SCOs; however, both arsenic and cyanide only exceeded SCOs at one location each. Arsenic was detected above its Restricted Commercial Use SCO in a sample collected from MW-4 at 5 to 7 feet bgs; cyanide was detected above its Restricted Commercial Use SCO in a sample collected from SB-5 at 9 to 11 feet bgs.

Nickel was the only metal present that was consistently above its Unrestricted Use SCO (30 mg/kg) across the site (20 of 22 samples). However, nickel was not detected at concentrations above its Restricted Commercial Use SCO in any samples. Concentrations of nickel were consistent across the study area (ranging from 20.8 mg/kg to 54.2 mg/kg) and could be attributable to background influences (e.g., naturally present in bedrock or soils). Mercury only exceeded its Unrestricted Use SCO at one location in a sample collected from 5 to 7 feet bgs. Zinc and lead exceeded their Unrestricted Use SCOs at three locations in samples collected from 5 to 14 feet bgs.

3.4.4 Total Petroleum Hydrocarbons

Petroleum-like odors were observed during advancement of MW-3 and a soil sample was collected from 7 to 9 feet bgs. The sample was submitted for laboratory analysis for the presence of TPH, including extractable organics in the diesel range and purgable organics in the gasoline range. Results from the TPH analysis are also summarized in **Table 3**. The results indicate that petroleum hydrocarbons in the range of gasoline, motor oils, kerosene, and diesel fuel were present in the sample. Hydrocarbons in the range of gasoline were present in the highest relative concentration (210 mg/kg), followed closely by motor oils (160 mg/kg), diesel fuel 150 mg/kg), and kerosene (140 mg/kg).

3.5 Groundwater Quality

A round of groundwater samples was collected on August 31, 2015 from the six monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-6, and MW-7) that did not contain NAPL. As stated above, approximately 0.4 feet of DNAPL was measured in monitoring well MW-5 during the August sampling event.

Discussions of the analytical results are presented below.

3.5.1 Total Petroleum Hydrocarbons

Results from the TPH analyses from the collected groundwater samples are summarized in **Table 4**. Note that the analytical results from the sample collected from MW-1 was rejected due to a holding time exceedance by the laboratory.

The presence of extractable hydrocarbons associated with petroleum products were reported at three monitoring wells, including MW-4 (360 micrograms per liter [µg/L]), MW-6 (0.370 µg/L), and MW-7 (410 µg/L). The petroleum hydrocarbons at MW-3 and MW-7 were reported to be in the range of gasoline. The potential parent petroleum hydrocarbon at MW-6 was unknown.

3.5.2 VOCs

The detected VOC analytes in groundwater are summarized in **Table 4** (detected analytes only); a complete list of the VOCs reported by the laboratory analytical method is included in **Table 4a**. The VOC analytical results are also presented on **Figure 7**.

VOCs were detected in each of the six samples. The highest relative concentrations of VOCs were detected at MW-7 (162 µg/L), MW-4 (126 µg/L), and MW-6 (113 µg/L). As stated above, the petroleum hydrocarbons at MW-7 were reported to be indicative of gasoline. Benzene, ethylbenzene, and xylenes were the only VOC analytes detected above their respective NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 groundwater standards (benzene and ethylbenzene were only slightly above their respective standards). Benzene, ethylbenzene, and xylenes were detected above their respective groundwater standards at four of the six wells, including MW-1, MW-4, MW-6, and MW-7.

The VOCs detected in the highest relative concentrations were cyclohexane, methylcyclohexane, and xylenes. Cyclohexane and methylcyclohexane were the only analytes detected in groundwater at each of the six monitoring wells. Cyclohexane, methylcyclohexane, and xylenes are commonly present in weathered gasoline.

3.5.3 SVOCs

The detected SVOC analytes in groundwater are summarized in **Table 4** (detected analytes only); a complete list of the SVOCs reported by the laboratory analytical method is also included in **Table 4a**. The SVOC analytical results are also presented on **Figure 8**.

Total SVOCs ranged from BDL at MW-1 to 29 µg/L at MW-3. None of the SVOCs were present above their respective NYSDEC TOGS 1.1.1 groundwater guidance values. Caprolactam was the SVOC detected at the highest relative concentrations. Caprolactam is not related to MGP operations. No PAHs were detected in any of the groundwater samples except for naphthalene at MW-7. Naphthalene was detected at a concentration of 1.2 µg/L, well below its guidance value of 10 µg/L.

3.5.4 Metals and Total Cyanide

The results metals and cyanide detected in groundwater samples are summarized in **Table 4**. Three metals (sodium, magnesium, and iron) were detected above their respective groundwater standards at all locations sampled. Barium was also present above its groundwater standard in samples collected from MW-2 and MW-3. Sodium and iron were detected at elevated concentrations in soil across the site (no

SCOs exist for either of these metals). Iron concentrations in native soil ranged from 11,000 mg/kg to 27,300 mg/kg, and sodium concentrations ranged from 173 mg/kg to 916 mg/kg. These metals; therefore, are likely elevated in background groundwater due to native soil and/or bedrock characteristics. Similarly, barium and magnesium were also present in soil across the site; however, at concentrations below unrestricted use SCOs.

For evaluation of natural attenuation parameters, two of the groundwater samples were also laboratory filtered and analyzed for iron and manganese. When compared to the non-filtered results, the dissolved iron concentrations were lower by 2 to 3 orders of magnitude, and below the groundwater standard. The laboratory-filtered manganese results were very similar to the non-filtered results; however, both filtered and non-filtered results were well below the groundwater standard.

Total cyanide was not detected in groundwater samples collected from the any of the six monitoring wells.

3.5.5 Geochemical Analyses

Groundwater samples were collected from monitoring wells MW-3 and MW-4 to evaluate natural attenuation processes. The samples were analyzed for carbon dioxide, methane, nitrate nitrogen, and sulfide as geochemical indicators and byproducts. The results from the geochemical analyses are also summarized in **Table 4**.

3.5.5.1 Carbon Dioxide

An accumulation of the end product carbon dioxide is a universal indicator of hydrocarbon biodegradation. Carbon dioxide concentrations in groundwater ranged from 16,000 µg/L at upgradient well MW-3 to 24,000 µg/L at cross-gradient well MW-4.

3.5.5.2 Methane

Methane is an end product produced during methanogenesis. Methanogenesis generally occurs after oxygen, nitrate, and sulfate have been depleted within the dissolved plume. The presence of methane in groundwater is indicative of strongly reducing conditions. Because methane is not present in fuels or MGP-related impacts, the presence of methane in groundwater is indicative of microbial degradation of hydrocarbons. Methane concentrations in groundwater ranged from 5,100 µg/L at monitoring well MW-3 to 6,000 µg/L at monitoring well MW-4.

3.5.5.3 Nitrate Nitrogen

When dissolved oxygen is depleted within a dissolved plume, nitrate is the next most favorable electron-acceptor. Nitrate was not detected in groundwater collected from either upgradient well MW-3 or downgradient well MW-4.

3.5.5.4 Sulfide

After dissolved oxygen and nitrate have been depleted within the dissolved plume, sulfate may be used as an electron acceptor for anaerobic degradation. This process is termed sulfate reduction and results in the

production on sulfide. Sulfide was not detected in groundwater collected from either upgradient well MW-3 or downgradient well MW-4.

3.5.5.5 Dissolved Iron (filtered)

Groundwater samples were collected from MW-3 and MW-4 and sent to the laboratory for filtering and analysis of iron. Samples were filtered to remove suspended material so that results for only dissolved iron would be reported. In some cases, iron (III) is used as an electron acceptor during anaerobic biodegradation of hydrocarbons. During this process, iron (III) is reduced to iron (II), which may be soluble in water. Iron (II) concentrations can thus be used as an indicator of anaerobic biodegradation of hydrocarbons. Dissolved iron concentrations in groundwater were reported as 0.0260 milligrams per liter (mg/L) at monitoring well MW-3 and below detection levels at monitoring well MW-4.

3.5.5.6 Dissolved Manganese (filtered)

Groundwater samples were collected from MW-3 and MW-4 and also sent to the laboratory for filtering and analysis of manganese. Similar to the analysis for dissolved iron, samples were filtered to remove suspended material so that results for only dissolved manganese would be reported. Dissolved manganese is generated by reducing conditions that develop during anaerobic biodegradation of hydrocarbons. Dissolved manganese concentrations in groundwater were reported as 0.0600 mg/L at monitoring well MW-3 and 0.220 mg/L at monitoring well MW-4.

3.6 Soil Vapor

Results from the TO-15 analyses from the collected soil vapor samples are summarized in **Table 5** (detected analytes only); a complete list of the VOCs reported by the laboratory analytical method is also included in **Table 5a**.

The highest concentration of VOCs in soil gas was detected at SV-3; the lowest concentration was reported at SV-1 located northeast from the former excavation area. In general, BTEX compounds were detected in much lower concentrations than were chlorinated VOCs. Acetone and chloroform were the VOCs detected in the highest frequencies (i.e., in each of the seven soil vapor samples) and in the highest relative concentrations. Fourteen (14) chlorinated compounds were detected, with at least 1 chlorinated compound detected in each of the samples.

None of the “MGP-indicator” analytes included with the TO-15 analyses (indene, isooctane, or thiopenes) were detected in any of the soil gas samples.

Six of the detected analytes (butane, isopentane, pentane, n-hexane, n-heptane, and 2,2,4-trimethylpentane) are commonly used as “gasoline indicators”. Gasoline indicators were reported in 6 of the 7 soil vapor samples (gasoline indicators were not present in soil gas collected from SV-6).

4 CONCLUSIONS

Discussions of pertinent conclusions based on the results from the site characterization activities are presented below.

4.1 Environmental Setting

The environmental setting of the Park Street former MGP and surrounding area has been sufficiently defined. The site straddles the boundary between the village commercial district and the SUNY campus. State and Federal records document multiple petroleum spills and leaking underground storage tanks upgradient from the site, which in addition to the MGP-related impacts, have impacted site soil and groundwater. MtBE was detected in two soil samples, and preliminary hydrocarbon fingerprinting of soil and groundwater identified gasoline range organics as the primary petroleum hydrocarbons present.

4.2 Geology and Hydrogeology

Geology at the site has been sufficiently characterized to understand the site conceptual model. Material at the site is generally fill, underlain by a medium to very dense till, underlain by weathered and competent middle to upper Devonian shale bedrock.

Gauging data indicates that groundwater flow is to the west-northwest at an average of 0.05 ft/ft. Groundwater is not observed in overburden material and is instead observed in bedrock which is acting as a partially confined artesian aquifer.

4.3 Nature and Extent of Impacts

4.3.1 Source Material

MGP-related source material was removed by SUNY Geneseo between September 2002 and January 2003 under the guidance of the NYSDEC. A stone/brick underground containment structure, approximately 800 tons of MGP-impacted soil, and 3,200 gallons of impacted water that accumulated in the excavation were transported off site for disposal. Excavation sidewall samples were collected for laboratory analysis. The excavation depths ranged between approximately 20 to 25 feet bgs, terminating at the top of competent bedrock. The soil analytical results collected during the site characterization confirm that the horizontal limits of source material were successfully removed during the excavation IRM. The location of the source removal excavation is shown on **Figure 2**.

4.3.2 Soil

The nature and extent of MGP-related impacts in soil has been sufficiently defined. Laboratory analysis of subsurface soil samples indicated that all locations outside the former excavation area had concentrations of total PAHs below 500 mg/kg (the remediation goal identified during the 2002/2003 soil removal IRM). The highest concentrations of VOCs detected in soil were located east and hydraulically upgradient from the former MGP facility, and several petroleum indicators, including MtBE, were prevalent. The predominance of methylcyclohexane, xylenes (total), and cyclohexane, common components of

weathered gasoline, along with the presence of MtBE and results from the petroleum hydrocarbon analyses, suggests that petroleum may be the primary source of VOCs detected in soil within the study area.

4.3.3 Groundwater

The nature and extent of MGP-related impacts in groundwater have been sufficiently defined. None of the PAH analytes traditionally associated with MGP operations were present above their respective groundwater guidance values; BTEX analytes, where existing, were only slightly above groundwater standards. Similar to VOCs in soil, the predominance of methylcyclohexane, xylenes (total), and cyclohexane and results from the petroleum hydrocarbon analyses, suggests that petroleum is the primary source of VOCs detected in groundwater within the study area.

The concentrations of carbon dioxide present in groundwater, along with the presence of dissolved methane and manganese, suggests that natural attenuation processes are occurring in groundwater.

4.3.4 Soil Vapor

While concentrations of VOCs were detected in soil vapor samples collected from across the site, no MGP indicator compounds were present in any of the 7 soil vapor samples. Gasoline indicators were present in 6 of the 7 soil vapor samples collected from across the site. Chlorinated compounds were detected in the highest relative concentrations; chlorinated compounds are not associated with MGP operations.

Based on the types of analytes detected, no evidence of MGP impacts exist in the soil vapor.

4.3.5 NAPL

A seam of MGP-related NAPL was detected within the weathered bedrock at one location during installation of MW-5; MW-5 is located immediately west of the former excavation IRM. Subsequent gauging of MW-5 indicates NAPL is accumulating within the well sump. Evidence of NAPL was not detected during the installation or subsequent gauging events of monitoring wells located to the north (MW-4) or south (MW-6).

5 RECOMMENDATIONS

Based on the source material IRM conducted in 2003/2003 and results from the site characterization completed at the Park Street former MGP site, a remedial investigation is not required. The following two recommendations; however, are presented:

- **Install One Additional Monitoring Well (MW-8).** Monitoring well MW-8 would be located west of the access road at an accessible location south of soil vapor point SV-3. The final location of MW-8 would be dependent upon the locations of utilities and accessibility. The objective of installing MW-8 is to assess the presence of NAPL in the bedrock adjacent to the Brodie Fine Arts building.

  The proposed location of MW-8 is shown on **Figure 11**. The well will be installed through the overburden and up to 20 feet into competent bedrock, similar to MW-1 through MW-7, and as described in the FSP. Prior to any intrusive activities, NYS One Call (811) will be contacted again to re-identify and re-mark public utilities in the work area. No overburden soil samples will be collected for laboratory analyses. Upon completion, MW-8 will be surveyed for location and elevations, and information added to the site map. A soil boring/monitoring well log will be created and forwarded to the NYSDEC. Community air monitoring will be performed as required by the CAMP,

- **Prepare a Site Management Plan.** Environmental impacts exist at the site that require monitoring. A site-specific Site Management Plan (SMP) will be developed in accordance with DER-10 (Section 6.2) requirements using the template available on the NYSDEC's website. A draft SMP will be provided to the Department for review within 60 days of approval of this SCR (completed environmental easements, if required, will not be included in the draft SMP).

6 REFERENCES

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Geneseo Department of Environmental Health and Safety. 2003. Report of Activities at LL-Lot, SUNY Geneseo. June 2003.

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TABLES

Table 1
Well Construction Details

Site Characterization Report
Rochester Gas and Electric
Former Park Street MGP Site

Well ID	Northing Coordinate	Easting Coordinate	Ground Surface Elevation	Top of Weathered Bedrock (feet bgs)	Top of Weathered Bedrock Elevation	Top of Competant Bedrock (feet bgs)	Top of Competant Bedrock Elevation	Screened Interval (ft bgs)	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)
MW-1	1353704.55	1019330.354	758.42	11.0	747.42	14.5	743.92	16.5-36.5	758.41	35.84
MW-2	1353766.155	1019308.138	760.29	13.0	747.29	15.0	745.29	17-37	760.25	36.65
MW-3	1353780.054	1019260.673	761.65	10.5	751.15	11.0	750.65	13-33	761.66	32.54
MW-4	1353683.744	1019399.011	756.07	14.5	741.57	18.5	737.57	20.5-40.5	756.18	39.70
MW-5	1353666.221	1019333.488	757.63	--	--	17.5	740.13	20-30	757.82	34.90
MW-6	1353655.223	1019280.819	757.55	9.0	748.55	15.0	742.55	17-37	757.73	37.39
MW-7	1353502.948	1019379.851	743.96	8.0	735.96	8.3	735.66	10.5-30.5	744.07	29.28

Notes:
1. bgs - feet below ground surface
2. TOC - top of casing
3. Northing and Easting Coordinates in reference to the New York State Plane Coordinate Systemm West Zone, 1983 North American Datum (NAD83)
4. Elevations in feet above mean sea level (ft amsl), 1988 North American Vertical Datum (NAVD88)
5. MW-5 was installed with a 5-foot long PVC sump
6. -- Indicates weathered bedrock was not identified at this location.

Table 2
Gauging Data

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Well ID	Ground Surface Elevation	Monitored Interval* (ft bgs)	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)	Date	Depth to Water (feet TOC)	Groundwater Elevation	Depth to Product (feet TOC)	Depth to Bottom (feet TOC)	Accumulated Thickness of Sediments (feet)
MW-1	758.42	16.5-36.5	758.41	35.84	8/31/2015	15.85	742.56	--	35.65	0.19
					10/1/2015	14.57	743.84	--	35.83	0.01
					12/17/2015	9.90	748.51	--	35.82	0.02
					1/5/2016	8.92	749.49	--	35.84	0.00
					2/4/2016	9.32	749.09	--	35.80	0.04
MW-2	760.29	17-37	760.25	36.65	8/31/2015	11.22	749.03	--	36.70	-0.05
					10/1/2015	10.73	749.52	--	36.70	-0.05
					12/17/2015	9.43	750.82	--	36.70	-0.05
					1/5/2016	9.40	750.85	--	36.72	-0.07
					2/4/2016	9.37	750.88	--	36.70	-0.05
MW-3	761.65	13-33	761.66	32.54	8/31/2015	12.20	749.46	--	32.58	-0.04
					10/1/2015	11.82	749.84	--	32.59	-0.05
					12/17/2015	10.45	751.21	--	32.57	-0.03
					1/5/2016	10.38	751.28	--	32.68	-0.14
					2/4/2016	10.43	751.23	--	32.56	-0.02
MW-4	756.07	20.5-40.5	756.18	39.70	8/31/2015	15.02	741.16	--	39.74	-0.04
					10/1/2015	15.27	740.91	--	39.72	-0.02
					12/17/2015	15.69	740.49	--	39.72	-0.02
					1/5/2016	16.09	740.09	--	39.75	-0.05
					2/4/2016	15.90	740.28	--	39.74	-0.04
MW-5	757.63	20-30	757.82	34.90	8/31/2015	16.04	741.78	--	34.72	0.18
					10/1/2015	16.38	741.44	34.49	34.89	0.01
					12/17/2015	17.09	740.73	33.80	34.90	0.00
					1/5/2016	16.45	741.37	34.74	35.09	-0.19
					2/4/2016	17.48	740.34	34.79	35.09	-0.19
MW-6	757.55	17-37	757.73	37.39	8/31/2015	15.64	742.09	--	37.35	0.04
					10/1/2015	15.73	742.00	--	37.35	0.04
					12/17/2015	15.90	741.83	--	37.33	0.06
					1/5/2016	15.96	741.77	--	37.33	0.06
					2/4/2016	16.11	741.62	--	37.35	0.04
MW-7	743.96	10.5-30.5	744.07	29.28	8/31/2015	6.37	737.70	--	29.94	-0.66
					10/1/2015	5.86	738.21	--	30.00	-0.72
					12/17/2015	6.57	737.50	--	29.95	-0.67
					1/5/2016	6.24	737.83	--	30.02	-0.74
					2/4/2016	6.43	737.64	--	30.04	-0.76

Notes:

ft bgs - feet below ground surface

TOC - top of casing

Elevations in feet above mean sea level (ft amsl), 1988 North American Vertical Datum (NAVD88).

Monitoring wells MW-1, MW-2, MW-3, MW-4, MW-6 and MW-7 are open bedrock wells; MW-5 is screened from 20 to 30 feet bgs and has a 5 foot long sump.

* Monitored Interval is 2 feet below top of competent bedrock to bottom of hole (MW-1, MW-2, MW-3, MW-4 MW-6, and MW-7) or to top of sump (MW-5)

Table 3
Soil Analytical Results (Detected Analytes Only)

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Sample Depth(Feet BGS): / Date Collected:	Unrestricted Use SCOs	Restricted Use SCOs Commercial	Units	MW-1 5 - 7 08/11/15	MW-1 9 - 11 08/11/15	MW-2 5 - 7 08/12/15	MW-2 9 - 13 08/12/15	MW-3 7 - 9 08/13/15	MW-3 9 - 10.2 08/13/15	MW-4 5 - 7 08/10/15	MW-4 13 - 14.5 08/10/15	MW-5 10 - 12 08/11/15	MW-5 12 - 14 08/11/15	MW-6 9 - 11 08/12/15	MW-6 13 - 14.2 08/12/15	MW-7 4 - 6 08/12/15	MW-7 6 - 8.3 08/12/15	SB-1 7 - 9 08/13/15	SB-1 9 - 11 08/13/15	SB-2 7 - 9 08/13/15	SB-2 9 - 11 08/13/15	SB-3 7 - 9 08/13/15	SB-3 9 - 11 08/13/15	SB-5 9 - 11 08/14/15	SB-5 11 - 13.5 08/14/15
Volatile Organic Compounds																									
1,2-Dichloroethane	20	30,000	µg/kg	4.0 U	4.9 U	3.8 U	**0.32 J**	410 U	**1.6 J**	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Acetone	50	500,000	µg/kg	**35**	**8.4 J**	22 UB	18 U	2,000 U	15 U	29 UJ	**40 J**	**14 J**	**28**	21 U	**6.4 J**	20 UB	19 UB	17 U	20 UB	1,700 U	18 UB	18 U	19 UB	19 U	18 UB
Benzene	60	44,000	µg/kg	**2,300 D**	**0.72 J**	3.8 U	3.7 U	**100 J**	**2.0 J**	5.9 UJ	4.1 UJ	**48**	**6,000 D**	**0.39 J**	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	**2.4 J**	3.6 U	3.7 U	**1.2 J**	**1.8 J**
Cyclohexane	- -	- -	µg/kg	**2.5 J**	4.9 U	3.8 U	3.7 U	**1,500 J**	**23**	5.9 UJ	4.1 UJ	**2.4 J**	**3.3 J**	4.2 U	**2.5 J**	4.0 U	3.8 U	3.4 U	**2.7 J**	**5,000 J**	**2,300 D**	3.6 U	**2.4 J**	3.8 U	3.6 U
Ethylbenzene	1,000	390,000	µg/kg	**92**	4.9 U	3.8 U	3.7 U	**2,500 J**	**1.5 J**	5.9 UJ	4.1 UJ	**47**	**5,900 D**	**0.33 J**	4.1 U	4.0 U	**0.91 J**	3.4 U	3.9 U	**370**	**37**	3.6 U	3.7 U	3.8 U	**0.57 J**
Isopropylbenzene	- -	- -	µg/kg	**19**	4.9 U	3.8 U	3.7 U	**320 J**	3.1 U	5.9 UJ	4.1 UJ	**4.0**	**14**	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	**370**	**22**	3.6 U	3.7 U	3.8 U	3.6 U
Methyl tert-butyl ether	930	500,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	**7.9**	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	**0.70 J**	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Methylcyclohexane	- -	- -	µg/kg	**3.1 J**	4.9 U	**0.91 J**	3.7 U	**4,900 J**	**25**	5.9 UJ	4.1 UJ	**3.1 J**	**4.6**	4.2 U	**2.6 J**	4.0 U	**2.4 J**	3.4 U	**2.7 J**	**17,000**	**7,600 D**	**2.3 J**	**2.5 J**	3.8 U	3.6 U
Methylene Chloride	50	500,000	µg/kg	4.0 U	4.9 U	3.8 UJ	3.7 UJ	410 UJ	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 UJ	3.8 U	3.4 U	3.9 U	750 UBJ	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Styrene	- -	- -	µg/kg	**63**	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	**14**	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	**0.70 J**	3.6 U
Toluene	700	500,000	µg/kg	**6,100 D**	**1.4 J**	**0.52 J**	3.7 U	410 U	**0.25 J**	5.9 UJ	4.1 UJ	**5.9**	**59**	4.2 U	**0.43 J**	4.0 U	3.8 U	3.4 U	3.9 U	350 U	**10**	3.6 U	3.7 U	**2.6 J**	3.6 U
Xylenes (total)	260	500,000	µg/kg	**950**	**1.6 J**	**1.2 J**	7.4 U	**14,000 J**	**5.6 J**	12 UJ	8.1 UJ	**170**	**480**	8.4 U	8.2 U	**1.0 J**	**6.4 J**	6.8 U	7.9 U	**1,100**	**67**	7.1 U	7.5 U	**3.5 J**	7.2 U
Total BTEX	- -	- -	µg/kg	**9,442**	**3.7 J**	**1.7 J**	BDL	**16,600 J**	**9.4 J**	BDL	BDL	**271**	**12,439**	**0.72 J**	**0.43 J**	**1.0 J**	**7.3 J**	BDL	BDL	**1,470**	**116 J**	BDL	BDL	**7.3 J**	**2.4 J**
Total Volatile Organic Compounds (VOCs)	- -	- -	µg/kg	**9,565 J**	**12.1 J**	**2.63 J**	**0.32 J**	**23,320 J**	**66.5 J**	BDL	**40 J**	**294 J**	**12,503 J**	**0.72 J**	**12.6 J**	**1.0 J**	**9.71 J**	BDL	**5.4 J**	**23,840 J**	**10,038 J**	**2.3 J**	**4.9 J**	**8.0 J**	**2.37 J**
Semivolatile Organic Compounds																									
2,4-Dimethylphenol	- -	- -	µg/kg	**5,300**	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
2-Methylnaphthalene	- -	- -	µg/kg	**60,000**	200 U	920 U	1,800 U	**1,200 J**	3,600 U	2,100 U	200 U	**5,300**	**1,700 J**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
2-Methylphenol	330	500,000	µg/kg	**3,600 J**	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
4-Methylphenol	330	500,000	µg/kg	**5,900 J**	390 U	1,800 U	3,600 U	7,000 U	7,000 U	4,000 U	380 U	3,700 U	3,500 U	350 U	1,700 U	1,900 U	18,000 U	4,000 U	7,700 U	3,600 U	6,800 U	1,400 U	17,000 U	41,000 UJ	7,800 U
Acenaphthene	20,000	500,000	µg/kg	**9,700**	200 U	920 U	1,800 U	3,600 U	3,600 U	**770 J**	200 U	**2,600**	**840 J**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Acenaphthylene	100,000	500,000	µg/kg	**11,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**910 J**	200 U	**12,000**	**3,500**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**8,600 J**	4,000 U
Anthracene	100,000	500,000	µg/kg	**33,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**3,600**	200 U	**20,000**	**6,400**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**18,000 J**	4,000 U
Benzo(a)anthracene	1,000	5,600	µg/kg	**30,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**14,000**	**70.0 J**	**20,000**	**11,000**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**36,000 J**	**800 J**
Benzo(a)pyrene	1,000	1,000	µg/kg	**20,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**16,000**	**120 J**	**15,000**	**7,400**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**30,000 J**	**740 J**
Benzo(b)fluoranthene	1,000	5,600	µg/kg	**22,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**18,000**	**160 J**	**17,000**	**8,400**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**32,000 J**	4,000 U
Benzo(g,h,i)perylene	100,000	500,000	µg/kg	**9,100**	200 U	920 U	1,800 U	3,600 U	3,600 U	**11,000**	**70.0 J**	**7,200**	**3,400**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**16,000 J**	4,000 U
Benzo(k)fluoranthene	800	56,000	µg/kg	**9,200**	200 U	920 U	1,800 U	3,600 U	3,600 U	**8,700**	200 U	**7,800**	**4,900**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**25,000 J**	4,000 U
Biphenyl	- -	- -	µg/kg	**9,400**	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	**3,200**	**970 J**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
bis(2-Ethylhexyl)phthalate	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	**130 J**	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Carbazole	- -	- -	µg/kg	**9,500**	200 U	920 U	1,800 U	3,600 U	3,600 U	**1,200 J**	200 U	**4,300**	**1,100 J**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**2,500 J**	4,000 U
Chrysene	1,000	56,000	µg/kg	**23,000**	**84.0 J**	920 U	1,800 U	3,600 U	3,600 U	**12,000**	**87.0 J**	**15,000**	**7,800**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**45,000 J**	**1,200 J**
Dibenzo(a,h)anthracene	330	560	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	**94.0 J**	**3,000**	**2,000**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**5,000 J**	4,000 U
Dibenzofuran	7,000	350,000	µg/kg	**28,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**650 J**	200 U	**13,000**	**3,600**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**4,400 J**	4,000 U
Fluoranthene	100,000	500,000	µg/kg	**58,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**18,000**	**93.0 J**	**39,000**	**20,000**	180 U	890 U	980 U	9,300 U	**340 J**	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**82,000 J**	**1,800 J**
Fluorene	30,000	500,000	µg/kg	**35,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**1,100 J**	200 U	**18,000**	**5,300**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**8,800 J**	4,000 U
Indeno(1,2,3-cd)pyrene	500	5,600	µg/kg	**9,200**	200 U	920 U	1,800 U	3,600 U	3,600 U	**11,000**	**100 J**	**7,400**	**4,000**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**15,000 J**	4,000 U
Naphthalene	12,000	500,000	µg/kg	**160,000 D**	200 U	920 U	1,800 U	**940 J**	3,600 U	**600 J**	200 U	**27,000**	**9,600**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Phenanthrene	100,000	500,000	µg/kg	**140,000 D**	200 U	920 U	1,800 U	3,600 U	3,600 U	**9,400**	**47.0 J**	**44,000**	**16,000**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**59,000 J**	**1,700 J**
Pyrene	100,000	500,000	µg/kg	**51,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**16,000**	**83.0 J**	**30,000**	**15,000**	180 U	890 U	980 U	9,300 U	**280 J**	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**71,000 J**	**1,300 J**
Total Polycyclic Aromatic Hydrocarbons (PAHs)	- -	- -	µg/kg	**620,200**	**84.0 J**	BDL	BDL	**940 J**	BDL	**141,080 J**	**924 J**	**285,000**	**125,540**	BDL	BDL	BDL	BDL	**620 J**	BDL	BDL	BDL	BDL	BDL	**451,400 J**	**7,540 J**
Total Semivolatile Organic Compounds (SVOCs)	- -	- -	µg/kg	**741,900 J**	**84.0 J**	BDL	BDL	**2,140 J**	BDL	**142,930 J**	**1,054 J**	**310,800**	**132,910 J**	BDL	BDL	BDL	BDL	**620 J**	BDL	BDL	BDL	BDL	BDL	**458,300 J**	**7,540 J**

Table 3
Soil Analytical Results (Detected Analytes Only)

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Sample Depth(Feet BGS): / Date Collected:	Unrestricted Use SCOs	Restricted Use SCOs Commercial	Units	MW-1 5 - 7 08/11/15	MW-1 9 - 11 08/11/15	MW-2 5 - 7 08/12/15	MW-2 9 - 13 08/12/15	MW-3 7 - 9 08/13/15	MW-3 9 - 10.2 08/13/15	MW-4 5 - 7 08/10/15	MW-4 13 - 14.5 08/10/15	MW-5 10 - 12 08/11/15	MW-5 12 - 14 08/11/15	MW-6 9 - 11 08/12/15	MW-6 13 - 14.2 08/12/15	MW-7 4 - 6 08/12/15	MW-7 6 - 8.3 08/12/15	SB-1 7 - 9 08/13/15	SB-1 9 - 11 08/13/15	SB-2 7 - 9 08/13/15	SB-2 9 - 11 08/13/15	SB-3 7 - 9 08/13/15	SB-3 9 - 11 08/13/15	SB-5 9 - 11 08/14/15	SB-5 11 - 13.5 08/14/15
Petroleum Hydrocarbons																									
Diesel, Fuel Oil #2, C10-C23	- -	- -	mg/kg	NA	NA	NA	NA	**150**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fuel Oil #4	- -	- -	mg/kg	NA	NA	NA	NA	18.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fuel Oil #6	- -	- -	mg/kg	NA	NA	NA	NA	18.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gasoline	- -	- -	mg/kg	NA	NA	NA	NA	**210**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kerosene	- -	- -	mg/kg	NA	NA	NA	NA	**140**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Motor Oils	- -	- -	mg/kg	NA	NA	NA	NA	**160**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown Hydrocarbon1	- -	- -	mg/kg	NA	NA	NA	NA	18.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics																									
Aluminum	- -	- -	mg/kg	**16,600 J**	**17,100 J**	**11,200 J**	**16,700 J**	**10,400 J**	**12,700 J**	**9,860 J**	**17,800 J**	**16,400 J**	**15,300 J**	**15,100 J**	**17,900 J**	**20,300 J**	**15,700 J**	**12,600**	**15,500**	**11,200**	**12,800**	**14,400**	**14,100**	**17,300**	**18,600**
Antimony	- -	- -	mg/kg	17.8 UJ	17.5 UJ	16.6 UJ	16.3 UJ	15.8 UJ	15.1 UJ	18.7 UJ	16.7 UJ	**0.990 J**	16.8 UJ	15.6 UJ	15.9 UJ	16.6 UJ	16.8 UJ	19.0 U	17.5 U	**0.650 J**	16.0 U	16.2 U	15.7 U	18.6 U	18.0 U
Arsenic	13	16	mg/kg	**2.20 J**	**2.90**	**3.60**	**4.00**	**3.60**	**3.60**	**23.9**	**6.60**	**3.90**	**4.80**	**2.80**	**3.50**	**2.40**	**5.60**	**7.30**	**3.40**	**3.70**	**4.00**	**4.10**	**3.80**	**5.00**	**3.60**
Barium	350	400	mg/kg	**66.3 J**	**86.4 J**	**55.3 J**	**67.7 J**	**44.3 J**	**47.2 J**	**95.3 J**	**63.9 J**	**168 J**	**69.5 J**	**98.9 J**	**58.8 J**	**75.1 J**	**57.8 J**	**92.7**	**54.9**	**48.3**	**99.5**	**71.1**	**63.6**	**123**	**76.6**
Beryllium	7.2	590	mg/kg	**0.820**	**0.830**	**0.550**	**0.820**	**0.490**	**0.640**	**0.900**	**0.950**	**0.820**	**0.750**	**0.760**	**0.920**	**0.880**	**0.740**	**0.580**	**0.790**	**0.590**	**0.690**	**0.750**	**0.750**	**0.860**	**0.960**
Cadmium	2.5	9.3	mg/kg	**0.0370 J**	**0.0410 J**	**0.0940 J**	**0.0340 J**	**0.140 J**	**0.0720 J**	**0.290**	**0.130 J**	**0.0530 J**	**0.260**	**0.0560 J**	0.210 U	**0.0740 J**	**0.160 J**	**0.150 J**	**0.0640 J**	**0.0610 J**	0.210 U	0.220 U	**0.0360 J**	**0.610**	**0.0570 J**
Calcium	- -	- -	mg/kg	**56,600 J**	**45,300 J**	**72,200 J**	**53,400 J**	**54,500 J**	**59,200 J**	**49,500 J**	**12,900 J**	**40,000 J**	**35,000 J**	**45,300 J**	**22,600 J**	**37,500 J**	**46,500 J**	**24,000**	**37,900**	**60,400**	**71,300**	**56,300**	**47,600**	**8,180**	**11,400**
Chromium	- -	- -	mg/kg	**24.7 J**	**26.1 J**	**16.8 J**	**24.3 J**	**15.1 J**	**19.2 J**	**15.7 J**	**26.6 J**	**24.8 J**	**22.9 J**	**22.9 J**	**27.2 J**	**26.4 J**	**24.3 J**	**16.8**	**25.3**	**17.5**	**20.2**	**22.4**	**22.3**	**23.9**	**28.8**
Cobalt	- -	- -	mg/kg	**13.5**	**13.7**	**10.4**	**15.4**	**10.8**	**12.5**	**6.50**	**15.4**	**14.9**	**14.5**	**13.4**	**14.7**	**8.70**	**10.7**	**8.60**	**15.1**	**10.8**	**12.2**	**14.2**	**15.5**	**12.2**	**17.1**
Copper	50	270	mg/kg	**27.8**	**28.0**	**27.7 J**	**30.5 J**	**32.1 J**	**28.0 J**	**49.0**	**42.2**	**26.6**	**31.0**	**27.0**	**28.3**	**17.3 J**	**34.1 J**	**27.4**	**27.1**	**26.5**	**29.1**	**29.2**	**28.0**	**18.4**	**27.0**
Cyanide	27	27	mg/kg	1.10 U	**0.860 J**	1.10 U	**1.10**	1.00 U	1.10 U	**5.80**	1.10 U	**2.90**	**3.80**	1.00 U	1.00 U	1.10 U	1.10 U	1.20 U	1.20 U	1.10 U	1.00 U	1.10 U	1.00 U	**469**	1.20 U
Iron	- -	- -	mg/kg	**20,200 J**	**23,800 J**	**16,500 J**	**21,400 J**	**15,500 J**	**18,300 J**	**11,000 J**	**27,100 J**	**23,800 J**	**24,300 J**	**21,300 J**	**24,100 J**	**19,300 J**	**21,100 J**	**17,100**	**24,500**	**17,100**	**19,700**	**21,400**	**21,700**	**23,300**	**27,300**
Lead	63	1,000	mg/kg	**10.1**	**10.1**	**12.2**	**12.2**	**12.2**	**13.8**	**138**	**22.3**	**10.9**	**14.3**	**9.70**	**11.8**	**9.10**	**13.2**	**130**	**13.4**	**12.2**	**13.4**	**12.1**	**11.4**	**63.6**	**13.5**
Magnesium	- -	- -	mg/kg	**7,830 J**	**8,340 J**	**17,200 J**	**7,380 J**	**12,700 J**	**9,390 J**	**3,640 J**	**6,780 J**	**7,800 J**	**7,460 J**	**7,400 J**	**9,170 J**	**7,770 J**	**6,450 J**	**6,110**	**8,300**	**11,100**	**7,240**	**7,540**	**7,570**	**5,550**	**7,880**
Manganese	1,600	10,000	mg/kg	**345 J**	**333 J**	**321 J**	**410 J**	**368 J**	**345 J**	**197 J**	**285 J**	**302 J**	**284 J**	**295 J**	**269 J**	**254 J**	**249 J**	**332**	**355**	**349**	**388**	**361**	**360**	**389**	**307**
Mercury	0.18	2.8	mg/kg	**0.0230**	**0.0140 J**	**0.0190**	**0.0180 J**	**0.00890 J**	**0.0170 J**	**0.200**	**0.0320**	**0.0300**	**0.0200**	**0.0170 J**	**0.0150 J**	**0.0570**	**0.0260**	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	310	mg/kg	**43.3**	**44.5**	**34.0**	**42.2**	**32.4**	**38.9**	**20.8**	**54.2**	**42.1**	**41.0**	**40.4**	**42.9**	**36.7**	**46.8**	**24.8**	**45.4**	**34.2**	**39.1**	**42.9**	**41.6**	**35.7**	**48.0**
Potassium	- -	- -	mg/kg	**3,650 J**	**3,470 J**	**2,750 J**	**3,850 J**	**2,700 J**	**3,070 J**	**1,450 J**	**3,840 J**	**3,550 J**	**3,030 J**	**3,110 J**	**3,980 J**	**4,200 J**	**3,520 J**	**2,720**	**3,000**	**2,510**	**2,990**	**3,020**	**3,010**	**2,960**	**3,120**
Selenium	3.9	1,500	mg/kg	4.70 U	4.70 U	4.40 U	**0.500 J**	4.20 U	4.00 U	**0.560 J**	4.50 U	**1.00 J**	4.50 U	4.10 U	**0.460 J**	**0.780 J**	**2.10 J**	**0.580 J**	4.70 U	**1.00 J**	**0.440 J**	4.30 U	**0.650 J**	**0.730 J**	4.80 U
Sodium	- -	- -	mg/kg	**226**	**212**	**524**	**235**	**173**	**234**	**736**	**173**	**523**	**472**	**427**	**240**	**186**	**189**	**916**	**627**	**407**	**264**	**642**	**327**	**752**	**321**
Vanadium	- -	- -	mg/kg	**21.6 J**	**20.9 J**	**17.7 J**	**21.8 J**	**17.6 J**	**19.1 J**	**21.9 J**	**24.7 J**	**20.8 J**	**18.7 J**	**19.2 J**	**22.7 J**	**26.7 J**	**25.7 J**	**21.8**	**19.7**	**16.9**	**17.1**	**18.6**	**17.7**	**27.6**	**23.9**
Zinc	109	10,000	mg/kg	**56.1 J**	**71.7 J**	**57.7 J**	**56.2 J**	**66.2 J**	**50.8 J**	**135 J**	**90.5 J**	**69.9 J**	**203 J**	**75.4 J**	**52.2 J**	**64.7 J**	**82.1 J**	**99.9**	**76.0**	**52.4**	**50.8**	**50.8**	**63.5**	**887**	**79.0**

Notes:

1. Samples were submitted to Test America, Amherst, New York for analysis using USEPA SW-846 Methods 8260B (VOCs), 8270D (SVOCs), 6010C (Inorganics), 9012B (Total Cyanide), 310.13 (Hydrocarbon Identification).
2. Samples from monitoring wells MW-3 and MW-4 were submitted to Test America, Amherst, New York for additional analysis of carbon dioxide, methane, sulfide, nitrate, nitrite, and dissolved iron and manganese.
3. Results are presented in units of micrograms per liter (µg/L) and milligrams per liter (mg/L), as identified.
4. J - Indicates that the analyte was detected at a concentration less than the practical quantitation limit (PQL).
5. U - Indicates the constituent was not detected at the PQL. The value preceding the U indicates the PQL.
6. UB - Indicates the constituent was not detected at a concentration less than the PQL due to associated blank contamination.
7. D - Compound quantitated using a secondary dilution.
8. NA - not analyzed
9. BDL - Below method detection limits.
10. BGS - Below ground surface.
11. Sample results detected above the Method Detection Limit (MDL) are presented in bold font.
12. Gray Shading indicates the result exceeds NYSDEC Part 375 Soil Cleanup Objectives (SCO) for Unrestricted use (Unrestricted use SCO).
13. Yellow Shading indicates the result exceeds NYSDEC Part 375 Soil Cleanup Objectives (SCO) for Commercial use (Commercial use SCO).
14. - - Indicates a standard or guidance value does not exist for the respective analyte.

Table 3a
Soil Analytical Results

Site Characterization Plan
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID:	Unrestricted Use SCOs	Restricted Use SCOs Commercial	Units	MW-1	MW-1	MW-2	MW-2	MW-3	MW-3	MW-4	MW-4	MW-5	MW-5	MW-6	MW-6	MW-7	MW-7	SB-1	SB-1	SB-2	SB-2	SB-3	SB-3	SB-5	SB-5
Sample Depth(Feet BGS):				5 - 7	9 - 11	5 - 7	9 - 13	7 - 9	9 - 10.2	5 - 7	13 - 14.5	10 - 12	12 - 14	9 - 11	13 - 14.2	4 - 6	6 - 8.3	7 - 9	9 - 11	7 - 9	9 - 11	7 - 9	9 - 11	11 - 13.5
Date Collected:				08/11/15	08/11/15	08/12/15	08/12/15	08/13/15	08/13/15	08/10/15	08/10/15	08/11/15	08/11/15	08/12/15	08/12/15	08/12/15	08/12/15	08/13/15	08/13/15	08/13/15	08/13/15	08/13/15	08/13/15	08/14/15	08/14/15
Volatile Organic Compounds																									
1,1,1-Trichloroethane	680	500,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,1,2,2-Tetrachloroethane	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 UJ	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,1,2-trichloro-1,2,2-trifluoroethane	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,1,2-Trichloroethane	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,1-Dichloroethane	270	240,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,1-Dichloroethene	330	500,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,2,4-Trichlorobenzene	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 UJ	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,2-Dibromo-3-chloropropane	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 UJ	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 UJ	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 UJ	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,2-Dibromoethane	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 UJ	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,2-Dichlorobenzene	1,100	500,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 UJ	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,2-Dichloroethane	20	30,000	µg/kg	4.0 U	4.9 U	3.8 U	**0.32 J**	410 U	**1.6 J**	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,2-Dichloropropane	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,3-Dichlorobenzene	2,400	280,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 UJ	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
1,4-Dichlorobenzene	1,800	130,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 UJ	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
2-Butanone	120	500,000	µg/kg	20 U	24 U	19 U	18 U	2,000 U	15 U	29 UJ	20 UJ	19 U	19 U	21 UJ	21 U	20 U	19 U	17 U	20 U	1,700 U	18 UB	18 U	19 U	19 U	18 U
2-Hexanone	- -	- -	µg/kg	20 U	24 U	19 U	18 U	2,000 U	15 U	29 UJ	20 UJ	19 U	19 U	21 U	21 U	20 U	19 U	17 U	20 U	1,700 U	18 U	18 U	19 U	19 U	18 U
4-Methyl-2-pentanone	- -	- -	µg/kg	20 U	24 U	19 U	18 U	2,000 U	15 U	29 UJ	20 UJ	19 U	19 U	21 UJ	21 U	20 U	19 U	17 U	20 U	1,700 U	18 U	18 U	19 U	19 U	18 U
Acetone	50	500,000	µg/kg	**35**	**8.4 J**	22 UB	18 U	2,000 U	15 U	29 UJ	**40 J**	**14 J**	**28**	21 U	**6.4 J**	20 UB	19 UB	17 U	20 UB	1,700 U	18 UB	18 U	19 UB	19 U	18 UB
Benzene	60	44,000	µg/kg	**2,300 D**	**0.72 J**	3.8 U	3.7 U	**100 J**	**2.0 J**	5.9 UJ	4.1 UJ	**48**	**6,000 D**	**0.39 J**	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	**2.4 J**	3.6 U	3.7 U	**1.2 J**	**1.8 J**
Bromodichloromethane	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Bromoform	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 UJ	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 UJ	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 UJ	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Bromomethane	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Carbon Disulfide	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Carbon Tetrachloride	760	22,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Chlorobenzene	1,100	500,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Chloroethane	- -	- -	µg/kg	4.0 U	4.9 U	3.8 UJ	3.7 UJ	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 UJ	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Chloroform	370	350,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Chloromethane	- -	- -	µg/kg	4.0 U	4.9 U	3.8 UJ	3.7 UJ	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 UJ	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
cis-1,2-Dichloroethene	250	500,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
cis-1,3-Dichloropropene	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Cyclohexane	- -	- -	µg/kg	**2.5 J**	4.9 U	3.8 U	3.7 U	**1,500 J**	**23**	5.9 UJ	4.1 UJ	**2.4 J**	**3.3 J**	4.2 U	**2.5 J**	4.0 U	3.8 U	3.4 U	**2.7 J**	**5,000 J**	**2,300 D**	3.6 U	**2.4 J**	3.8 U	3.6 U
Dibromochloromethane	- -	- -	µg/kg	4.0 UJ	4.9 UJ	3.8 U	3.7 U	410 UJ	3.1 UJ	5.9 UJ	4.1 UJ	3.8 UJ	3.7 UJ	4.2 UJ	4.1 UJ	4.0 U	3.8 UJ	3.4 UJ	3.9 UJ	350 UJ	3.7 UJ	3.6 UJ	3.7 UJ	3.8 UJ	3.6 UJ
Dichlorodifluoromethane	- -	- -	µg/kg	4.0 UJ	4.9 UJ	3.8 U	3.7 U	410 UJ	3.1 UJ	5.9 UJ	4.1 UJ	3.8 UJ	3.7 UJ	4.2 UJ	4.1 UJ	4.0 U	3.8 UJ	3.4 UJ	3.9 UJ	350 U	3.7 UJ	3.6 UJ	3.7 UJ	3.8 UJ	3.6 UJ
Ethylbenzene	1,000	390,000	µg/kg	**92**	4.9 U	3.8 U	3.7 U	**2,500 J**	**1.5 J**	5.9 UJ	4.1 UJ	**47**	**5,900 D**	**0.33 J**	4.1 U	4.0 U	**0.91 J**	3.4 U	3.9 U	**370**	**37**	3.6 U	3.7 U	3.8 U	**0.57 J**
Isopropylbenzene	- -	- -	µg/kg	**19**	4.9 U	3.8 U	3.7 U	**320 J**	3.1 U	5.9 UJ	4.1 UJ	**4.0**	**14**	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	**370**	**22**	3.6 U	3.7 U	3.8 U	3.6 U
Methyl acetate	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Methyl tert-butyl ether	930	500,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	**7.9**	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	**0.70 J**	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Methylcyclohexane	- -	- -	µg/kg	**3.1 J**	4.9 U	**0.91 J**	3.7 U	**4,900 J**	**25**	5.9 UJ	4.1 UJ	**3.1 J**	**4.6**	4.2 U	**2.6 J**	4.0 U	**2.4 J**	3.4 U	**2.7 J**	**17,000**	**7,600 D**	**2.3 J**	**2.5 J**	3.8 U	3.6 U
Methylene Chloride	50	500,000	µg/kg	4.0 U	4.9 U	3.8 UJ	3.7 UJ	410 UJ	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 UJ	3.8 U	3.4 U	3.9 U	750 UBJ	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Styrene	- -	- -	µg/kg	**63**	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	**14**	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	**0.70 J**	3.6 U
Tetrachloroethene	1,300	150,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Toluene	700	500,000	µg/kg	**6,100 D**	**1.4 J**	**0.52 J**	3.7 U	410 U	**0.25 J**	5.9 UJ	4.1 UJ	**5.9**	**59**	4.2 U	**0.43 J**	4.0 U	3.8 U	3.4 U	3.9 U	350 U	**10**	3.6 U	3.7 U	**2.6 J**	3.6 U
trans-1,2-Dichloroethene	190	500,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
trans-1,3-Dichloropropene	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Trichloroethene	470	200,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Trichlorofluoromethane	- -	- -	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Vinyl Chloride	20	13,000	µg/kg	4.0 U	4.9 U	3.8 U	3.7 U	410 U	3.1 U	5.9 UJ	4.1 UJ	3.8 U	3.7 U	4.2 U	4.1 U	4.0 U	3.8 U	3.4 U	3.9 U	350 U	3.7 U	3.6 U	3.7 U	3.8 U	3.6 U
Xylenes (total)	260	500,000	µg/kg	**950**	**1.6 J**	**1.2 J**	7.4 U	**14,000 J**	**5.6 J**	12 UJ	8.1 UJ	**170**	**480**	8.4 U	8.2 U	**1.0 J**	**6.4 J**	6.8 U	7.9 U	**1,100**	**67**	7.1 U	7.5 U	**3.5 J**	7.2 U
Total BTEX	- -	- -	µg/kg	**9,442**	**3.7 J**	**1.7 J**	BDL	**16,600 J**	**9.4 J**	BDL	BDL	**271**	**12,439**	**0.72 J**	**0.43 J**	**1.0 J**	**7.3 J**	BDL	BDL	**1,470**	**116 J**	BDL	BDL	**7.3 J**	**2.4 J**
Total Volatile Organic Compounds (VOCs)	- -	- -	µg/kg	**9,565 J**	**12.1 J**	**2.63 J**	**0.32 J**	**23,320 J**	**66.5 J**	BDL	**40 J**	**294 J**	**12,503 J**	**0.72 J**	**12.6 J**	**1.0 J**	**9.71 J**	BDL	**5.4 J**	**23,840 J**	**10,038 J**	**2.3 J**	**4.9 J**	**8.0 J**	**2.37 J**
Semivolatile Organic Compounds																									
2,4,5-Trichlorophenol	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
2,4,6-Trichlorophenol	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
2,4-Dichlorophenol	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U

Table 3a
Soil Analytical Results

Site Characterization Plan
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Sample Depth(Feet BGS): / Date Collected:	Unrestricted Use SCOs	Restricted Use SCOs Commercial	Units	MW-1 5 - 7 08/11/15	MW-1 9 - 11 08/11/15	MW-2 5 - 7 08/12/15	MW-2 9 - 13 08/12/15	MW-3 7 - 9 08/13/15	MW-3 9 - 10.2 08/13/15	MW-4 5 - 7 08/10/15	MW-4 13 - 14.5 08/10/15	MW-5 10 - 12 08/11/15	MW-5 12 - 14 08/11/15	MW-6 9 - 11 08/12/15	MW-6 13 - 14.2 08/12/15	MW-7 4 - 6 08/12/15	MW-7 6 - 8.3 08/12/15	SB-1 7 - 9 08/13/15	SB-1 9 - 11 08/13/15	SB-2 7 - 9 08/13/15	SB-2 9 - 11 08/13/15	SB-3 7 - 9 08/13/15	SB-3 9 - 11 08/13/15	SB-5 9 - 11 08/14/15	SB-5 11 - 13.5 08/14/15
2,4-Dimethylphenol	- -	- -	µg/kg	**5,300**	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
2,4-Dinitrophenol	- -	- -	µg/kg	37,000 U	1,900 U	9,000 U	18,000 U	35,000 U	35,000 U	20,000 U	1,900 U	19,000 U	18,000 U	1,700 U	8,700 U	9,500 U	91,000 U	20,000 U	39,000 U	18,000 U	34,000 U	7,200 U	87,000 U	200,000 UJ	39,000 U
2,4-Dinitrotoluene	- -	- -	µg/kg	3,800 U	200 UJ	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 UJ	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
2,6-Dinitrotoluene	- -	- -	µg/kg	3,800 UJ	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 UJ	200 UJ	1,900 U	1,800 UJ	180 UJ	890 UJ	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
2-Chloronaphthalene	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
2-Chlorophenol	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
2-Methylnaphthalene	- -	- -	µg/kg	**60,000**	200 U	920 U	1,800 U	**1,200 J**	3,600 U	2,100 U	200 U	**5,300**	**1,700 J**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
2-Methylphenol	330	500,000	µg/kg	**3,600 J**	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
2-Nitroaniline	- -	- -	µg/kg	7,400 U	390 U	1,800 U	3,600 U	7,000 U	7,000 U	4,000 U	380 U	3,700 U	3,500 U	350 U	1,700 U	1,900 U	18,000 U	4,000 U	7,700 U	3,600 U	6,800 U	1,400 U	17,000 U	41,000 UJ	7,800 U
2-Nitrophenol	- -	- -	µg/kg	3,800 UJ	200 UJ	920 U	1,800 U	3,600 U	3,600 U	2,100 UJ	200 UJ	1,900 UJ	1,800 UJ	180 UJ	890 UJ	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
3,3'-Dichlorobenzidine	- -	- -	µg/kg	7,400 U	390 U	1,800 U	3,600 U	7,000 U	7,000 U	4,000 U	380 U	3,700 U	3,500 U	350 U	1,700 U	1,900 U	18,000 U	4,000 U	7,700 U	3,600 U	6,800 U	1,400 U	17,000 U	41,000 UJ	7,800 U
3-Nitroaniline	- -	- -	µg/kg	7,400 U	390 U	1,800 U	3,600 U	7,000 U	7,000 U	4,000 U	380 U	3,700 U	3,500 U	350 U	1,700 U	1,900 U	18,000 U	4,000 U	7,700 U	3,600 U	6,800 U	1,400 U	17,000 U	41,000 UJ	7,800 U
4,6-Dinitro-2-methylphenol	- -	- -	µg/kg	7,400 U	390 U	1,800 U	3,600 U	7,000 U	7,000 U	4,000 U	380 U	3,700 U	3,500 U	350 U	1,700 U	1,900 U	18,000 U	4,000 U	7,700 U	3,600 U	6,800 U	1,400 U	17,000 U	41,000 UJ	7,800 U
4-Bromophenyl-phenylether	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
4-Chloro-3-Methylphenol	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
4-Chloroaniline	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
4-Chlorophenyl-phenylether	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
4-Methylphenol	330	500,000	µg/kg	**5,900 J**	390 U	1,800 U	3,600 U	7,000 U	7,000 U	4,000 U	380 U	3,700 U	3,500 U	350 U	1,700 U	1,900 U	18,000 U	4,000 U	7,700 U	3,600 U	6,800 U	1,400 U	17,000 U	41,000 UJ	7,800 U
4-Nitroaniline	- -	- -	µg/kg	7,400 U	390 U	1,800 U	3,600 U	7,000 U	7,000 U	4,000 U	380 U	3,700 U	3,500 U	350 U	1,700 U	1,900 U	18,000 U	4,000 U	7,700 U	3,600 U	6,800 U	1,400 U	17,000 U	41,000 UJ	7,800 U
4-Nitrophenol	- -	- -	µg/kg	7,400 U	390 U	1,800 U	3,600 U	7,000 U	7,000 U	4,000 U	380 U	3,700 U	3,500 U	350 U	1,700 U	1,900 U	18,000 U	4,000 U	7,700 U	3,600 U	6,800 U	1,400 U	17,000 U	41,000 UJ	7,800 U
Acenaphthene	20,000	500,000	µg/kg	**9,700**	200 U	920 U	1,800 U	3,600 U	3,600 U	**770 J**	200 U	**2,600**	**840 J**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Acenaphthylene	100,000	500,000	µg/kg	**11,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**910 J**	200 U	**12,000**	**3,500**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**8,600 J**	4,000 U
Acetophenone	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Anthracene	100,000	500,000	µg/kg	**33,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**3,600**	200 U	**20,000**	**6,400**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**18,000 J**	4,000 U
Atrazine	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Benzaldehyde	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Benzo(a)anthracene	1,000	5,600	µg/kg	**30,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**14,000**	**70.0 J**	**20,000**	**11,000**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**36,000 J**	**800 J**
Benzo(a)pyrene	1,000	1,000	µg/kg	**20,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**16,000**	**120 J**	**15,000**	**7,400**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**30,000 J**	**740 J**
Benzo(b)fluoranthene	1,000	5,600	µg/kg	**22,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**18,000**	**160 J**	**17,000**	**8,400**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**32,000 J**	4,000 U
Benzo(g,h,i)perylene	100,000	500,000	µg/kg	**9,100**	200 U	920 U	1,800 U	3,600 U	3,600 U	**11,000**	**70.0 J**	**7,200**	**3,400**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**16,000 J**	4,000 U
Benzo(k)fluoranthene	800	56,000	µg/kg	**9,200**	200 U	920 U	1,800 U	3,600 U	3,600 U	**8,700**	200 U	**7,800**	**4,900**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**25,000 J**	4,000 U
Biphenyl	- -	- -	µg/kg	**9,400**	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	**3,200**	**970 J**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
bis(2-Chloroethoxy)methane	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
bis(2-Chloroethyl)ether	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
bis(2-Chloroisopropyl)ether	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
bis(2-Ethylhexyl)phthalate	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	**130 J**	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Butylbenzylphthalate	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Caprolactam	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Carbazole	- -	- -	µg/kg	**9,500**	200 U	920 U	1,800 U	3,600 U	3,600 U	**1,200 J**	200 U	**4,300**	**1,100 J**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**2,500 J**	4,000 U
Chrysene	1,000	56,000	µg/kg	**23,000**	**84.0 J**	920 U	1,800 U	3,600 U	3,600 U	**12,000**	**87.0 J**	**15,000**	**7,800**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**45,000 J**	**1,200 J**
Dibenzo(a,h)anthracene	330	560	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	**94.0 J**	**3,000**	**2,000**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**5,000 J**	4,000 U
Dibenzofuran	7,000	350,000	µg/kg	**28,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**650 J**	200 U	**13,000**	**3,600**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**4,400 J**	4,000 U
Diethylphthalate	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Dimethylphthalate	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Di-n-Butylphthalate	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Di-n-Octylphthalate	- -	- -	µg/kg	3,800 UJ	200 UJ	920 U	1,800 U	3,600 U	3,600 U	2,100 UJ	200 UJ	1,900 UJ	1,800 UJ	180 UJ	890 UJ	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Fluoranthene	100,000	500,000	µg/kg	**58,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**18,000**	**93.0 J**	**39,000**	**20,000**	180 U	890 U	980 U	9,300 U	**340 J**	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**82,000 J**	**1,800 J**
Fluorene	30,000	500,000	µg/kg	**35,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**1,100 J**	200 U	**18,000**	**5,300**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**8,800 J**	4,000 U
Hexachlorobenzene	330	6,000	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Hexachlorobutadiene	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Hexachlorocyclopentadiene	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Hexachloroethane	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Indeno(1,2,3-cd)pyrene	500	5,600	µg/kg	**9,200**	200 U	920 U	1,800 U	3,600 U	3,600 U	**11,000**	**100 J**	**7,400**	**4,000**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**15,000 J**	4,000 U
Isophorone	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Naphthalene	12,000	500,000	µg/kg	**160,000 D**	200 U	920 U	1,800 U	**940 J**	3,600 U	**600 J**	200 U	**27,000**	**9,600**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U

Table 3a
Soil Analytical Results

Site Characterization Plan
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Sample Depth(Feet BGS): / Date Collected:	Unrestricted Use SCOs	Restricted Use SCOs Commercial	Units	MW-1 5 - 7 08/11/15	MW-1 9 - 11 08/11/15	MW-2 5 - 7 08/12/15	MW-2 9 - 13 08/12/15	MW-3 7 - 9 08/13/15	MW-3 9 - 10.2 08/13/15	MW-4 5 - 7 08/10/15	MW-4 13 - 14.5 08/10/15	MW-5 10 - 12 08/11/15	MW-5 12 - 14 08/11/15	MW-6 9 - 11 08/12/15	MW-6 13 - 14.2 08/12/15	MW-7 4 - 6 08/12/15	MW-7 6 - 8.3 08/12/15	SB-1 7 - 9 08/13/15	SB-1 9 - 11 08/13/15	SB-2 7 - 9 08/13/15	SB-2 9 - 11 08/13/15	SB-3 7 - 9 08/13/15	SB-3 9 - 11 08/13/15	SB-5 9 - 11 08/14/15	SB-5 11 - 13.5 08/14/15
Nitrobenzene	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
N-Nitroso-di-n-propylamine	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
N-Nitrosodiphenylamine	- -	- -	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Pentachlorophenol	800	6,700	µg/kg	7,400 U	390 U	1,800 U	3,600 U	7,000 U	7,000 U	4,000 U	380 U	3,700 U	3,500 U	350 U	1,700 U	1,900 U	18,000 U	4,000 U	7,700 U	3,600 U	6,800 U	1,400 U	17,000 U	41,000 UJ	7,800 U
Phenanthrene	100,000	500,000	µg/kg	**140,000 D**	200 U	920 U	1,800 U	3,600 U	3,600 U	**9,400**	**47.0 J**	**44,000**	**16,000**	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**59,000 J**	**1,700 J**
Phenol	330	500,000	µg/kg	3,800 U	200 U	920 U	1,800 U	3,600 U	3,600 U	2,100 U	200 U	1,900 U	1,800 U	180 U	890 U	980 U	9,300 U	2,100 U	4,000 U	1,800 U	3,500 U	740 U	8,900 U	21,000 UJ	4,000 U
Pyrene	100,000	500,000	µg/kg	**51,000**	200 U	920 U	1,800 U	3,600 U	3,600 U	**16,000**	**83.0 J**	**30,000**	**15,000**	180 U	890 U	980 U	9,300 U	**280 J**	4,000 U	1,800 U	3,500 U	740 U	8,900 U	**71,000 J**	**1,300 J**
Total Polycyclic Aromatic Hydrocarbons (PAHs)	- -	- -	µg/kg	**620,200**	**84.0 J**	BDL	BDL	**940 J**	BDL	**141,080 J**	**924 J**	**285,000**	**125,540**	BDL	BDL	BDL	BDL	**620 J**	BDL	BDL	BDL	BDL	BDL	**451,400 J**	**7,540 J**
Total Semivolatile Organic Compounds (SVOCs)	- -	- -	µg/kg	**741,900 J**	**84.0 J**	BDL	BDL	**2,140 J**	BDL	**142,930 J**	**1,054 J**	**310,800**	**132,910 J**	BDL	BDL	BDL	BDL	**620 J**	BDL	BDL	BDL	BDL	BDL	**458,300 J**	**7,540 J**
Petroleum Hydrocarbons																									
Diesel, Fuel Oil #2, C10-C23	- -	- -	mg/kg	NA	NA	NA	NA	**150**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fuel Oil #4	- -	- -	mg/kg	NA	NA	NA	NA	18.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fuel Oil #6	- -	- -	mg/kg	NA	NA	NA	NA	18.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gasoline	- -	- -	mg/kg	NA	NA	NA	NA	**210**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kerosene	- -	- -	mg/kg	NA	NA	NA	NA	**140**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Motor Oils	- -	- -	mg/kg	NA	NA	NA	NA	**160**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unknown Hydrocarbon1	- -	- -	mg/kg	NA	NA	NA	NA	18.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics																									
Aluminum	- -	- -	mg/kg	**16,600 J**	**17,100 J**	**11,200 J**	**16,700 J**	**10,400 J**	**12,700 J**	**9,860 J**	**17,800 J**	**16,400 J**	**15,300 J**	**15,100 J**	**17,900 J**	**20,300 J**	**15,700 J**	**12,600**	**15,500**	**11,200**	**12,800**	**14,400**	**14,100**	**17,300**	**18,600**
Antimony	- -	- -	mg/kg	17.8 UJ	17.5 UJ	16.6 UJ	16.3 UJ	15.8 UJ	15.1 UJ	18.7 UJ	16.7 UJ	**0.990 J**	16.8 UJ	15.6 UJ	15.9 UJ	16.6 UJ	16.8 UJ	19.0 U	17.5 U	**0.650 J**	16.0 U	16.2 U	15.7 U	18.6 U	18.0 U
Arsenic	13	16	mg/kg	**2.20 J**	**2.90**	**3.60**	**4.00**	**3.60**	**3.60**	**23.9**	**6.60**	**3.90**	**4.80**	**2.80**	**3.50**	**2.40**	**5.60**	**7.30**	**3.40**	**3.70**	**4.00**	**4.10**	**3.80**	**5.00**	**3.60**
Barium	350	400	mg/kg	**66.3 J**	**86.4 J**	**55.3 J**	**67.7 J**	**44.3 J**	**47.2 J**	**95.3 J**	**63.9 J**	**168 J**	**69.5 J**	**98.9 J**	**58.8 J**	**75.1 J**	**57.8 J**	**92.7**	**54.9**	**48.3**	**99.5**	**71.1**	**63.6**	**123**	**76.6**
Beryllium	7.2	590	mg/kg	**0.820**	**0.830**	**0.550**	**0.820**	**0.490**	**0.640**	**0.900**	**0.950**	**0.820**	**0.750**	**0.760**	**0.920**	**0.880**	**0.740**	**0.580**	**0.790**	**0.590**	**0.690**	**0.750**	**0.750**	**0.860**	**0.960**
Cadmium	2.5	9.3	mg/kg	**0.0370 J**	**0.0410 J**	**0.0940 J**	**0.0340 J**	**0.140 J**	**0.0720 J**	**0.290**	**0.130 J**	**0.0530 J**	**0.260**	**0.0560 J**	0.210 U	**0.0740 J**	**0.160 J**	**0.150 J**	**0.0640 J**	**0.0610 J**	0.210 U	0.220 U	**0.0360 J**	**0.610**	**0.0570 J**
Calcium	- -	- -	mg/kg	**56,600 J**	**45,300 J**	**72,200 J**	**53,400 J**	**54,500 J**	**59,200 J**	**49,500 J**	**12,900 J**	**40,000 J**	**35,000 J**	**45,300 J**	**22,600 J**	**37,500 J**	**46,500 J**	**24,000**	**37,900**	**60,400**	**71,300**	**56,300**	**47,600**	**8,180**	**11,400**
Chromium	- -	- -	mg/kg	**24.7 J**	**26.1 J**	**16.8 J**	**24.3 J**	**15.1 J**	**19.2 J**	**15.7 J**	**26.6 J**	**24.8 J**	**22.9 J**	**22.9 J**	**27.2 J**	**26.4 J**	**24.3 J**	**16.8**	**25.3**	**17.5**	**20.2**	**22.4**	**22.3**	**23.9**	**28.8**
Cobalt	- -	- -	mg/kg	**13.5**	**13.7**	**10.4**	**15.4**	**10.8**	**12.5**	**6.50**	**15.4**	**14.9**	**14.5**	**13.4**	**14.7**	**8.70**	**10.7**	**8.60**	**15.1**	**10.8**	**12.2**	**14.2**	**15.5**	**12.2**	**17.1**
Copper	50	270	mg/kg	**27.8**	**28.0**	**27.7 J**	**30.5 J**	**32.1 J**	**28.0 J**	**49.0**	**42.2**	**26.6**	**31.0**	**27.0**	**28.3**	**17.3 J**	**34.1 J**	**27.4**	**27.1**	**26.5**	**29.1**	**29.2**	**28.0**	**18.4**	**27.0**
Cyanide	27	27	mg/kg	1.10 U	**0.860 J**	1.10 U	**1.10**	1.00 U	1.10 U	**5.80**	1.10 U	**2.90**	**3.80**	1.00 U	1.00 U	1.10 U	1.10 U	1.20 U	1.20 U	1.10 U	1.00 U	1.10 U	1.00 U	**469**	1.20 U
Iron	- -	- -	mg/kg	**20,200 J**	**23,800 J**	**16,500 J**	**21,400 J**	**15,500 J**	**18,300 J**	**11,000 J**	**27,100 J**	**23,800 J**	**24,300 J**	**21,300 J**	**24,100 J**	**19,300 J**	**21,100 J**	**17,100**	**24,500**	**17,100**	**19,700**	**21,400**	**21,700**	**23,300**	**27,300**
Lead	63	1,000	mg/kg	**10.1**	**10.1**	**12.2**	**12.2**	**12.2**	**13.8**	**138**	**22.3**	**10.9**	**14.3**	**9.70**	**11.8**	**9.10**	**13.2**	**130**	**13.4**	**12.2**	**13.4**	**12.1**	**11.4**	**63.6**	**13.5**
Magnesium	- -	- -	mg/kg	**7,830 J**	**8,340 J**	**17,200 J**	**7,380 J**	**12,700 J**	**9,390 J**	**3,640 J**	**6,780 J**	**7,800 J**	**7,460 J**	**7,400 J**	**9,170 J**	**7,770 J**	**6,450 J**	**6,110**	**8,300**	**11,100**	**7,240**	**7,540**	**7,570**	**5,550**	**7,880**
Manganese	1,600	10,000	mg/kg	**345 J**	**333 J**	**321 J**	**410 J**	**368 J**	**345 J**	**197 J**	**285 J**	**302 J**	**284 J**	**295 J**	**269 J**	**254 J**	**249 J**	**332**	**355**	**349**	**388**	**361**	**360**	**389**	**307**
Mercury	0.18	2.8	mg/kg	**0.0230**	**0.0140 J**	**0.0190**	**0.0180 J**	**0.00890 J**	**0.0170 J**	**0.200**	**0.0320**	**0.0300**	**0.0200**	**0.0170 J**	**0.0150 J**	**0.0570**	**0.0260**	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	310	mg/kg	**43.3**	**44.5**	**34.0**	**42.2**	**32.4**	**38.9**	**20.8**	**54.2**	**42.1**	**41.0**	**40.4**	**42.9**	**36.7**	**46.8**	**24.8**	**45.4**	**34.2**	**39.1**	**42.9**	**41.6**	**35.7**	**48.0**
Potassium	- -	- -	mg/kg	**3,650 J**	**3,470 J**	**2,750 J**	**3,850 J**	**2,700 J**	**3,070 J**	**1,450 J**	**3,840 J**	**3,550 J**	**3,030 J**	**3,110 J**	**3,980 J**	**4,200 J**	**3,520 J**	**2,720**	**3,000**	**2,510**	**2,990**	**3,020**	**3,010**	**2,960**	**3,120**
Selenium	3.9	1,500	mg/kg	4.70 U	4.70 U	4.40 U	**0.500 J**	4.20 U	4.00 U	**0.560 J**	4.50 U	**1.00 J**	4.50 U	4.10 U	**0.460 J**	**0.780 J**	**2.10 J**	**0.580 J**	4.70 U	**1.00 J**	**0.440 J**	4.30 U	**0.650 J**	**0.730 J**	4.80 U
Silver	2	1,500	mg/kg	0.710 U	0.700 U	0.660 U	0.650 U	0.630 U	0.600 U	0.750 U	0.670 U	0.710 U	0.670 U	0.620 U	0.630 U	0.660 U	0.670 U	0.760 U	0.700 U	0.630 U	0.640 U	0.650 U	0.630 U	0.740 U	0.720 U
Sodium	- -	- -	mg/kg	**226**	**212**	**524**	**235**	**173**	**234**	**736**	**173**	**523**	**472**	**427**	**240**	**186**	**189**	**916**	**627**	**407**	**264**	**642**	**327**	**752**	**321**
Thallium	- -	- -	mg/kg	7.10 U	7.00 U	6.60 U	6.50 U	6.30 U	6.00 U	7.50 U	6.70 U	7.10 U	6.70 U	6.20 U	6.30 U	6.60 U	6.70 U	7.60 U	7.00 U	6.30 U	6.40 U	6.50 U	6.30 U	7.40 U	7.20 U
Vanadium	- -	- -	mg/kg	**21.6 J**	**20.9 J**	**17.7 J**	**21.8 J**	**17.6 J**	**19.1 J**	**21.9 J**	**24.7 J**	**20.8 J**	**18.7 J**	**19.2 J**	**22.7 J**	**26.7 J**	**25.7 J**	**21.8**	**19.7**	**16.9**	**17.1**	**18.6**	**17.7**	**27.6**	**23.9**
Zinc	109	10,000	mg/kg	**56.1 J**	**71.7 J**	**57.7 J**	**56.2 J**	**66.2 J**	**50.8 J**	**135 J**	**90.5 J**	**69.9 J**	**203 J**	**75.4 J**	**52.2 J**	**64.7 J**	**82.1 J**	**99.9**	**76.0**	**52.4**	**50.8**	**50.8**	**63.5**	**887**	**79.0**

Notes:

1. Samples were submitted to Test America, Amherst, New York for analysis using USEPA SW-846 Methods 8260B (VOCs), 8270D (SVOCs), 6010C (Inorganics), 9012B (Total Cyanide), 310.13 (Hydrocarbon Identification).
2. Samples from monitoring wells MW-3 and MW-4 were submitted to Test America, Amherst, New York for additional analysis of carbon dioxide, methane, sulfide, nitrate, nitrite, and dissolved iron and manganese.
3. Results are presented in units of micrograms per liter (µg/L) and milligrams per liter (mg/L), as identified.
4. J - Indicates that the analyte was detected at a concentration less than the practical quantitation limit (PQL).
5. U - Indicates the constituent was not detected at the PQL. The value preceding the U indicates the PQL.
6. UB - Indicates the constituent was not detected at a concentration less than the PQL due to associated blank contamination.
7. D - Compound quantitated using a secondary dilution.
8. NA - not analyzed
9. BRL - Below reporting limits.
10. BGS - Below ground surface.
11. Sample results detected above the Method Detection Limit (MDL) are presented in bold font.
12. Gray Shading indicates the result exceeds NYSDEC Part 375 Soil Cleanup Objectives (SCO) for Unrestricted use (Unrestricted use SCO).
13. Yellow Shading indicates the result exceeds NYSDEC Part 375 Soil Cleanup Objectives (SCO) for Commercial use (Commercial use SCO).
14. - - Indicates a standard or guidance value does not exist for the respective analyte.

Table 4
Groundwater Analytical Results (Detected Analytes Only)

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Date Collected:	NYSDEC TOGS GW Stds & GVs	Units	MW-1 08/31/15	MW-2 08/31/15	MW-3 08/31/15	MW-4 08/31/15	MW-6 08/31/15	MW-7 08/31/15
Volatile Organic Compounds								
2-Butanone	50	µg/L	10 U	10 UJ	10 U	**2.2 J**	10 U	10 U
Acetone	50	µg/L	10 U	10 UJ	10 U	**7.4 J**	12 UB	10 UB
Benzene	1	µg/L	**1.1**	1.0 UJ	1.0 U	**2.0**	**5.8**	**4.2**
Bromodichloromethane	50	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	**1.3 J**	1.0 U
Chloroform	7	µg/L	1.0 U	1.0 UJ	**0.71 J**	**1.4**	**6.6**	**2.4**
cis-1,2-Dichloroethene	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	**1.1**
Cyclohexane	- -	µg/L	**18**	**3.8 J**	**0.91 J**	**41**	**43**	**58**
Ethylbenzene	5	µg/L	**0.81 J**	1.0 UJ	1.0 U	**5.9**	**4.4**	**6.2**
Isopropylbenzene	5	µg/L	1.0 U	1.0 UJ	1.0 U	**1.1**	**0.97 J**	**1.4**
Methylcyclohexane	- -	µg/L	**15**	**5.6 J**	**1.6**	**32**	**31**	**54**
Toluene	5	µg/L	**1.4**	**0.65 J**	1.0 U	**4.4**	**3.7**	**4.9**
Xylenes (total)	5	µg/L	**4.2**	**1.5 J**	2.0 U	**29**	**16**	**30**
Total BTEX	- -	µg/L	**7.5**	**2.2**	BRL	**41**	**30**	**45**
Total Volatile Organic Compounds (VOCs)	- -	µg/L	**40.5 J**	**11.6 J**	**3.22 J**	**126 J**	**113 J**	**162**
Semivolatile Organic Compounds								
2,4-Dimethylphenol	50 (GV)	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	**0.860 J**	4.80 U
2-Methylnaphthalene	- -	µg/L	4.60 U	5.20 UJ	4.90 U	**0.790 J**	4.80 U	**1.60 J**
Acetophenone	- -	µg/L	4.60 U	5.20 UJ	4.90 U	**0.570 J**	4.80 U	4.80 U
Caprolactam	- -	µg/L	4.60 U	**29.0 J**	**23.0**	5.00 U	4.80 U	4.80 U
Carbazole	- -	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	**0.380 J**	4.80 U
Naphthalene	10 (GV)	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	**1.20 J**
Total Polycyclic Aromatic Hydrocarbons (PAHs)	- -	µg/L	BRL	BRL	BRL	BRL	BRL	**1.20 J**
Total Semivolatile Organic Compounds (SVOCs)	- -	µg/L	BRL	**29.0 J**	**23.0**	**1.36 J**	**1.24 J**	**2.8 J**
Inorganics								
Aluminum	- -	mg/L	**2.00**	**0.480**	**1.20**	**0.0680 J**	**0.200**	**0.530**
Arsenic	0.025	mg/L	0.0150 U	0.0150 U	0.0150 U	**0.00560 J**	0.0150 U	0.0150 U
Barium	1	mg/L	**0.470**	**2.60**	**2.00**	**0.920**	**0.900**	**0.710**
Calcium	- -	mg/L	**293**	**142**	**158**	**124**	**110**	**121**
Chromium	0.05	mg/L	**0.00320 J**	**0.00150 J**	**0.00220 J**	0.00400 U	0.00400 U	**0.00130 J**
Cobalt	- -	mg/L	0.00400 U	0.00400 U	0.00400 U	0.00400 U	**0.000980 J**	0.00400 U
Copper	0.2	mg/L	**0.00360 J**	0.0100 U	0.0100 U	0.0100 U	**0.00410 J**	**0.00280 J**
Iron	0.3	mg/L	**2.00**	**2.40**	**4.70**	**37.7**	**0.440**	**1.80**
Magnesium	35	mg/L	**204**	**91.2**	**126**	**85.0**	**83.3**	**74.3**
Manganese	0.3	mg/L	**0.150**	**0.0450**	**0.0650**	**0.230**	**0.0300**	**0.0640**
Nickel	0.1	mg/L	**0.00500 J**	0.0100 U	**0.00220 J**	**0.00230 J**	**0.0130**	**0.00200 J**
Potassium	- -	mg/L	**8.40**	**7.40**	**11.7**	**10.4**	**9.30**	**31.1**
Sodium	20	mg/L	**373**	**278**	**159**	**419**	**304**	**377**
Vanadium	- -	mg/L	**0.00390 J**	0.00500 U	**0.00190 J**	0.00500 U	0.00500 U	0.00500 U
Zinc	2	mg/L	**0.00830 J**	**0.00360 J**	**0.00550 J**	**0.00350 J**	**0.00300 J**	**0.00490 J**

Table 4
Groundwater Analytical Results (Detected Analytes Only)

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Date Collected:	NYSDEC TOGS GW Stds & GVs	Units	MW-1 08/31/15	MW-2 08/31/15	MW-3 08/31/15	MW-4 08/31/15	MW-6 08/31/15	MW-7 08/31/15
Petroleum Hydrocarbons								
Diesel, Fuel Oil #2, C10-C23	- -	mg/L	R	0.480 U	0.480 U	0.520 U	0.510 U	0.470 U
Fuel Oil #4,#5,#6	- -	mg/L	NA	0.480 U	0.480 U	0.520 U	0.510 U	0.470 U
Gasoline	- -	mg/L	R	0.190 U	0.190 U	**0.360**	0.200 U	**0.410**
Kerosene	- -	mg/L	R	0.480 U	0.480 U	0.520 U	0.510 U	0.470 U
Motor Oils	- -	mg/L	R	0.960 U	0.960 U	1.00 U	1.00 U	0.950 U
Unknown Hydrocarbons	- -	mg/L	R	0.190 U	0.190 U	0.210 U	**0.370**	0.190 U
Geochemical Analyses								
Carbon Dioxide	- -	ug/L	NA	NA	**16,000 J**	**24,000 J**	NA	NA
Methane	- -	ug/L	NA	NA	**5,100 J**	**6,000 J**	NA	NA
Nitrate Nitrogen	0.01	mg/L	NA	NA	0.0500 U	0.0500 U	NA	NA
Sulfide	0.00005	mg/L	NA	NA	1.00 U	1.00 U	NA	NA
Iron (Filtered)	0.3	mg/L	NA	NA	**0.0260 J**	0.0500 U	NA	NA
Manganese (Filtered)	0.3	mg/L	NA	NA	**0.0600**	**0.220**	NA	NA

Notes:

1. Samples were submitted to Test America, Amherst, New York for analysis using USEPA SW-846 Methods 8260B (VOCs), 8270D (SVOCs), 6010C (Inorganics), 9012B (Total Cyanide), 310.13 (Hydrocarbon Identification).
2. Samples from monitoring wells MW-3 and MW-4 were submitted to Test America, Amherst, New York for additional analysis of carbon dioxide, methane, sulfide, nitrate, nitrite, and dissolved iron and manganese.
3. Results are presented in units of micrograms per liter (µg/L) and milligrams per liter (mg/L), as identified.
4. J - Indicates that the analyte was detected at a concentration less than the practical quantitation limit (PQL).
5. U - Indicates the constituent was not detected at the PQL. The value preceding the U indicates the PQL.
6. UB - Indicates the constituent was not detected at a concentration less than the PQL due to associated blank contamination.
7. R - Indicates the sample results were rejected.
8. NA - not analyzed
9. BRL - Below method detection limits.
10. Sample results detected above the Method Detection Limit (MDL) are presented in bold font.
11. Shading indicates that the result exceeds the NYSDEC TOGS 1.1.1 Water Quality Standard or Guidance Value.
12. - - Indicates a standard or guidance value does not exist for the respective analyte.
13 GV - Guidance Value

Table 4a
Groundwater Analytical Results (All Analytes)

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Date Collected:	NYSDEC TOGS GW Stds & GVs	Units	MW-1 08/31/15	MW-2 08/31/15	MW-3 08/31/15	MW-4 08/31/15	MW-6 08/31/15	MW-7 08/31/15
Volatile Organic Compounds								
1,1,1-Trichloroethane	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane	0.04	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	3	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	3	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	3	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	50	µg/L	10 U	10 UJ	10 U	**2.2 J**	10 U	10 U
2-Hexanone	50	µg/L	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	- -	µg/L	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50	µg/L	10 U	10 UJ	10 U	**7.4 J**	12 UB	10 UB
Benzene	1	µg/L	**1.1**	1.0 UJ	1.0 U	**2.0**	**5.8**	**4.2**
Bromodichloromethane	50	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	**1.3 J**	1.0 U
Bromoform	50	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U
Carbon Disulfide	60	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	7	µg/L	1.0 U	1.0 UJ	**0.71 J**	**1.4**	**6.6**	**2.4**
Chloromethane	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	**1.1**
cis-1,3-Dichloropropene	0.4	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	- -	µg/L	**18**	**3.8 J**	**0.91 J**	**41**	**43**	**58**
Dibromochloromethane	50	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	µg/L	**0.81 J**	1.0 UJ	1.0 U	**5.9**	**4.4**	**6.2**
Isopropylbenzene	5	µg/L	1.0 U	1.0 UJ	1.0 U	**1.1**	**0.97 J**	**1.4**
Methyl acetate	- -	µg/L	2.5 U	2.5 UJ	2.5 U	2.5 U	2.5 U	2.5 U
Methyl tert-butyl ether	10	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	- -	µg/L	**15**	**5.6 J**	**1.6**	**32**	**31**	**54**
Methylene Chloride	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	5	µg/L	**1.4**	**0.65 J**	1.0 U	**4.4**	**3.7**	**4.9**
trans-1,2-Dichloroethene	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	0.4	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 4a
Groundwater Analytical Results (All Analytes)

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Date Collected:	NYSDEC TOGS GW Stds & GVs	Units	MW-1 08/31/15	MW-2 08/31/15	MW-3 08/31/15	MW-4 08/31/15	MW-6 08/31/15	MW-7 08/31/15
Vinyl Chloride	2	µg/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	5	µg/L	**4.2**	**1.5 J**	2.0 U	**29**	**16**	**30**
Total BTEX	- -	µg/L	**7.5**	**2.2**	BDL	**41**	**30**	**45**
Total Volatile Organic Compounds (VOCs)	- -	µg/L	**40.5 J**	**11.6 J**	**3.22 J**	**126 J**	**113 J**	**162**
Semivolatile Organic Compounds								
2,4,5-Trichlorophenol	1	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
2,4,6-Trichlorophenol	1	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
2,4-Dichlorophenol	5	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
2,4-Dimethylphenol	50	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	**0.860 J**	4.80 U
2,4-Dinitrophenol	10	µg/L	9.20 UJ	10.0 UJ	9.80 UJ	10.0 UJ	9.70 UJ	9.50 UJ
2,4-Dinitrotoluene	5	µg/L	4.60 UJ	5.20 UJ	4.90 UJ	5.00 UJ	4.80 UJ	4.80 UJ
2,6-Dinitrotoluene	5	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
2-Chloronaphthalene	10	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
2-Chlorophenol	1	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
2-Methylnaphthalene	- -	µg/L	4.60 U	5.20 UJ	4.90 U	**0.790 J**	4.80 U	**1.60 J**
2-Methylphenol	1	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
2-Nitroaniline	5	µg/L	9.20 U	10.0 UJ	9.80 U	10.0 U	9.70 U	9.50 U
2-Nitrophenol	1	µg/L	4.60 UJ	5.20 UJ	4.90 UJ	5.00 UJ	4.80 UJ	4.80 UJ
3,3'-Dichlorobenzidine	5	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
3-Nitroaniline	5	µg/L	9.20 U	10.0 UJ	9.80 U	10.0 U	9.70 U	9.50 U
4,6-Dinitro-2-methylphenol	1	µg/L	9.20 U	10.0 UJ	9.80 U	10.0 U	9.70 U	9.50 U
4-Bromophenyl-phenylether	- -	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
4-Chloro-3-Methylphenol	1	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
4-Chloroaniline	5	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
4-Chlorophenyl-phenylether	- -	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
4-Methylphenol	1	µg/L	9.20 U	10.0 UJ	9.80 U	10.0 U	9.70 U	9.50 U
4-Nitroaniline	5	µg/L	9.20 U	10.0 UJ	9.80 U	10.0 U	9.70 U	9.50 U
4-Nitrophenol	1	µg/L	9.20 U	10.0 U	9.80 U	10.0 U	9.70 UJ	9.50 UJ
Acenaphthene	20	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Acenaphthylene	- -	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Acetophenone	- -	µg/L	4.60 U	5.20 UJ	4.90 U	**0.570 J**	4.80 U	4.80 U
Anthracene	50	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Atrazine	- -	µg/L	4.60 UJ	5.20 UJ	4.90 UJ	5.00 UJ	4.80 UJ	4.80 UJ
Benzaldehyde	- -	µg/L	4.60 UJ	5.20 UBJ	4.90 UBJ	5.00 UJ	4.80 UJ	4.80 UJ
Benzo(a)anthracene	0.002	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Benzo(a)pyrene	0	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Benzo(b)fluoranthene	0.002	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Benzo(g,h,i)perylene	- -	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Benzo(k)fluoranthene	0.002	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Biphenyl	- -	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
bis(2-Chloroethoxy)methane	5	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
bis(2-Chloroethyl)ether	1	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
bis(2-Chloroisopropyl)ether	- -	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
bis(2-Ethylhexyl)phthalate	5	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Butylbenzylphthalate	50	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Caprolactam	- -	µg/L	4.60 U	**29.0 J**	**23.0**	5.00 U	4.80 U	4.80 U
Carbazole	- -	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	**0.380 J**	4.80 U

Table 4a
Groundwater Analytical Results (All Analytes)

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Date Collected:	NYSDEC TOGS GW Stds & GVs	Units	MW-1 08/31/15	MW-2 08/31/15	MW-3 08/31/15	MW-4 08/31/15	MW-6 08/31/15	MW-7 08/31/15
Chrysene	0.002	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Dibenzo(a,h)anthracene	- -	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Dibenzofuran	- -	µg/L	9.20 U	10.0 UJ	9.80 U	10.0 U	9.70 U	9.50 U
Diethylphthalate	50	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Dimethylphthalate	50	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Di-n-Butylphthalate	50	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Di-n-Octylphthalate	50	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Fluoranthene	50	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Fluorene	50	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Hexachlorobenzene	0.04	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Hexachlorobutadiene	0.5	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Hexachlorocyclopentadiene	5	µg/L	4.60 UJ	5.20 UJ	4.90 UJ	5.00 UJ	4.80 UJ	4.80 UJ
Hexachloroethane	5	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Indeno(1,2,3-cd)pyrene	0.002	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Isophorone	50	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Naphthalene	10	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	**1.20 J**
Nitrobenzene	0.4	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
N-Nitroso-di-n-propylamine	- -	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
N-Nitrosodiphenylamine	50	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Pentachlorophenol	1	µg/L	9.20 UJ	10.0 UJ	9.80 UJ	10.0 UJ	9.70 UJ	9.50 UJ
Phenanthrene	50	µg/L	4.60 UB	5.20 UBJ	4.90 UBJ	5.00 UB	4.80 UB	4.80 UB
Phenol	1	µg/L	4.60 U	5.20 UJ	4.90 U	5.00 U	4.80 U	4.80 U
Pyrene	50	µg/L	4.60 UJ	5.20 UJ	4.90 UJ	5.00 UJ	4.80 UJ	4.80 UJ
Total Polycyclic Aromatic Hydrocarbons (PAHs)	- -	µg/L	BDL	BDL	BDL	BDL	BDL	**1.20 J**
Total Semivolatile Organic Compounds (SVOCs)	- -	µg/L	BDL	**29.0 J**	**23.0**	**1.36 J**	**1.24 J**	**2.8 J**
Inorganics								
Aluminum	- -	mg/L	**2.00**	**0.480**	**1.20**	**0.0680 J**	**0.200**	**0.530**
Antimony	0.003	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Arsenic	0.025	mg/L	0.0150 U	0.0150 U	0.0150 U	**0.00560 J**	0.0150 U	0.0150 U
Barium	1	mg/L	**0.470**	**2.60**	**2.00**	**0.920**	**0.900**	**0.710**
Beryllium	0.003	mg/L	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U
Cadmium	0.005	mg/L	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U
Calcium	- -	mg/L	**293**	**142**	**158**	**124**	**110**	**121**
Chromium	0.05	mg/L	**0.00320 J**	**0.00150 J**	**0.00220 J**	0.00400 U	0.00400 U	**0.00130 J**
Cobalt	- -	mg/L	0.00400 U	0.00400 U	0.00400 U	0.00400 U	**0.000980 J**	0.00400 U
Copper	0.2	mg/L	**0.00360 J**	0.0100 U	0.0100 U	0.0100 U	**0.00410 J**	**0.00280 J**
Cyanide	0.2	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Iron	0.3	mg/L	**2.00**	**2.40**	**4.70**	**37.7**	**0.440**	**1.80**
Lead	0.025	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Magnesium	35	mg/L	**204**	**91.2**	**126**	**85.0**	**83.3**	**74.3**
Manganese	0.3	mg/L	**0.150**	**0.0450**	**0.0650**	**0.230**	**0.0300**	**0.0640**
Nickel	0.1	mg/L	**0.00500 J**	0.0100 U	**0.00220 J**	**0.00230 J**	**0.0130**	**0.00200 J**
Potassium	- -	mg/L	**8.40**	**7.40**	**11.7**	**10.4**	**9.30**	**31.1**
Selenium	0.01	mg/L	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U
Silver	0.05	mg/L	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U
Sodium	20	mg/L	**373**	**278**	**159**	**419**	**304**	**377**
Thallium	0.0005	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U

Table 4a
Groundwater Analytical Results (All Analytes)

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Date Collected:	NYSDEC TOGS GW Stds & GVs	Units	MW-1 08/31/15	MW-2 08/31/15	MW-3 08/31/15	MW-4 08/31/15	MW-6 08/31/15	MW-7 08/31/15
Vanadium	- -	mg/L	**0.00390 J**	0.00500 U	**0.00190 J**	0.00500 U	0.00500 U	0.00500 U
Zinc	2	mg/L	**0.00830 J**	**0.00360 J**	**0.00550 J**	**0.00350 J**	**0.00300 J**	**0.00490 J**
Petroleum Hydrocarbons								
Diesel, Fuel Oil #2, C10-C23	- -	mg/L	R	0.480 U	0.480 U	0.520 U	0.510 U	0.470 U
Fuel Oil #4,#5,#6	- -	mg/L	NA	0.480 U	0.480 U	0.520 U	0.510 U	0.470 U
Gasoline	- -	mg/L	R	0.190 U	0.190 U	**0.360**	0.200 U	**0.410**
Kerosene	- -	mg/L	R	0.480 U	0.480 U	0.520 U	0.510 U	0.470 U
Motor Oils	- -	mg/L	R	0.960 U	0.960 U	1.00 U	1.00 U	0.950 U
Unknown Hydrocarbons	- -	mg/L	R	0.190 U	0.190 U	0.210 U	**0.370**	0.190 U
Geochemical Analyses								
Carbon Dioxide	- -	ug/L	NA	NA	**16,000 J**	**24,000 J**	NA	NA
Methane	- -	ug/L	NA	NA	**5,100 J**	**6,000 J**	NA	NA
Nitrate Nitrogen	0.01	mg/L	NA	NA	0.0500 U	0.0500 U	NA	NA
Sulfide	0.00005	mg/L	NA	NA	1.00 U	1.00 U	NA	NA
Iron (Filtered)	0.3	mg/L	NA	NA	**0.0260 J**	0.0500 U	NA	NA
Manganese (Filtered)	0.3	mg/L	NA	NA	**0.0600**	**0.220**	NA	NA

Notes:

1. Samples were submitted to Test America, Amherst, New York for analysis using USEPA SW-846 Methods 8260B (VOCs), 8270D (SVOCs), 6010C (Inorganics), 9012B (Total Cyanide), 310.13 (Hydrocarbon Identification).
2. Samples from monitoring wells MW-3 and MW-4 were submitted to Test America, Amherst, New York for additional analysis of carbon dioxide, methane, sulfide, nitrate, nitrite, and dissolved iron and manganese.
3. Results are presented in units of micrograms per liter (µg/L) and milligrams per liter (mg/L), as identified.
4. J - Indicates that the analyte was detected at a concentration less than the practical quantitation limit (PQL).
5. U - Indicates the constituent was not detected at the PQL. The value preceding the U indicates the PQL.
6. UB - Indicates the constituent was not detected at a concentration less than the PQL due to associated blank contamination.
7. R - Indicates the sample results are rejected.
8. NA - not analyzed
9. BDL - Below method detection limits.
10. Sample results detected above the Method Detection Limit (MDL) are presented in bold font.
11. Shading indicates that the result exceeds the NYSDEC TOGS 1.1.1 Water Quality Standard or Guidance Value.
12. - - Indicates a standard or guidance value does not exist for the respective analyate.
13. GV - Guidance value

Table 5
TO-15 Soil Gas Analytical Results (Detected Analytes Only)

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Date Collected:	Units	SV-1 09/02/15	SV-2 09/02/15	SV-3 09/02/15	SV-4 09/02/15	SV-5 09/02/15	SV-6 09/02/15	SV-7 09/02/15
Volatile Organic Compounds								
1,1,1-Trichloroethane	µg/m3	1.1 U	**4.0**	6.6 U	1.1 U	3.3 U	22 U	21 U
1,1,2,2-Tetrachloroethane	µg/m3	**0.60 J**	1.4 U	8.3 U	1.4 U	4.1 U	27 U	27 U
1,1,2-trichloro-1,2,2-trifluoroethane	µg/m3	**0.52 J**	**0.94 J**	9.2 U	**0.70 J**	4.6 U	31 U	30 U
1,2,4-Trimethylbenzene	µg/m3	**4.2**	**1.3**	**48**	**4.6**	**3.5**	20 U	19 U
1,3,5-Trimethylbenzene	µg/m3	**0.99**	**0.54 J**	**20**	**0.59 J**	**0.79 J**	20 U	19 U
2,2,4-Trimethylpentane	µg/m3	**0.29 J**	0.93 U	**2.9 J**	**0.81 J**	2.8 U	19 U	18 U
2-Butanone	µg/m3	**3.5**	**2.4**	**3.2 J**	**3.4**	**7.7**	**6.8 J**	29 U
2-Hexanone	µg/m3	**0.79 J**	2.0 U	12 U	**1.3 J**	6.1 U	41 U	40 U
4-Ethyltoluene	µg/m3	**0.41 J**	0.98 U	**10**	**0.77 J**	**0.88 J**	20 U	19 U
Acetone	µg/m3	**52**	**45**	**58 J**	**47**	**52**	**240**	**43 J**
Benzene	µg/m3	**0.15 J**	**1.6**	**4.1**	**0.24 J**	**0.43 J**	13 U	13 U
Bromodichloromethane	µg/m3	1.3 U	**3.9**	**24**	**24**	**25**	**4.3 J**	26 U
Butane	µg/m3	1.2 U	1.2 U	**240**	**11**	**9.6**	24 U	23 U
Carbon Disulfide	µg/m3	**0.71 J**	**2.2**	**11**	**6.2**	**16**	31 U	31 U
Carbon Tetrachloride	µg/m3	1.3 U	1.3 U	7.6 U	**0.14 J**	**0.37 J**	25 U	25 U
Chlorobenzene	µg/m3	0.92 U	0.92 U	5.5 U	0.92 U	**0.31 J**	18 U	18 U
Chlorodifluoromethane	µg/m3	1.8 U	1.8 U	**1.9 J**	**1.3 J**	**150**	35 U	35 U
Chloroform	µg/m3	**5.1**	**32**	**260**	**140**	**120**	**46**	**44**
Chloromethane	µg/m3	**0.16 J**	**0.68 J**	6.2 U	**0.23 J**	3.1 U	21 U	20 U
Cyclohexane	µg/m3	**0.79**	**5.9**	**49**	**4.2**	**4.1**	14 U	14 U
Dibromochloromethane	µg/m3	1.7 U	1.7 U	**2.0 J**	**2.7**	**3.1 J**	34 U	34 U
Dichlorodifluoromethane	µg/m3	**2.3 J**	**2.9**	**3.6 J**	**2.9**	**2.6 J**	**310**	49 U
Ethylbenzene	µg/m3	**0.43 J**	**0.51 J**	**12**	**3.2**	**2.6 J**	17 U	17 U
Isopentane	µg/m3	0.59 U	**6.5**	**150**	**7.5**	**5.6**	12 U	12 U
Isopropanol	µg/m3	**0.72 J**	12 U	74 U	12 U	**1.2 J**	250 U	240 U
Isopropylbenzene	µg/m3	0.98 U	**0.24 J**	**2.2 J**	**0.30 J**	**0.44 J**	20 U	19 U
m,p-Xylenes	µg/m3	**3.4**	**2.5**	**64**	**8.7**	**9.4**	43 U	43 U
Naphthalene	µg/m3	**0.71 J**	**2.0 J**	**1.4 J**	**1.1 J**	**0.64 J**	52 U	52 U
n-Decane	µg/m3	2.9 U	**1.0 J**	**25**	**2.0 J**	8.7 U	**44 J**	57 U
n-Dodecane	µg/m3	35 U	35 U	210 U	**4.6 J**	100 U	**63 J**	690 U
N-Heptane	µg/m3	0.82 U	**1.9**	**85**	**0.60 J**	**2.2 J**	16 U	16 U
N-Hexane	µg/m3	**0.42 J**	**2.3**	**110**	**4.4**	**5.4**	14 U	**2.5 J**
n-Octane	µg/m3	0.93 U	**1.9**	**50**	**0.67 J**	**1.6 J**	**9.8 J**	**32**
Nonane	µg/m3	1.0 U	**1.1**	**33**	**0.98 J**	**1.1 J**	**22**	**230**
n-Propylbenzene	µg/m3	**0.22 J**	**0.20 J**	**5.7**	**0.48 J**	**0.64 J**	20 U	19 U
n-Undecane	µg/m3	32 U	32 U	**15 J**	**2.7 J**	96 U	**100 J**	630 U
o-Xylene	µg/m3	**1.8**	**1.6**	**20**	**5.0**	**5.0**	17 U	17 U
Pentane	µg/m3	1.5 U	**2.7**	**160**	**8.3**	**8.7**	30 U	29 U
p-Isopropyltoluene	µg/m3	**0.19 J**	**0.32 J**	**1.0 J**	**0.19 J**	**0.48 J**	22 UJ	22 U
Styrene	µg/m3	0.85 U	0.85 U	5.1 U	**0.10 J**	2.5 U	17 U	17 U
t-Butyl Alcohol	µg/m3	**1.7 J**	15 U	91 U	15 U	**1.7 J**	300 U	300 U
Tetrachloroethene	µg/m3	**6.1**	**38**	**2.2 J**	**2.4**	4.1 U	27 U	27 U
Tetrahydrofuran	µg/m3	15 U	15 U	89 U	15 U	**2.9 J**	290 U	290 U
Toluene	µg/m3	**0.69 J**	**3.9**	**24**	**2.2**	**2.6**	**14 J**	**11 J**
Trichlorofluoromethane	µg/m3	**1.5**	**2.7**	**4.0 J**	**1.9**	**4.8**	22 U	22 U
Xylenes (total)	µg/m3	**5.2**	**4.1**	**85**	**13**	**15**	61 U	60 U

Notes:
1. Samples were submitted to Test America, South Burlington, Vermont for analysis using USEPA method TO-15.
2. TO-15 results are presented in units of micrograms per cubic meter ($\mu g/m^3$).
3. J - Indicates the analyte was detected at a concentration less than the practical quantitation limit (PQL). The value reported is an estimated concentration.
4. U - Indicates the constituent was not detected at the PQL. The value preceding the U indicates the PQL.
5. UJ - Indicates the constituent was not detected above the PQL. The reported limit is approximate and may or may not represent the actual PQL.
6. Sample results detected above the Method Detection Limit (MDL) are presented in bold font.

Table 5a
TO-15 Soil Gas Analytical Results

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID:		SV-1	SV-2	SV-3	SV-4	SV-5	SV-6	SV-7
Date Collected:	Units	09/02/15	09/02/15	09/02/15	09/02/15	09/02/15	09/02/15	09/02/15
Volatile Organic Compounds								
1,1,1-Trichloroethane	µg/m3	1.1 U	**4.0**	6.6 U	1.1 U	3.3 U	22 U	21 U
1,1,2,2-Tetrachloroethane	µg/m3	**0.60 J**	1.4 U	8.3 U	1.4 U	4.1 U	27 U	27 U
1,1,2-trichloro-1,2,2-trifluoroethane	µg/m3	**0.52 J**	**0.94 J**	9.2 U	**0.70 J**	4.6 U	31 U	30 U
1,1,2-Trichloroethane	µg/m3	1.1 U	1.1 U	6.6 U	1.1 U	3.3 U	22 U	21 U
1,1-Dichloroethane	µg/m3	0.81 U	0.81 U	4.9 U	0.81 U	2.4 U	16 U	16 U
1,1-Dichloroethene	µg/m3	0.79 U	0.79 U	4.8 U	0.79 U	2.4 U	16 U	16 U
1,2,4-Trichlorobenzene	µg/m3	3.7 U	3.7 U	22 U	3.7 U	11 U	74 U	73 U
1,2,4-Trimethylbenzene	µg/m3	**4.2**	**1.3**	**48**	**4.6**	**3.5**	20 U	19 U
1,2-Dibromoethane	µg/m3	1.5 U	1.5 U	9.3 U	1.5 U	4.6 U	31 U	30 U
1,2-Dichlorobenzene	µg/m3	1.2 U	1.2 U	7.2 U	1.2 U	3.6 U	24 U	24 U
1,2-Dichloroethane	µg/m3	0.81 U	0.81 U	4.9 U	0.81 U	2.4 U	16 U	16 U
1,2-Dichloroethene (total)	µg/m3	1.6 U	1.6 U	9.5 U	1.6 U	4.7 U	32 U	31 U
1,2-Dichloropropane	µg/m3	0.92 U	0.92 U	5.6 U	0.92 U	2.8 U	18 U	18 U
1,2-Dichlorotetrafluoroethane	µg/m3	1.4 U	1.4 U	8.4 U	1.4 U	4.2 U	28 U	28 U
1,3,5-Trimethylbenzene	µg/m3	**0.99**	**0.54 J**	**20**	**0.59 J**	**0.79 J**	20 U	19 U
1,3-Butadiene	µg/m3	0.44 U	0.44 U	2.7 U	0.44 U	1.3 U	8.8 U	8.7 U
1,3-Dichlorobenzene	µg/m3	1.2 U	1.2 U	7.2 U	1.2 U	3.6 U	24 U	24 U
1,4-Dichlorobenzene	µg/m3	1.2 U	1.2 U	7.2 U	1.2 U	3.6 U	24 U	24 U
1,4-Dioxane	µg/m3	18 U	18 U	110 U	18 U	54 U	360 U	350 U
2,2,4-Trimethylpentane	µg/m3	**0.29 J**	0.93 U	**2.9 J**	**0.81 J**	2.8 U	19 U	18 U
2-Butanone	µg/m3	**3.5**	**2.4**	**3.2 J**	**3.4**	**7.7**	**6.8 J**	29 U
2-Chlorotoluene	µg/m3	1.0 U	1.0 U	6.2 U	1.0 U	3.1 U	21 U	20 U
2-Hexanone	µg/m3	**0.79 J**	2.0 U	12 U	**1.3 J**	6.1 U	41 U	40 U
3-Chloropropene	µg/m3	1.6 U	1.6 U	9.4 U	1.6 U	4.7 U	31 U	31 U
4-Ethyltoluene	µg/m3	**0.41 J**	0.98 U	**10**	**0.77 J**	**0.88 J**	20 U	19 U
4-Methyl-2-pentanone	µg/m3	2.0 U	2.0 U	12 U	2.0 U	6.1 U	41 U	40 U
Acetone	µg/m3	**52**	**45**	**58 J**	**47**	**52**	**240**	**43 J**
Benzene	µg/m3	**0.15 J**	**1.6**	**4.1**	**0.24 J**	**0.43 J**	13 U	13 U
Benzyl Chloride	µg/m3	1.0 U	1.0 U	6.2 U	1.0 U	3.1 U	21 U	20 U
Bromodichloromethane	µg/m3	1.3 U	**3.9**	**24**	**24**	**25**	**4.3 J**	26 U
Bromoethane	µg/m3	0.87 U	0.87 U	5.3 U	0.87 U	2.6 U	17 U	17 U
Bromoform	µg/m3	2.1 U	2.1 U	12 UT	2.1 U	6.2 U	41 U	41 U
Bromomethane	µg/m3	0.78 U	0.78 U	4.7 U	0.78 U	2.3 U	16 U	15 U
Butane	µg/m3	1.2 U	1.2 U	**240**	**11**	**9.6**	24 U	23 U
Carbon Disulfide	µg/m3	**0.71 J**	**2.2**	**11**	**6.2**	**16**	31 U	31 U
Carbon Tetrachloride	µg/m3	1.3 U	1.3 U	7.6 U	**0.14 J**	**0.37 J**	25 U	25 U
Chlorobenzene	µg/m3	0.92 U	0.92 U	5.5 U	0.92 U	**0.31 J**	18 U	18 U

Table 5a
TO-15 Soil Gas Analytical Results

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID:		SV-1	SV-2	SV-3	SV-4	SV-5	SV-6	SV-7
Date Collected:	Units	09/02/15	09/02/15	09/02/15	09/02/15	09/02/15	09/02/15	09/02/15
Chlorodifluoromethane	µg/m3	1.8 U	1.8 U	**1.9 J**	**1.3 J**	**150**	35 U	35 U
Chloroethane	µg/m3	1.3 U	1.3 U	7.9 U	1.3 U	3.9 U	26 U	26 U
Chloroform	µg/m3	**5.1**	**32**	**260**	**140**	**120**	**46**	**44**
Chloromethane	µg/m3	**0.16 J**	**0.68 J**	6.2 U	**0.23 J**	3.1 U	21 U	20 U
cis-1,2-Dichloroethene	µg/m3	0.79 U	0.79 U	4.8 U	0.79 U	2.4 U	16 U	16 U
cis-1,3-Dichloropropene	µg/m3	0.91 U	0.91 U	5.5 U	0.91 U	2.7 U	18 U	18 U
Cyclohexane	µg/m3	**0.79**	**5.9**	**49**	**4.2**	**4.1**	14 U	14 U
Dibromochloromethane	µg/m3	1.7 U	1.7 U	**2.0 J**	**2.7**	**3.1 J**	34 U	34 U
Dichlorodifluoromethane	µg/m3	**2.3 J**	**2.9**	**3.6 J**	**2.9**	**2.6 J**	**310**	49 U
Ethylbenzene	µg/m3	**0.43 J**	**0.51 J**	**12**	**3.2**	**2.6 J**	17 U	17 U
Hexachlorobutadiene	µg/m3	2.1 U	2.1 U	13 U	2.1 U	6.4 U	43 U	42 U
Isopentane	µg/m3	0.59 U	**6.5**	**150**	**7.5**	**5.6**	12 U	12 U
Isopropanol	µg/m3	**0.72 J**	12 U	74 U	12 U	**1.2 J**	250 U	240 U
Isopropylbenzene	µg/m3	0.98 U	**0.24 J**	**2.2 J**	**0.30 J**	**0.44 J**	20 U	19 U
m,p-Xylenes	µg/m3	**3.4**	**2.5**	**64**	**8.7**	**9.4**	43 U	43 U
Methyl Methacrylate	µg/m3	2.0 U	2.0 U	12 U	2.0 U	6.1 U	41 U	40 U
Methyl tert-butyl ether	µg/m3	0.72 U	0.72 U	4.3 U	0.72 U	2.2 U	14 U	14 U
Methylene Chloride	µg/m3	1.7 UB	1.7 UB	10 UB	1.7 UB	5.2 UB	35 UB	34 UB
Naphthalene	µg/m3	**0.71 J**	**2.0 J**	**1.4 J**	**1.1 J**	**0.64 J**	52 U	52 U
n-Butylbenzene	µg/m3	1.1 U	1.1 U	6.6 U	1.1 U	3.3 U	22 U	22 U
n-Decane	µg/m3	2.9 U	**1.0 J**	**25**	**2.0 J**	8.7 U	**44 J**	57 U
n-Dodecane	µg/m3	35 U	35 U	210 U	**4.6 J**	100 U	**63 J**	690 U
N-Heptane	µg/m3	0.82 U	**1.9**	**85**	**0.60 J**	**2.2 J**	16 U	16 U
N-Hexane	µg/m3	**0.42 J**	**2.3**	**110**	**4.4**	**5.4**	14 U	**2.5 J**
n-Octane	µg/m3	0.93 U	**1.9**	**50**	**0.67 J**	**1.6 J**	**9.8 J**	**32**
Nonane	µg/m3	1.0 U	**1.1**	**33**	**0.98 J**	**1.1 J**	**22**	**230**
n-Propylbenzene	µg/m3	**0.22 J**	**0.20 J**	**5.7**	**0.48 J**	**0.64 J**	20 U	19 U
n-Undecane	µg/m3	32 U	32 U	**15 J**	**2.7 J**	96 U	**100 J**	630 U
o-Xylene	µg/m3	**1.8**	**1.6**	**20**	**5.0**	**5.0**	17 U	17 U
Pentane	µg/m3	1.5 U	**2.7**	**160**	**8.3**	**8.7**	30 U	29 U
p-Isopropyltoluene	µg/m3	**0.19 J**	**0.32 J**	**1.0 J**	**0.19 J**	**0.48 J**	22 UJ	22 U
sec-Butylbenzene	µg/m3	1.1 U	1.1 U	6.6 U	1.1 U	3.3 U	22 U	22 U
Styrene	µg/m3	0.85 U	0.85 U	5.1 U	**0.10 J**	2.5 U	17 U	17 U
t-Butyl Alcohol	µg/m3	**1.7 J**	15 U	91 U	15 U	**1.7 J**	300 U	300 U
tert-Butylbenzene	µg/m3	1.1 U	1.1 U	6.6 U	1.1 U	3.3 U	22 U	22 U
Tetrachloroethene	µg/m3	**6.1**	**38**	**2.2 J**	**2.4**	4.1 U	27 U	27 U
Tetrahydrofuran	µg/m3	15 U	15 U	89 U	15 U	**2.9 J**	290 U	290 U
Toluene	µg/m3	**0.69 J**	**3.9**	**24**	**2.2**	**2.6**	**14 J**	**11 J**

Table 5a
TO-15 Soil Gas Analytical Results

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID: / Date Collected:	Units	SV-1 09/02/15	SV-2 09/02/15	SV-3 09/02/15	SV-4 09/02/15	SV-5 09/02/15	SV-6 09/02/15	SV-7 09/02/15
trans-1,2-Dichloroethene	µg/m3	0.79 U	0.79 U	4.8 U	0.79 U	2.4 U	16 U	16 U
trans-1,3-Dichloropropene	µg/m3	0.91 U	0.91 U	5.5 U	0.91 U	2.7 U	18 U	18 U
Trichloroethene	µg/m3	1.1 U	1.1 U	6.5 U	1.1 U	3.2 U	21 U	21 U
Trichlorofluoromethane	µg/m3	**1.5**	**2.7**	**4.0 J**	**1.9**	**4.8**	22 U	22 U
Vinyl Chloride	µg/m3	0.51 U	0.51 U	3.1 U	0.51 U	1.5 U	10 U	10 U
Xylenes (total)	µg/m3	**5.2**	**4.1**	**85**	**13**	**15**	61 U	60 U

Notes:
1. Samples were submitted to Test America, South Burlington, Vermont for analysis using USEPA method TO-15.
2. TO-15 results are presented in units of micrograms per cubic meter ($\mu g/m^3$).
3. J - Indicates the analyte was detected at a concentration less than the practical quantitation limit (PQL). The value reported is an estimated concentration.
4. U - Indicates the constituent was not detected at the PQL. The value preceding the U indicates the PQL.
5. UJ - Indicates the constituent was not detected above the PQL. The reported limit is approximate and may or may not represent the actual PQL.
6. Sample results detected above the Method Detection Limit (MDL) are presented in bold font.

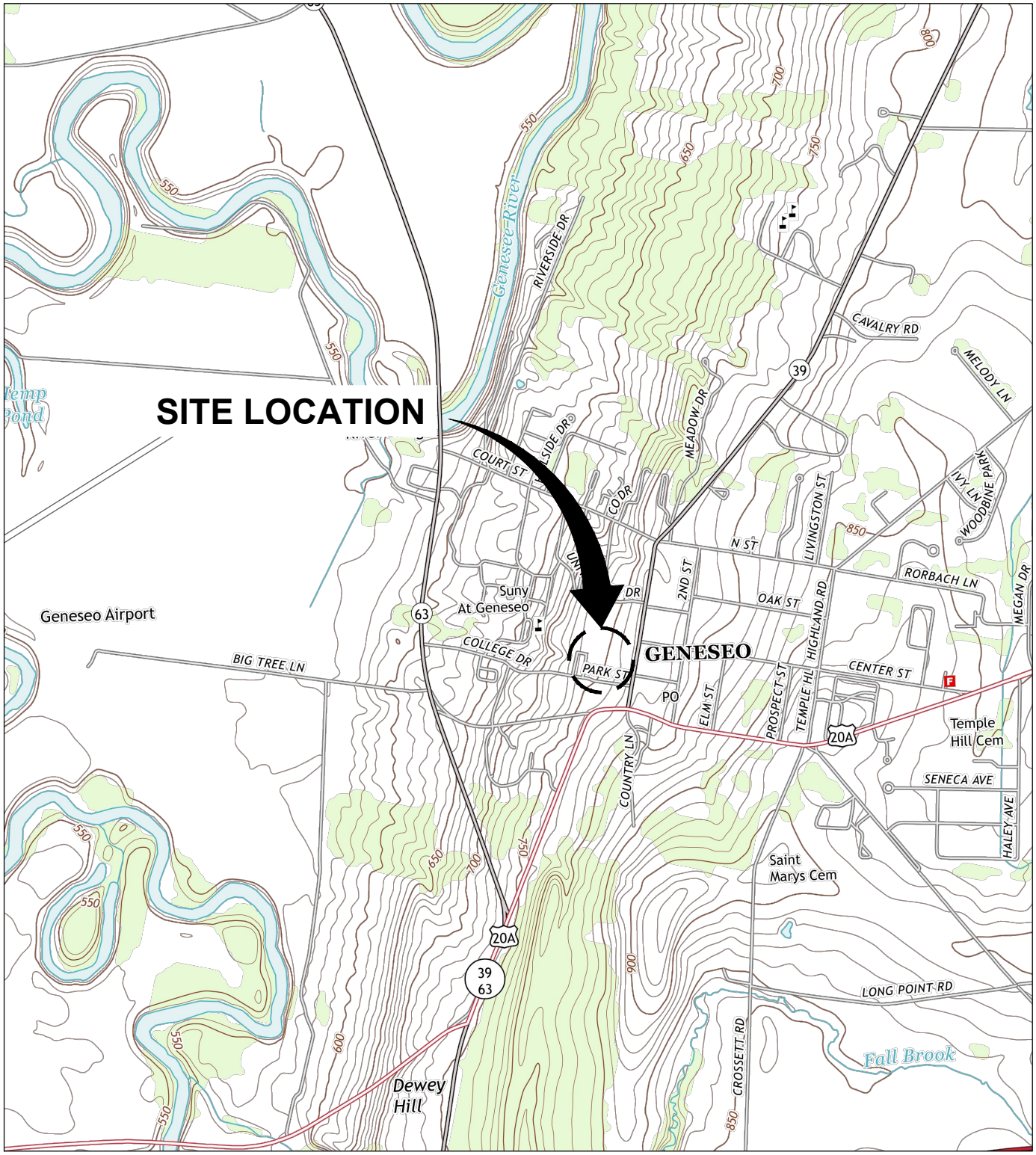
Table 5b
Tentatively Identified Compounds Soil Gas Analytical Results

Site Characterization Report
Rochester Gas and Electric
Geneseo Park Street Former MGP Site

Location ID:		SV-1	SV-2	SV-3	SV-4	SV-5	SV-6	SV-7
Date Collected:	Units	09/02/15	09/02/15	09/02/15	09/02/15	09/02/15	09/02/15	09/02/15
Tentatively Identified Volatile Organic Compounds								
.beta.-Phellandrene	ppbv	NA	NA	NA	NA	NA	130 JN	NA
.beta.-Pinene	ppbv	NA	NA	NA	NA	NA	780 JN	490 JN
1R-.alpha.-Pinene	ppbv	NA	NA	NA	NA	NA	3,900 JN	NA
1S-.alpha.-Pinene	ppbv	NA	NA	NA	NA	NA	7,400 JN	9,500 JN
3,3-Dimethyl-6-methylenecyclohexene	ppbv	NA	NA	NA	NA	NA	180 JN	NA
Camphene	ppbv	NA	NA	NA	NA	NA	630 JN	840 JN
Cyclohexane, 1,1,3-trimethyl-	ppbv	NA	1.50 JN	NA	NA	NA	NA	NA
Cyclohexane, 1,2-dimethyl-, trans-	ppbv	NA	1.30 JN	NA	NA	NA	NA	NA
Cyclohexane, 1,3-dimethyl-, cis-	ppbv	NA	2.60 JN	NA	NA	NA	NA	NA
Cyclotrisiloxane, hexamethyl-	ppbv	NA	NA	NA	13.0 JN	10.0 JN	NA	NA
Heptane, 3-ethyl-2-methyl-	ppbv	NA	1.10 JN	NA	NA	NA	NA	NA
Limonene	ppbv	NA	NA	NA	NA	NA	830 JN	NA
Methylcyclohexane	ppbv	NA	5.50 JN	NA	NA	NA	NA	NA
Pentane, 2-methyl-	ppbv	NA	NA	19.0 JN	NA	NA	NA	NA
Tricyclo[2.2.1.0(2,6)]heptane, 1,7,7-tri	ppbv	NA	NA	NA	NA	NA	53.0 JN	160 JN
Unknown1	ppbv	16.0 JN	41.0 JN	71.0 JN	16.0 JN	11.0 JN	330 JN	960 JN
Unknown2	ppbv	7.40 JN	7.70 JN	24.0 JN	8.60 JN	NA	81.0 JN	310 JN
Unknown3	ppbv	NA	NA	24.0 JN	NA	NA	NA	210 JN
Unknown4	ppbv	NA	NA	11.0 JN	NA	NA	NA	95.0 JN
Unknown5	ppbv	NA	NA	11.0 JN	NA	NA	NA	90.0 JN
Unknown6	ppbv	NA	NA	9.40 JN	NA	NA	NA	NA
Unknown7	ppbv	NA	NA	7.40 JN	NA	NA	NA	NA

Notes:
1. Samples were submitted to Test America, South Burlington, Vermont for analysis using USEPA method TO-15.
2. Tentatively Identified Compound (TIC) results are presented in units of parts per billion volume (ppbv)
3. JN - Indicates the presence of a constituent for which there is presumptive evidence to make a tentative identification. The value reported is an estimated concentration.
4. NA - Indicates no evidence of the constituent was identified.

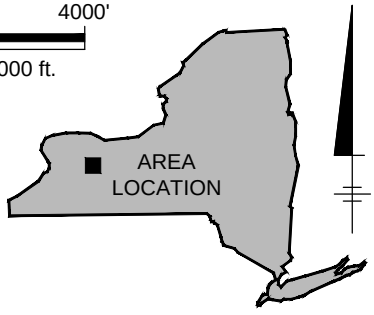
FIGURES



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., GENESEO, NY, 2013

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.



ROCHESTER GAS & ELECTRIC
PARK STREET FORMER MGP SITE
SITE CHARACTERIZATION REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1

CITY:CRANBURY-NJ DIV/GROUP:ENVCAD DB:JMEYER LD:JMEYER PIC:K.WHITE PM:B.AHRENS TM:B.AHRENS LYR:(Opt)ON=*;OFF=*REF*
C:\ENVCAD\CRANBURY\ACTIVE\00131138\0000\00003\SCRIB00131138N01.dwg LAYOUT: 1 SAVED: 5/20/2016 3:41 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/20/2016 3:42 PM BY: FATTO, TRACEY
XREFS: IMAGES: PROJECTNAME: ---

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- BUILDING LINE
- FENCE LINE
- VEGETATION
- SANITARY SEWER LINE
- STORM SEWER LINE
- WATER LINE
- OVERHEAD ELECTRIC LINE
- UNDERGROUND ELECTRIC LINE
- NATURAL GAS LINE
- OVERHEAD TELEPHONE & CABLE LINE
- TELEPHONE & CABLE LINE
- UNKNOWN UTILITY
- FORMER MGP STRUCTURE
- LIMITS OF BEDROCK EXCAVATION
- LIMITS OF OVERBURDEN EXCAVATION
- FORMER STONE/BRICK STRUCTURE CONTAINING COAL TAR

NOTES:

1. FORMER LOCATIONS OF GAS WORKS STRUCTURES FROM SANBORN LIBRARY, LLC 1906 MAP. LOCATIONS ARE APPROXIMATE.
2. LIMITS OF THE 2002/2003 OVERBURDEN EXCAVATION, BEDROCK EXCAVATION, AND LOCATIONS OF THE FORMER STRUCTURE CONTAINING COAL TAR FROM REPORT OF ACTIVITIES AT LL-LOT, SUNY GENESEO (2003). LOCATIONS ARE APPROXIMATE.
3. GROUND PENETRATING RADAR SURVEY AND UTILITY LOCATION PREFORMED BY UNDERGROUND SERVICES JULY 2015.

SOURCE:

1. BASEMAP INFORMATION PROVIDED BY FISHER ASSOCIATES, LLC. DATED JUNE, 2015. FILENAME: GENESEO TOPO.DWG. GEOREFERENCED TO NEW YORK STATE PLANE NAD83 COORDINATE SYSTEM.

0 60' 120'

GRAPHIC SCALE

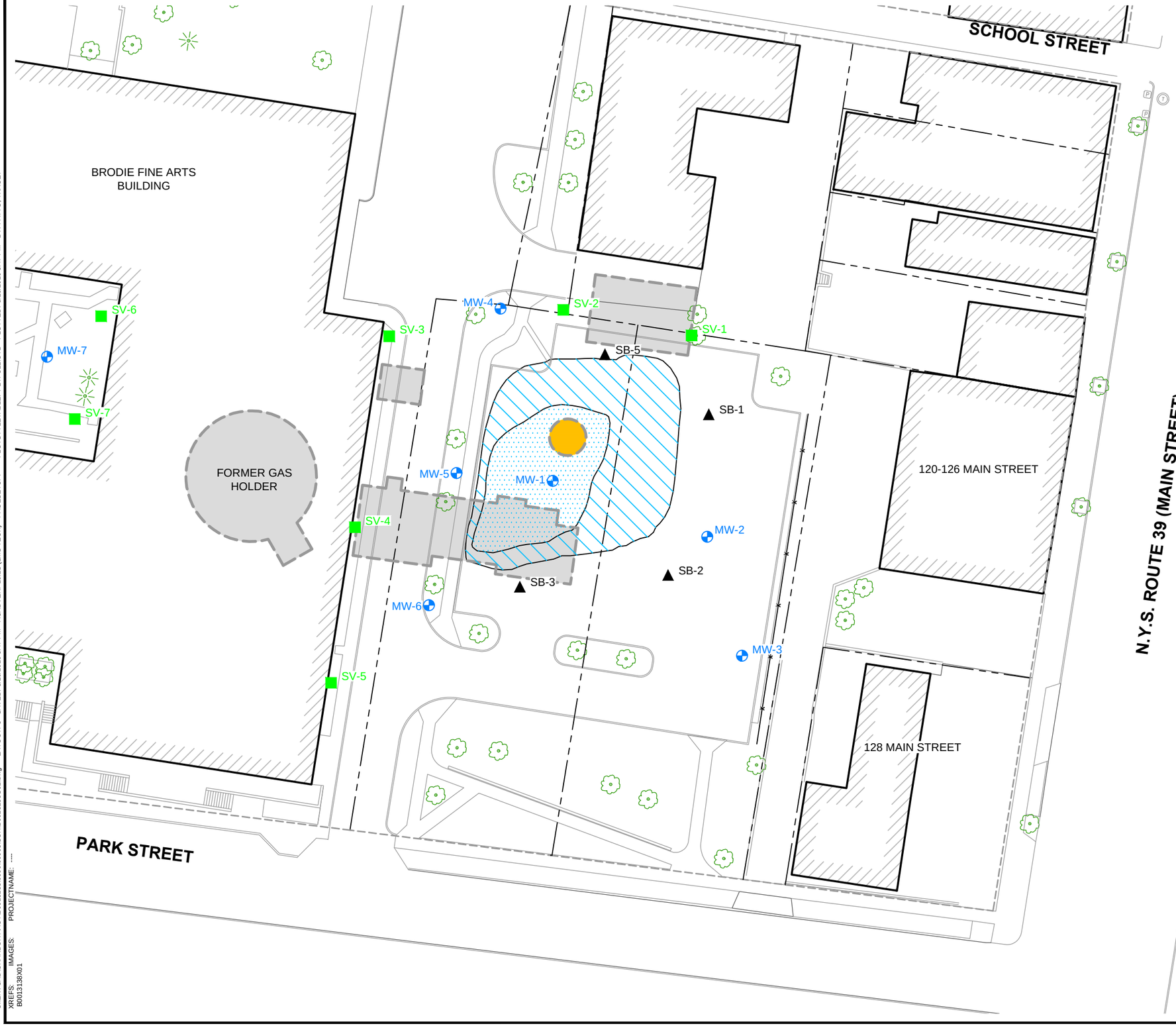
ROCHESTER GAS & ELECTRIC
PARK STREET FORMER MGP SITE
SITE CHARACTERIZATION REPORT

SITE MAP

ARCADIS

FIGURE
2

CITY:CRANBURY-NJ DIV/GROUP:ENVCAD DB:JMEYER LD:JMEYER PIC:K.WHITE PM:B.AHRENS TM:B.AHRENS LYR:(Opt)ON=*;OFF=*REF*
C:\ENVCAD\CRANBURY\ACTIVE\B0013138\0000\0000\03\SCRIB0013138B01.dwg LAYOUT: 2 SAVED: 5/20/2016 3:46 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/20/2016 3:46 PM BY: FATTO, TRACEY
XREFS: IMAGES: PROJECTNAME: ---
B0013138X01Sanborn Maps 1906.jpg
SB and MW Locations.jpg



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- BUILDING LINE
- FENCE LINE
- VEGETATION
- FORMER MGP STRUCTURE
- LIMITS OF BEDROCK EXCAVATION
- LIMITS OF OVERBURDEN EXCAVATION
- FORMER STONE/BRICK STRUCTURE CONTAINING COAL TAR
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- SOIL VAPOR SAMPLE LOCATION

NOTES:

1. FORMER LOCATIONS OF GAS WORKS STRUCTURES FROM SANBORN LIBRARY, LLC 1906 MAP. LOCATIONS ARE APPROXIMATE.
2. LIMITS OF THE 2002/2003 OVERBURDEN EXCAVATION, BEDROCK EXCAVATION, AND LOCATIONS OF THE FORMER STRUCTURE CONTAINING COAL TAR FROM REPORT OF ACTIVITIES AT LL-LOT, SUNY GENESEO (2003). LOCATIONS ARE APPROXIMATE.

SOURCE:

1. BASEMAP INFORMATION PROVIDED BY FISHER ASSOCIATES, LLC. DATED JUNE, 2015. FILENAME: GENESEO TOPO.DWG. GEOREFERENCED TO NEW YORK STATE PLANE NAD83 COORDINATE SYSTEM.

0 40' 80'

GRAPHIC SCALE

ROCHESTER GAS & ELECTRIC
PARK STREET FORMER MGP SITE
SITE CHARACTERIZATION REPORT

SOIL BORING, MONITORING WELL AND SOIL VAPOR LOCATIONS

ARCADIS

FIGURE
3

CITY:CRANBURY-NJ DIVGROUP-ENVCAD DB:JMEYER LD:JMEYER PIC:K.WHITE PM:B.AHRENS TM:B.AHRENS LYR:(OptjON=*;OFF=*REF*
C:\ENVCAD\CRANBURY\ACTIVE\B0013138\0000\0003\SCRIB0013138G01.dwg LAYOUT: 3 SAVED: 5/20/2016 3:47 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/20/2016 3:47 PM BY: FATTO, TRACEY
XREFS: IMAGES: PROJECTNAME: ---
B0013138X01

NOTES:

1. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL, 1988 NORTH AMERICAN VERTICAL DATUM (NAVD88).
2. FORMER LOCATIONS OF GAS WORKS STRUCTURES FROM SANBORN LIBRARY, LLC 1906 MAP. LOCATIONS ARE APPROXIMATE.
3. LIMITS OF THE 2002/2003 OVERBURDEN EXCAVATION, BEDROCK EXCAVATION, AND LOCATIONS OF THE FORMER STRUCTURE CONTAINING COAL TAR FROM REPORT OF ACTIVITIES AT LL-LOT, SUNY GENESEO (2003). LOCATIONS ARE APPROXIMATE.

SOURCE:

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0 40' 80'

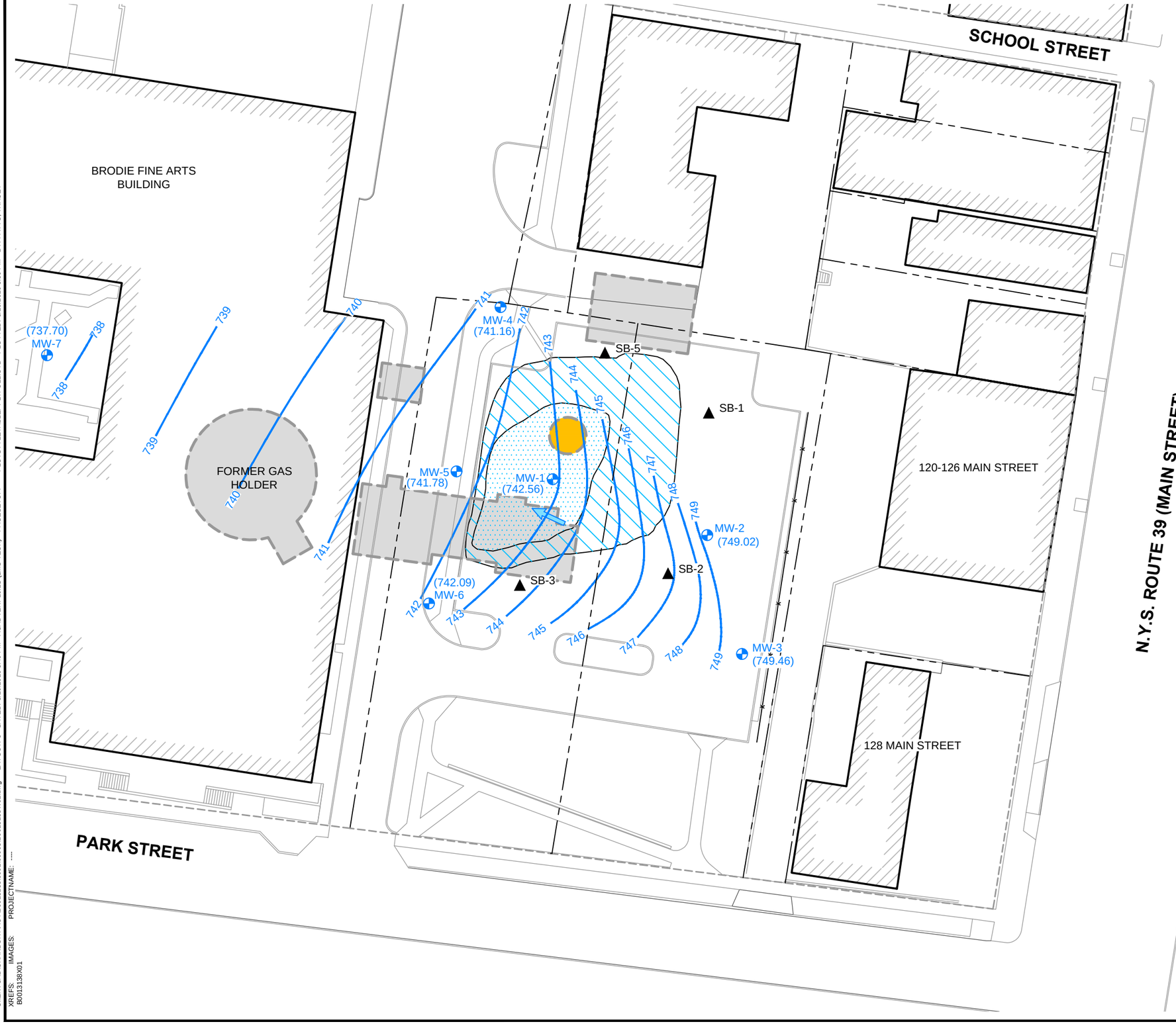
GRAPHIC SCALE

ROCHESTER GAS & ELECTRIC
PARK STREET FORMER MGP SITE
SITE CHARACTERIZATION REPORT

TOP OF COMPETENT BEDROCK CONTOURS

ARCADIS

FIGURE 4



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- BUILDING LINE
- FENCE LINE
- FORMER MGP STRUCTURE
- LIMITS OF BEDROCK EXCAVATION
- LIMITS OF OVERBURDEN EXCAVATION
- FORMER STONE/BRICK STRUCTURE CONTAINING COAL TAR
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- INFERRED GROUNDWATER ELEVATION CONTOUR
- (89.79) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- GROUNDWATER FLOW DIRECTION

NOTES:

1. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL, 1988 NORTH AMERICAN VERTICAL DATUM (NAVD88).
2. FORMER LOCATIONS OF GAS WORKS STRUCTURES FROM SANBORN LIBRARY, LLC 1906 MAP. LOCATIONS ARE APPROXIMATE.
3. LIMITS OF THE 2002/2003 OVERBURDEN EXCAVATION, BEDROCK EXCAVATION, AND LOCATIONS OF THE FORMER STRUCTURE CONTAINING COAL TAR FROM REPORT OF ACTIVITIES AT LL-LOT, SUNY GENESEO (2003). LOCATIONS ARE APPROXIMATE.

SOURCE:

1. BASEMAP INFORMATION PROVIDED BY FISHER ASSOCIATES, LLC. DATED JUNE, 2015. FILENAME: GENESEO TOPO.DWG. GEOREFERENCED TO NEW YORK STATE PLANE NAD83 COORDINATE SYSTEM.

0 40' 80'

GRAPHIC SCALE

ROCHESTER GAS & ELECTRIC
PARK STREET FORMER MGP SITE
SITE CHARACTERIZATION REPORT

SHALLOW BEDROCK GROUNDWATER CONTOURS AUGUST 31, 2015

ARCADIS

FIGURE
5

CITY:CRANBURY-NJ DIVGROUP-ENVCAD DB:JMEYER LD:JMEYER PIC:K.WHITE PM:B.AHRENS TM:B.AHRENS LYR:(OptiON=*OFF=*REF*
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XREFS: IMAGES: PROJECTNAME: ----
B0013138X01

NOTES:

1. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL, 1988 NORTH AMERICAN VERTICAL DATUM (NAVD88).
2. FORMER LOCATIONS OF GAS WORKS STRUCTURES FROM SANBORN LIBRARY, LLC 1906 MAP. LOCATIONS ARE APPROXIMATE.
3. LIMITS OF THE 2002/2003 OVERBURDEN EXCAVATION, BEDROCK EXCAVATION, AND LOCATIONS OF THE FORMER STRUCTURE CONTAINING COAL TAR FROM REPORT OF ACTIVITIES AT LL-LOT, SUNY GENESEO (2003). LOCATIONS ARE APPROXIMATE.

SOURCE:

1. BASEMAP INFORMATION PROVIDED BY FISHER ASSOCIATES, LLC. DATED JUNE, 2015. FILENAME: GENESEO TOPO.DWG. GEOREFERENCED TO NEW YORK STATE PLANE NAD83 COORDINATE SYSTEM.

0 40' 80'

GRAPHIC SCALE

ROCHESTER GAS & ELECTRIC
PARK STREET FORMER MGP SITE
SITE CHARACTERIZATION REPORT

SHALLOW BEDROCK GROUNDWATER CONTOURS OCTOBER 1, 2015

ARCADIS

FIGURE 6

CITY:CRANBURY-NJ DIV/GROUP:ENVCAD DB:JMEYER LD:JMEYER PIC:K.WHITE PM:B.AHRENS TM:B.AHRENS LYR:(OBJON=*;OFF=*REF*
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XREFS: IMAGES: PROJECTNAME: ----
B0013138X01

MW-7	
Date	8/31/2015
Petroleum Hydrocarbons	
Gasoline	**410**
VOCs	
Benzene	**4.2**
Chloroform	**2.4**
cis-1,2-Dichloroethene	**1.1**
Cyclohexane	**58**
Ethylbenzene	**6.2**
Isopropylbenzene	**1.4**
Methylcyclohexane	**54**
Toluene	**4.9**
Xylenes (total)	**30**
Total BTEX	**45**
Total VOCs	**162**

MW-4	
Date	8/31/2015
Petroleum Hydrocarbons	
Gasoline	**360**
VOCs	
2-Butanone	**2.2 J**
Acetone	**7.4 J**
Benzene	**2.0**
Chloroform	**1.4**
Cyclohexane	**41**
Ethylbenzene	**5.9**
Isopropylbenzene	**1.1**
Methylcyclohexane	**32**
Toluene	**4.4**
Xylenes (total)	**29**
Total BTEX	**41**
Total VOCs	**126 J**

MW-1	
Date	8/31/2015
VOCs	
Benzene	**1.1**
Cyclohexane	**18**
Ethylbenzene	**0.81 J**
Methylcyclohexane	**15**
Toluene	**1.4**
Xylenes (total)	**4.2**
Total BTEX	**7.5 J**
Total VOCs	**40 J**

MW-2	
Date	8/31/2015
VOCs	
Cyclohexane	**3.8 J**
Methylcyclohexane	**5.6 J**
Toluene	**0.65 J**
Xylenes (total)	**1.5 J**
Total BTEX	**2.2 J**
Total VOCs	**12 J**

MW-3	
Date	8/31/2015
VOCs	
Chloroform	**0.71 J**
Cyclohexane	**0.91 J**
Methylcyclohexane	**1.6**
Total BTEX	BDL
Total VOCs	**3.2 J**

MW-6	
Date	8/31/2015
VOCs	
Benzene	**5.8**
Bromodichloromethane	**1.3 J**
Chloroform	**6.6**
Cyclohexane	**43**
Ethylbenzene	**4.4**
Isopropylbenzene	**0.97 J**
Methylcyclohexane	**31**
Toluene	**3.7**
Xylenes (total)	**16**
Total BTEX	**30**
Total VOCs	**113 J**

SCHOOL STREET

PARK STREET

N.Y.S. ROUTE 39 (MAIN STREET)

120-126 MAIN STREET

128 MAIN STREET

FORMER GAS HOLDER

MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7

SV-1 SV-2 SV-3 SV-4 SV-5 SV-6 SV-7

SB-1 SB-2 SB-3 SB-5

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- BUILDING LINE
- FENCE LINE
- VEGETATION
- FORMER MGP STRUCTURE
- LIMITS OF BEDROCK EXCAVATION
- LIMITS OF OVERBURDEN EXCAVATION
- FORMER STONE/BRICK STRUCTURE CONTAINING COAL TAR
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- SOIL VAPOR SAMPLE LOCATION

NOTES:

1. RESULTS ARE IN UNITS OF MICROGRAMS PER LITER (ug/L)
2. ONLY DETECTED CONSTITUENTS ARE PRESENTED.
3. BTEX – BENZENE, TOLUENE, ETHYLBENZENE, XYLENE
4. VOC – VOLATILE ORGANIC COMPOUND
5. BDL – BELOW DETECTION LIMITS
6. J – INDICATES AN ESTIMATED CONCENTRATION
7. U – INDICATES THE CONSTITUENT WAS NOT DETECTED ABOVE THE IDENTIFIED CONCENTRATION
8. A BOLD RESULT INDICATES CONSTITUENT DETECTION
9. SHADING INDICATES RESULT EXCEEDS THE NYSDEC TOGS 1.1.1
10. FORMER LOCATIONS OF GAS WORKS STRUCTURES FROM SANBORN LIBRARY, LLC 1906 MAP. LOCATIONS ARE APPROXIMATE.
11. LIMITS OF THE 2002/2003 OVERBURDEN EXCAVATION, BEDROCK EXCAVATION, AND LOCATIONS OF THE FORMER STRUCTURE CONTAINING COAL TAR FROM REPORT OF ACTIVITIES AT LL-LOT, SUNY GENESEO (2003). LOCATIONS ARE APPROXIMATE.

SOURCE:

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0 40' 80'

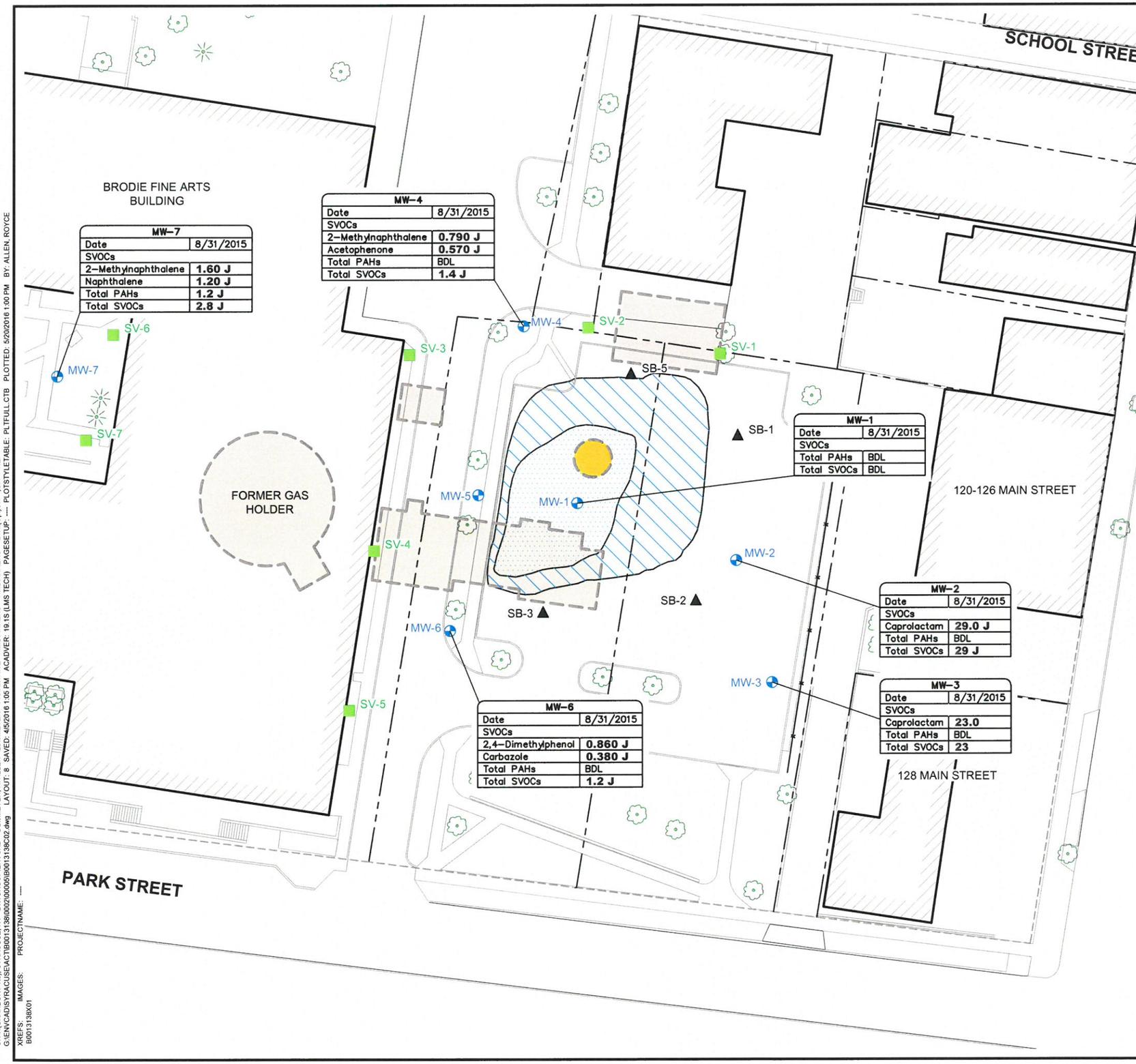
GRAPHIC SCALE

ROCHESTER GAS & ELECTRIC
PARK STREET FORMER MGP SITE
SITE CHARACTERIZATION REPORT

GROUNDWATER VOC DATA

ARCADIS

FIGURE 7



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- BUILDING LINE
- FENCE LINE
- VEGETATION
- FORMER MGP STRUCTURE
- LIMITS OF BEDROCK EXCAVATION
- LIMITS OF OVERBURDEN EXCAVATION
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- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- SOIL VAPOR SAMPLE LOCATION

NOTES:

1. RESULTS ARE IN UNITS OF MICROGRAMS PER LITER (ug/L)
2. ONLY DETECTED CONSTITUENTS ARE PRESENTED.
3. PAH – POLYCYCLIC AROMATIC HYDROCARBON
4. SVOC – SEMIVOLATILE ORGANIC COMPOUND
5. BDL – BELOW DETECTION LIMITS
6. J – INDICATES AN ESTIMATED CONCENTRATION
7. U – INDICATES THE CONSTITUENT WAS NOT DETECTED ABOVE THE IDENTIFIED CONCENTRATION
8. A BOLD RESULT INDICATES CONSTITUENT DETECTION
9. SHADING INDICATES RESULT EXCEEDS THE NYSDEC TOGS 1.1.1
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11. LIMITS OF THE 2002/2003 OVERBURDEN EXCAVATION, BEDROCK EXCAVATION, AND LOCATIONS OF THE FORMER STRUCTURE CONTAINING COAL TAR FROM REPORT OF ACTIVITIES AT LL-LOT, SUNY GENESEO (2003). LOCATIONS ARE APPROXIMATE.

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0 40' 80'

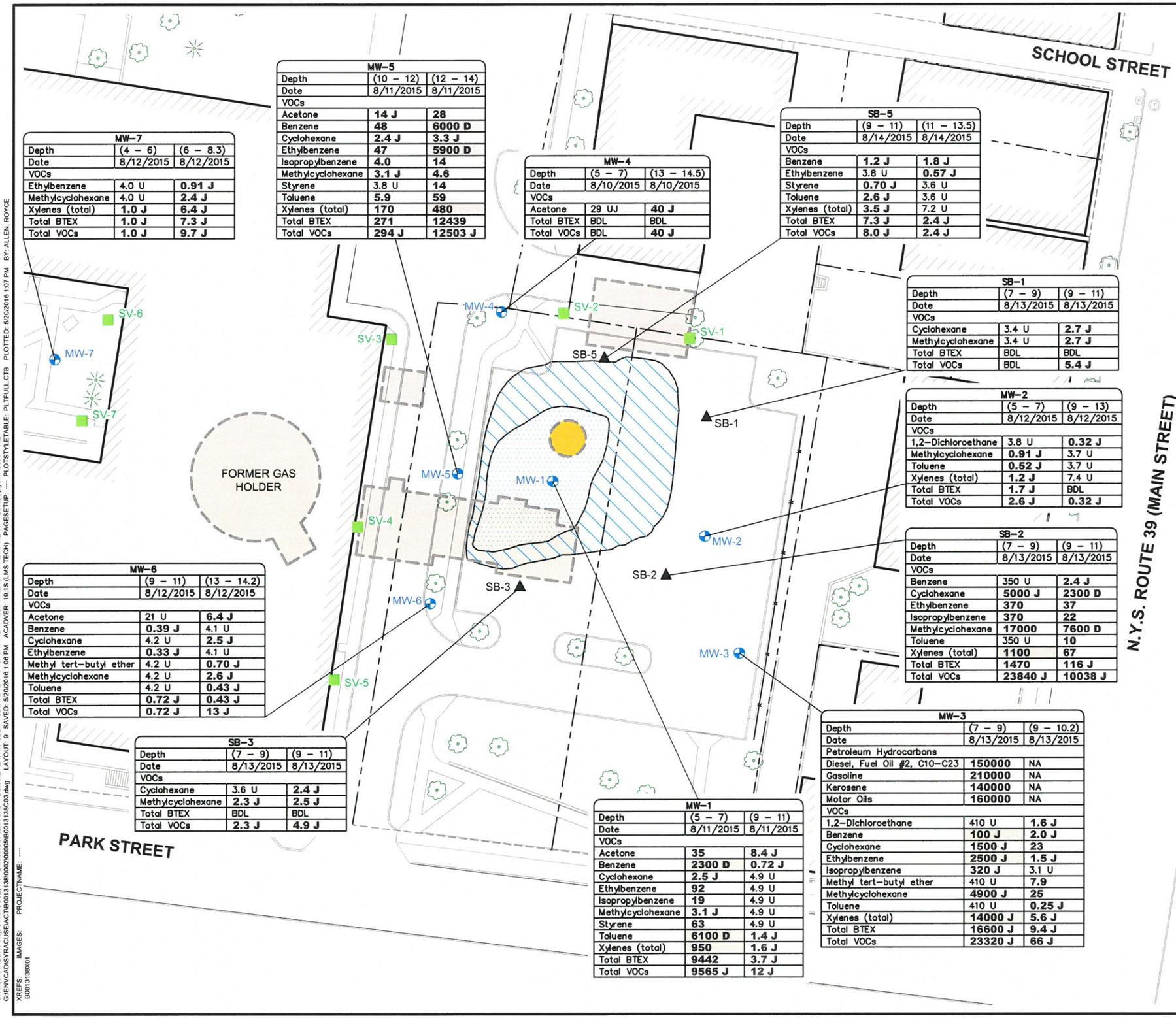
GRAPHIC SCALE

ROCHESTER GAS & ELECTRIC
PARK STREET FORMER MGP SITE
SITE CHARACTERIZATION REPORT

GROUNDWATER SVOC DATA

ARCADIS

FIGURE 8



MW-5		
Depth	(10 – 12)	(12 – 14)
Date	8/11/2015	8/11/2015
VOCs		
Acetone	**14 J**	**28**
Benzene	**48**	**6000 D**
Cyclohexane	**2.4 J**	**3.3 J**
Ethylbenzene	**47**	**5900 D**
Isopropylbenzene	**4.0**	**14**
Methylcyclohexane	**3.1 J**	**4.6**
Styrene	3.8 U	**14**
Toluene	**5.9**	**59**
Xylenes (total)	**170**	**480**
Total BTEX	**271**	**12439**
Total VOCs	**294 J**	**12503 J**

MW-7		
Depth	(4 – 6)	(6 – 8.3)
Date	8/12/2015	8/12/2015
VOCs		
Ethylbenzene	4.0 U	**0.91 J**
Methylcyclohexane	4.0 U	**2.4 J**
Xylenes (total)	**1.0 J**	**6.4 J**
Total BTEX	**1.0 J**	**7.3 J**
Total VOCs	**1.0 J**	**9.7 J**

MW-4		
Depth	(5 – 7)	(13 – 14.5)
Date	8/10/2015	8/10/2015
VOCs		
Acetone	29 UJ	**40 J**
Total BTEX	BDL	BDL
Total VOCs	BDL	**40 J**

SB-5		
Depth	(9 – 11)	(11 – 13.5)
Date	8/14/2015	8/14/2015
VOCs		
Benzene	**1.2 J**	**1.8 J**
Ethylbenzene	3.8 U	**0.57 J**
Styrene	**0.70 J**	3.6 U
Toluene	**2.6 J**	3.6 U
Xylenes (total)	**3.5 J**	7.2 U
Total BTEX	**7.3 J**	**2.4 J**
Total VOCs	**8.0 J**	**2.4 J**

SB-1		
Depth	(7 – 9)	(9 – 11)
Date	8/13/2015	8/13/2015
VOCs		
Cyclohexane	3.4 U	**2.7 J**
Methylcyclohexane	3.4 U	**2.7 J**
Total BTEX	BDL	BDL
Total VOCs	BDL	**5.4 J**

MW-2		
Depth	(5 – 7)	(9 – 13)
Date	8/12/2015	8/12/2015
VOCs		
1,2-Dichloroethane	3.8 U	**0.32 J**
Methylcyclohexane	**0.91 J**	3.7 U
Toluene	**0.52 J**	3.7 U
Xylenes (total)	**1.2 J**	7.4 U
Total BTEX	**1.7 J**	BDL
Total VOCs	**2.6 J**	**0.32 J**

SB-2		
Depth	(7 – 9)	(9 – 11)
Date	8/13/2015	8/13/2015
VOCs		
Benzene	350 U	**2.4 J**
Cyclohexane	**5000 J**	**2300 D**
Ethylbenzene	**370**	**37**
Isopropylbenzene	**370**	**22**
Methylcyclohexane	**17000**	**7600 D**
Toluene	350 U	**10**
Xylenes (total)	**1100**	**67**
Total BTEX	**1470**	**116 J**
Total VOCs	**23840 J**	**10038 J**

MW-6		
Depth	(9 – 11)	(13 – 14.2)
Date	8/12/2015	8/12/2015
VOCs		
Acetone	21 U	**6.4 J**
Benzene	**0.39 J**	4.1 U
Cyclohexane	4.2 U	**2.5 J**
Ethylbenzene	**0.33 J**	4.1 U
Methyl tert-butyl ether	4.2 U	**0.70 J**
Methylcyclohexane	4.2 U	**2.6 J**
Toluene	4.2 U	**0.43 J**
Total BTEX	**0.72 J**	**0.43 J**
Total VOCs	**0.72 J**	**13 J**

SB-3		
Depth	(7 – 9)	(9 – 11)
Date	8/13/2015	8/13/2015
VOCs		
Cyclohexane	3.6 U	**2.4 J**
Methylcyclohexane	**2.3 J**	**2.5 J**
Total BTEX	BDL	BDL
Total VOCs	**2.3 J**	**4.9 J**

MW-1		
Depth	(5 – 7)	(9 – 11)
Date	8/11/2015	8/11/2015
VOCs		
Acetone	**35**	**8.4 J**
Benzene	**2300 D**	**0.72 J**
Cyclohexane	**2.5 J**	4.9 U
Ethylbenzene	**92**	4.9 U
Isopropylbenzene	**19**	4.9 U
Methylcyclohexane	**3.1 J**	4.9 U
Styrene	**63**	4.9 U
Toluene	**6100 D**	**1.4 J**
Xylenes (total)	**950**	**1.6 J**
Total BTEX	**9442**	**3.7 J**
Total VOCs	**9565 J**	**12 J**

MW-3		
Depth	(7 – 9)	(9 – 10.2)
Date	8/13/2015	8/13/2015
Petroleum Hydrocarbons		
Diesel, Fuel Oil #2, C10-C23	**150000**	NA
Gasoline	**210000**	NA
Kerosene	**140000**	NA
Motor Oils	**160000**	NA
VOCs		
1,2-Dichloroethane	410 U	**1.6 J**
Benzene	**100 J**	**2.0 J**
Cyclohexane	**1500 J**	**23**
Ethylbenzene	**2500 J**	**1.5 J**
Isopropylbenzene	**320 J**	3.1 U
Methyl tert-butyl ether	410 U	**7.9**
Methylcyclohexane	**4900 J**	**25**
Toluene	410 U	**0.25 J**
Xylenes (total)	**14000 J**	**5.6 J**
Total BTEX	**16600 J**	**9.4 J**
Total VOCs	**23320 J**	**66 J**

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- BUILDING LINE
- FENCE LINE
- VEGETATION
- FORMER MGP STRUCTURE
- LIMITS OF BEDROCK EXCAVATION
- LIMITS OF OVERBURDEN EXCAVATION
- FORMER STONE/BRICK STRUCTURE CONTAINING COAL TAR
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- SOIL VAPOR SAMPLE LOCATION

NOTES:

1. RESULTS ARE IN UNITS OF MICROGRAMS PER LITER (ug/L)
2. ONLY DETECTED CONSTITUENTS ARE PRESENTED.
3. BTEX – BENZENE, TOLUENE, ETHYLBENZENE, XYLENE
4. VOC – VOLATILE ORGANIC COMPOUND
5. DEPTHS ARE IN FEET BELOW GROUND SURFACE
6. NA – NOT ANALYZED
7. BDL – BELOW DETECTION LIMITS
8. J – INDICATES AN ESTIMATED CONCENTRATION
9. U – INDICATES THE CONSTITUENT WAS NOT DETECTED ABOVE THE IDENTIFIED CONCENTRATION
10. A BOLD RESULT INDICATES CONSTITUENT DETECTION
11. GRAY SHADING INDICATES RESULT EXCEEDS THE NYSDEC PART 375 UNRESTRICTED USE SCO.
12. YELLOW SHADING INDICATES RESULT EXCEEDS THE NYSDEC PART 375 COMMERCIAL USE SCO.
13. FORMER LOCATIONS OF GAS WORKS STRUCTURES FROM SANBORN LIBRARY, LLC 1906 MAP. LOCATIONS ARE APPROXIMATE.
14. LIMITS OF THE 2002/2003 OVERBURDEN EXCAVATION, BEDROCK EXCAVATION, AND LOCATIONS OF THE FORMER STRUCTURE CONTAINING COAL TAR FROM REPORT OF ACTIVITIES AT LL-LOT, SUNY GENESEO (2003). LOCATIONS ARE APPROXIMATE.

SOURCE:

1. BASEMAP INFORMATION PROVIDED BY FISHER ASSOCIATES, LLC. DATED JUNE, 2015. FILENAME: GENESEO TOPO.DWG. GEOREFERENCED TO NEW YORK STATE PLANE NAD83 COORDINATE SYSTEM.

0 40' 80'

GRAPHIC SCALE

ROCHESTER GAS & ELECTRIC
PARK STREET FORMER MGP SITE
SITE CHARACTERIZATION REPORT

SOIL VOC DATA

ARCADIS

FIGURE 9

MW-4		
Depth	(5 – 7)	(13 – 14.5)
Date	8/10/2015	8/10/2015
SVOCs		
Acenaphthene	**770 J**	200 U
Acenaphthylene	**910 J**	200 U
Anthracene	**3600**	200 U
Benzo(a)anthracene	**14000**	**70.0 J**
Benzo(a)pyrene	**16000**	**120 J**
Benzo(b)fluoranthene	**18000**	**160 J**
Benzo(g,h,i)perylene	**11000**	**70.0 J**
Benzo(k)fluoranthene	**8700**	200 U
bis(2–Ethylhexyl)phthalate	2100 U	**130 J**
Carbazole	**1200 J**	200 U
Chrysene	**12000**	**87.0 J**
Dibenzo(a,h)anthracene	2100 U	**94.0 J**
Dibenzofuran	**650 J**	200 U
Fluoranthene	**18000**	**93.0 J**
Fluorene	**1100 J**	200 U
Indeno(1,2,3–cd)pyrene	**11000**	**100 J**
Naphthalene	**600 J**	200 U
Phenanthrene	**9400**	**47.0 J**
Pyrene	**16000**	**83.0 J**
Total PAHs	**141080 J**	**924 J**
Total SVOCs	**142930 J**	**1050 J**

SB–5		
Depth	(9 – 11)	(11 – 13.5)
Date	8/14/2015	8/14/2015
SVOCs		
Acenaphthylene	**8600 J**	4000 U
Anthracene	**18000 J**	4000 U
Benzo(a)anthracene	**36000 J**	**800 J**
Benzo(a)pyrene	**30000 J**	**740 J**
Benzo(b)fluoranthene	**32000 J**	4000 U
Benzo(g,h,i)perylene	**16000 J**	4000 U
Benzo(k)fluoranthene	**25000 J**	4000 U
Carbazole	**2500 J**	4000 U
Chrysene	**45000 J**	**1200 J**
Dibenzo(a,h)anthracene	**5000 J**	4000 U
Dibenzofuran	**4400 J**	4000 U
Fluoranthene	**82000 J**	**1800 J**
Fluorene	**8800 J**	4000 U
Indeno(1,2,3–cd)pyrene	**15000 J**	4000 U
Phenanthrene	**59000 J**	**1700 J**
Pyrene	**71000 J**	**1300 J**
Total PAHs	**451400 J**	**7540 J**
Total SVOCs	**458300 J**	**7540 J**

MW–1		
Depth	(5 – 7)	(9 – 11)
Date	8/11/2015	8/11/2015
SVOCs		
2,4–Dimethylphenol	**5300**	200 U
2–Methylnaphthalene	**60000**	200 U
2–Methylphenol	**3600 J**	200 U
4–Methylphenol	**5900 J**	390 U
Acenaphthene	**9700**	200 U
Acenaphthylene	**11000**	200 U
Anthracene	**33000**	200 U
Benzo(a)anthracene	**30000**	200 U
Benzo(a)pyrene	**20000**	200 U
Benzo(b)fluoranthene	**22000**	200 U
Benzo(g,h,i)perylene	**9100**	200 U
Benzo(k)fluoranthene	**9200**	200 U
Biphenyl	**9400**	200 U
Carbazole	**9500**	200 U
Chrysene	**23000**	**84.0 J**
Dibenzofuran	**28000**	200 U
Fluoranthene	**58000**	200 U
Fluorene	**35000**	200 U
Indeno(1,2,3–cd)pyrene	**9200**	200 U
Naphthalene	**160000 D**	200 U
Phenanthrene	**140000 D**	200 U
Pyrene	**51000**	200 U
Total PAHs	**620200**	**84 J**
Total SVOCs	**741900 J**	**84 J**

MW–7		
Depth	(4 – 6)	(6 – 8.3)
Date	8/12/2015	8/12/2015
SVOCs		
Total PAHs	BDL	BDL
Total SVOCs	BDL	BDL

SB–1		
Depth	(7 – 9)	(9 – 11)
Date	8/13/2015	8/13/2015
SVOCs		
Fluoranthene	**340 J**	4000 U
Pyrene	**280 J**	4000 U
Total PAHs	**620 J**	BDL
Total SVOCs	**620 J**	BDL

MW–2		
Depth	(5 – 7)	(9 – 13)
Date	8/12/2015	8/12/2015
SVOCs		
Total PAHs	BDL	BDL
Total SVOCs	BDL	BDL

SB–2		
Depth	(7 – 9)	(9 – 11)
Date	8/13/2015	8/13/2015
SVOCs		
Total PAHs	BDL	BDL
Total SVOCs	BDL	BDL

MW–3		
Depth	(7 – 9)	(9 – 10.2)
Date	8/13/2015	8/13/2015
SVOCs		
2–Methylnaphthalene	**1200 J**	3600 U
Naphthalene	**940 J**	3600 U
Total PAHs	**940 J**	BDL
Total SVOCs	**2140 J**	BDL

MW–5		
Depth	(10 – 12)	(12 – 14)
Date	8/11/2015	8/11/2015
SVOCs		
2–Methylnaphthalene	**5300**	**1700 J**
Acenaphthene	**2600**	**840 J**
Acenaphthylene	**12000**	**3500**
Anthracene	**20000**	**6400**
Benzo(a)anthracene	**20000**	**11000**
Benzo(a)pyrene	**15000**	**7400**
Benzo(b)fluoranthene	**17000**	**8400**
Benzo(g,h,i)perylene	**7200**	**3400**
Benzo(k)fluoranthene	**7800**	**4900**
Biphenyl	**3200**	**970 J**
Carbazole	**4300**	**1100 J**
Chrysene	**15000**	**7800**
Dibenzo(a,h)anthracene	**3000**	**2000**
Dibenzofuran	**13000**	**3600**
Fluoranthene	**39000**	**20000**
Fluorene	**18000**	**5300**
Indeno(1,2,3–cd)pyrene	**7400**	**4000**
Naphthalene	**27000**	**9600**
Phenanthrene	**44000**	**16000**
Pyrene	**30000**	**15000**
Total PAHs	**285000**	**125540 J**
Total SVOCs	**310800**	**132910 J**

MW–6		
Depth	(9 – 11)	(13 – 14.2)
Date	8/12/2015	8/12/2015
SVOCs		
Total PAHs	BDL	BDL
Total SVOCs	BDL	BDL

SB–3		
Depth	(7 – 9)	(9 – 11)
Date	8/13/2015	8/13/2015
SVOCs		
Total PAHs	BDL	BDL
Total SVOCs	BDL	BDL

LEGEND:

- PROPERTY LINE
- RIGHT–OF–WAY LINE
- BUILDING LINE
- FENCE LINE
- VEGETATION
- FORMER MGP STRUCTURE
- LIMITS OF BEDROCK EXCAVATION
- LIMITS OF OVERBURDEN EXCAVATION
- FORMER STONE/BRICK STRUCTURE CONTAINING COAL TAR
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- SOIL VAPOR SAMPLE LOCATION

NOTES:

1. RESULTS ARE IN UNITS OF MICROGRAMS PER LITER (ug/L)
2. ONLY DETECTED CONSTITUENTS ARE PRESENTED.
3. PAH – POLYCYCLIC AROMATIC HYDROCARBON
4. SVOC – SEMIVOLATILE ORGANIC COMPOUND
5. DEPTHS ARE IN FEET BELOW GROUND SURFACE
6. NA – NOT ANALYZED
7. BDL – BELOW DETECTION LIMITS
8. J – INDICATES AN ESTIMATED CONCENTRATION
9. U – INDICATES THE CONSTITUENT WAS NOT DETECTED ABOVE THE IDENTIFIED CONCENTRATION
10. A BOLD RESULT INDICATES CONSTITUENT DETECTION
11. GRAY SHADING INDICATES RESULT EXCEEDS THE NYSDEC PART 375 UNRESTRICTED USE SCO.
12. YELLOW SHADING INDICATES RESULT EXCEEDS THE NYSDEC PART 375 COMMERCIAL USE SCO.
13. FORMER LOCATIONS OF GAS WORKS STRUCTURES FROM SANBORN LIBRARY, LLC 1906 MAP. LOCATIONS ARE APPROXIMATE.
14. LIMITS OF THE 2002/2003 OVERBURDEN EXCAVATION, BEDROCK EXCAVATION, AND LOCATIONS OF THE FORMER STRUCTURE CONTAINING COAL TAR FROM REPORT OF ACTIVITIES AT LL–LOT, SUNY GENESEO (2003). LOCATIONS ARE APPROXIMATE.

SOURCE:

1. BASEMAP INFORMATION PROVIDED BY FISHER ASSOCIATES, LLC. DATED JUNE, 2015. FILENAME: GENESEO TOPO.DWG. GEOREFERENCED TO NEW YORK STATE PLANE NAD83 COORDINATE SYSTEM.

0 40' 80'

GRAPHIC SCALE

ROCHESTER GAS & ELECTRIC
PARK STREET FORMER MGP SITE
SITE CHARACTERIZATION REPORT

SOIL SVOC DATA

ARCADIS

FIGURE
10

SCHOOL STREET

BRODIE FINE ARTS BUILDING

FORMER GAS HOLDER

120-126 MAIN STREET

128 MAIN STREET

N.Y.S. ROUTE 39 (MAIN STREET)

PARK STREET

SV-1
SV-2
SV-3
SV-4
SV-5
SV-6
SV-7
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
SB-1
SB-2
SB-3
SB-5

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- BUILDING LINE
- FENCE LINE
- VEGETATION
- FORMER MGP STRUCTURE
- LIMITS OF BEDROCK EXCAVATION
- LIMITS OF OVERBURDEN EXCAVATION
- FORMER STONE/BRICK STRUCTURE CONTAINING COAL TAR
- MW-8 — PROPOSED MONITORING WELL LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- SOIL VAPOR SAMPLE LOCATION

NOTES:

1. FORMER LOCATIONS OF GAS WORKS STRUCTURES FROM SANBORN LIBRARY, LLC 1906 MAP. LOCATIONS ARE APPROXIMATE.
2. LIMITS OF THE 2002/2003 OVERBURDEN EXCAVATION, BEDROCK EXCAVATION, AND LOCATIONS OF THE FORMER STRUCTURE CONTAINING COAL TAR FROM REPORT OF ACTIVITIES AT LL-LOT, SUNY GENESEO (2003). LOCATIONS ARE APPROXIMATE.

SOURCE:

1. BASEMAP INFORMATION PROVIDED BY FISHER ASSOCIATES, LLC. DATED JUNE, 2015. FILENAME: GENESEO TOPO.DWG. GEOREFERENCED TO NEW YORK STATE PLANE NAD83 COORDINATE SYSTEM.

0 40' 80'

GRAPHIC SCALE

ROCHESTER GAS & ELECTRIC
PARK STREET FORMER MGP SITE
SITE CHARACTERIZATION REPORT

LOCATION OF PROPOSED MONITORING WELL MW-8

ARCADIS Design & Consultancy for natural and built assets

FIGURE 11

CITY:(CRANBURY-NJ),SYRACUSE,NY DIV/GROUP:ENV/IM-DV DB:JMEYER R.ALLEN LD:JMEYER PIC:KWHITE PM:BAHRENS TM:BAHRENS LYR:
G:\ENV\CAD\SYRACUSE\ACT\B0013138\0000000\D\WOS\C-RPT\B0013138P01.dwg LAYOUT: 11 SAVED: 5/20/2016 12:51 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/20/2016 12:53 PM BY: ALLEN, ROYCE
XREFS: IMAGES: PROJECTNAME: ---
B0013138X01

APPENDIX A

Soil Boring and Monitoring Well Installation Logs

Date Start/Finish: August 11-12, 2015
Drilling Company: Nothnagle Drilling, Inc.
Driller's Name: Steve Loranty
Drilling Method: Hollow Stem Auger/Rock Core
Auger Size: 6-1/4" ID/HQ Core Barrel
Rig Type: CME 85 Truck Mounted Rig
Sampling Method: 4' Macrocore

Northing: 1019329.23
Easting: 1353704.50
Casing Elevation: 758.41' AMSL
Borehole Depth: 36.5' bgs
Surface Elevation: 758.42' AMSL
Descriptions By: Nicholas (Klaus) Beyrle

Well ID/Boring ID: **MW-1**
Client: RG&E
Site Location: 6 Park Street, Geneseo, New York

Depth (ft bgs) / Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
760 / 0									Flush-mount concrete surface pad with locking j-plug.
								Asphalt.	Concrete (0-1' bgs)
								Gravel road base.	Sand Drain (0.5-1' bgs)
	1	0-5	NA	NA	NA	0.7 0.1		Brown medium to coarse SAND and medium to coarse rounded to angular GRAVEL, moist. Large COBBLES 2-4.5 ft bgs, red and white brick debris at 3.5 ft bgs.	
755 / 5						13.8		Gray-brown SILTY CLAY, trace fine SAND, trace fine to medium Gravel, medium plasticity, no dilatancy, soft.	
	2	5-9	NA	NA	4.0	391.0 194.2 18.3 9.4		Brown SILT and very fine to coarse angular GRAVEL, some tar-like material, strong odor, moist. Light Gray SILT and very fine to medium angular GRAVEL, little to trace Clay, brittle, dry. Material possibly stone fill.	Cement-Bentonite Grout (0.3-16.5' bgs)
750 / 10	3	9-11	NA	NA	2.0	0.3 0.2			4" Steel Casing (0.3-16.5' bgs)
	4	11-14.5	NA	NA	0.2	0.2			
745 / 15	5	14.5-16.5	NA	0	2.0	NA		Dark gray SHALE, breaks across entire length.	Bedrock Formation

ARCADIS
Infrastructure, environment, buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Client: RG&E

Well/Boring ID: **MW-1**

Borehole Depth: 36.5' bgs

Site Location:

6 Park Street,
Geneseo, New York

Depth (ft. bgs) / Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
740 / 20	6	16.5-21.5	6.02 min/ft 5.07 min/ft 5.35 min/ft 4.45 min/ft 4.28 min/ft	6	4.7	NA		Dark gray SHALE, 15-deg joint at 17.4 ft bgs, mechanical breaks across entire length.	Bedrock Formation
735 / 25	7	21.5-25.5	3.17 min/ft 3.50 min/ft 3.75 min/ft 3.83 min/ft 3.75 min/ft	73	5.0	NA		Dark gray SHALE, horizontal joint 1-2.5mm wide at 23.8 ft bgs, joints along bedding planes at 22.2, 23.2, 24.87, 25, 25.5 ft bgs.	Open Bedrock Hole (16.5-36.5' bgs)
730 / 30	8	25.5-30.5	3.25 min/ft 3.50 min/ft 3.00 min/ft 3.00 min/ft 2.50 min/ft	91	5.0	NA		Dark gray SHALE, horizontal joint 1-2 mm wide at 29.1, 1-3mm wide at 29.75, 26.9, 27.55, 28.1, and 30.8 ft bgs, 45-deg mechanical break 30.1-30.3 ft bgs.	
725 / 35	9	30.5-35.5	2.50 min/ft 2.50 min/ft 2.25 min/ft 2.25 min/ft 2.50 min/ft	93	5.0	NA		Dark gray SHALE, horizontal joint 1-2mm wide at 32.45 and 32.83 ft bgs, 15-deg joint 34.7-34.75 ft bgs.	

ARCADIS
Infrastructure, environment, buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Client: RG&E

Well/Boring ID: **MW-1**

Borehole Depth: 36.5' bgs

Site Location:

6 Park Street,
Geneseo, New York

Depth (ft. bgs) / Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
								End of boring at 36.5' bgs.	

720
40
715
45
710
50
705
55

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

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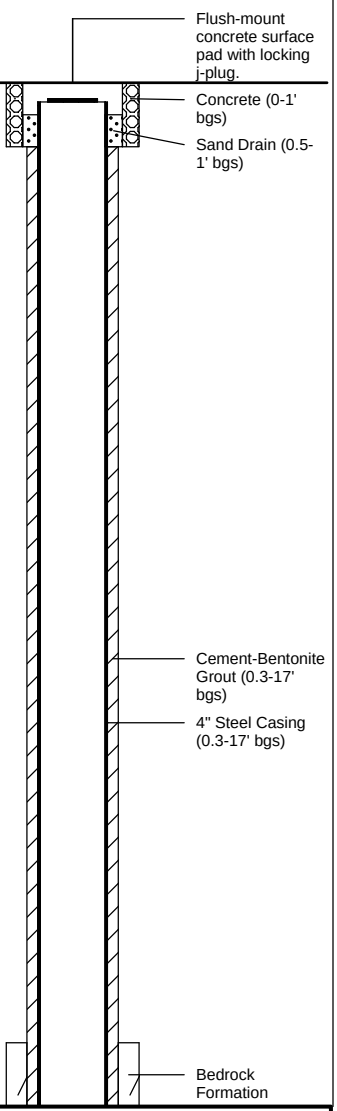
Date Start/Finish: August 12 and 14, 2015
Drilling Company: Nothnagle Drilling, Inc.
Driller's Name: Steve Loranty
Drilling Method: Hollow Stem Auger/Rock Core
Auger Size: 6-1/4" ID/HQ Core Barrel
Rig Type: CME 85 Truck Mounted Rig
Sampling Method: 4' Macrocore

Northing: 1019307.06
Easting: 1353766.02
Casing Elevation: 760.25' AMSL
Borehole Depth: 37' bgs
Surface Elevation: 760.29' AMSL
Descriptions By: Nicholas (Klaus) Beyrle

Well ID/Boring ID: **MW-2**
Client: RG&E
Site Location: 6 Park Street, Geneseo, New York

Depth (ft bgs) / Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 / 760								
						0.0		Asphalt.
								Gravel road base.
	1	0-5	NA	NA	NA	0.0		Dark gray very fine to very coarse subrounded GRAVEL, some to little very coarse Sand, little small Cobbles, moist.
						0.0		Brown medium to coarse SAND and subrounded to subangular very fine to very coarse GRAVEL, moist.
						0.0		Yellow-brown SILT and very fine to fine SAND, trace medium to very coarse subrounded to subangular Gravel, trace brick and charcoal debris, soft.
5 / 755	2	5-9	NA	NA	4.0	0.0		Yellow-brown very fine to fine SAND, trace Silt, trace Shale fragments, loose, medium dense, dry.
						0.0		
10 / 750	3	9-13	NA	NA	NA	0.0		
						0.0		
	4	13-15	NA	NA	NA	NA		NO RECOVERY. Top of weathered SHALE bedrock at 13 ft bgs. Top of competent SHALE bedrock at 15 ft bgs.
15 / 745								Dark gray SHALE, breaks across entire length.



ARCADIS
Infrastructure, environment, buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Client: RG&E

Well/Boring ID: **MW-2**

Borehole Depth: 37' bgs

Site Location:

6 Park Street,
Geneseo, New York

Depth (ft. bgs) / Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
	5	15-17	NA	0	2.0				
			NA					Dark gray SHALE, medium hard, 60-deg joint 17.70-17.73 ft bgs, 60-deg joint 17.87-17.96 ft bgs, 50-deg joint 18.95-18.95 ft bgs, 12-deg joint 20.30 ft bgs, horizontal joint 20.40 ft bgs, 82-deg joint 20.60-21.16 ft bgs.	
			NA						
	6	17-22	5.00 min/ft	27	4.5	NA			Bedrock Formation
20 740			10.00 min/ft						
			7.33 min/ft						
			8.50 min/ft					Dark gray SHALE, medium hard, horizontal joint at 22.20, 22.35, 23.10, 23.50, 25.0, 25.2 ft bgs, mechanical break at 23.6, 24.6, 25.23, 25.95, 26.5 ft bgs, broken zone 2.1-2.25 ft bgs.	
			NA						
	7	22-27	4.50 min/ft	58	4.5	NA			
25 735			4.33 min/ft						Open Bedrock Hole (17-37' bgs)
			5.33 min/ft						
			3.85 min/ft					Dark gray SHALE, horizontal joint 1-2mm wide 27.5, 1-3mm wide 28.25 ft bgs, 5-deg joint 1-2mm wide 28.65 ft bgs, 80-deg calcium filled joint 29.3-29.75, 30.4-32 ft bgs, broken zone 31.4-31.8 ft bgs.	
			4.53 min/ft						
	8	27-32	5.02 min/ft	91	5.0	NA			
30 730			7.15 min/ft						
			6.58 min/ft						
			3.85 min/ft					Dark gray SHALE, 10-deg joint 1mm wide 34 ft bgs, mechanical breaks at 34.2, 34.95, 36.4, 36.95 ft bgs.	
			3.93 min/ft						
	9	32-37	4.53 min/ft	96	5.0	NA			
35 725			3.43 min/ft						

ARCADIS
Infrastructure, environment, buildings

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Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Client: RG&E

Well/Boring ID: **MW-2**

Borehole Depth: 37' bgs

Site Location:

6 Park Street,
Geneseo, New York

Depth (ft. bgs) / Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
			3.73 min/ft					End of boring at 37' bgs.	
40 / 720									
45 / 715									
50 / 710									
55 / 705									

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

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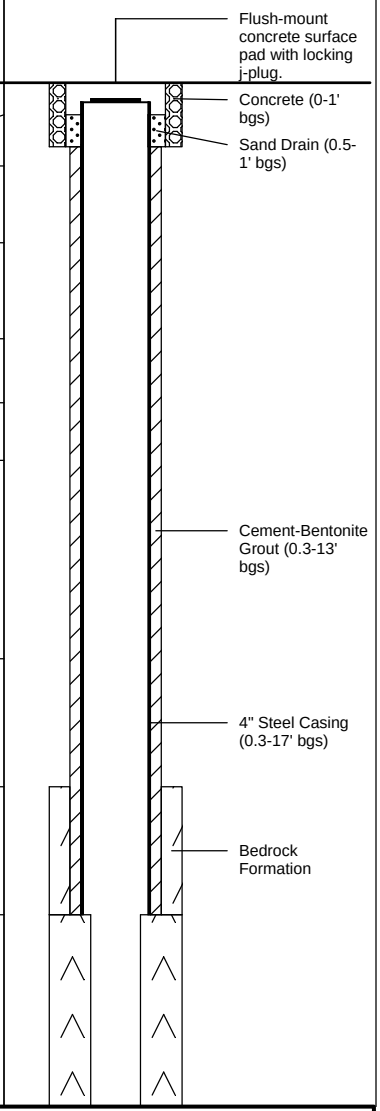
Date Start/Finish: August 13-14, 2015
Drilling Company: Nothnagle Drilling, Inc.
Driller's Name: Steve Loranty
Drilling Method: Hollow Stem Auger/Rock Core
Auger Size: 6-1/4" ID/HQ Core Barrel
Rig Type: CME 85 Truck Mounted Rig
Sampling Method: 4' Macrocore

Northing: 1019260.91
Easting: 1353779.99
Casing Elevation: 761.66' AMSL
Borehole Depth: 33' bgs
Surface Elevation: 761.65' AMSL
Descriptions By: Nicholas (Klaus) Beyrle

Well ID/Boring ID: MW-3
Client: RG&E
Site Location: 6 Park Street, Geneseo, New York

Depth (ft bgs) / Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 / 761						NA		Asphalt.
								Gravel road base.
						2.3		Light reddish brown SILTY CLAY, white and gray mottled, trace fine Sand, trace fine subrounded Gravel, high plasticity, no dilatancy.
	1	0-5	NA	NA	NA	4.4		Light reddish brown SILT, gray mottling, some Clay, trace rounded fine Gravel, trace rootlets, no plasticity, no dilatancy, stiff, dry.
						438		Yellow-brown SILT, olive gray mottling, trace rounded fine Gravel, no plasticity, no dilatancy, trace rootlets, medium stiff, petroleum-like odor, dry.
5 / 756						1586		Gray very fine SAND, SILT and CLAY, some to little very fine to medium angular Gravel, medium stiff, wet (due to rain overnight).
						154.6		Gray-brown very fine to medium SAND and SILT, little Clay, some to little very fine to very coarse angular to rounded gravel, medium stiff, strong petroleum-like odor, dry to moist.
	2	5-9	NA	NA	4.0	1309		
						1025		
						79.8		
10 / 751						8.2		Gray-brown very fine to fine SAND and SILT, trace Clay, little to trace very fine to coarse angular Gravel and weathered Shale bedrock dry to moist. Competent bedrock at 11 ft bgs.
	3	9-11	NA	NA	1.7	22.3		
						75.6		
	4	11-13	NA	0	2.0	NA		Dark gray fragments of SHALE.
15 / 746			NA					Dark gray SHALE, medium hard, broken zone 13-14.2 ft bgs, mechanical breaks at 14.2, 14.35, 14.65, 14.8, 14.86, 15.0, 15.2, 15.6, 15.7 ft bgs, broken zone 15.9-18 ft bgs.
			3.37 min/ft					
	5	13-18	4.20 min/ft	0	5.0	NA		



ARCADIS
Infrastructure, environment, buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Client: RG&E

Well/Boring ID: **MW-3**

Borehole Depth: 33' bgs

Site Location:

6 Park Street,
Geneseo, New York

Depth (ft. bgs) / Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
745			4.67 min/ft 4.43 min/ft					Dark gray SHALE, medium hard, broken zone 13-14.2 ft bgs, mechanical breaks at 14.2, 14.35, 14.65, 14.8, 14.86, 15.0, 15.2, 15.6, 15.7 ft bgs, broken zone 15.9-18 ft bgs.	
20	6	18-23	6.63 min/ft 3.87 min/ft 4.25 min/ft 4.42 min/ft 4.15 min/ft	0	4.6	NA		Dark gray SHALE, medium hard, mechanical breaks along bedding planes 18.65, 18.7, 18.85, 19.4, 19.7, 19.9, 20.25 ft bgs, broken zone 20.6-21.4 ft bgs, 80-deg joint 20.7-22.6 ft bgs, mechanical break at 21.5, 22.0, 22.2, 22.5, 22.7 ft bgs.	Bedrock Formation
740									
25	7	23-28	4.38 min/ft 4.02 min/ft 3.08 min/ft 4.98 min/ft NA	25	4.3	NA		Dark gray SHALE, medium hard, mechanical break 23.4 ft bgs, horizontal joint 23.65, 24.18 ft bgs, broken zone 24.37-24.6 ft bgs, horizontal joint 23.15 ft bgs, broken zone 23.35-23.45 ft bgs, mechanical breaks 23.65, 23.87, 24.22 ft bgs, horizontal joint 24.30 ft bgs, mechanical break 24.57, 24.9 ft bgs, broken zone 25.2-25.4 ft bgs.	Open Bedrock Hole (13-33' bgs)
735									
30	8	28-33	NA 5.78 min/ft 3.27 min/ft 4.28 min/ft 4.00 min/ft	86	5.0	NA		Dark gray SHALE, medium hard, horizontal joint 28.44, 29.05-29.06, 29.2 ft bgs, mechanical break 29.95 ft bgs, broken zone 30.3-30.57 ft bgs, vertical joint 30.6-32.25 ft bgs, mechanical break 31 ft bgs, horizontal joint 31.58, 32 ft bgs, mechanical break 32.3, 32.9 ft bgs.	
730									
35								End of boring at 33' bgs.	

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Infrastructure, environment, buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

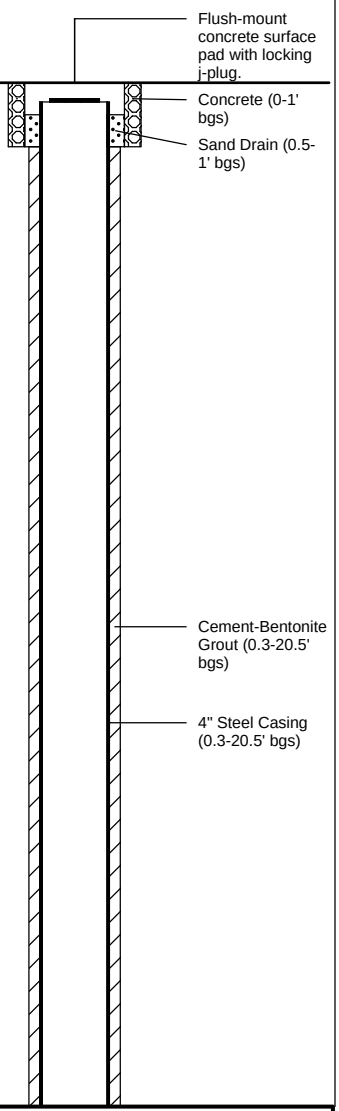
Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Date Start/Finish: August 10-11 and 17, 2015
Drilling Company: Nothnagle Drilling, Inc.
Driller's Name: Steve Loranty
Drilling Method: Hollow Stem Auger/Rock Core
Auger Size: 6-1/4" ID/HQ Core Barrel
Rig Type: CME 85 Truck Mounted Rig
Sampling Method: 4' Macrocore

Northing: 1019399.75
Easting: 1353683.64
Casing Elevation: 756.18' AMSL
Borehole Depth: 40.5' bgs
Surface Elevation: 756.07' AMSL
Descriptions By: Nicholas (Klaus) Beyrle

Well ID/Boring ID: **MW-4**
Client: RG&E
Site Location: 6 Park Street, Geneseo, New York

Depth (ft bgs) / Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 / 755	1	0-5	NA	NA	NA	2.1		TOPSOIL. Brown fine SAND, little fine to medium subrounded to angular Gravel, trace roots, dry. Dark brown SILT and very fine to fine SAND, some fine to medium Gravel, trace brick debris and rootlets. Little very fine to fine Sand 4-5 ft bgs.
5 / 750	2	5-9	NA	NA	1.0	1.3 0.0		Brown fine to coarse SAND and SILT, some to little very fine to coarse angular gravel, trace Slag, trace brick fragments, moist.
10 / 745	3	9-13	NA	NA	3.1	0.0 0.0 0.0 0.0		Brown SILTY CLAY, trace very fine to fine Sand and very fine Gravel, medium soft, medium plasticity, moist. Gray SILT, some Clay and very fine to medium Sand, trace rootlets, no plasticity, moist. Gray olive CLAY, yellow mottled, trace Silt, trace rootlets, little medium to coarse rounded Gravel 11-11.3 ft bgs, stiff, plastic, moist.
	4	13-14.5	NA	NA	1.8	0.0 0.0 0.6		Olive green-gray SILT and CLAY, trace very fine Gravel, brittle, dry. Top of weathered SHALE bedrock at 14.5 ft bgs.
15								Gray broken SHALE fragments and Silt. Wet at 17.5 ft bgs. Competent bedrock at 18.5 ft bgs.



Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

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Client: RG&E

Well/Boring ID: **MW-4**

Borehole Depth: 40.5' bgs

Site Location:

6 Park Street,
Geneseo, New York

Depth (ft. bgs) / Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
740	5	14.5 18.5	NA	NA	0.8	0.8		Gray broken SHALE fragments and Silt. Wet at 17.5 ft bgs. Competent bedrock at 18.5 ft bgs.	Cement-Bentonite Grout (0.3-18.5' bgs)
	6	18.5 20.5	NA	0	2.0	NA		Dark gray SHALE.	
20 735	7	20.5 25.5	3.78 min/ft 2.93 min/ft 3.35 min/ft 2.88 min/ft 5.05 min/ft	50	4.2	NA		Dark gray SHALE, medium hard, mechanical break 20.65, 20.72, 21.2, 21.25, 21.34, 21.45, 21.55, 21.70, 21.77, 22.02, 22.5, 22.9, 23.05 ft bgs, horizontal joint 23.2 ft bgs, mechanical break 23.87, 24.3, 24.7 ft bgs, vertical joint 24.0-24.7 ft bgs.	
25 730	8	25.5 30.5	5.50 min/ft 5.40 min/ft NA NA NA	91.6	5.0	NA		Dark gray SHALE, medium hard, horizontal joint 26.14 ft bgs, broken zone 26.6-26.75 ft bgs, mechanical break 27.88 ft bgs, horizontal joint 28.9 ft bgs, mechanical break 29.65 ft bgs, broken zone 29.7-29.9 ft bgs, mechanical break 30.5 ft bgs.	Open Bedrock Hole (20.5-40.5' bgs) Bedrock Formation
30 725	9	30.5 35.5	5.48 min/ft 3.12 min/ft 2.82 min/ft 1.35 min/ft NA	100	5.0	NA		Dark gray SHALE, medium hard, horizontal joint 1-2mm wide 31.69 ft bgs, 32.46 ft bgs, horizontal joint 33.05 ft bgs, horizontal joint 1-5mm wide 33.8 ft bgs, mechanical break 34.67-35.07 ft bgs.	
35								Dark gray SHALE, medium hard, horizontal joint 35.72 ft bgs, mechanical break	

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Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Client: RG&E

Well/Boring ID: **MW-4**

Borehole Depth: 40.5' bgs

Site Location:

6 Park Street,
Geneseo, New York

Depth (ft. bgs) / Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
720			NA					37.17 ft bgs, horizontal joint 38, 39.5 ft bgs, mechanical break 40.05 ft bgs, broken zone 40.3-40.5 ft bgs.	Open Bedrock Hole (20.5-40.5' bgs)
			NA						
	10	35.5 40.5	NA	90	5.0	NA			Bedrock Formation
			3.47 min/ft						
40			2.77 min/ft						
								End of boring at 40.5' bgs.	
715									
45									
710									
50									
705									
55									

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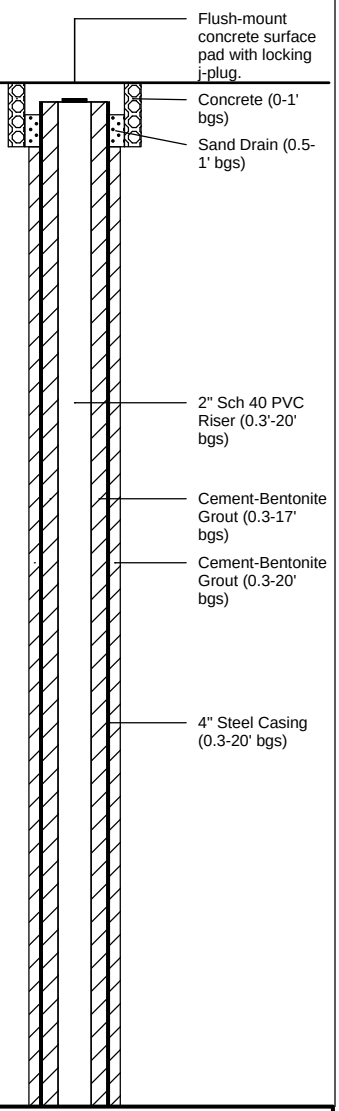
Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Date Start/Finish: August 11-12 and 17-18, 2015
Drilling Company: Nothnagle Drilling, Inc.
Driller's Name: Steve Loranty
Drilling Method: Hollow Stem Auger/Rock Core
Auger Size: 6-1/4" ID/HQ Core Barrel
Rig Type: CME 85 Truck Mounted Rig
Sampling Method: 4' Macrocore

Northing: 1019332.20
Easting: 1353666.43
Casing Elevation: 757.82' AMSL
Borehole Depth: 35.0' bgs
Surface Elevation: 757.63' AMSL
Descriptions By: Nicholas (Klaus) Beyrle

Well ID/Boring ID: **MW-5**
Client: RG&E
Site Location: 6 Park Street, Geneseo, New York

Depth (ft bgs) / Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
760								
0								Brown wood mulch.
	1	0-5	NA	NA	NA	0.0		Brown medium to coarse SAND, little rounded to angular medium to coarse Gravel, trace roots, moist.
755								
5						0.0		Brown fine to coarse SAND and very fine to very coarse rounded GRAVEL, some Silt, moist to wet.
	2	5-10	NA	NA	1.5	0.0		
750								
10						1.2		Gray-green CLAY and SILT, trace fine Sand, wood piece at top of interval, coal-tar-like odor, moist.
	3	10-14	NA	NA	2.8	29.6		Dark Gray broken ROCK fragments and SILT, some to little Clay, odor, moist.
745						26.7		Dark gray-olive SILT, some very fine to coarse angular Gravel, little Clay, moist.
						5.2		
15	4	14-17.5	NA	NA	NA	NA		NO RECOVERY. Top of competent SHALE bedrock at 17.5 ft bgs.



Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

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Client: RG&E

Well/Boring ID: **MW-5**

Borehole Depth: 35.0' bgs

Site Location:

6 Park Street,
Geneseo, New York

Depth (ft. bgs) / Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
								NO RECOVERY. Top of competent SHALE bedrock at 17.5 ft bgs.
740	5	17.5-20	NA	0	2.0	NA		Dark gray SHALE, breaks across entire length.
20	6	20-25	3.57 min/ft 3.22 min/ft 3.55 min/ft 2.25 min/ft 3.75 min/ft	43	4.7	NA		Dark gray SHALE, medium hard, horizontal joint with trace oil-like material 20.2 ft bgs, 63-deg joint coated with oil-like material 20.2-20.6 ft bgs, horizontal joint 21.1, 21.2, 21.3 ft bgs, broken zone 21.3-21.4 ft bgs, horizontal joint 21.5 ft bgs, horizontal joint containing little to trace oil-like material 21.73 ft bgs, mechanical break 21.9, 22.0, 22.2, 22.48 ft bgs, horizontal joint 22.9 ft bgs, mechanical break 23.2, 23.35, 24.03, 24.32 ft bgs.
735								
25	7	25-30	5.27 min/ft 4.53 min/ft 4.10 min/ft NA NA	30	4.6	NA		Dark gray SHALE, medium hard, broken zone 25.25-25.4 ft bgs, 15-deg joint 1-3mm wide 25.65 ft bgs, horizontal joint 1-3 mm wide 25.67, 25.9, 2-4mm wide 26.18, 27.5, 26.73, 28.24, 27.9, 28.47, 28.68, 29.05 ft bgs, vertical joint 27.35-28.55 ft bgs.
730								
30	8	30-35	7.02 min/ft 4.42 min/ft 4.75 min/ft 3.87 min/ft 3.12 min/ft	88	4.8	NA		Dark gray SHALE, medium hard, horizontal joint 1-2mm wide, 31.15, 31.95, 1-4mm wide 34 ft bgs, mechanical break 34.38 ft bgs.
725								
35								End of boring at 35' bgs.

Well Construction

- Cement-Bentonite Grout (0.3-20' bgs)
- Bentonite Seal (17-19' bgs)
- 2" Sch 40 PVC Riser (0.3'-20' bgs)
- #2 Silica Sand Pack (19-30' bgs)
- 2" Sch 40 PVC 0.020" Slot Screen (20-30' bgs)
- 2" Sch 40 PCV Sump (25-30' bgs)
- Cement-Bentonite Grout (30-35' bgs)

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Infrastructure, environment, buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

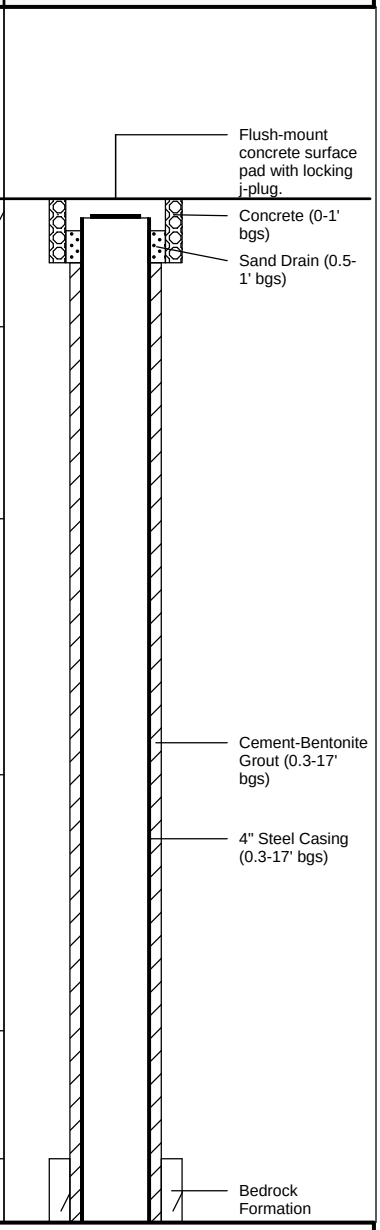
Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Date Start/Finish: August 12 and 18, 2015
Drilling Company: Nothnagle Drilling, Inc.
Driller's Name: Steve Loranty
Drilling Method: Hollow Stem Auger/Rock Core
Auger Size: 6-1/4" ID/HQ Core Barrel
Rig Type: CME 85 Truck Mounted Rig
Sampling Method: 4' Macrocore

Northing: 1019281.30
Easting: 1353655.12
Casing Elevation: 757.73' AMSL
Borehole Depth: 37.0' bgs
Surface Elevation: 757.55' AMSL
Descriptions By: Nicholas (Klaus) Beyrle

Well ID/Boring ID: **MW-6**
Client: RG&E
Site Location: 6 Park Street, Geneseo, New York

Depth (ft bgs) / Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
760 / 0								
0 / 755						0.0		Brown wood mulch.
								Yellowish brown very fine to medium SAND, little Silt, little fine to coarse Gravel, no plasticity, no dilatancy, dry.
	1	0-5	NA	NA	NA	0.0		Yellowish brown very fine to medium SAND, some medium to coarse subrounded to angular Gravel, trace Silt, dry.
5 / 750	2	5-9	NA	NA	1.8	0.0 0.0 0.0		Gray, brown mottled SILT, little to trace Clay, brittle, dry.
10 / 745	3	9-13	NA	NA	2.3	0.0 0.0 0.0		Gray weathered SHALE bedrock, some to little Silt, brittle, dry.
	4	13-15	NA	NA	1.2	0.0 0.0		Gray weathered SHALE bedrock, brittle, dry. Top of competent SHALE bedrock at 15 ft bgs.
15								Dark gray SHALE, breaks across entire length.



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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Client: RG&E

Well/Boring ID: **MW-6**

Borehole Depth: 37.0' bgs

Site Location:

6 Park Street,
Geneseo, New York

Depth (ft. bgs) / Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
	5	15-17	NA	NA	0	NA		Dark gray SHALE, breaks across entire length.	Cement-Bentonite Grout (0.3-17' bgs)
740			4.62 min/ft 4.00 min/ft					Dark gray SHALE, medium hard, horizontal joint 2-3mm wide 17.7, 1-3mm wide 18.04, 1-2mm wide 18.18, 1-2mm wide 18.35, 18.43-18.45, 18.65-18.67 ft bgs, mechanical break 18.82 ft bgs, horizontal joint 1-2mm wide 18.95 ft bgs, mechanical break 19.13 ft bgs, horizontal break 19.5-19.52 ft bgs, mechanical break 20.21, 20.56 ft bgs.	
20	6	17-22	3.25 min/ft 2.15 min/ft 2.12 min/ft	35	3.7	NA			
735			4.15 min/ft 3.95 min/ft					Dark gray SHALE, medium hard, horizontal joint, 22.17, 1-3mm wide 22.46, 22.73, 22.9, 23.69, 24.1 ft bgs, 45-deg joint 23.95-24.4 ft bgs, broken zone 24.7-24.8 ft bgs, horizontal joint 25.4-25.42 ft bgs, mechanical break 26.47 ft bgs.	Open Bedrock Hole (17-37' bgs)
25	7	22-27	5.73 min/ft 4.58 min/ft 5.67 min/ft	73	3.7	NA			Bedrock Formation
730			6.02 min/ft 4.50 min/ft					Dark gray SHALE, medium hard, 45-deg joint 27-27.55 ft bgs, horizontal joint 27.55, 1-2mm wide 28.9, 1-3mm wide 29.75, 30.55, 31 ft bgs, mechanical break 31.45 ft bgs.	
30	8	27-32	4.30 min/ft NA NA	100	5.0	NA			
725			NA NA					Dark gray SHALE, medium hard, horizontal joint with trace calcium-like mineral deposit 32.36 ft bgs, broken zone 32.8-33.2, 33.85-33.95 ft bgs, mechanical break 34.2 ft bgs, horizontal joint 1-3mm wide 35.3 ft bgs, mechanical break 35.9 ft bgs, broken zone 36.8-37 ft bgs.	
35	9	32-37	NA NA	75	5.0	NA			
								Dark gray SHALE, medium hard, horizontal joint with trace calcium-like mineral	

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Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Client: RG&E

Well/Boring ID: **MW-6**

Borehole Depth: 37.0' bgs

Site Location:

6 Park Street,
Geneseo, New York

Depth (ft. bgs) / Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
			NA					deposit 32.36 ft bgs, broken zone 32.8-33.2, 33.85-33.95 ft bgs, mechanical break 34.2 ft bgs, horizontal joint 1-3mm wide 35.3 ft bgs, mechanical break 35.9 ft bgs, broken zone 36.8-37 ft bgs.	Open Bedrock Hole (17-37' bgs)
								End of boring at 37.0' bgs.	

720
40
715
45
710
50
705
55

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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Date Start/Finish: August 11 and 13-14, 2015
Drilling Company: Nothnagle Drilling, Inc.
Driller's Name: Steve Loranty
Drilling Method: Hollow Stem Auger/Rock Core
Auger Size: 6-1/4" ID/HQ Core Barrel
Rig Type: CME 85 Truck Mounted Rig
Sampling Method: 4' Macrocore

Northing: 1019380.35
Easting: 1353503.14
Casing Elevation: 744.07' AMSL
Borehole Depth: 30.5' bgs
Surface Elevation: 743.96' AMSL
Descriptions By: Nicholas (Klaus) Beyrle

Well ID/Boring ID: MW-7
Client: RG&E
Site Location: 6 Park Street, Geneseo, New York

Depth (ft bgs) / Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
745 / 0								
						7.8		TOPSOIL. Yellowish brown very fine to medium SAND, some Silt, little very fine to medium Gravel, some brick debris, some rootlets, no plasticity, no dilatancy, moist.
	1	0-5	NA	NA	NA	0.0		Dark brown SILTY CLAY, medium plasticity, no dilatancy, soft, moist.
740 / 5								Yellowish brown CLAYEY SILT, trace fine Sand, trace Gravel, medium plasticity, no dilatancy, moist.
	2	5-8.5	NA	NA	3.3	0.0		
						0.0		Yellowish brown SILT, little very fine to fine Sand, no plasticity, no dilatancy, loose to medium dense, brittle, dry.
								Gray weathered SHALE bedrock. Top of competent SHALE bedrock at 8.3 ft bgs.
735 / 10	3	8.5-10.5	NA	NA	NA	NA		Interval not sampled/logged.
	4	10.5-15.5	10.00 min/ft, 10.00 min/ft, 11.00 min/ft, 10.00 min/ft, 10.00 min/ft	22	4.04	NA		Dark gray SHALE, medium hard, broken zone 10.6-11.2 ft bgs, horizontal joint 13.1, 13.9, 14, 14.4 ft bgs, vertical mechanical joint 12.5-14.7 ft bgs.
730 / 15								Dark gray SHALE, medium hard, horizontal joint 15.7, 16.75, 17.7, 18.45, 19.25, 20.1 ft bgs, 72-deg joint 16-16.65 ft bgs.

Well Construction:
- Flush-mount concrete surface pad with locking j-plug.
- Concrete (0-1' bgs)
- Sand Drain (0.5-1' bgs)
- Cement-Bentonite Grout (0.3-10.5' bgs)
- 4" Steel Casing (0.3-10.5' bgs)
- Bedrock Formation
- Bedrock Formation

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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Client: RG&E

Well/Boring ID: **MW-7**

Borehole Depth: 30.5' bgs

Site Location:

6 Park Street,
Geneseo, New York

Depth (ft. bgs) / Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
725 / 20	5	15.5-20.5	8.00 min/ft 8.50 min/ft 9.50 min/ft 10.00 min/ft 10.00 min/ft	89	4.89	NA		Dark gray SHALE, medium hard, horizontal joint 15.7, 16.75, 17.7, 18.45, 19.25, 20.1 ft bgs, 72-deg joint 16-16.65 ft bgs.	
720 / 25	6	20.5-25.5	8.00 min/ft 10.00 min/ft 11.00 min/ft 11.00 min/ft 9.00 min/ft	93	4.92	NA		Dark gray SHALE, medium hard, horizontal joint 1mm wide 20.83 ft bgs, mechanical break 21.3 ft bgs, horizontal joint with calcium-like mineral deposit 1-2mm wide 21.9, 21.96 ft bgs, mechanical break 23.86, 24.6 ft bgs.	Open Bedrock Hole (10.5-30.5' bgs)
715 / 30	7	25.5-30.5	11.00 min/ft 11.00 min/ft 10.00 min/ft 11.00 min/ft 12.00 min/ft	69	4.71	NA		Dark gray SHALE, medium hard, mechanical break 25.65, 25.9 ft bgs, horizontal joint with calcium-like mineral deposit 1mm wide 26.4, 1-3mm wide 27.65 ft bgs, mechanical break 27.9, 29 ft bgs, 54-deg joint 28.2-28.4 ft bgs.	
710 / 35								End of boring at 30.5' bgs.	

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Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA. 4" steel casing set 2 ft into competent bedrock. Open hole bedrock well installed using HQ core barrel.

Date Start/Finish: August 13, 2015
Drilling Company: Nothnagle Drilling, Inc.
Driller's Name: Steve Loranty
Drilling Method: Hollow Stem Auger/Rock Core
Auger Size: 6-1/4" ID
Rig Type: CME 85 Truck Mounted Rig
Sampling Method: 4' Macrocore

Northing: 1019356.16
Easting: 1353766.74
Casing Elevation: NA
Borehole Depth: 12.9' bgs
Surface Elevation: 759.24' AMSL
Descriptions By: Nicholas (Klaus) Beyrle

Well ID/Boring ID: **SB-1**
Client: RG&E
Site Location: 6 Park Street, Geneseo, New York

Depth (ft bgs) / Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
760									
0								Asphalt.	Asphalt cold patch (0-0.3' bgs)
								Road base gravel.	
	1	0-5	NA	NA	NA	0.0		Brown fine to coarse SAND and fine to coarse rounded Gravel, little cobbles, some Silt, dry to moist.	
755									
5									
	2	5-9	NA	NA	1.6	0.0 0.0		Dark brown grading to brown SILT and very fine SAND, some-little Clay, trace very fine to medium angular Gravel, low plasticity, soft, dry to moist.	Cement-Bentonite Grout (0.3-12.9' bgs)
750									
10						0.0		Brown SILT and CLAY, orange mottled, medium stiff, no plastic, dry.	
	3	9-12.9	NA	NA	3.8	0.0 0.0		Gray weathered SHALE bedrock, dry. Top of weathered SHALE bedrock at 11 ft bgs.	
								End of boring at 12.9' bgs.	
745									
15									

ARCADIS
Infrastructure, environment, buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA.

Date Start/Finish: August 13, 2015
Drilling Company: Nothnagle Drilling, Inc.
Driller's Name: Steve Loranty
Drilling Method: Hollow Stem Auger/Rock Core
Auger Size: 6-1/4" ID
Rig Type: CME 85 Truck Mounted Rig
Sampling Method: 4' Macrocore

Northing: 1019292.15
Easting: 1353750.52
Casing Elevation: NA
Borehole Depth: 13.2' bgs
Surface Elevation: 760.19' AMSL
Descriptions By: Nicholas (Klaus) Beyrle

Well ID/Boring ID: SB-2
Client: RG&E
Site Location: 6 Park Street, Geneseo, New York

Depth (ft bgs) / Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
0 / 760								Asphalt.	Asphalt cold patch (0-0.3' bgs)
								Road base gravel.	
	1	0-5	NA	NA	NA	0.0		Brown coarse SAND and fine to coarse subangular to subrounded GRAVEL, moist.	
								Dark reddish brown SILT, little very fine Sand, trace small to medium subrounded Pebbles, trace brick debris, soft to medium stiff, moist.	
								Dark reddish brown SILT, little very fine Sand, trace small to medium subrounded Pebbles, soft to medium stiff, moist to wet.	
5 / 755						0.3		Brown-gray SILT, trace Clay, little to trace very fine to medium angular Gravel, strong petroleum-like odor 7.5-8.8 ft bgs, stiff, dry.	
						2.1			
	2	5-9	NA	NA	3.8	89.3			Cement-Bentonite Grout (0.3-13.2' bgs)
						372.2			
						1007			
10 / 750								Weathered SHALE bedrock and rock flour, brittle, faint petroleum-like odor. Competent bedrock at 11 ft bgs.	
	3	9-13	NA	NA	1.5	251.9			
						56.4		Dark Gray SHALE bedrock.	
	4	13-13.2	NA	NA	0.1	8.3		End of boring at 13.2' bgs.	
15 / 745									

ARCADIS
Infrastructure, environment, buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA.

Date Start/Finish: August 13, 2015
Drilling Company: Nothnagle Drilling, Inc.
Driller's Name: Steve Loranty
Drilling Method: Hollow Stem Auger/Rock Core
Auger Size: 6-1/4" ID
Rig Type: CME 85 Truck Mounted Rig
Sampling Method: 4' Macrocore

Northing: 1019287.46
Easting: 1353691.45
Casing Elevation: NA
Borehole Depth: 11' bgs
Surface Elevation: 758.49' AMSL
Descriptions By: Nicholas (Klaus) Beyrle

Well ID/Boring ID: SB-3
Client: RG&E
Site Location: 6 Park Street, Geneseo, New York

Depth (ft bgs) / Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
760									
0								Asphalt.	Asphalt cold patch (0-0.3' bgs)
								Road base gravel.	
	1	0-5	NA	NA	NA	1.1		Dark gray SILT, some very fine to fine Sand, little small to medium subrounded to subangular Gravel, soft to medium stiff, no plasticity no dilatancy, moist.	
755						2.2		Dark brown SILT, trace very fine to fine Sand, trace Clay, trace subrounded to angular fine to medium Gravel, soft to medium stiff, low to medium plasticity, no dilatancy, moist.	
						2.9		Dark brown fine to coarse SAND, trace subrounded to angular fine to medium Gravel, trace Silt, loose, dry to moist.	
5									
	2	5-9	NA	NA	3.7	0.0		Reddish-dark brown very fine to fine SILTY SAND, little Silt, trace angular to subrounded fine to medium Gravel, dense to very dense, dry.	Cement-Bentonite Grout (0.3-11' bgs)
						0.0		Light brown SILT, medium stiff, brittle, dry.	
750									
10	3	9-11	NA	NA	2.0	0.0		Light gray weathered SHALE bedrock, dry. Top of SHALE bedrock at 11ft bgs.	
								End of boring at 11.0' bgs.	
745									
15									

ARCADIS
Infrastructure, environment, buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

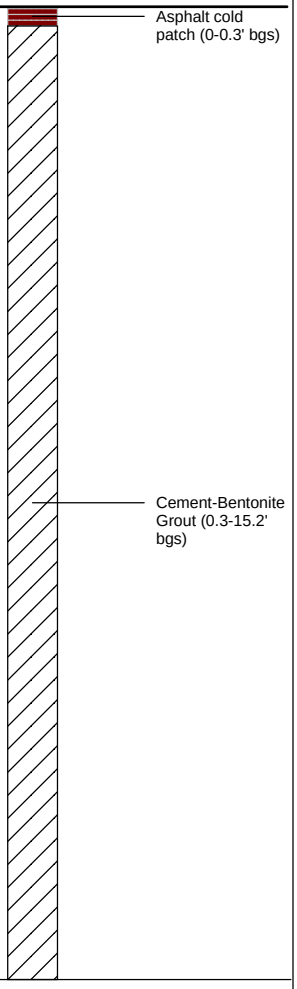
Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA.

Date Start/Finish: August 14, 2015
Drilling Company: Nothnagle Drilling, Inc.
Driller's Name: Steve Loranty
Drilling Method: Hollow Stem Auger/Rock Core
Auger Size: 6-1/4" ID
Rig Type: CME 85 Truck Mounted Rig
Sampling Method: 4' Macrocore

Northing: 1019380.09
Easting: 1353725.34
Casing Elevation: NA
Borehole Depth: 15.2' bgs
Surface Elevation: 758.33' AMSL
Descriptions By: Nicholas (Klaus) Beyrle

Well ID/Boring ID: **SB-5**
Client: RG&E
Site Location: 6 Park Street, Geneseo, New York

Depth (ft bgs) / Elevation (ft AMSL)	Sample Run Number	Sample/Int/Type	Minutes per Foot	RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
760								
0								Asphalt.
								Road base gravel.
	1	0-5	NA	NA	NA	0.0		Brown fine to coarse SAND and SILT, some fine to coarse angular Gravel, trace brick, moist.
755								
5								Black and brown Slag and SILT, dry to moist.
						0.0		Brown SILT, little Clay, no plasticity, medium stiff, moist to dry. White calcium-like deposits possibly ash-like material 6.2-7 ft bgs.
	2	5-9	NA	NA	2.0	0.0		
750						0.0		
								Dark brown SILT, some very fine Sand, trace very fine angular to rounded Gravel, medium soft, moist.
10						0.0		Gray CLAY, orange mottled, some Silt, trace very fine angular to rounded Gravel, medium plasticity, stiff, dry to moist. Brittle 11.3-12.6 ft bgs.
	3	9-13	NA	NA	3.6	0.0		
						0.0		
								Gray CLAY, orange mottled, some Silt, trace very fine angular to rounded Gravel, brittle, medium plasticity, stiff, dry to moist. Top of weathered Shale bedrock at 13.5 ft bgs.
745						0.0		Gray weathered SHALE bedrock, brittle.
	4	13-15.2	NA	NA	2.2	0.0		
15						0.0		
								End of boring at 15.2' bgs.



ARCADIS
Infrastructure, environment, buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Location hand cleared to 5 ft bgs. Overburden drilled with 6.25" ID HSA.

APPENDIX B

PTS Laboratories, Inc. Physical Properties Report

8100 Secura Way • Santa Fe Springs, CA 90670
Telephone (562) 347-2500 • Fax (562) 907-3610

February 9, 2016

Bruce Ahrens
ARCADIS U.S., Inc.
295 Woodcliff Dr.
Fairport, NY 14450

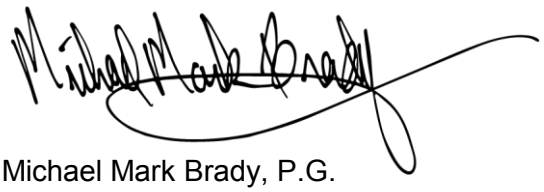
Re: PTS File No: 45755R1
Physical Properties Data
Geneseo Park Street Former MGP; B0012128.0001

Dear Mr. Ahrens:

Please find enclosed REVISED report for Physical Properties analyses conducted upon samples received from your Geneseo Park Street Former MGP; B0012128.0001 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. The report was revised to include extrapolated Viscosity data per client request. The samples are currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please give me a call at (562) 347-2502.

Sincerely,
PTS Laboratories, Inc.



Michael Mark Brady, P.G.
Laboratory Director

Encl.

Project Name: Geneseo Park Street Former MGP
Project Number: B0012128.0001

PTS File No: 45755R1
Client: ARCADIS U.S., Inc.

TEST PROGRAM - 20151224

FLUID ID	Date	Time	Fluid Type	Fluid Properties Pkg.	Fluid Cleaning				Comments
			Method:	ASTM D1481, 445, 971	Proprietary				
Date Received: 20151224									
DNAPLMW-5	**20151217**	**1030**	**DANPL/Water**	**X**	**X**				
TOTALS:			**4 jars**	**1**	**1**				

Laboratory Test Program Notes

Standard TAT for basic analysis is 10 business days.

Fluid Properties Package - DNAPL & Water: Includes dynamic viscosity and fluid density at three temperatures (70, 100, 130°F), surface tension for each fluid, and interfacial tensions (three phase pairs; oil/water, oil/air, and water/air (at ambient laboratory temperature)).

Per client request include extrapolated Viscosity at 55°F

PTS Laboratories

PTS File No: 45755R1
Client: ARCADIS U.S., Inc.
Report Date: 02/09/16

VISCOSITY, DENSITY, and SPECIFIC GRAVITY DATA

(METHODOLOGY: ASTM D445, ASTM D1481, API RP40)

Project Name: Geneseo Park Street Former MGP
Project No: B0012128.0001

SAMPLE ID	MATRIX	TEMPERATURE, °F	SPECIFIC GRAVITY	DENSITY, g/cc	VISCOSITY	
					centistokes	centipoise
DNAPLMW-5	Water	55	- -	- -	*1.21	- -
		70	1.004	1.002	1.04	1.04
		100	1.004	0.9975	0.714	0.712
		130	1.003	0.9889	0.542	0.536
DNAPLMW-5	NAPL	55	- -	- -	*8000	- -
		70	1.158	1.156	2000	2310
		100	1.151	1.143	329	376
		130	1.146	1.130	72.7	82.1

*Extrapolated using ASTM D341 Viscosity-Temperature Charts

QUALITY CONTROL DATA

Date:	01/21/16	01/21/16	01/28/16
FLUID TYPE:	Cannon® CVS S3	DI Water	Cannon® CVS S3
TEMPERATURE, °F:	70	70	70
DENSITY, MEASURED:	0.8636	0.9982	
DENSITY, PUBLISHED:	0.8631	0.9980	
RPD:	0.05	0.02	
VISCOSITY, MEASURED:		1.00	4.57
VISCOSITY, PUBLISHED:		0.98	4.54
RPD:		2.09	0.67

CVS Lot #: 15201 CVS = Certified Viscosity Standard

PTS File No: 45755R1
Client: ARCADIS U.S., Inc.
Report Date: 02/09/16

PTS Laboratories

INTERFACIAL / SURFACE TENSION DATA

(METHODOLOGY: DuNuoy Method - ASTM D971)

Project Name: Geneseo Park Street Former MGP
Project No: B0012128.0001

PHASE PAIR		TEMPERATURE,	INTERFACIAL TENSION,
SAMPLE ID / PHASE	SAMPLE ID / PHASE	°F	Dynes/centimeter
DNAPLMW-5 / Water	Air	73	55.8
DNAPLMW-5 / NAPL	Air	73	39.7
DNAPLMW-5 / NAPL	DNAPLMW-5 / Water	73	22.2

QUALITY CONTROL DATA

Date: 01/29/16
PHASE PAIR: DIWATER / AIR
TEMPERATURE, °F: 71
IFT, MEASURED: 71.9
IFT, PUBLISHED: 72.5
RPD: -0.81

PTS Laboratories, Inc.

CHAIN OF CUSTODY RECORD

COMPANY	Arcadis
ADDRESS	295 Woodcliff Drive
CITY	Fairport, NY
ZIP CODE	14450
PROJECT MANAGER	Bruce Ahrens
email	bruce.ahrens@arcadis.com
PROJECT NAME	Geneseo Park Street Former MGP
PHONE NUMBER	585-662-4034
PROJECT NUMBER	B0013138.0001
FAX NUMBER	585-385-4198
SITE LOCATION	Geneseo, New York
SAMPLER SIGNATURE	

PO#

TURNAROUND TIME
24 HOURS ☐ 5 DAYS ☐
72 HOURS ☐ NORMAL ☑
OTHER: _____

SAMPLE INTEGRITY (CHECK):
INTACT ____ TEMP(F)____

PTS QUOTE NO.
15-242

PTS FILE:
45755

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	DEPTH, FT	NUMBER OF SAMPLES	SOIL PROPERTIES PACKAGE	HYDRAULIC CONDUCTIVITY PACKAGE	PORE FLUID SATURATIONS PACKAGE	TCEQ/TNRCC PROPERTIES PACKAGE	CAPILLARITY PACKAGE	FLUID PROPERTIES PACKAGE	PHOTOLOG: CORE PHOTOGRAPHY	VAPOR TRANSPORT PACKAGE	POROSITY: TOTAL, AIR FILLED, WATER FILLED	POROSITY: EFFECTIVE, ASTM D425M	SPECIFIC GRAVITY, ASTM D854	BULK DENSITY (DRY), API RP40 or ASTM D2937	AIR PERMEABILITY, API RP40	HYDRAULIC CONDUCTIVITY, EPA9100/API RP40 or D5084	GRAIN SIZE DISTRIBUTION, ASTM D422 or 4464M	TOC: WALKLEY-BLACK	ATTERBERG LIMITS, ASTM D4318	VAPOR INTRUSION PACKAGE	FREE PRODUCT MOBILITY PACKAGE			COMMENTS
DNAPLMW-5	12.17.15	1030	35	4						X																

1. RELINQUISHED BY: Nicholas Boyle
COMPANY: ARCADIS
DATE: 12.17.15 TIME: 1400

2. RECEIVED BY:
COMPANY: PTS Labs. Inc
DATE: 12/24/15 TIME: 0955

3. RELINQUISHED BY
COMPANY
DATE TIME

4. RECEIVED BY
COMPANY
DATE TIME

PTS Laboratories, Inc. • 8100 Secura Way • Santa Fe Springs, CA 90670 • Phone (562) 347-2500 • Fax (562) 279-1150

APPENDIX C

Soil Gas Sample Collection Logs

Soil Gas Sample Collection Log

ARCADIS

Sample ID: SV-1

Client:	RGE	**Date/Day:**	9 / 2 / 15
Project:	Genesee Park St	**Weather:**	Calm am cast, 30.1"
Location:	Genesee, NY	**Temperature:**	65°F
Project #:	B0013134	**Wind Speed/Direction:**	Calm, SE (ft/min) (mph)
Samplers:	NSG/MMH	**Subcontractor:**	N/A
Logged By:		**Equipment:**	
Background PID Ambient Air Reading:	0 ppb	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:	~~3.8 BGS~~ 2.8-3.8 bgs		
Probe (circle one):	Permanent / (Temporary)	**Approximate Volume of Sampling Train::**	60 mL= (6 ' of 1/4 " ID tubing)
Time of Collection:	Start: 0840 Finish: 1440	**Approximate Purge Volume:**	180 mL= [(60) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): 1 L 3 L (6 L) **Other:** ___ L

Canister ID: 3317

Flow Controller ID: 2528

Tracer Gas Information (if applicable)

Tracer Gas: Helium

Canister Pressure (inches Hg): ~~30~~ -30

Reported By Laboratory	Measured Prior to Sample Collection	Measured Following Sample Collection
-30.0	Analog: -30 / Digital: - NA	Analog: - 6 / Digital: -

Tracer Gas Concentration (if applicable):

Measured from Soil Vapor Tubing		Measured in 'Concentrated' Area		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
0 ppm ppm	0 ppm	~~90.1~~ 77.4 %	~~Clipped~~ %	1725 AM %

General Observations/Notes:

Photo ID:	ppb reading on the PID following sample
Analog reading (-) after ( ) hrs.	Collected from soil vapor tubing.
Analog reading (-) after ( ) hrs.	
Differential Pressure:	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Screened 2.8-3.8 - 3 to ground
3 above ground = 6

Soil Gas Sample Collection Log

ARCADIS

Sample ID: SV-2

Client:	RGE	**Date/Day:**	9 / 2 / 15
Project:	Gansevoort Park St	**Weather:**	Calm, Clear 30.1
Location:	Gansevoort NY	**Temperature:**	71°F
Project #:	B0015138	**Wind Speed/Direction:**	Smph/SE (ft/min) (mph)
Samplers:	NJB/MM	**Subcontractor:**	None
Logged By:	NJB	**Equipment:**	None
Background PID Ambient Air Reading:	0 ppb	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:			
Probe (circle one):	Permanent / (Temporary)	**Approximate Volume of Sampling Train::**	60 mL= (6 ' of 1/4 " ID tubing)
Time of Collection:	Start: 0920 Finish: ~~1500~~	**Approximate Purge Volume:**	180 mL= [(60) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): 1 L 3 L (6 L) **Other:** ___ L

Canister ID: 3641

Flow Controller ID: 4937

Tracer Gas Information (if applicable)

Tracer Gas: He

Canister Pressure (inches Hg):

Reported By Laboratory	Measured Prior to Sample Collection	Measured Following Sample Collection
-30.0	Analog: -27.5 / Digital: -	Analog: -6.5 / Digital: -

Tracer Gas Concentration (if applicable):

Measured from Soil Vapor Tubing		Measured in 'Concentrated' Area		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
0 ppm	0 ppm	92.9 %	42.3 %	14275 ppm ~~%~~

General Observations/Notes:

Photo ID:	ppb reading on the PID following sample
Analog reading (-) after ( ) hrs.	Collected from soil vapor tubing.
Analog reading (-) after ( ) hrs.	
Differential Pressure:	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

screen 2.75-3.75

Tubing above 2.75 = 2.7

Tubing above 2.2 + 0.8 = 3 = ~6f

2.2

Soil Gas Sample Collection Log

ARCADIS

Sample ID: SV-3

Client:	RGE	**Date/Day:**	9 / 2 / 15
Project:	Genesco Park SI	**Weather:**	Calm, Hazy 30.1
Location:	Genesco NY	**Temperature:**	73°F
Project #:	B0013738	**Wind Speed/Direction:**	Calm SE (ft/min) (mph)
Samplers:	NJB/MMH	**Subcontractor:**	NONE
Logged By:	NJB	**Equipment:**	NONE
Background PID Ambient Air Reading:	0 ppb	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:	2.75-3.75		
Probe (circle one):	Permanent / (Temporary)	**Approximate Volume of Sampling Train::**	55 mL= (5.5 ' of ____ " ID tubing)
Time of Collection:	Start: 0955 Finish: 1530	**Approximate Purge Volume:**	165 mL= [(55) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): 1 L 3 L (6 L) **Other:** ___ L

Canister ID: 2632

Flow Controller ID: 5004

Tracer Gas Information (if applicable)

Tracer Gas: He

Canister Pressure (inches Hg):

Reported By Laboratory	Measured Prior to Sample Collection	Measured Following Sample Collection
- ~~28~~ 30	Analog: - 28 / Digital: -	Analog: - 6 / Digital: -

Tracer Gas Concentration (if applicable):

Measured from Soil Vapor Tubing		Measured in 'Concentrated' Area		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
0 ppm	0 ppm	93.0 %	33.6 %	8425 ppm ~~%~~

General Observations/Notes:

Photo ID:	ppb reading on the PID following sample
Analog reading (-) after ( ) hrs.	Collected from soil vapor tubing.
Analog reading (-) after ( ) hrs.	
Differential Pressure:	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Tubing below ground 2.75 = 5.55
Tubing Above ground = 2.8
screen 2.75-3.75
5.5

Soil Gas Sample Collection Log

ARCADIS

Sample ID: SV-4

Client:	RGE	**Date/Day:**	9 / 2 / 15
Project:	Genesee Park St	**Weather:**	Calm 30.09"
Location:	Geneseo, NY	**Temperature:**	75°F
Project #:	B0013134	**Wind Speed/Direction:**	Calm SE (ft/min) (mph)
Samplers:	NJB/MMM	**Subcontractor:**	None
Logged By:	NJB	**Equipment:**	None
Background PID Ambient Air Reading:	0 ppb	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:	2.75 - 3.75		
Probe (circle one):	Permanent / (Temporary)	**Approximate Volume of Sampling Train::**	60 mL= (6 ' of ¼ " ID tubing)
Time of Collection:	Start: 1030 Finish: 1630	**Approximate Purge Volume:**	180 mL= [(60) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): 1 L 3 L (6 L) **Other:** ___ L

Canister ID: 4824

Flow Controller ID: 3954

Tracer Gas Information (if applicable)

Tracer Gas: He

Canister Pressure (inches Hg):

Reported By Laboratory	Measured Prior to Sample Collection	Measured Following Sample Collection
-29.9	Analog: -29.5 / Digital: -	Analog: -6.5 / Digital: -

Tracer Gas Concentration (if applicable):

Measured from Soil Vapor Tubing		Measured in 'Concentrated' Area		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
750 ppm	25 ppm	93.1 %	23.0 %	7800 ppm ~~%~~

General Observations/Notes:

Photo ID:	ppb reading on the PID following sample
Analog reading (-) after ( ) hrs.	Collected from soil vapor tubing.
Analog reading (-) after ( ) hrs.	
Differential Pressure:	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

4.0
Screened 2.75 - 3.75

Tubing below = 2.75 = 6
Tubing above = 3.2

Soil Gas Sample Collection Log

ARCADIS

Sample ID: SV-5

Client:	RGE	**Date/Day:**	9 / 2 / 15
Project:	Genesee Park St	**Weather:**	Calm Sunny, Overcast 30.09"
Location:	Geneseo, NY	**Temperature:**	78°
Project #:	B0013138	**Wind Speed/Direction:**	Calm ESE 2mph (ft/min) (mph)
Samplers:	NJB / MMH	**Subcontractor:**	none
Logged By:	NJB	**Equipment:**	None
Background PID Ambient Air Reading:	0 ppb	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:	2.6-3.6		
Probe (circle one):	Permanent / (Temporary)	**Approximate Volume of Sampling Train::**	54 mL= (5.4' of 1/4" ID tubing)
Time of Collection:	Start: 1055 Finish: 1640	**Approximate Purge Volume:**	162 mL= [(54) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): 1 L 3 L (6 L) **Other:** ___ L

Canister ID: 4076

Flow Controller ID: 476

Tracer Gas Information (if applicable)

Tracer Gas: He

Canister Pressure (inches Hg):

Reported By Laboratory	Measured Prior to Sample Collection	Measured Following Sample Collection
-29.7	Analog: -29 / Digital: -	Analog: -6.5 / Digital: -

Tracer Gas Concentration (if applicable):

Measured from Soil Vapor Tubing		Measured in 'Concentrated' Area		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
350 ppm	0 ppm	91.7 %	23.8 %	7651 ppm %

General Observations/Notes:

Photo ID:	ppb reading on the PID following sample
Analog reading (-) after ( ) hrs.	Collected from soil vapor tubing.
Analog reading (-) after ( ) hrs.	
Differential Pressure:	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

5.4

Tubing below 2.6

Tubing above 2.8

5.4

Screen 2.6-3.6

Soil Gas Sample Collection Log

ARCADIS

Sample ID: SV-6 / **DUP-**090215

Client:	RGE	**Date/Day:**	9 / 2 / 15
Project:	Genesee Park SL	**Weather:**	Calm, Hazy 30s°F
Location:	Genesee NY	**Temperature:**	
Project #:	60013138	**Wind Speed/Direction:**	NNE (courtyard) (ft/min) (mph)
Samplers:	MJB / NMH	**Subcontractor:**	NOPAS
Logged By:	MB	**Equipment:**	NOPAS
Background PID Ambient Air Reading:	0 ppb	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:	2.75-3.75		
Probe (circle one):	Permanent / (Temporary)	**Approximate Volume of Sampling Train::**	65 mL= (65 of 1/4 " ID tubing)
Time of Collection:	Start: 1140 Finish: 1740	**Approximate Purge Volume:**	198 mL= [(195) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): 1 L 3 L (6 L) **Other:** ___ L

	Sample	/ DUP
Canister ID:	4087	/ 3539
Flow Controller ID:	4752	/ 4049

Tracer Gas Information (if applicable)

Tracer Gas: He

Canister Pressure (inches Hg):

Reported By Laboratory		Measured Prior to Sample Collection		Measured Following Sample Collection	
(Sample)	(DUP)	(Sample)	(DUP)	(Sample)	(DUP)
- 29.9	- 30.0	Analog: - 3	Analog: - 27.5	Analog: - -9	Analog: - -9
		Digital: -	Digital: -	Digital: -	Digital: -

Tracer Gas Concentration (if applicable):

Measured from Soil Vapor Tubing		Measured in 'Concentrated' Area		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
0 ppm	0 ppm	92.8 %	49.5 %	0 %

General Observations/Notes:

Photo ID:	ppb reading on the PID following sample
Analog reading (-) after ( ) hrs.	Collected from soil vapor tubing.
Analog reading (-) after ( ) hrs.	
Differential Pressure:	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

4.8

Tubing below = 2.75
Tubing above = 3.8 = 6.55

Soil Gas Sample Collection Log

ARCADIS

Sample ID: ~~SV-6~~ SV-7

Client:	RGE	**Date/Day:**	9 / 2 / 15
Project:	Geasco Park SL	**Weather:**	Sunny 30.08"
Location:	Geasco, NY	**Temperature:**	83°F
Project #:	B0013138	**Wind Speed/Direction:**	~~2mph WSW~~ (circle) (ft/min) (mph)
Samplers:	NSB / MMH	**Subcontractor:**	None
Logged By:	NSB	**Equipment:**	None
Background PID Ambient Air Reading:	0 ppb	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:	2.0-3.0		
Probe (circle one):	Permanent / (Temporary)	**Approximate Volume of Sampling Train::**	51 mL= (5' of 1/4 " ID tubing)
Time of Collection:	Start: 1200 Finish: 1400	**Approximate Purge Volume:**	153 mL= [(51) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): 1 L 3 L (6 L) **Other:** ___ L

Canister ID: 4455

Flow Controller ID: 3856

Tracer Gas Information (if applicable)

Tracer Gas: He

Canister Pressure (inches Hg):

Reported By Laboratory	Measured Prior to Sample Collection	Measured Following Sample Collection
- 30.0	Analog: - 30 / Digital: -	Analog: - 6 / Digital: -

Tracer Gas Concentration (if applicable):

Measured from Soil Vapor Tubing		Measured in 'Concentrated' Area		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
0 ppm	0 ppm	92.4 %	46.9 %	0 ppm %

General Observations/Notes:

Photo ID:	ppb reading on the PID following sample
Analog reading (-) after ( ) hrs.	Collected from soil vapor tubing.
Analog reading (-) after ( ) hrs.	
Differential Pressure:	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Above ground tubing = 3.1 = 5.1
Below ground tubing = 2

4.1

APPENDIX D

Data Usability Summary Report (DUSR)

ARCADIS
Infrastructure · Water · Environment · Buildings

Imagine the result

Rochester Gas & Electric – Geneseo Park Street Site

Data Usability Summary Report

GENESEO, NEW YORK

Volatile, Semivolatile, Metals and Cyanide Analyses

SDG #480-85554-1 and 480-85640-1

Analyses Performed By:
TestAmerica
Amherst, New York

Report #24467R
Review Level: Tier III
Project: B0013138.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #200-29600-1 for samples collected in association with the Rochester Gas & Electric Geneseo Park Street Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	TPH	MET	MISC
480-85554	MW-5 (10-12)	480-85554-1	Soil	8/11/2015		X	X		X	X
	MW-5 (12-14)	480-85554-2	Soil	8/11/2015		X	X		X	X
	MW-6 (9-11)	480-85554-3	Soil	8/12/2015		X	X		X	X
	MW-6 (13-14.2)	480-85554-4	Soil	8/12/2015		X	X		X	X
	MW-4 (5-7)	480-85554-5	Soil	8/10/2015		X	X		X	X
	MW-4 (13-14.5)	480-85554-6	Soil	8/10/2015		X	X		X	X
	MW-1 (5-7)	480-85554-7	Soil	8/11/2015		X	X		X	X
	MW-1 (9-11)	480-85554-8	Soil	8/11/2015		X	X		X	X
	DUP-081115	480-85554-9	Soil	8/11/2015	MW-1 (9-11)	X	X		X	X
480-85640	MW-2 (5-7)	480-85640-1	Soil	8/12/2015		X	X		X	X
	MW-2 (9-13)	480-85640-2	Soil	8/12/2015		X	X		X	X
	MW-7 (4-6)	480-85640-3	Soil	8/12/2015		X	X		X	X
	MW-7 (6-8.3)	480-85640-4	Soil	8/12/2015		X	X		X	X
	MW-3 (7-9)	480-85640-5	Soil	8/13/2015		X	X	X	X	X
	MW-3 (9-10.2)	480-85640-6	Soil	8/13/2015		X	X		X	X
	TRIP BLANK	480-85640-7	Water	8/13/2015		X				

Note:

1. Miscellaneous parameters include total cyanide.
2. Matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location MW-6 (9-11) and MW-3 (7-9).

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 8260C, 8270D and NYDOH 310.13 (total petroleum hydrocarbons-TPH). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis (preserved) 7 days from collection to analysis (non-preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.
	Soil	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to <6 °C.

The laboratory noted, "The following samples were received outside of the preparation holding time. As such, the laboratory could not perform the analysis within holding time: MW-4 (5-7) (480-85554-5), MW-4 (13-14.5) (480-85554-6) and DUP-081115 (480-85554-9)." Samples prepared beyond the method prescribed holding time were qualified as estimated (J).

The analyses that exceeded the holding time are presented in the following table.

Sample Locations	Holding Time	Criteria
MW-4 (5-7) MW-4 (13-14.5) DUP-081115	~72 Hours	48 Hours

Sample results associated with sample locations analyzed by analytical method SW-846 8260 were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
MW-7 (4-6) MW-7 (6-8.3)	Acetone (TB)	Detected sample results <RL and <BAL	"UB" at the RL
MW-2 (5-7)	Acetone (TB)	Detected sample results >RL and <BAL	"UB" at detected sample concentration

RL Reporting limit
TB Trip Blank

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
All samples associated with SDG 480-85554	ICV %RSD	Dichlorodifluoromethane	17.6%
		Dibromchloromethane	17.0%

Sample Locations	Initial/Continuing	Compound	Criteria
	CCV %D	Dichlorodifluoromethane	25.2%
		Vinyl chloride	23.7%
		Trichlorofluoromethane	22.5%
		1,1-Dichloroethene	23.2%
		Carbon disulfide	20.7%
		1,1,1-Trichloroethane	21.6%
		1,1-Dichloropropene	22.0%
MW-7 (6-8.3) MW-3 (9-10.2)	ICV %RSD	Dichlorodifluoromethane	17.6%
		Dibromchloromethane	17.0%
MW-3 (7-9)	ICV %RSD	Methylene chloride	16.9%
		Dibromchloromethane	20.0%
		Bromoform	18.2%
		1,2-Dibromo-3-Chloropropane	18.7%
	CCV %D	Bromoform	27.0%
MW-2 (5-7) MW-2 (9-13) MW-7 (4-6)	ICV %RSD	Methylene chloride	18.2%
	CCV %D	Chloromethane	-27.6%
		Bromoform	29.8%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
MW-4 (5-7)	1,2-Dichloroethane-d4	AC
	4-Bromofluorobenzene	< LL but > 10%
	Dibromofluoromethane	AC
	Toluene-d8	AC

LL Lower control limit
AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
MW-6 (9-11)	1,1,2,2-Tetrachloroethane	<LL but >10%	<LL but >10%
	1,2,4-Trichlorobenzene	<LL but >10%	<LL but >10%
	1,2-Dibromo-3-Chloropropane	<LL but >10%	<LL but >10%
	1,2-Dibromoethane	<LL but >10%	AC
	1,2-Dichlorobenzene	<LL but >10%	<LL but >10%
	1,3-Dichlorobenzene	<LL but >10%	<LL but >10%
	1,4-Dichlorobenzene	<LL but >10%	<LL but >10%
	2-Butanone (MEK)	<LL but >10%	AC
	4-Methyl-2-pentanone	<LL but >10%	AC
	Bromoform	<LL but >10%	AC

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Please note the MS/MSD analysis performed on sample location MW-3 (7-9) exhibited recoveries and RPD above the control limits for the majority of target compounds; therefore detected compounds were qualified as estimated (J).

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery	LCSD Recovery
MW-2 (5-7) MW-2 (9-13) MW-7 (4-6)	Bromoform	>UL	NA
	Chloroethane	<LL but >10%	NA
MW-7 (6-8.3) MW-3 (9-10.2)	2-Butanone	>UL	>UL

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-1 (9-11)/ DUP-081115	Acetone	8.4 J	7.6 J	AC
	Benzene	0.72 J	0.50 J	AC
	Toluene	1.4 J	0.67 J	AC
	Xylenes, total	1.6 J	7.7 U	AC

AC Acceptable
NC Not compliant

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
MW-5 (12-14)	Benzene	510 E	6000 D	6000 D
	Ethylbenzene	240 E	5900 D	5900 D
MW-1 (5-7)	Benzene	370 E	2300 D	2300 D
	Toluene	600 E	6100 D	6100 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks		X	X		
Laboratory Control Sample (LCS)		X	X		
Laboratory Control Sample Duplicate(LCSD)		X	X		
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)		X	X		
Matrix Spike Duplicate(MSD)		X	X		
MS/MSD Precision (RPD)		X	X		
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present				X	

VOCs: SW-846 8260C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
All samples associated with this SDG	ICV %RSD	2-Nitrophenol	18.4%
		2,6-Dinitrotoluene	16.1%
		Di-n-octyl phthalate	17.1%
MW-5 (10-12) MW-5 (12-14) MW-6 (9-11) MW-6 (13-14.2) MW-4 (5-7) MW-1 (5-7) MW-1 (9-11) DUP-081115	CCV %D	Benzaldehyde	37.8%
		Di-n-octyl phthalate	23.2%
MW-4 (13-14.5)	CCV %D	Benzaldehyde	26.9%
		2-Nitrophenol	20.3%
MW-2 (5-7) MW-7 (4-6) MW-7 (6-8.3) MW-3 (7-9) MW-3 (9-10.2) TRIP BLANK	CCV %D	Benzaldehyde	50.1%
MW-2 (9-13)	CCV %D	Benzaldehyde	50.4%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J

Initial/Continuing	Criteria	Sample Result	Qualification
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
MW-5 (12-14)	Phenol-d6	AC
	2-Fluorophenol	AC
	2,4,6-Tribromophenol	AC
	Nitrobenzene-d5	AC
	2-Fluorobiphenyl	AC
	Terphenyl-d14	<LL but > 10%

LL Lower control limit
AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	J[1]
	Detect	

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Please note a reduced list of target analytes was used for the MS/MSD analysis. The MS/MSD associated with sample MW-6 (9-11) exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

The MS/MSD analysis associated with sample location MW-3 (7-9) was performed at a 20-fold dilution; therefore, percent recoveries were not evaluated for this sample.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Please note a reduced list of target analytes was used for the LCS analysis. All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-1 (9-11)/ DUP-081115	All compounds	U	U	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
MW-1 (5-7)	Naphthalene	140000 E	160000 D	160000 D
	Phenanthrene	110000 E	140000 D	140000 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

The laboratory noted the samples associated with SDG 480-85640 were analyzed at dilutions due to the nature of the sample matrix and/or extract viscosity; therefore elevated detection limits were provided.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

PETROLEUM PRODUCTS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Petroleum products By NYSDOH 310.13	Soil	14 days from collection to analysis	Cool to <6 °C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% or a correlation coefficient of greater than 0.99 is allowed.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All calibration criteria were within the control limits.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

7. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not included for this parameter.

8. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified compounds met the specified criteria.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PETROLEUM PRODUCTS

Petroleum Products: By NYSDOH 310.13	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries					X
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010C and 9012B. Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

  B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

  E The reported value is estimated due to the presence of interference.

  N Spiked sample recovery is not within control limits.

  * Duplicate analysis is not within control limits.

- Validation Qualifiers

  J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Preserve to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. All initial calibration verification standard recoveries were within control limits.

All continuing calibration verification standard recoveries were within the control limit.

3.2 Low Level Continuing Calibration Standard

The low level continuing calibration check standard (ICVL/CCVL) serves to verify the linearity of calibration of the analysis at the RL.

The ICVL/CCVL standard recoveries were within the control limits of 70 to 130%.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

All analytes associated with MS/MSD recoveries were within control limits with the exception of the following analyte present in the table below.

Sample Location	Analyte	MS Recovery	MSD Recovery
MW-6 (9-11)	Antimony	<LL but >30%	<LL but >30%
	Barium	AC	>UL
	Magnesium	>UL	>UL
	Potassium	>UL	>UL
	Vanadium	>UL	>UL
	Zinc	AC	<LL but >30%
MW-3 (7-9)	Antimony	<LL but >30%	<LL but >30%
	Barium	>UL	>UL
	Potassium	>UL	>UL

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are applied to all sample results associated with this SDG.

Control limit	Sample Result	Qualification
MS/MSD percent recovery 30% to 74%	Non-detect	UJ
	Detect	J
MS/MSD percent recovery <30%	Non-detect	R
	Detect	J
MS/MSD percent recovery >125%	Non-detect	No Action
	Detect	J

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices.

MS/MSD analysis was performed in addition to the laboratory duplicate analysis. The laboratory duplicate and MS/MSD recoveries exhibited acceptable RPD.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-1 (9-11)/ DUP-081115	Aluminum	17100	15200	11.8%
	Arsenic	2.9	3.1	AC
	Barium	86.4	45.9	61.2%
	Beryllium	0.83	0.74	AC
	Cadmium	0.041 J	0.048 J	AC
	Calcium	45300	41800	8.0%
	Chromium	26.1	23.8	9.2%
	Cobalt	13.7	13.3	3.0%
	Copper	28.0	27.3	2.5%
	Iron	23800	22400	6.1%
	Lead	10.1	11.2	10.3%
	Magnesium	8340	7520	10.3%
	Manganese	333	304	9.1%
	Nickel	44.5	41.6	6.7%
	Potassium	3470	2750	23.2%
	Sodium	212	163	AC
	Vanadium	20.9	17.2	19.4%

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Zinc	71.7	76.4	6.3%

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

All serial dilutions were within control limits, with the exception of the analytes presented in the following table.

Sample Locations	Analytes	Serial Dilution (%D)
MW-6 (9-11)	Aluminum	18%
	Barium	22%
	Calcium	19%
	Chromium	20%
	Iron	20%
	Magnesium	17%
	Manganese	20%
	Potassium	21%
	Vanadium	22%
	Zinc	23%
MW-3 (7-9)	Aluminum	17%
	Barium	20%
	Calcium	24%
	Chromium	21%
	Copper	12%
	Iron	24%
	Magnesium	16%
	Manganese	22%
	Potassium	16%

	Vanadium	17%
	Zinc	23%

The criteria used to evaluate the serial dilution are presented in the following table. In the case of a serial dilution deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS; SW-846 6010C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X		X	
B. Method Blanks		X		X	
C. Equipment/Field Blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Lab Duplicate (RPD)					X
Field Duplicate (RPD)		X		X	
ICP Serial Dilution		X	X		
Reporting Limit Verification		X		X	
Raw Data		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CCVL Standard		X		X	
ICP Interference Check		X		X	
Transcription/calculations acceptable		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Total Cyanide SW-846 9012B	Water	14 days from collection to analysis	Cool to <6°C; preserved to a pH of greater than 12.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of

four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier “N” will be removed.

The MS/MSD analysis exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate analysis exhibited recoveries within the control limits.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-1 (9-11)/ DUP-081115	Cyanide	0.86 J	0.55 J	AC

AC Acceptable
NC Not compliant

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit recoveries between the control limits of 80% and 120%.

All analytes associated with the LCS analysis exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: SW-846 9012B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present				X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	TPH	MET	MISC	
480-85554	8/11/2015	SW846	MW-5 (10-12)	Soil	No	No	-	No	Yes	VOC: ICV %RSD SVOC: ICV %RSD MET: MS/MSD%R, Serial Dln
	8/11/2015	SW846	MW-5 (12-14)	Soil	No	No	-	No	Yes	VOC: ICV %RSD SVOC: ICV %RSD MET: MS/MSD%R, Serial Dln
	8/12/2015	SW846	MW-6 (9-11)	Soil	No	No	-	No	Yes	VOC: ICV %RSD, MS/MSD%R SVOC: ICV %RSD MET: MS/MSD%R, Serial Dln
	8/12/2015	SW846	MW-6 (13-14.2)	Soil	No	No	-	No	Yes	VOC: ICV %RSD SVOC: ICV %RSD MET: MS/MSD%R, Serial Dln
	8/10/2015	SW846	MW-4 (5-7)	Soil	No	No	-	No	Yes	VOC: ICV %RSD, Holding Time SVOC: ICV %RSD MET: MS/MSD%R, Serial Dln
	8/10/2015	SW846	MW-4 (13-14.5)	Soil	No	No	-	No	Yes	VOC: ICV %RSD, Holding Time SVOC: ICV %RSD MET: MS/MSD%R, Serial Dln
	8/11/2015	SW846	MW-1 (5-7)	Soil	No	No	-	No	Yes	VOC: ICV %RSD SVOC: ICV %RSD MET: MS/MSD%R, Serial Dln
	8/11/2015	SW846	MW-1 (9-11)	Soil	No	No	-	No	Yes	VOC: ICV %RSD SVOC: ICV %RSD MET: MS/MSD%R, Serial Dln
	8/11/2015	SW846	DUP-081115	Soil	No	No	-	No	Yes	VOC: ICV %RSD, Holding Time SVOC: ICV %RSD MET: MS/MSD%R, Serial Dln
480-85640	8/12/2015	SW846	MW-2 (5-7)	Soil	No	Yes	-	No	Yes	VOC: ICV %RSD, CCV%D, LCS%R, Trip Blk MET: MS/MSD%R, Serial Dln
	8/12/2015	SW846	MW-2 (9-13)	Soil	No	Yes	-	No	Yes	VOC: ICV %RSD, CCV%D, LCS%R, MET: MS/MSD%R, Serial Dln
	8/12/2015	SW846	MW-7 (4-6)	Soil	No	Yes	-	No	Yes	VOC: ICV %RSD, CCV%D, LCS%R, Trip Blk MET: MS/MSD%R, Serial Dln

	8/12/2015	SW846	MW-7 (6-8.3)	Soil	No	Yes	-	No	Yes	VOC: ICV %RSD, Trip Blk MET: MS/MSD%R, Serial Dln
	8/13/2015	SW846	MW-3 (7-9)	Soil	No	Yes	Yes	No	Yes	VOC: ICV %RSD, MS/MSD %R/RPD MET: MS/MSD%R, Serial Dln
	8/13/2015	SW846	MW-3 (9-10.2)	Soil	No	Yes	-	No	Yes	VOC: ICV %RSD MET: MS/MSD%R, Serial Dln
	8/13/2015	SW846	TRIP BLANK	Water	Yes	-	-	-	-	

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

VALIDATION PERFORMED BY: Jeffrey L. Davin

SIGNATURE: 

DATE: October 22, 2015

PEER REVIEW: Joseph C. Houser

DATE: October 23, 2015

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAr

THE LEADER IN ENV

480-85554 Chain of Custody

TAL-4124 (1007)

Client: ARCADIS/RGE	Project Manager: Bruce Ahrens	8.12.15	nber 2
Address: 295 Woodcliff Dr. NY	Telephone Number (Area Code)/Fax Number: 585-385-0090	Lab Number	Page 1 of 1
City: Fairport / State: NY / Zip Code: 14450	Site Contact: Klaus Beyrle	Lab Contact: Melissa Deyo	
Project Name and Location (State): Genesee Park St	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	Analysis: TCL VOC	TCL SVOC	TAL Metals	Cyanide	Special Instructions/ Conditions of Receipt
MW-5 (10-12)	8.11.15	1530			X		4	(5)					1	X	X	X	X	
MW-5 (12-14)	8.11.15	1550					4	(5)					1	X	X	X	X	
MW-6 (9-11)	8.12.15	1430					12	6					3	X	X	X	X	MS/MSD
MW-6 (13-14.2)	8.12.15	1250					4	(5)					1	X	X	X	X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

⊖ Per Contract

Turn Around Time Required

☐ 24 Hours ☒ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Standard

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Cathy Boyle	8.12.15	1350	1. Received By:		
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

	Date	Time
1. Received By	8/13/15	0900
2. Received By		
3. Received By		

Comments

2.0 #1

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

09/21/2015

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
ARCADIS/RGE	~~Melissa Doyo~~ Bruce Ahrens	8.11.15	297363
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
295 Woodcliff Drive	585-385-0090		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Fairport / NY / 14450	Klaus Boyle	Melissa Doyo	
Project Name and Location (State)	**Carrier/Waybill Number**		
Genesee Park Street			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Anch	Analysis: TCL VOC	TCL SVOC	TAL Metals	Cyanide	Special Instructions/ Conditions of Receipt
MW-4 (5-7)	8.10.15	1340				X	4	2					1	X	X	X	X	
MW-4 (13-14.5)	8.10.15	1400																
MW-1 (5-7)	8.11.15	1340																
MW-1 (9-11)	8.11.15	1400																
Dup-081115	8.11.15	—																

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ ~~Unknown~~

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)
Per Contract

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Standard

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	8.11.15	1550	1. Received By		
2. Relinquished By			2. Received By	8/13/15	0900
3. Relinquished By			3. Received By		

Comments

2,8260

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

DATA REPORTING QUALIFIERS

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Lab Section	Qualifier	Description
GC/MS VOA		
	B	Compound was found in the blank and sample.
	F1	MS and/or MSD Recovery is outside acceptance limits.
	E	Result exceeded calibration range.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	H	Sample was prepped or analyzed beyond the specified holding time
	X	Surrogate is outside control limits
GC/MS Semi VOA		
	E	Result exceeded calibration range.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate is outside control limits
Metals		
	B	Compound was found in the blank and sample.
	F1	MS and/or MSD Recovery is outside acceptance limits.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	W	PS: Post-digestion spike was outside control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	V	Serial Dilution exceeds the control limits
General Chemistry		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-5 (10-12)**

Lab Sample ID: 480-85554-1
Client Matrix: Solid
% Moisture: 12.4
Date Sampled: 08/11/2015 1530
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/18/2015 1526
Prep Date: 08/13/2015 1300
Analysis Batch: 480-259171
Prep Batch: 480-259213
Instrument ID: HP5973F
Lab File ID: F0213.D
Initial Weight/Volume: 7.541 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.27	3.8
1,1,2,2-Tetrachloroethane		ND		0.61	3.8
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.86	3.8
1,1,2-Trichloroethane		ND		0.49	3.8
1,1-Dichloroethane		ND		0.46	3.8
1,1-Dichloroethene		ND		0.46	3.8
1,2,4-Trichlorobenzene		ND		0.23	3.8
1,2-Dibromo-3-Chloropropane		ND		1.9	3.8
1,2-Dibromoethane		ND		0.49	3.8
1,2-Dichlorobenzene		ND		0.30	3.8
1,2-Dichloroethane		ND		0.19	3.8
1,2-Dichloropropane		ND		1.9	3.8
1,3-Dichlorobenzene		ND		0.19	3.8
1,4-Dichlorobenzene		ND		0.53	3.8
2-Butanone (MEK)		ND		1.4	19
2-Hexanone		ND		1.9	19
4-Methyl-2-pentanone (MIBK)		ND		1.2	19
Acetone		14	J	3.2	19
Benzene		48		0.19	3.8
Bromodichloromethane		ND		0.51	3.8
Bromoform		ND		1.9	3.8
Bromomethane		ND		0.34	3.8
Carbon disulfide		ND		1.9	3.8
Carbon tetrachloride		ND		0.37	3.8
Chlorobenzene		ND		0.50	3.8
Chloroethane		ND		0.85	3.8
Chloroform		ND		0.23	3.8
Chloromethane		ND		0.23	3.8
cis-1,2-Dichloroethene		ND		0.48	3.8
cis-1,3-Dichloropropene		ND		0.54	3.8
Cyclohexane		2.4	J	0.53	3.8
Dibromochloromethane		ND J		0.48	3.8
Dichlorodifluoromethane		ND J		0.31	3.8
Ethylbenzene		47		0.26	3.8
Isopropylbenzene		4.0		0.57	3.8
Methyl acetate		ND		2.3	3.8
Methyl tert-butyl ether		ND		0.37	3.8
Methylcyclohexane		3.1	J	0.57	3.8
Methylene Chloride		ND		1.7	3.8
Styrene		ND		0.19	3.8
Tetrachloroethene		ND		0.51	3.8
Toluene		5.9		0.29	3.8
trans-1,2-Dichloroethene		ND		0.39	3.8
trans-1,3-Dichloropropene		ND		1.7	3.8
Trichloroethene		ND		0.83	3.8
Trichlorofluoromethane		ND		0.36	3.8

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-5 (10-12)

Lab Sample ID: 480-85554-1 Date Sampled: 08/11/2015 1530
Client Matrix: Solid % Moisture: 12.4 Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259171	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-259213	Lab File ID:	F0213.D
Dilution:	1.0			Initial Weight/Volume:	7.541 g
Analysis Date:	08/18/2015 1526			Final Weight/Volume:	5 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.46	3.8
Xylenes, Total		170		0.64	7.6

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	121		64 - 126
4-Bromofluorobenzene (Surr)	104		72 - 126
Dibromofluoromethane (Surr)	115		60 - 140
Toluene-d8 (Surr)	98		71 - 125

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-5 (12-14)**

Lab Sample ID: 480-85554-2
Client Matrix: Solid
% Moisture: 8.1

Date Sampled: 08/11/2015 1550
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/18/2015 1551
Prep Date: 08/13/2015 1300

Analysis Batch: 480-259171
Prep Batch: 480-259213

Instrument ID: HP5973F
Lab File ID: F0214.D
Initial Weight/Volume: 7.268 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.27	3.7
1,1,2,2-Tetrachloroethane		ND		0.61	3.7
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.85	3.7
1,1,2-Trichloroethane		ND		0.49	3.7
1,1-Dichloroethane		ND		0.46	3.7
1,1-Dichloroethene		ND		0.46	3.7
1,2,4-Trichlorobenzene		ND		0.23	3.7
1,2-Dibromo-3-Chloropropane		ND		1.9	3.7
1,2-Dibromoethane		ND		0.48	3.7
1,2-Dichlorobenzene		ND		0.29	3.7
1,2-Dichloroethane		ND		0.19	3.7
1,2-Dichloropropane		ND		1.9	3.7
1,3-Dichlorobenzene		ND		0.19	3.7
1,4-Dichlorobenzene		ND		0.52	3.7
2-Butanone (MEK)		ND		1.4	19
2-Hexanone		ND		1.9	19
4-Methyl-2-pentanone (MIBK)		ND		1.2	19
Acetone		28		3.2	19
Benzene	6000	~~510~~	~~E~~ D	0.18	3.7
Bromodichloromethane		ND		0.50	3.7
Bromoform		ND		1.9	3.7
Bromomethane		ND		0.34	3.7
Carbon disulfide		ND		1.9	3.7
Carbon tetrachloride		ND		0.36	3.7
Chlorobenzene		ND		0.49	3.7
Chloroethane		ND		0.85	3.7
Chloroform		ND		0.23	3.7
Chloromethane		ND		0.23	3.7
cis-1,2-Dichloroethene		ND		0.48	3.7
cis-1,3-Dichloropropene		ND		0.54	3.7
Cyclohexane		3.3	J	0.52	3.7
Dibromochloromethane		ND	J	0.48	3.7
Dichlorodifluoromethane		ND	J	0.31	3.7
Ethylbenzene	5900	~~240~~	~~E~~ D	0.26	3.7
Isopropylbenzene		14		0.56	3.7
Methyl acetate		ND		2.3	3.7
Methyl tert-butyl ether		ND		0.37	3.7
Methylcyclohexane		4.6		0.57	3.7
Methylene Chloride		ND		1.7	3.7
Styrene		14		0.19	3.7
Tetrachloroethene		ND		0.50	3.7
Toluene		59		0.28	3.7
trans-1,2-Dichloroethene		ND		0.39	3.7
trans-1,3-Dichloropropene		ND		1.6	3.7
Trichloroethene		ND		0.82	3.7
Trichlorofluoromethane		ND		0.35	3.7

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-5 (12-14)

Lab Sample ID: 480-85554-2 Date Sampled: 08/11/2015 1550
Client Matrix: Solid % Moisture: 8.1 Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259171	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-259213	Lab File ID:	F0214.D
Dilution:	1.0			Initial Weight/Volume:	7.268 g
Analysis Date:	08/18/2015 1551			Final Weight/Volume:	5 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.46	3.7
Xylenes, Total		480		0.63	7.5

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		64 - 126
4-Bromofluorobenzene (Surr)	96		72 - 126
Dibromofluoromethane (Surr)	111		60 - 140
Toluene-d8 (Surr)	99		71 - 125

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-5 (12-14)**

Lab Sample ID: 480-85554-2
Client Matrix: Solid
% Moisture: 8.1

Date Sampled: 08/11/2015 1550
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259737	Instrument ID:	HP5973G
Prep Method:	5035A	Prep Batch:	480-259512	Lab File ID:	G41632.D
Dilution:	4.0			Initial Weight/Volume:	7.172 g
Analysis Date:	08/21/2015 0213	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		89	320
1,1,2,2-Tetrachloroethane		ND		52	320
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		160	320
1,1,2-Trichloroethane		ND		67	320
1,1-Dichloroethane		ND		99	320
1,1-Dichloroethene		ND		110	320
1,2,4-Trichlorobenzene		ND		120	320
1,2-Dibromo-3-Chloropropane		ND		160	320
1,2-Dibromoethane		ND		56	320
1,2-Dichlorobenzene		ND		82	320
1,2-Dichloroethane		ND		130	320
1,2-Dichloropropane		ND		52	320
1,3-Dichlorobenzene		ND		86	320
1,4-Dichlorobenzene		ND		45	320
2-Butanone (MEK)		ND		950	1600
2-Hexanone		ND		660	1600
4-Methyl-2-pentanone (MIBK)		ND		100	1600
Acetone		ND		1300	1600
Benzene		6000		61	320
Bromodichloromethane		ND		64	320
Bromoform		ND		160	320
Bromomethane		ND		71	320
Carbon disulfide		ND		150	320
Carbon tetrachloride		ND		82	320
Chlorobenzene		ND		42	320
Chloroethane		ND		67	320
Chloroform		ND		220	320
Chloromethane		ND		76	320
cis-1,2-Dichloroethene		ND		89	320
cis-1,3-Dichloropropene		ND		77	320
Cyclohexane		ND		71	320
Dibromochloromethane		ND		160	320
Dichlorodifluoromethane		ND		140	320
Ethylbenzene		5900		93	320
Isopropylbenzene		280	J	48	320
Methyl acetate		ND		150	320
Methyl tert-butyl ether		ND		120	320
Methylcyclohexane		ND		150	320
Methylene Chloride		610	B	64	320
Styrene		ND		77	320
Tetrachloroethene		ND		43	320
Toluene		3600		86	320
trans-1,2-Dichloroethene		ND		76	320
trans-1,3-Dichloropropene		ND		32	320
Trichloroethene		ND		89	320
Trichlorofluoromethane		ND		150	320

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-5 (12-14)

Lab Sample ID: 480-85554-2 Date Sampled: 08/11/2015 1550
Client Matrix: Solid % Moisture: 8.1 Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259737	Instrument ID:	HP5973G
Prep Method:	5035A	Prep Batch:	480-259512	Lab File ID:	G41632.D
Dilution:	4.0			Initial Weight/Volume:	7.172 g
Analysis Date:	08/21/2015 0213	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		110	320
Xylenes, Total		21000		180	640

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		53 - 146
4-Bromofluorobenzene (Surr)	104		49 - 148
Dibromofluoromethane (Surr)	100		60 - 140
Toluene-d8 (Surr)	101		50 - 149

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-6 (9-11)**

Lab Sample ID: 480-85554-3
Client Matrix: Solid
% Moisture: 5.6

Date Sampled: 08/12/2015 1230
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/18/2015 1618
Prep Date: 08/13/2015 1300

Analysis Batch: 480-259171
Prep Batch: 480-259213

Instrument ID: HP5973F
Lab File ID: F0215.D
Initial Weight/Volume: 6.309 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.30	4.2
1,1,2,2-Tetrachloroethane		ND	~~F1~~ J	0.68	4.2
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.96	4.2
1,1,2-Trichloroethane		ND		0.55	4.2
1,1-Dichloroethane		ND		0.51	4.2
1,1-Dichloroethene		ND		0.51	4.2
1,2,4-Trichlorobenzene		ND	~~F1~~ J	0.26	4.2
1,2-Dibromo-3-Chloropropane		ND	~~F1~~ J	2.1	4.2
1,2-Dibromoethane		ND	~~F1~~ J	0.54	4.2
1,2-Dichlorobenzene		ND	~~F1~~ J	0.33	4.2
1,2-Dichloroethane		ND		0.21	4.2
1,2-Dichloropropane		ND		2.1	4.2
1,3-Dichlorobenzene		ND	~~F1~~ J	0.22	4.2
1,4-Dichlorobenzene		ND	~~F1~~ J	0.59	4.2
2-Butanone (MEK)		ND	~~F1~~ J	1.5	21
2-Hexanone		ND		2.1	21
4-Methyl-2-pentanone (MIBK)		ND	~~F1~~ J	1.4	21
Acetone		ND		3.5	21
Benzene		0.39	J	0.21	4.2
Bromodichloromethane		ND		0.56	4.2
Bromoform		ND	~~F1~~ J	2.1	4.2
Bromomethane		ND		0.38	4.2
Carbon disulfide		ND		2.1	4.2
Carbon tetrachloride		ND		0.41	4.2
Chlorobenzene		ND		0.55	4.2
Chloroethane		ND		0.95	4.2
Chloroform		ND		0.26	4.2
Chloromethane		ND		0.25	4.2
cis-1,2-Dichloroethene		ND		0.54	4.2
cis-1,3-Dichloropropene		ND		0.60	4.2
Cyclohexane		ND		0.59	4.2
Dibromochloromethane		ND J		0.54	4.2
Dichlorodifluoromethane		ND J		0.35	4.2
Ethylbenzene		0.33	J	0.29	4.2
Isopropylbenzene		ND		0.63	4.2
Methyl acetate		ND		2.5	4.2
Methyl tert-butyl ether		ND		0.41	4.2
Methylcyclohexane		ND		0.64	4.2
Methylene Chloride		ND		1.9	4.2
Styrene		ND		0.21	4.2
Tetrachloroethene		ND		0.56	4.2
Toluene		ND		0.32	4.2
trans-1,2-Dichloroethene		ND		0.43	4.2
trans-1,3-Dichloropropene		ND		1.8	4.2
Trichloroethene		ND		0.92	4.2
Trichlorofluoromethane		ND		0.40	4.2

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-6 (9-11)

Lab Sample ID: 480-85554-3 Date Sampled: 08/12/2015 1230
Client Matrix: Solid % Moisture: 5.6 Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259171	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-259213	Lab File ID:	F0215.D
Dilution:	1.0			Initial Weight/Volume:	6.309 g
Analysis Date:	08/18/2015 1618			Final Weight/Volume:	5 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.51	4.2
Xylenes, Total		ND		0.71	8.4

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		64 - 126
4-Bromofluorobenzene (Surr)	92		72 - 126
Dibromofluoromethane (Surr)	111		60 - 140
Toluene-d8 (Surr)	103		71 - 125

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: **MW-6 (13-14.2)**

Lab Sample ID: 480-85554-4 Date Sampled: 08/12/2015 1250
Client Matrix: Solid % Moisture: 5.4 Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259171	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-259213	Lab File ID:	F0216.D
Dilution:	1.0			Initial Weight/Volume:	6.423 g
Analysis Date:	08/18/2015 1644			Final Weight/Volume:	5 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.30	4.1
1,1,2,2-Tetrachloroethane		ND		0.67	4.1
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.94	4.1
1,1,2-Trichloroethane		ND		0.54	4.1
1,1-Dichloroethane		ND		0.50	4.1
1,1-Dichloroethene		ND		0.50	4.1
1,2,4-Trichlorobenzene		ND		0.25	4.1
1,2-Dibromo-3-Chloropropane		ND		2.1	4.1
1,2-Dibromoethane		ND		0.53	4.1
1,2-Dichlorobenzene		ND		0.32	4.1
1,2-Dichloroethane		ND		0.21	4.1
1,2-Dichloropropane		ND		2.1	4.1
1,3-Dichlorobenzene		ND		0.21	4.1
1,4-Dichlorobenzene		ND		0.58	4.1
2-Butanone (MEK)		ND		1.5	21
2-Hexanone		ND		2.1	21
4-Methyl-2-pentanone (MIBK)		ND		1.4	21
Acetone		6.4	J	3.5	21
Benzene		ND		0.20	4.1
Bromodichloromethane		ND		0.55	4.1
Bromoform		ND		2.1	4.1
Bromomethane		ND		0.37	4.1
Carbon disulfide		ND		2.1	4.1
Carbon tetrachloride		ND		0.40	4.1
Chlorobenzene		ND		0.54	4.1
Chloroethane		ND		0.93	4.1
Chloroform		ND		0.25	4.1
Chloromethane		ND		0.25	4.1
cis-1,2-Dichloroethene		ND		0.53	4.1
cis-1,3-Dichloropropene		ND		0.59	4.1
Cyclohexane		2.5	J	0.58	4.1
Dibromochloromethane		ND	J	0.53	4.1
Dichlorodifluoromethane		ND	J	0.34	4.1
Ethylbenzene		ND		0.28	4.1
Isopropylbenzene		ND		0.62	4.1
Methyl acetate		ND		2.5	4.1
Methyl tert-butyl ether		0.70	J	0.40	4.1
Methylcyclohexane		2.6	J	0.63	4.1
Methylene Chloride		ND		1.9	4.1
Styrene		ND		0.21	4.1
Tetrachloroethene		ND		0.55	4.1
Toluene		0.43	J	0.31	4.1
trans-1,2-Dichloroethene		ND		0.42	4.1
trans-1,3-Dichloropropene		ND		1.8	4.1
Trichloroethene		ND		0.91	4.1
Trichlorofluoromethane		ND		0.39	4.1

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-6 (13-14.2)

Lab Sample ID: 480-85554-4 Date Sampled: 08/12/2015 1250
Client Matrix: Solid % Moisture: 5.4 Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259171	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-259213	Lab File ID:	F0216.D
Dilution:	1.0			Initial Weight/Volume:	6.423 g
Analysis Date:	08/18/2015 1644			Final Weight/Volume:	5 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.50	4.1
Xylenes, Total		ND		0.69	8.2

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		64 - 126
4-Bromofluorobenzene (Surr)	88		72 - 126
Dibromofluoromethane (Surr)	113		60 - 140
Toluene-d8 (Surr)	106		71 - 125

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-4 (5-7)**

Lab Sample ID: 480-85554-5
Client Matrix: Solid
% Moisture: 18.1

Date Sampled: 08/10/2015 1340
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/18/2015 1709
Prep Date: 08/13/2015 1300

Analysis Batch: 480-259171
Prep Batch: 480-259213

Instrument ID: HP5973F
Lab File ID: F0217.D
Initial Weight/Volume: 5.18 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND	H J	0.43	5.9
1,1,2,2-Tetrachloroethane		ND	H	0.96	5.9
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	H	1.3	5.9
1,1,2-Trichloroethane		ND	H	0.77	5.9
1,1-Dichloroethane		ND	H	0.72	5.9
1,1-Dichloroethene		ND	H	0.72	5.9
1,2,4-Trichlorobenzene		ND	H	0.36	5.9
1,2-Dibromo-3-Chloropropane		ND	H	2.9	5.9
1,2-Dibromoethane		ND	H	0.76	5.9
1,2-Dichlorobenzene		ND	H	0.46	5.9
1,2-Dichloroethane		ND	H	0.30	5.9
1,2-Dichloropropane		ND	H	2.9	5.9
1,3-Dichlorobenzene		ND	H	0.30	5.9
1,4-Dichlorobenzene		ND	H	0.82	5.9
2-Butanone (MEK)		ND	H	2.2	29
2-Hexanone		ND	H	2.9	29
4-Methyl-2-pentanone (MIBK)		ND	H	1.9	29
Acetone		ND	H	5.0	29
Benzene		ND	H	0.29	5.9
Bromodichloromethane		ND	H	0.79	5.9
Bromoform		ND	H	2.9	5.9
Bromomethane		ND	H	0.53	5.9
Carbon disulfide		ND	H	2.9	5.9
Carbon tetrachloride		ND	H	0.57	5.9
Chlorobenzene		ND	H	0.78	5.9
Chloroethane		ND	H	1.3	5.9
Chloroform		ND	H	0.36	5.9
Chloromethane		ND	H	0.36	5.9
cis-1,2-Dichloroethene		ND	H	0.75	5.9
cis-1,3-Dichloropropene		ND	H	0.85	5.9
Cyclohexane		ND	H	0.82	5.9
Dibromochloromethane		ND	H	0.75	5.9
Dichlorodifluoromethane		ND	H	0.49	5.9
Ethylbenzene		ND	H	0.41	5.9
Isopropylbenzene		ND	H	0.89	5.9
Methyl acetate		ND	H	3.6	5.9
Methyl tert-butyl ether		ND	H	0.58	5.9
Methylcyclohexane		ND	H	0.90	5.9
Methylene Chloride		ND	H	2.7	5.9
Styrene		ND	H	0.29	5.9
Tetrachloroethene		ND	H	0.79	5.9
Toluene		ND	H	0.45	5.9
trans-1,2-Dichloroethene		ND	H	0.61	5.9
trans-1,3-Dichloropropene		ND	H	2.6	5.9
Trichloroethene		ND	H	1.3	5.9
Trichlorofluoromethane		ND	H	0.56	5.9

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: MW-4 (5-7)

Lab Sample ID: 480-85554-5
Client Matrix: Solid
% Moisture: 18.1

Date Sampled: 08/10/2015 1340
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259171	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-259213	Lab File ID:	F0217.D
Dilution:	1.0			Initial Weight/Volume:	5.18 g
Analysis Date:	08/18/2015 1709			Final Weight/Volume:	5 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND	H J	0.72	5.9
Xylenes, Total		ND	H J	0.99	12

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		64 - 126
4-Bromofluorobenzene (Surr)	67	X	72 - 126
Dibromofluoromethane (Surr)	110		60 - 140
Toluene-d8 (Surr)	109		71 - 125

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-4 (13-14.5)**

Lab Sample ID: 480-85554-6
Client Matrix: Solid
% Moisture: 13.9

Date Sampled: 08/10/2015 1400
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/18/2015 1735
Prep Date: 08/13/2015 1300

Analysis Batch: 480-259171
Prep Batch: 480-259213

Instrument ID: HP5973F
Lab File ID: F0218.D
Initial Weight/Volume: 7.147 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND	H J	0.30	4.1
1,1,2,2-Tetrachloroethane		ND	H	0.66	4.1
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	H	0.93	4.1
1,1,2-Trichloroethane		ND	H	0.53	4.1
1,1-Dichloroethane		ND	H	0.50	4.1
1,1-Dichloroethene		ND	H	0.50	4.1
1,2,4-Trichlorobenzene		ND	H	0.25	4.1
1,2-Dibromo-3-Chloropropane		ND	H	2.0	4.1
1,2-Dibromoethane		ND	H	0.52	4.1
1,2-Dichlorobenzene		ND	H	0.32	4.1
1,2-Dichloroethane		ND	H	0.20	4.1
1,2-Dichloropropane		ND	H	2.0	4.1
1,3-Dichlorobenzene		ND	H	0.21	4.1
1,4-Dichlorobenzene		ND	H	0.57	4.1
2-Butanone (MEK)		ND	H	1.5	20
2-Hexanone		ND	H	2.0	20
4-Methyl-2-pentanone (MIBK)		ND	H	1.3	20
Acetone		40	H	3.4	20
Benzene		ND	H	0.20	4.1
Bromodichloromethane		ND	H	0.54	4.1
Bromoform		ND	H	2.0	4.1
Bromomethane		ND	H	0.37	4.1
Carbon disulfide		ND	H	2.0	4.1
Carbon tetrachloride		ND	H	0.39	4.1
Chlorobenzene		ND	H	0.54	4.1
Chloroethane		ND	H	0.92	4.1
Chloroform		ND	H	0.25	4.1
Chloromethane		ND	H	0.25	4.1
cis-1,2-Dichloroethene		ND	H	0.52	4.1
cis-1,3-Dichloropropene		ND	H	0.59	4.1
Cyclohexane		ND	H	0.57	4.1
Dibromochloromethane		ND	H	0.52	4.1
Dichlorodifluoromethane		ND	H	0.34	4.1
Ethylbenzene		ND	H	0.28	4.1
Isopropylbenzene		ND	H	0.61	4.1
Methyl acetate		ND	H	2.5	4.1
Methyl tert-butyl ether		ND	H	0.40	4.1
Methylcyclohexane		ND	H	0.62	4.1
Methylene Chloride		ND	H	1.9	4.1
Styrene		ND	H	0.20	4.1
Tetrachloroethene		ND	H	0.55	4.1
Toluene		ND	H	0.31	4.1
trans-1,2-Dichloroethene		ND	H	0.42	4.1
trans-1,3-Dichloropropene		ND	H	1.8	4.1
Trichloroethene		ND	H	0.89	4.1
Trichlorofluoromethane		ND	H	0.38	4.1

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-4 (13-14.5)**

Lab Sample ID: 480-85554-6
Client Matrix: Solid
% Moisture: 13.9

Date Sampled: 08/10/2015 1400
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259171	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-259213	Lab File ID:	F0218.D
Dilution:	1.0			Initial Weight/Volume:	7.147 g
Analysis Date:	08/18/2015 1735			Final Weight/Volume:	5 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND	H J	0.50	4.1
Xylenes, Total		ND	H J	0.68	8.1

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117		64 - 126
4-Bromofluorobenzene (Surr)	98		72 - 126
Dibromofluoromethane (Surr)	114		60 - 140
Toluene-d8 (Surr)	102		71 - 125

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-1 (5-7)**

Lab Sample ID: 480-85554-7
Client Matrix: Solid
% Moisture: 12.6

Date Sampled: 08/11/2015 1340
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/18/2015 1801
Prep Date: 08/13/2015 1300

Analysis Batch: 480-259171
Prep Batch: 480-259213

Instrument ID: HP5973F
Lab File ID: F0219.D
Initial Weight/Volume: 7.209 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.29	4.0
1,1,2,2-Tetrachloroethane		ND		0.64	4.0
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.90	4.0
1,1,2-Trichloroethane		ND		0.52	4.0
1,1-Dichloroethane		ND		0.48	4.0
1,1-Dichloroethene		ND		0.49	4.0
1,2,4-Trichlorobenzene		ND		0.24	4.0
1,2-Dibromo-3-Chloropropane		ND		2.0	4.0
1,2-Dibromoethane		ND		0.51	4.0
1,2-Dichlorobenzene		ND		0.31	4.0
1,2-Dichloroethane		ND		0.20	4.0
1,2-Dichloropropane		ND		2.0	4.0
1,3-Dichlorobenzene		ND		0.20	4.0
1,4-Dichlorobenzene		ND		0.56	4.0
2-Butanone (MEK)		ND		1.5	20
2-Hexanone		ND		2.0	20
4-Methyl-2-pentanone (MIBK)		ND		1.3	20
Acetone		35		3.3	20
Benzene	2300	~~370~~	~~E~~ D	0.19	4.0
Bromodichloromethane		ND		0.53	4.0
Bromoform		ND		2.0	4.0
Bromomethane		ND		0.36	4.0
Carbon disulfide		ND		2.0	4.0
Carbon tetrachloride		ND		0.38	4.0
Chlorobenzene		ND		0.52	4.0
Chloroethane		ND		0.90	4.0
Chloroform		ND		0.25	4.0
Chloromethane		ND		0.24	4.0
cis-1,2-Dichloroethene		ND		0.51	4.0
cis-1,3-Dichloropropene		ND		0.57	4.0
Cyclohexane		2.5	J	0.56	4.0
Dibromochloromethane		ND J		0.51	4.0
Dichlorodifluoromethane		ND J		0.33	4.0
Ethylbenzene		92		0.27	4.0
Isopropylbenzene		19		0.60	4.0
Methyl acetate		ND		2.4	4.0
Methyl tert-butyl ether		ND		0.39	4.0
Methylcyclohexane		3.1	J	0.60	4.0
Methylene Chloride		ND		1.8	4.0
Styrene		63		0.20	4.0
Tetrachloroethene		ND		0.53	4.0
Toluene	6100	~~600~~	~~E~~ D	0.30	4.0
trans-1,2-Dichloroethene		ND		0.41	4.0
trans-1,3-Dichloropropene		ND		1.7	4.0
Trichloroethene		ND		0.87	4.0
Trichlorofluoromethane		ND		0.38	4.0

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-1 (5-7)

Lab Sample ID: 480-85554-7 Date Sampled: 08/11/2015 1340
Client Matrix: Solid % Moisture: 12.6 Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259171	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-259213	Lab File ID:	F0219.D
Dilution:	1.0			Initial Weight/Volume:	7.209 g
Analysis Date:	08/18/2015 1801			Final Weight/Volume:	5 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.48	4.0
Xylenes, Total		950		0.67	7.9

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	120		64 - 126
4-Bromofluorobenzene (Surr)	102		72 - 126
Dibromofluoromethane (Surr)	113		60 - 140
Toluene-d8 (Surr)	95		71 - 125

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-1 (5-7)**

Lab Sample ID: 480-85554-7
Client Matrix: Solid
% Moisture: 12.6

Date Sampled: 08/11/2015 1340
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259737	Instrument ID:	HP5973G
Prep Method:	5035A	Prep Batch:	480-259512	Lab File ID:	G41633.D
Dilution:	4.0			Initial Weight/Volume:	6.474 g
Analysis Date:	08/21/2015 0236	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		110	380
1,1,2,2-Tetrachloroethane		ND		62	380
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		190	380
1,1,2-Trichloroethane		ND		80	380
1,1-Dichloroethane		ND		120	380
1,1-Dichloroethene		ND		130	380
1,2,4-Trichlorobenzene		ND		140	380
1,2-Dibromo-3-Chloropropane		ND		190	380
1,2-Dibromoethane		ND		67	380
1,2-Dichlorobenzene		ND		98	380
1,2-Dichloroethane		ND		160	380
1,2-Dichloropropane		ND		62	380
1,3-Dichlorobenzene		ND		100	380
1,4-Dichlorobenzene		ND		54	380
2-Butanone (MEK)		ND		1100	1900
2-Hexanone		ND		780	1900
4-Methyl-2-pentanone (MIBK)		ND		120	1900
Acetone		ND		1600	1900
Benzene		2300		73	380
Bromodichloromethane		ND		77	380
Bromoform		ND		190	380
Bromomethane		ND		84	380
Carbon disulfide		ND		170	380
Carbon tetrachloride		ND		98	380
Chlorobenzene		ND		50	380
Chloroethane		ND		80	380
Chloroform		ND		260	380
Chloromethane		ND		91	380
cis-1,2-Dichloroethene		ND		110	380
cis-1,3-Dichloropropene		ND		91	380
Cyclohexane		ND		85	380
Dibromochloromethane		ND		190	380
Dichlorodifluoromethane		ND		170	380
Ethylbenzene		1700		110	380
Isopropylbenzene		550		57	380
Methyl acetate		ND		180	380
Methyl tert-butyl ether		ND		140	380
Methylcyclohexane		ND		180	380
Methylene Chloride		690	B	76	380
Styrene		1100		92	380
Tetrachloroethene		ND		51	380
Toluene		6100		100	380
trans-1,2-Dichloroethene		ND		90	380
trans-1,3-Dichloropropene		ND		38	380
Trichloroethene		ND		110	380
Trichlorofluoromethane		ND		180	380

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: MW-1 (5-7)

Lab Sample ID: 480-85554-7
Client Matrix: Solid
% Moisture: 12.6

Date Sampled: 08/11/2015 1340
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259737	Instrument ID:	HP5973G
Prep Method:	5035A	Prep Batch:	480-259512	Lab File ID:	G41633.D
Dilution:	4.0			Initial Weight/Volume:	6.474 g
Analysis Date:	08/21/2015 0236	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		130	380
Xylenes, Total		21000		210	770

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		53 - 146
4-Bromofluorobenzene (Surr)	103		49 - 148
Dibromofluoromethane (Surr)	96		60 - 140
Toluene-d8 (Surr)	100		50 - 149

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-1 (9-11)**

Lab Sample ID: 480-85554-8
Client Matrix: Solid
% Moisture: 14.9

Date Sampled: 08/11/2015 1400
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/18/2015 1827
Prep Date: 08/13/2015 1300

Analysis Batch: 480-259171
Prep Batch: 480-259213

Instrument ID: HP5973F
Lab File ID: F0220.D
Initial Weight/Volume: 6.032 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.35	4.9
1,1,2,2-Tetrachloroethane		ND		0.79	4.9
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.1	4.9
1,1,2-Trichloroethane		ND		0.63	4.9
1,1-Dichloroethane		ND		0.59	4.9
1,1-Dichloroethene		ND		0.60	4.9
1,2,4-Trichlorobenzene		ND		0.30	4.9
1,2-Dibromo-3-Chloropropane		ND		2.4	4.9
1,2-Dibromoethane		ND		0.63	4.9
1,2-Dichlorobenzene		ND		0.38	4.9
1,2-Dichloroethane		ND		0.24	4.9
1,2-Dichloropropane		ND		2.4	4.9
1,3-Dichlorobenzene		ND		0.25	4.9
1,4-Dichlorobenzene		ND		0.68	4.9
2-Butanone (MEK)		ND		1.8	24
2-Hexanone		ND		2.4	24
4-Methyl-2-pentanone (MIBK)		ND		1.6	24
Acetone		8.4	J	4.1	24
Benzene		0.72	J	0.24	4.9
Bromodichloromethane		ND		0.65	4.9
Bromoform		ND		2.4	4.9
Bromomethane		ND		0.44	4.9
Carbon disulfide		ND		2.4	4.9
Carbon tetrachloride		ND		0.47	4.9
Chlorobenzene		ND		0.64	4.9
Chloroethane		ND		1.1	4.9
Chloroform		ND		0.30	4.9
Chloromethane		ND		0.29	4.9
cis-1,2-Dichloroethene		ND		0.62	4.9
cis-1,3-Dichloropropene		ND		0.70	4.9
Cyclohexane		ND		0.68	4.9
Dibromochloromethane		ND	J	0.62	4.9
Dichlorodifluoromethane		ND	J	0.40	4.9
Ethylbenzene		ND		0.34	4.9
Isopropylbenzene		ND		0.73	4.9
Methyl acetate		ND		2.9	4.9
Methyl tert-butyl ether		ND		0.48	4.9
Methylcyclohexane		ND		0.74	4.9
Methylene Chloride		ND		2.2	4.9
Styrene		ND		0.24	4.9
Tetrachloroethene		ND		0.65	4.9
Toluene		1.4	J	0.37	4.9
trans-1,2-Dichloroethene		ND		0.50	4.9
trans-1,3-Dichloropropene		ND		2.1	4.9
Trichloroethene		ND		1.1	4.9
Trichlorofluoromethane		ND		0.46	4.9

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-1 (9-11)

Lab Sample ID: 480-85554-8 Date Sampled: 08/11/2015 1400
Client Matrix: Solid % Moisture: 14.9 Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259171	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-259213	Lab File ID:	F0220.D
Dilution:	1.0			Initial Weight/Volume:	6.032 g
Analysis Date:	08/18/2015 1827			Final Weight/Volume:	5 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.59	4.9
Xylenes, Total		1.6	J	0.82	9.7

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		64 - 126
4-Bromofluorobenzene (Surr)	84		72 - 126
Dibromofluoromethane (Surr)	114		60 - 140
Toluene-d8 (Surr)	107		71 - 125

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **DUP-081115**

Lab Sample ID: 480-85554-9
Client Matrix: Solid
% Moisture: 8.3

Date Sampled: 08/11/2015 0000
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/18/2015 1853
Prep Date: 08/13/2015 1300

Analysis Batch: 480-259171
Prep Batch: 480-259213

Instrument ID: HP5973F
Lab File ID: F0221.D
Initial Weight/Volume: 7.104 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND	H	0.28	3.8
1,1,2,2-Tetrachloroethane		ND	H	0.62	3.8
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	H	0.88	3.8
1,1,2-Trichloroethane		ND	H	0.50	3.8
1,1-Dichloroethane		ND	H	0.47	3.8
1,1-Dichloroethene		ND	H	0.47	3.8
1,2,4-Trichlorobenzene		ND	H	0.23	3.8
1,2-Dibromo-3-Chloropropane		ND	H	1.9	3.8
1,2-Dibromoethane		ND	H	0.49	3.8
1,2-Dichlorobenzene		ND	H	0.30	3.8
1,2-Dichloroethane		ND	H	0.19	3.8
1,2-Dichloropropane		ND	H	1.9	3.8
1,3-Dichlorobenzene		ND	H	0.20	3.8
1,4-Dichlorobenzene		ND	H	0.54	3.8
2-Butanone (MEK)		ND	H	1.4	19
2-Hexanone		ND	H	1.9	19
4-Methyl-2-pentanone (MIBK)		ND	H	1.3	19
Acetone		7.6	J H	3.2	19
Benzene		0.50	J H	0.19	3.8
Bromodichloromethane		ND	H	0.51	3.8
Bromoform		ND	H	1.9	3.8
Bromomethane		ND	H	0.35	3.8
Carbon disulfide		ND	H	1.9	3.8
Carbon tetrachloride		ND	H	0.37	3.8
Chlorobenzene		ND	H	0.51	3.8
Chloroethane		ND	H	0.87	3.8
Chloroform		ND	H	0.24	3.8
Chloromethane		ND	H	0.23	3.8
cis-1,2-Dichloroethene		ND	H	0.49	3.8
cis-1,3-Dichloropropene		ND	H	0.55	3.8
Cyclohexane		ND	H	0.54	3.8
Dibromochloromethane		ND	H	0.49	3.8
Dichlorodifluoromethane		ND	H	0.32	3.8
Ethylbenzene		ND	H	0.26	3.8
Isopropylbenzene		ND	H	0.58	3.8
Methyl acetate		ND	H	2.3	3.8
Methyl tert-butyl ether		ND	H	0.38	3.8
Methylcyclohexane		ND	H	0.58	3.8
Methylene Chloride		ND	H	1.8	3.8
Styrene		ND	H	0.19	3.8
Tetrachloroethene		ND	H	0.52	3.8
Toluene		0.67	J H	0.29	3.8
trans-1,2-Dichloroethene		ND	H	0.40	3.8
trans-1,3-Dichloropropene		ND	H	1.7	3.8
Trichloroethene		ND	H	0.84	3.8
Trichlorofluoromethane		ND	H	0.36	3.8

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **DUP-081115**

Lab Sample ID: 480-85554-9
Client Matrix: Solid
% Moisture: 8.3

Date Sampled: 08/11/2015 0000
Date Received: 08/13/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259171	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-259213	Lab File ID:	F0221.D
Dilution:	1.0			Initial Weight/Volume:	7.104 g
Analysis Date:	08/18/2015 1853			Final Weight/Volume:	5 mL
Prep Date:	08/13/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND	H J	0.47	3.8
Xylenes, Total		ND	H J	0.65	7.7

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		64 - 126
4-Bromofluorobenzene (Surr)	83		72 - 126
Dibromofluoromethane (Surr)	114		60 - 140
Toluene-d8 (Surr)	108		71 - 125

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-5 (10-12)

Lab Sample ID: 480-85554-1 Date Sampled: 08/11/2015 1530
Client Matrix: Solid % Moisture: 12.4 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52394.D
Dilution:	10			Initial Weight/Volume:	+30.25 g
Analysis Date:	08/20/2015 1532			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		3200		280	1900
bis (2-chloroisopropyl) ether		ND		380	1900
2,4,5-Trichlorophenol		ND		520	1900
2,4,6-Trichlorophenol		ND		380	1900
2,4-Dichlorophenol		ND		200	1900
2,4-Dimethylphenol		ND		460	1900
2,4-Dinitrophenol		ND		8900	19000
2,4-Dinitrotoluene		ND		400	1900
2,6-Dinitrotoluene		ND	J	230	1900
2-Chloronaphthalene		ND		320	1900
2-Chlorophenol		ND		350	1900
2-Methylnaphthalene		5300		380	1900
2-Methylphenol		ND		230	1900
2-Nitroaniline		ND		280	3700
2-Nitrophenol		ND	J	540	1900
3,3'-Dichlorobenzidine		ND		2300	3700
3-Nitroaniline		ND		530	3700
4,6-Dinitro-2-methylphenol		ND		1900	3700
4-Bromophenyl phenyl ether		ND		270	1900
4-Chloro-3-methylphenol		ND		480	1900
4-Chloroaniline		ND		480	1900
4-Chlorophenyl phenyl ether		ND		240	1900
4-Methylphenol		ND		230	3700
4-Nitroaniline		ND		1000	3700
4-Nitrophenol		ND		1300	3700
Acenaphthene		2600		280	1900
Acenaphthylene		12000		250	1900
Acetophenone		ND		260	1900
Anthracene		20000		480	1900
Atrazine		ND		670	1900
Benzaldehyde		ND		1500	1900
Benzo[a]anthracene		20000		190	1900
Benzo[a]pyrene		15000		280	1900
Benzo[b]fluoranthene		17000		310	1900
Benzo[g,h,i]perylene		7200		200	1900
Benzo[k]fluoranthene		7800		250	1900
Bis(2-chloroethoxy)methane		ND		410	1900
Bis(2-chloroethyl)ether		ND		250	1900
Bis(2-ethylhexyl) phthalate		ND		660	1900
Butyl benzyl phthalate		ND		320	1900
Caprolactam		ND		580	1900
Carbazole		4300		230	1900
Chrysene		15000		430	1900
Di-n-butyl phthalate		ND		330	1900
Di-n-octyl phthalate		ND	J	230	1900
Dibenz(a,h)anthracene		3000		340	1900

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-5 (10-12)

Lab Sample ID: 480-85554-1 Date Sampled: 08/11/2015 1530
Client Matrix: Solid % Moisture: 12.4 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52394.D
Dilution:	10			Initial Weight/Volume:	+30.25 g
Analysis Date:	08/20/2015 1532			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		13000		230	1900
Diethyl phthalate		ND		250	1900
Dimethyl phthalate		ND		230	1900
Fluoranthene		39000		200	1900
Fluorene		18000		230	1900
Hexachlorobenzene		ND		260	1900
Hexachlorobutadiene		ND		280	1900
Hexachlorocyclopentadiene		ND		260	1900
Hexachloroethane		ND		250	1900
Indeno[1,2,3-cd]pyrene		7400		240	1900
Isophorone		ND		410	1900
N-Nitrosodi-n-propylamine		ND		330	1900
N-Nitrosodiphenylamine		ND		1600	1900
Naphthalene		27000		250	1900
Nitrobenzene		ND		210	1900
Pentachlorophenol		ND		1900	3700
Phenanthrene		44000		280	1900
Phenol		ND		290	1900
Pyrene		30000		230	1900

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	119		39 - 146
2-Fluorobiphenyl	90		37 - 120
2-Fluorophenol	77		18 - 120
Nitrobenzene-d5	94		34 - 132
p-Terphenyl-d14	98		65 - 153
Phenol-d5	77		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-5 (12-14)

Lab Sample ID: 480-85554-2 Date Sampled: 08/11/2015 1550
Client Matrix: Solid % Moisture: 8.1 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52395.D
Dilution:	10			Initial Weight/Volume:	+30.54 g
Analysis Date:	08/20/2015 1559			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		970	J	270	1800
bis (2-chloroisopropyl) ether		ND		360	1800
2,4,5-Trichlorophenol		ND		490	1800
2,4,6-Trichlorophenol		ND		360	1800
2,4-Dichlorophenol		ND		190	1800
2,4-Dimethylphenol		ND		440	1800
2,4-Dinitrophenol		ND		8400	18000
2,4-Dinitrotoluene		ND		370	1800
2,6-Dinitrotoluene		ND	J	210	1800
2-Chloronaphthalene		ND		300	1800
2-Chlorophenol		ND		330	1800
2-Methylnaphthalene		1700	J	360	1800
2-Methylphenol		ND		210	1800
2-Nitroaniline		ND		270	3500
2-Nitrophenol		ND	J	510	1800
3,3'-Dichlorobenzidine		ND		2100	3500
3-Nitroaniline		ND		500	3500
4,6-Dinitro-2-methylphenol		ND		1800	3500
4-Bromophenyl phenyl ether		ND		260	1800
4-Chloro-3-methylphenol		ND		450	1800
4-Chloroaniline		ND		450	1800
4-Chlorophenyl phenyl ether		ND		220	1800
4-Methylphenol		ND		210	3500
4-Nitroaniline		ND		950	3500
4-Nitrophenol		ND		1300	3500
Acenaphthene		840	J	270	1800
Acenaphthylene		3500		240	1800
Acetophenone		ND		250	1800
Anthracene		6400		450	1800
Atrazine		ND		630	1800
Benzaldehyde		ND		1400	1800
Benzo[a]anthracene		11000		180	1800
Benzo[a]pyrene		7400		270	1800
Benzo[b]fluoranthene		8400		290	1800
Benzo[g,h,i]perylene		3400		190	1800
Benzo[k]fluoranthene		4900		240	1800
Bis(2-chloroethoxy)methane		ND		380	1800
Bis(2-chloroethyl)ether		ND		240	1800
Bis(2-ethylhexyl) phthalate		ND		620	1800
Butyl benzyl phthalate		ND		300	1800
Caprolactam		ND		550	1800
Carbazole		1100	J	210	1800
Chrysene		7800		410	1800
Di-n-butyl phthalate		ND		310	1800
Di-n-octyl phthalate		ND	J	210	1800
Dibenz(a,h)anthracene		2000		320	1800

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-5 (12-14)

Lab Sample ID: 480-85554-2 Date Sampled: 08/11/2015 1550
Client Matrix: Solid % Moisture: 8.1 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52395.D
Dilution:	10			Initial Weight/Volume:	+30.54 g
Analysis Date:	08/20/2015 1559			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		3600		210	1800
Diethyl phthalate		ND		240	1800
Dimethyl phthalate		ND		210	1800
Fluoranthene		20000		190	1800
Fluorene		5300		210	1800
Hexachlorobenzene		ND		250	1800
Hexachlorobutadiene		ND		270	1800
Hexachlorocyclopentadiene		ND		250	1800
Hexachloroethane		ND		240	1800
Indeno[1,2,3-cd]pyrene		4000		220	1800
Isophorone		ND		380	1800
N-Nitrosodi-n-propylamine		ND		310	1800
N-Nitrosodiphenylamine		ND		1500	1800
Naphthalene		9600		240	1800
Nitrobenzene		ND		200	1800
Pentachlorophenol		ND		1800	3500
Phenanthrene		16000		270	1800
Phenol		ND		280	1800
Pyrene		15000		210	1800

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	86		39 - 146
2-Fluorobiphenyl	45		37 - 120
2-Fluorophenol	37		18 - 120
Nitrobenzene-d5	55		34 - 132
p-Terphenyl-d14	43	X	65 - 153
Phenol-d5	36		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-6 (9-11)

Lab Sample ID: 480-85554-3 Date Sampled: 08/12/2015 1230
Client Matrix: Solid % Moisture: 5.6 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52396.D
Dilution:	1.0			Initial Weight/Volume:	+30.33 g
Analysis Date:	08/20/2015 1627			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		26	180
bis (2-chloroisopropyl) ether		ND		36	180
2,4,5-Trichlorophenol		ND		48	180
2,4,6-Trichlorophenol		ND		36	180
2,4-Dichlorophenol		ND		19	180
2,4-Dimethylphenol		ND		43	180
2,4-Dinitrophenol		ND		820	1700
2,4-Dinitrotoluene		ND		37	180
2,6-Dinitrotoluene		ND	J	21	180
2-Chloronaphthalene		ND		29	180
2-Chlorophenol		ND		32	180
2-Methylnaphthalene		ND		36	180
2-Methylphenol		ND		21	180
2-Nitroaniline		ND		26	350
2-Nitrophenol		ND	J	50	180
3,3'-Dichlorobenzidine		ND		210	350
3-Nitroaniline		ND		49	350
4,6-Dinitro-2-methylphenol		ND		180	350
4-Bromophenyl phenyl ether		ND		25	180
4-Chloro-3-methylphenol		ND		44	180
4-Chloroaniline		ND		44	180
4-Chlorophenyl phenyl ether		ND		22	180
4-Methylphenol		ND		21	350
4-Nitroaniline		ND		93	350
4-Nitrophenol		ND		120	350
Acenaphthene		ND		26	180
Acenaphthylene		ND		23	180
Acetophenone		ND		24	180
Anthracene		ND		44	180
Atrazine		ND		62	180
Benzaldehyde		ND		140	180
Benzo[a]anthracene		ND		18	180
Benzo[a]pyrene		ND		26	180
Benzo[b]fluoranthene		ND		28	180
Benzo[g,h,i]perylene		ND		19	180
Benzo[k]fluoranthene		ND		23	180
Bis(2-chloroethoxy)methane		ND		38	180
Bis(2-chloroethyl)ether		ND		23	180
Bis(2-ethylhexyl) phthalate		ND		61	180
Butyl benzyl phthalate		ND		29	180
Caprolactam		ND		53	180
Carbazole		ND		21	180
Chrysene		ND		40	180
Di-n-butyl phthalate		ND		30	180
Di-n-octyl phthalate		ND	J	21	180
Dibenz(a,h)anthracene		ND		31	180

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-6 (9-11)

Lab Sample ID: 480-85554-3 Date Sampled: 08/12/2015 1230
Client Matrix: Solid % Moisture: 5.6 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52396.D
Dilution:	1.0			Initial Weight/Volume:	+30.33 g
Analysis Date:	08/20/2015 1627			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		21	180
Diethyl phthalate		ND		23	180
Dimethyl phthalate		ND		21	180
Fluoranthene		ND		19	180
Fluorene		ND		21	180
Hexachlorobenzene		ND		24	180
Hexachlorobutadiene		ND		26	180
Hexachlorocyclopentadiene		ND		24	180
Hexachloroethane		ND		23	180
Indeno[1,2,3-cd]pyrene		ND		22	180
Isophorone		ND		38	180
N-Nitrosodi-n-propylamine		ND		30	180
N-Nitrosodiphenylamine		ND		140	180
Naphthalene		ND		23	180
Nitrobenzene		ND		20	180
Pentachlorophenol		ND		180	350
Phenanthrene		ND		26	180
Phenol		ND		27	180
Pyrene		ND		21	180

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	83		39 - 146
2-Fluorobiphenyl	78		37 - 120
2-Fluorophenol	70		18 - 120
Nitrobenzene-d5	68		34 - 132
p-Terphenyl-d14	90		65 - 153
Phenol-d5	73		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: **MW-6 (13-14.2)**

Lab Sample ID: 480-85554-4 Date Sampled: 08/12/2015 1250
Client Matrix: Solid % Moisture: 5.4 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52397.D
Dilution:	5.0			Initial Weight/Volume:	+30.23 g
Analysis Date:	08/20/2015 1654			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		130	890
bis (2-chloroisopropyl) ether		ND		180	890
2,4,5-Trichlorophenol		ND		240	890
2,4,6-Trichlorophenol		ND		180	890
2,4-Dichlorophenol		ND		94	890
2,4-Dimethylphenol		ND		220	890
2,4-Dinitrophenol		ND		4100	8700
2,4-Dinitrotoluene		ND		180	890
2,6-Dinitrotoluene		ND	J	100	890
2-Chloronaphthalene		ND		150	890
2-Chlorophenol		ND		160	890
2-Methylnaphthalene		ND		180	890
2-Methylphenol		ND		100	890
2-Nitroaniline		ND		130	1700
2-Nitrophenol		ND	J	250	890
3,3'-Dichlorobenzidine		ND		1000	1700
3-Nitroaniline		ND		250	1700
4,6-Dinitro-2-methylphenol		ND		890	1700
4-Bromophenyl phenyl ether		ND		130	890
4-Chloro-3-methylphenol		ND		220	890
4-Chloroaniline		ND		220	890
4-Chlorophenyl phenyl ether		ND		110	890
4-Methylphenol		ND		100	1700
4-Nitroaniline		ND		470	1700
4-Nitrophenol		ND		620	1700
Acenaphthene		ND		130	890
Acenaphthylene		ND		120	890
Acetophenone		ND		120	890
Anthracene		ND		220	890
Atrazine		ND		310	890
Benzaldehyde		ND		710	890
Benzo[a]anthracene		ND		89	890
Benzo[a]pyrene		ND		130	890
Benzo[b]fluoranthene		ND		140	890
Benzo[g,h,i]perylene		ND		94	890
Benzo[k]fluoranthene		ND		120	890
Bis(2-chloroethoxy)methane		ND		190	890
Bis(2-chloroethyl)ether		ND		120	890
Bis(2-ethylhexyl) phthalate		ND		300	890
Butyl benzyl phthalate		ND		150	890
Caprolactam		ND		270	890
Carbazole		ND		100	890
Chrysene		ND		200	890
Di-n-butyl phthalate		ND		150	890
Di-n-octyl phthalate		ND	J	100	890
Dibenz(a,h)anthracene		ND		160	890

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-6 (13-14.2)**

Lab Sample ID: 480-85554-4
Client Matrix: Solid
% Moisture: 5.4

Date Sampled: 08/12/2015 1250
Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52397.D
Dilution:	5.0			Initial Weight/Volume:	+30.23 g
Analysis Date:	08/20/2015 1654			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		100	890
Diethyl phthalate		ND		120	890
Dimethyl phthalate		ND		100	890
Fluoranthene		ND		94	890
Fluorene		ND		100	890
Hexachlorobenzene		ND		120	890
Hexachlorobutadiene		ND		130	890
Hexachlorocyclopentadiene		ND		120	890
Hexachloroethane		ND		120	890
Indeno[1,2,3-cd]pyrene		ND		110	890
Isophorone		ND		190	890
N-Nitrosodi-n-propylamine		ND		150	890
N-Nitrosodiphenylamine		ND		720	890
Naphthalene		ND		120	890
Nitrobenzene		ND		100	890
Pentachlorophenol		ND		890	1700
Phenanthrene		ND		130	890
Phenol		ND		140	890
Pyrene		ND		100	890

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	88		39 - 146
2-Fluorobiphenyl	87		37 - 120
2-Fluorophenol	72		18 - 120
Nitrobenzene-d5	78		34 - 132
p-Terphenyl-d14	95		65 - 153
Phenol-d5	75		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-4 (5-7)

Lab Sample ID: 480-85554-5 Date Sampled: 08/10/2015 1340
Client Matrix: Solid % Moisture: 18.1 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52398.D
Dilution:	10			Initial Weight/Volume:	+30.09 g
Analysis Date:	08/20/2015 1722			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		300	2100
bis (2-chloroisopropyl) ether		ND		410	2100
2,4,5-Trichlorophenol		ND		560	2100
2,4,6-Trichlorophenol		ND		410	2100
2,4-Dichlorophenol		ND		220	2100
2,4-Dimethylphenol		ND		500	2100
2,4-Dinitrophenol		ND		9500	20000
2,4-Dinitrotoluene		ND		430	2100
2,6-Dinitrotoluene		ND	J	240	2100
2-Chloronaphthalene		ND		340	2100
2-Chlorophenol		ND		380	2100
2-Methylnaphthalene		ND		410	2100
2-Methylphenol		ND		240	2100
2-Nitroaniline		ND		300	4000
2-Nitrophenol		ND	J	580	2100
3,3'-Dichlorobenzidine		ND		2400	4000
3-Nitroaniline		ND		570	4000
4,6-Dinitro-2-methylphenol		ND		2100	4000
4-Bromophenyl phenyl ether		ND		290	2100
4-Chloro-3-methylphenol		ND		510	2100
4-Chloroaniline		ND		510	2100
4-Chlorophenyl phenyl ether		ND		260	2100
4-Methylphenol		ND		240	4000
4-Nitroaniline		ND		1100	4000
4-Nitrophenol		ND		1400	4000
Acenaphthene		770	J	300	2100
Acenaphthylene		910	J	270	2100
Acetophenone		ND		280	2100
Anthracene		3600		510	2100
Atrazine		ND		720	2100
Benzaldehyde		ND		1600	2100
Benzo[a]anthracene		14000		210	2100
Benzo[a]pyrene		16000		300	2100
Benzo[b]fluoranthene		18000		330	2100
Benzo[g,h,i]perylene		11000		220	2100
Benzo[k]fluoranthene		8700		270	2100
Bis(2-chloroethoxy)methane		ND		440	2100
Bis(2-chloroethyl)ether		ND		270	2100
Bis(2-ethylhexyl) phthalate		ND		710	2100
Butyl benzyl phthalate		ND		340	2100
Caprolactam		ND		620	2100
Carbazole		1200	J	240	2100
Chrysene		12000		460	2100
Di-n-butyl phthalate		ND		350	2100
Di-n-octyl phthalate		ND	J	240	2100
Dibenz(a,h)anthracene		ND		370	2100

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-4 (5-7)

Lab Sample ID: 480-85554-5 Date Sampled: 08/10/2015 1340
Client Matrix: Solid % Moisture: 18.1 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52398.D
Dilution:	10			Initial Weight/Volume:	+30.09 g
Analysis Date:	08/20/2015 1722			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		650	J	240	2100
Diethyl phthalate		ND		270	2100
Dimethyl phthalate		ND		240	2100
Fluoranthene		18000		220	2100
Fluorene		1100	J	240	2100
Hexachlorobenzene		ND		280	2100
Hexachlorobutadiene		ND		300	2100
Hexachlorocyclopentadiene		ND		280	2100
Hexachloroethane		ND		270	2100
Indeno[1,2,3-cd]pyrene		11000		260	2100
Isophorone		ND		440	2100
N-Nitrosodi-n-propylamine		ND		350	2100
N-Nitrosodiphenylamine		ND		1700	2100
Naphthalene		600	J	270	2100
Nitrobenzene		ND		230	2100
Pentachlorophenol		ND		2100	4000
Phenanthrene		9400		300	2100
Phenol		ND		320	2100
Pyrene		16000		240	2100

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	112		39 - 146
2-Fluorobiphenyl	81		37 - 120
2-Fluorophenol	77		18 - 120
Nitrobenzene-d5	86		34 - 132
p-Terphenyl-d14	91		65 - 153
Phenol-d5	74		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: **MW-4 (13-14.5)**

Lab Sample ID: 480-85554-6 Date Sampled: 08/10/2015 1400
Client Matrix: Solid % Moisture: 13.9 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259881	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52425.D
Dilution:	1.0			Initial Weight/Volume:	+30.07 g
Analysis Date:	08/21/2015 2107			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		29	200
bis (2-chloroisopropyl) ether		ND		39	200
2,4,5-Trichlorophenol		ND		53	200
2,4,6-Trichlorophenol		ND		39	200
2,4-Dichlorophenol		ND		21	200
2,4-Dimethylphenol		ND		48	200
2,4-Dinitrophenol		ND		910	1900
2,4-Dinitrotoluene		ND		41	200
2,6-Dinitrotoluene		ND	J	23	200
2-Chloronaphthalene		ND		32	200
2-Chlorophenol		ND		36	200
2-Methylnaphthalene		ND		39	200
2-Methylphenol		ND		23	200
2-Nitroaniline		ND		29	380
2-Nitrophenol		ND	J	56	200
3,3'-Dichlorobenzidine		ND		230	380
3-Nitroaniline		ND		54	380
4,6-Dinitro-2-methylphenol		ND		200	380
4-Bromophenyl phenyl ether		ND		28	200
4-Chloro-3-methylphenol		ND		49	200
4-Chloroaniline		ND		49	200
4-Chlorophenyl phenyl ether		ND		24	200
4-Methylphenol		ND		23	380
4-Nitroaniline		ND		100	380
4-Nitrophenol		ND		140	380
Acenaphthene		ND		29	200
Acenaphthylene		ND		26	200
Acetophenone		ND		27	200
Anthracene		ND		49	200
Atrazine		ND		68	200
Benzaldehyde		ND		160	200
Benzo[a]anthracene		70	J	20	200
Benzo[a]pyrene		120	J	29	200
Benzo[b]fluoranthene		160	J	31	200
Benzo[g,h,i]perylene		70	J	21	200
Benzo[k]fluoranthene		ND		26	200
Bis(2-chloroethoxy)methane		ND		42	200
Bis(2-chloroethyl)ether		ND		26	200
Bis(2-ethylhexyl) phthalate		130	J	67	200
Butyl benzyl phthalate		ND		32	200
Caprolactam		ND		59	200
Carbazole		ND		23	200
Chrysene		87	J	44	200
Di-n-butyl phthalate		ND		34	200
Di-n-octyl phthalate		ND	J	23	200
Dibenz(a,h)anthracene		94	J	35	200

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-4 (13-14.5)

Lab Sample ID: 480-85554-6 Date Sampled: 08/10/2015 1400
Client Matrix: Solid % Moisture: 13.9 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259881	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52425.D
Dilution:	1.0			Initial Weight/Volume:	+30.07 g
Analysis Date:	08/21/2015 2107			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		23	200
Diethyl phthalate		ND		26	200
Dimethyl phthalate		ND		23	200
Fluoranthene		93	J	21	200
Fluorene		ND		23	200
Hexachlorobenzene		ND		27	200
Hexachlorobutadiene		ND		29	200
Hexachlorocyclopentadiene		ND		27	200
Hexachloroethane		ND		26	200
Indeno[1,2,3-cd]pyrene		100	J	24	200
Isophorone		ND		42	200
N-Nitrosodi-n-propylamine		ND		34	200
N-Nitrosodiphenylamine		ND		160	200
Naphthalene		ND		26	200
Nitrobenzene		ND		22	200
Pentachlorophenol		ND		200	380
Phenanthrene		47	J	29	200
Phenol		ND		30	200
Pyrene		83	J	23	200

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	75		39 - 146
2-Fluorobiphenyl	78		37 - 120
2-Fluorophenol	70		18 - 120
Nitrobenzene-d5	65		34 - 132
p-Terphenyl-d14	83		65 - 153
Phenol-d5	76		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-1 (5-7)

Lab Sample ID: 480-85554-7 Date Sampled: 08/11/2015 1340
Client Matrix: Solid % Moisture: 12.6 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52400.D
Dilution:	20			Initial Weight/Volume:	+30.51 g
Analysis Date:	08/20/2015 1817			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		9400		560	3800
bis (2-chloroisopropyl) ether		ND		770	3800
2,4,5-Trichlorophenol		ND		1000	3800
2,4,6-Trichlorophenol		ND		770	3800
2,4-Dichlorophenol		ND		410	3800
2,4-Dimethylphenol		5300		920	3800
2,4-Dinitrophenol		ND		18000	37000
2,4-Dinitrotoluene		ND		790	3800
2,6-Dinitrotoluene		ND	J	450	3800
2-Chloronaphthalene		ND		630	3800
2-Chlorophenol		ND		700	3800
2-Methylnaphthalene		60000		770	3800
2-Methylphenol		3600	J	450	3800
2-Nitroaniline		ND		560	7400
2-Nitrophenol		ND	J	1100	3800
3,3'-Dichlorobenzidine		ND		4500	7400
3-Nitroaniline		ND		1100	7400
4,6-Dinitro-2-methylphenol		ND		3800	7400
4-Bromophenyl phenyl ether		ND		540	3800
4-Chloro-3-methylphenol		ND		950	3800
4-Chloroaniline		ND		950	3800
4-Chlorophenyl phenyl ether		ND		470	3800
4-Methylphenol		5900	J	450	7400
4-Nitroaniline		ND		2000	7400
4-Nitrophenol		ND		2700	7400
Acenaphthene		9700		560	3800
Acenaphthylene		11000		500	3800
Acetophenone		ND		520	3800
Anthracene		33000		950	3800
Atrazine		ND		1300	3800
Benzaldehyde		ND		3000	3800
Benzo[a]anthracene		30000		380	3800
Benzo[a]pyrene		20000		560	3800
Benzo[b]fluoranthene		22000		610	3800
Benzo[g,h,i]perylene		9100		410	3800
Benzo[k]fluoranthene		9200		500	3800
Bis(2-chloroethoxy)methane		ND		810	3800
Bis(2-chloroethyl)ether		ND		500	3800
Bis(2-ethylhexyl) phthalate		ND		1300	3800
Butyl benzyl phthalate		ND		630	3800
Caprolactam		ND		1100	3800
Carbazole		9500		450	3800
Chrysene		23000		860	3800
Di-n-butyl phthalate		ND		650	3800
Di-n-octyl phthalate		ND	J	450	3800
Dibenz(a,h)anthracene		ND		680	3800

Client: ARCADIS U.S. Inc Job Number: 480-85554-1

Client Sample ID: MW-1 (5-7)

Lab Sample ID: 480-85554-7 Date Sampled: 08/11/2015 1340
Client Matrix: Solid % Moisture: 12.6 Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52400.D
Dilution:	20			Initial Weight/Volume:	+30.51 g
Analysis Date:	08/20/2015 1817			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		28000		450	3800
Diethyl phthalate		ND		500	3800
Dimethyl phthalate		ND		450	3800
Fluoranthene		58000		410	3800
Fluorene		35000		450	3800
Hexachlorobenzene		ND		520	3800
Hexachlorobutadiene		ND		560	3800
Hexachlorocyclopentadiene		ND		520	3800
Hexachloroethane		ND		500	3800
Indeno[1,2,3-cd]pyrene		9200		470	3800
Isophorone		ND		810	3800
N-Nitrosodi-n-propylamine		ND		650	3800
N-Nitrosodiphenylamine		ND		3100	3800
Naphthalene	160000	~~140000~~	~~E~~ D	500	3800
Nitrobenzene		ND		430	3800
Pentachlorophenol		ND		3800	7400
Phenanthrene	140000	~~110000~~	~~E~~ D	560	3800
Phenol		ND		590	3800
Pyrene		51000		450	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	189	X	39 - 146
2-Fluorobiphenyl	92		37 - 120
2-Fluorophenol	79		18 - 120
Nitrobenzene-d5	117		34 - 132
p-Terphenyl-d14	105		65 - 153
Phenol-d5	89		11 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-1 (5-7)**

Lab Sample ID: 480-85554-7
Client Matrix: Solid
% Moisture: 12.6

Date Sampled: 08/11/2015 1340
Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-260277	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52453.D
Dilution:	100			Initial Weight/Volume:	+30.51 g
Analysis Date:	08/25/2015 1243	Run Type:	DL	Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		9900	J	2800	19000
bis (2-chloroisopropyl) ether		ND		3800	19000
2,4,5-Trichlorophenol		ND		5200	19000
2,4,6-Trichlorophenol		ND		3800	19000
2,4-Dichlorophenol		ND		2000	19000
2,4-Dimethylphenol		5200	J	4600	19000
2,4-Dinitrophenol		ND		88000	190000
2,4-Dinitrotoluene		ND		3900	19000
2,6-Dinitrotoluene		ND		2300	19000
2-Chloronaphthalene		ND		3200	19000
2-Chlorophenol		ND		3500	19000
2-Methylnaphthalene		69000		3800	19000
2-Methylphenol		3500	J	2300	19000
2-Nitroaniline		ND		2800	37000
2-Nitrophenol		ND		5400	19000
3,3'-Dichlorobenzidine		ND		23000	37000
3-Nitroaniline		ND		5300	37000
4,6-Dinitro-2-methylphenol		ND		19000	37000
4-Bromophenyl phenyl ether		ND		2700	19000
4-Chloro-3-methylphenol		ND		4700	19000
4-Chloroaniline		ND		4700	19000
4-Chlorophenyl phenyl ether		ND		2400	19000
4-Methylphenol		5000	J	2300	37000
4-Nitroaniline		ND		10000	37000
4-Nitrophenol		ND		13000	37000
Acenaphthene		11000	J	2800	19000
Acenaphthylene		11000	J	2500	19000
Acetophenone		ND		2600	19000
Anthracene		37000		4700	19000
Atrazine		ND		6600	19000
Benzaldehyde		ND		15000	19000
Benzo[a]anthracene		32000		1900	19000
Benzo[a]pyrene		26000		2800	19000
Benzo[b]fluoranthene		28000		3000	19000
Benzo[g,h,i]perylene		10000	J	2000	19000
Benzo[k]fluoranthene		8100	J	2500	19000
Bis(2-chloroethoxy)methane		ND		4100	19000
Bis(2-chloroethyl)ether		ND		2500	19000
Bis(2-ethylhexyl) phthalate		ND		6500	19000
Butyl benzyl phthalate		ND		3200	19000
Caprolactam		ND		5700	19000
Carbazole		9800	J	2300	19000
Chrysene		26000		4300	19000
Di-n-butyl phthalate		ND		3300	19000
Di-n-octyl phthalate		ND		2300	19000
Dibenz(a,h)anthracene		ND		3400	19000

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-1 (5-7)**

Lab Sample ID: 480-85554-7
Client Matrix: Solid
% Moisture: 12.6
Date Sampled: 08/11/2015 1340
Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-260277	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52453.D
Dilution:	100			Initial Weight/Volume:	+30.51 g
Analysis Date:	08/25/2015 1243	Run Type:	DL	Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		32000		2300	19000
Diethyl phthalate		ND		2500	19000
Dimethyl phthalate		ND		2300	19000
Fluoranthene		68000		2000	19000
Fluorene		39000		2300	19000
Hexachlorobenzene		ND		2600	19000
Hexachlorobutadiene		ND		2800	19000
Hexachlorocyclopentadiene		ND		2600	19000
Hexachloroethane		ND		2500	19000
Indeno[1,2,3-cd]pyrene		13000	J	2400	19000
Isophorone		ND		4100	19000
N-Nitrosodi-n-propylamine		ND		3300	19000
N-Nitrosodiphenylamine		ND		16000	19000
Naphthalene		160000		2500	19000
Nitrobenzene		ND		2100	19000
Pentachlorophenol		ND		19000	37000
Phenanthrene		140000		2800	19000
Phenol		ND		2900	19000
Pyrene		56000		2300	19000

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	0	X	39 - 146
2-Fluorobiphenyl	0	X	37 - 120
2-Fluorophenol	0	X	18 - 120
Nitrobenzene-d5	0	X	34 - 132
p-Terphenyl-d14	0	X	65 - 153
Phenol-d5	0	X	11 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-1 (9-11)**

Lab Sample ID: 480-85554-8
Client Matrix: Solid
% Moisture: 14.9

Date Sampled: 08/11/2015 1400
Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 08/20/2015 1844
Prep Date: 08/13/2015 1351

Analysis Batch: 480-259596
Prep Batch: 480-258542

Instrument ID: HP5973V
Lab File ID: V52401.D
Initial Weight/Volume: +30.08 g
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		29	200
bis (2-chloroisopropyl) ether		ND		40	200
2,4,5-Trichlorophenol		ND		54	200
2,4,6-Trichlorophenol		ND		40	200
2,4-Dichlorophenol		ND		21	200
2,4-Dimethylphenol		ND		48	200
2,4-Dinitrophenol		ND		920	1900
2,4-Dinitrotoluene		ND		41	200
2,6-Dinitrotoluene		ND	J	23	200
2-Chloronaphthalene		ND		33	200
2-Chlorophenol		ND		36	200
2-Methylnaphthalene		ND		40	200
2-Methylphenol		ND		23	200
2-Nitroaniline		ND		29	390
2-Nitrophenol		ND	J	56	200
3,3'-Dichlorobenzidine		ND		230	390
3-Nitroaniline		ND		55	390
4,6-Dinitro-2-methylphenol		ND		200	390
4-Bromophenyl phenyl ether		ND		28	200
4-Chloro-3-methylphenol		ND		49	200
4-Chloroaniline		ND		49	200
4-Chlorophenyl phenyl ether		ND		25	200
4-Methylphenol		ND		23	390
4-Nitroaniline		ND		100	390
4-Nitrophenol		ND		140	390
Acenaphthene		ND		29	200
Acenaphthylene		ND		26	200
Acetophenone		ND		27	200
Anthracene		ND		49	200
Atrazine		ND		69	200
Benzaldehyde		ND		160	200
Benzo[a]anthracene		ND		20	200
Benzo[a]pyrene		ND		29	200
Benzo[b]fluoranthene		ND		32	200
Benzo[g,h,i]perylene		ND		21	200
Benzo[k]fluoranthene		ND		26	200
Bis(2-chloroethoxy)methane		ND		42	200
Bis(2-chloroethyl)ether		ND		26	200
Bis(2-ethylhexyl) phthalate		ND		68	200
Butyl benzyl phthalate		ND		33	200
Caprolactam		ND		60	200
Carbazole		ND		23	200
Chrysene		84	J	45	200
Di-n-butyl phthalate		ND		34	200
Di-n-octyl phthalate		ND	J	23	200
Dibenz(a,h)anthracene		ND		35	200

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-1 (9-11)**

Lab Sample ID: 480-85554-8
Client Matrix: Solid

% Moisture: 14.9

Date Sampled: 08/11/2015 1400
Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52401.D
Dilution:	1.0			Initial Weight/Volume:	+30.08 g
Analysis Date:	08/20/2015 1844			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		23	200
Diethyl phthalate		ND		26	200
Dimethyl phthalate		ND		23	200
Fluoranthene		ND		21	200
Fluorene		ND		23	200
Hexachlorobenzene		ND		27	200
Hexachlorobutadiene		ND		29	200
Hexachlorocyclopentadiene		ND		27	200
Hexachloroethane		ND		26	200
Indeno[1,2,3-cd]pyrene		ND		25	200
Isophorone		ND		42	200
N-Nitrosodi-n-propylamine		ND		34	200
N-Nitrosodiphenylamine		ND		160	200
Naphthalene		ND		26	200
Nitrobenzene		ND		22	200
Pentachlorophenol		ND		200	390
Phenanthrene		ND		29	200
Phenol		ND		30	200
Pyrene		ND		23	200

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	82		39 - 146
2-Fluorobiphenyl	84		37 - 120
2-Fluorophenol	71		18 - 120
Nitrobenzene-d5	73		34 - 132
p-Terphenyl-d14	92		65 - 153
Phenol-d5	76		11 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **DUP-081115**

Lab Sample ID: 480-85554-9
Client Matrix: Solid
% Moisture: 8.3

Date Sampled: 08/11/2015 0000
Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D
Prep Method: 3550C
Dilution: 1.0
Analysis Date: 08/20/2015 1912
Prep Date: 08/13/2015 1351

Analysis Batch: 480-259596
Prep Batch: 480-258542

Instrument ID: HP5973V
Lab File ID: V52402.D
Initial Weight/Volume: +30.24 g
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		27	180
bis (2-chloroisopropyl) ether		ND		37	180
2,4,5-Trichlorophenol		ND		50	180
2,4,6-Trichlorophenol		ND		37	180
2,4-Dichlorophenol		ND		19	180
2,4-Dimethylphenol		ND		44	180
2,4-Dinitrophenol		ND		850	1800
2,4-Dinitrotoluene		ND		38	180
2,6-Dinitrotoluene		ND	J	22	180
2-Chloronaphthalene		ND		30	180
2-Chlorophenol		ND		34	180
2-Methylnaphthalene		ND		37	180
2-Methylphenol		ND		22	180
2-Nitroaniline		ND		27	360
2-Nitrophenol		ND	J	52	180
3,3'-Dichlorobenzidine		ND		220	360
3-Nitroaniline		ND		51	360
4,6-Dinitro-2-methylphenol		ND		180	360
4-Bromophenyl phenyl ether		ND		26	180
4-Chloro-3-methylphenol		ND		45	180
4-Chloroaniline		ND		45	180
4-Chlorophenyl phenyl ether		ND		23	180
4-Methylphenol		ND		22	360
4-Nitroaniline		ND		96	360
4-Nitrophenol		ND		130	360
Acenaphthene		ND		27	180
Acenaphthylene		ND		24	180
Acetophenone		ND		25	180
Anthracene		ND		45	180
Atrazine		ND		64	180
Benzaldehyde		ND		150	180
Benzo[a]anthracene		ND		18	180
Benzo[a]pyrene		ND		27	180
Benzo[b]fluoranthene		ND		29	180
Benzo[g,h,i]perylene		ND		19	180
Benzo[k]fluoranthene		ND		24	180
Bis(2-chloroethoxy)methane		ND		39	180
Bis(2-chloroethyl)ether		ND		24	180
Bis(2-ethylhexyl) phthalate		ND		63	180
Butyl benzyl phthalate		ND		30	180
Caprolactam		ND		55	180
Carbazole		ND		22	180
Chrysene		62	J	41	180
Di-n-butyl phthalate		ND		31	180
Di-n-octyl phthalate		ND	J	22	180
Dibenz(a,h)anthracene		ND		32	180

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: DUP-081115

Lab Sample ID: 480-85554-9
Client Matrix: Solid

% Moisture: 8.3

Date Sampled: 08/11/2015 0000
Date Received: 08/13/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259596	Instrument ID:	HP5973V
Prep Method:	3550C	Prep Batch:	480-258542	Lab File ID:	V52402.D
Dilution:	1.0			Initial Weight/Volume:	+30.24 g
Analysis Date:	08/20/2015 1912			Final Weight/Volume:	1 mL
Prep Date:	08/13/2015 1351			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		22	180
Diethyl phthalate		ND		24	180
Dimethyl phthalate		ND		22	180
Fluoranthene		ND		19	180
Fluorene		ND		22	180
Hexachlorobenzene		ND		25	180
Hexachlorobutadiene		ND		27	180
Hexachlorocyclopentadiene		ND		25	180
Hexachloroethane		ND		24	180
Indeno[1,2,3-cd]pyrene		ND		23	180
Isophorone		ND		39	180
N-Nitrosodi-n-propylamine		ND		31	180
N-Nitrosodiphenylamine		ND		150	180
Naphthalene		ND		24	180
Nitrobenzene		ND		21	180
Pentachlorophenol		ND		180	360
Phenanthrene		ND		27	180
Phenol		ND		28	180
Pyrene		ND		22	180

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	80		39 - 146
2-Fluorobiphenyl	83		37 - 120
2-Fluorophenol	71		18 - 120
Nitrobenzene-d5	72		34 - 132
p-Terphenyl-d14	93		65 - 153
Phenol-d5	77		11 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-5 (10-12)**

Lab Sample ID: 480-85554-1
Client Matrix: Solid
% Moisture: 12.4

Date Sampled: 08/11/2015 1530
Date Received: 08/13/2015 0900

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 08/17/2015 0905
Prep Date: 08/14/2015 1635

Analysis Batch: 480-259063
Prep Batch: 480-258782

Instrument ID: ICAP1
Lab File ID: I1081715A-3.asc
Initial Weight/Volume: +0.4821 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		16400 J		5.2	11.8
Antimony		0.99	J	0.47	17.7
Arsenic		3.9		0.47	2.4
Barium		168 J		0.13	0.59
Beryllium		0.82		0.033	0.24
Cadmium		0.053	J	0.035	0.24
Calcium		40000 J	~~B~~	3.9	59.2
Chromium		24.8 J		0.24	0.59
Cobalt		14.9		0.059	0.59
Copper		26.6		0.25	1.2
Iron		23800 J		4.1	11.8
Lead		10.9		0.28	1.2
Magnesium		7800 J		1.1	23.7
Manganese		302 J	~~B~~	0.038	0.24
Nickel		42.1		0.27	5.9
Potassium		3550 J		23.7	35.5
Selenium		1.0	J	0.47	4.7
Silver		ND		0.24	0.71
Sodium		523		15.4	166
Thallium		ND		0.35	7.1
Vanadium		20.8 J		0.13	0.59
Zinc		69.9 J		0.76	2.4

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-5 (12-14)**

Lab Sample ID: 480-85554-2
Client Matrix: Solid
% Moisture: 8.1

Date Sampled: 08/11/2015 1550
Date Received: 08/13/2015 0900

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 08/17/2015 0908
Prep Date: 08/14/2015 1635

Analysis Batch: 480-259063
Prep Batch: 480-258782

Instrument ID: ICAP1
Lab File ID: I1081715A-3.asc
Initial Weight/Volume: +0.4867 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		15300 J		4.9	11.2
Antimony		ND J		0.45	16.8
Arsenic		4.8		0.45	2.2
Barium		69.5 J		0.12	0.56
Beryllium		0.75		0.031	0.22
Cadmium		0.26		0.034	0.22
Calcium		35000 J	~~B~~	3.7	55.9
Chromium		22.9 J		0.22	0.56
Cobalt		14.5		0.056	0.56
Copper		31.0		0.23	1.1
Iron		24300 J		3.9	11.2
Lead		14.3		0.27	1.1
Magnesium		7460 J		1.0	22.4
Manganese		284 J	~~B~~	0.036	0.22
Nickel		41.0		0.26	5.6
Potassium		3030 J		22.4	33.6
Selenium		ND		0.45	4.5
Silver		ND		0.22	0.67
Sodium		472		14.5	157
Thallium		ND		0.34	6.7
Vanadium		18.7 J		0.12	0.56
Zinc		203 J		0.72	2.2

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-6 (9-11)**

Lab Sample ID: 480-85554-3
Client Matrix: Solid
% Moisture: 5.6

Date Sampled: 08/12/2015 1230
Date Received: 08/13/2015 0900

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 08/17/2015 0911
Prep Date: 08/14/2015 1635

Analysis Batch: 480-259063
Prep Batch: 480-258782

Instrument ID: ICAP1
Lab File ID: I1081715A-3.asc
Initial Weight/Volume: +0.5109 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		15100 J		4.6	10.4
Antimony		ND J	~~F1~~	0.41	15.6
Arsenic		2.8		0.41	2.1
Barium		98.9 J	~~F1~~	0.11	0.52
Beryllium		0.76		0.029	0.21
Cadmium		0.056	J	0.031	0.21
Calcium		45300 J	~~B~~	3.4	51.8
Chromium		22.9 J		0.21	0.52
Cobalt		13.4		0.052	0.52
Copper		27.0		0.22	1.0
Iron		21300 J		3.6	10.4
Lead		9.7		0.25	1.0
Magnesium		7400 J	~~F1~~	0.96	20.7
Manganese		295 J	~~B~~	0.033	0.21
Nickel		40.4		0.24	5.2
Potassium		3110 J	~~F1~~	20.7	31.1
Selenium		ND		0.41	4.1
Silver		ND		0.21	0.62
Sodium		427		13.5	145
Thallium		ND		0.31	6.2
Vanadium		19.2 J	~~F1~~	0.11	0.52
Zinc		75.4 J	~~F1~~	0.66	2.1

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-6 (13-14.2)**

Lab Sample ID: 480-85554-4
Client Matrix: Solid
% Moisture: 5.4

Date Sampled: 08/12/2015 1250
Date Received: 08/13/2015 0900

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 08/17/2015 0935
Prep Date: 08/14/2015 1635

Analysis Batch: 480-259063
Prep Batch: 480-258782

Instrument ID: ICAP1
Lab File ID: I1081715A-3.asc
Initial Weight/Volume: +0.4996 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)		Qualifier	MDL	RL
Aluminum		17900	J		4.7	10.6
Antimony		ND	J		0.42	15.9
Arsenic		3.5			0.42	2.1
Barium		58.8	J		0.12	0.53
Beryllium		0.92			0.030	0.21
Cadmium		ND			0.032	0.21
Calcium		22600	J	~~B~~	3.5	52.9
Chromium		27.2	J		0.21	0.53
Cobalt		14.7			0.053	0.53
Copper		28.3			0.22	1.1
Iron		24100	J		3.7	10.6
Lead		11.8			0.25	1.1
Magnesium		9170	J		0.98	21.2
Manganese		269	J	~~B~~	0.034	0.21
Nickel		42.9			0.24	5.3
Potassium		3980	J		21.2	31.7
Selenium		0.46		J	0.42	4.2
Silver		ND			0.21	0.63
Sodium		240			13.8	148
Thallium		ND			0.32	6.3
Vanadium		22.7	J		0.12	0.53
Zinc		52.2	J		0.68	2.1

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-4 (5-7)**

Lab Sample ID: 480-85554-5
Client Matrix: Solid
% Moisture: 18.1

Date Sampled: 08/10/2015 1340
Date Received: 08/13/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259063	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-258782	Lab File ID:	I1081715A-3.asc
Dilution:	1.0			Initial Weight/Volume:	+0.4908 g
Analysis Date:	08/17/2015 0938			Final Weight/Volume:	50 mL
Prep Date:	08/14/2015 1635				

Analyte	DryWt Corrected: Y	Result (mg/Kg)		Qualifier	MDL	RL
Aluminum		9860	J		5.5	12.4
Antimony		ND	J		0.50	18.7
Arsenic		23.9			0.50	2.5
Barium		95.3	J		0.14	0.62
Beryllium		0.90			0.035	0.25
Cadmium		0.29			0.037	0.25
Calcium		49500	J	~~B~~	4.1	62.2
Chromium		15.7	J		0.25	0.62
Cobalt		6.5			0.062	0.62
Copper		49.0			0.26	1.2
Iron		11000	J		4.4	12.4
Lead		138			0.30	1.2
Magnesium		3640	J		1.2	24.9
Manganese		197	J	~~B~~	0.040	0.25
Nickel		20.8			0.29	6.2
Potassium		1450	J		24.9	37.3
Selenium		0.56		J	0.50	5.0
Silver		ND			0.25	0.75
Sodium		736			16.2	174
Thallium		ND			0.37	7.5
Vanadium		21.9	J		0.14	0.62
Zinc		135	J		0.80	2.5

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-4 (13-14.5)**

Lab Sample ID: 480-85554-6
Client Matrix: Solid
% Moisture: 13.9

Date Sampled: 08/10/2015 1400
Date Received: 08/13/2015 0900

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 08/17/2015 0941
Prep Date: 08/14/2015 1635

Analysis Batch: 480-259063
Prep Batch: 480-258782

Instrument ID: ICAP1
Lab File ID: I1081715A-3.asc
Initial Weight/Volume: +0.5215 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		17800 J		4.9	11.1
Antimony		ND J		0.45	16.7
Arsenic		6.6		0.45	2.2
Barium		63.9 J		0.12	0.56
Beryllium		0.95		0.031	0.22
Cadmium		0.13	J	0.033	0.22
Calcium		12900 J	~~B~~	3.7	55.7
Chromium		26.6 J		0.22	0.56
Cobalt		15.4		0.056	0.56
Copper		42.2		0.23	1.1
Iron		27100 J		3.9	11.1
Lead		22.3		0.27	1.1
Magnesium		6780 J		1.0	22.3
Manganese		285 J	~~B~~	0.036	0.22
Nickel		54.2		0.26	5.6
Potassium		3840 J		22.3	33.4
Selenium		ND		0.45	4.5
Silver		ND		0.22	0.67
Sodium		173		14.5	156
Thallium		ND		0.33	6.7
Vanadium		24.7 J		0.12	0.56
Zinc		90.5 J		0.71	2.2

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-1 (5-7)**

Lab Sample ID: 480-85554-7
Client Matrix: Solid
% Moisture: 12.6

Date Sampled: 08/11/2015 1340
Date Received: 08/13/2015 0900

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 08/17/2015 0944
Prep Date: 08/14/2015 1635

Analysis Batch: 480-259063
Prep Batch: 480-258782

Instrument ID: ICAP1
Lab File ID: I1081715A-3.asc
Initial Weight/Volume: +0.4821 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)		Qualifier	MDL	RL
Aluminum		16600	J		5.2	11.9
Antimony		ND	J		0.47	17.8
Arsenic		2.2		J	0.47	2.4
Barium		66.3	J		0.13	0.59
Beryllium		0.82			0.033	0.24
Cadmium		0.037		J	0.036	0.24
Calcium		56600	J	~~B~~	3.9	59.4
Chromium		24.7	J		0.24	0.59
Cobalt		13.5			0.059	0.59
Copper		27.8			0.25	1.2
Iron		20200	J		4.2	11.9
Lead		10.1			0.28	1.2
Magnesium		7830	J		1.1	23.7
Manganese		345	J	~~B~~	0.038	0.24
Nickel		43.3			0.27	5.9
Potassium		3650	J		23.7	35.6
Selenium		ND			0.47	4.7
Silver		ND			0.24	0.71
Sodium		226			15.4	166
Thallium		ND			0.36	7.1
Vanadium		21.6	J		0.13	0.59
Zinc		56.1	J		0.76	2.4

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **MW-1 (9-11)**

Lab Sample ID: 480-85554-8
Client Matrix: Solid
% Moisture: 14.9

Date Sampled: 08/11/2015 1400
Date Received: 08/13/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259063	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-258782	Lab File ID:	I1081715A-3.asc
Dilution:	1.0			Initial Weight/Volume:	+0.5023 g
Analysis Date:	08/17/2015 0947			Final Weight/Volume:	50 mL
Prep Date:	08/14/2015 1635				

Analyte	DryWt Corrected: Y	Result (mg/Kg)		Qualifier	MDL	RL
Aluminum		17100	J		5.1	11.7
Antimony		ND	J		0.47	17.5
Arsenic		2.9			0.47	2.3
Barium		86.4	J		0.13	0.58
Beryllium		0.83			0.033	0.23
Cadmium		0.041		J	0.035	0.23
Calcium		45300	J	~~B~~	3.9	58.5
Chromium		26.1	J		0.23	0.58
Cobalt		13.7			0.058	0.58
Copper		28.0			0.25	1.2
Iron		23800	J		4.1	11.7
Lead		10.1			0.28	1.2
Magnesium		8340	J		1.1	23.4
Manganese		333	J	~~B~~	0.037	0.23
Nickel		44.5			0.27	5.8
Potassium		3470	J		23.4	35.1
Selenium		ND			0.47	4.7
Silver		ND			0.23	0.70
Sodium		212			15.2	164
Thallium		ND			0.35	7.0
Vanadium		20.9	J		0.13	0.58
Zinc		71.7	J		0.75	2.3

Client: ARCADIS U.S. Inc

Job Number: 480-85554-1

Client Sample ID: **DUP-081115**

Lab Sample ID: 480-85554-9
Client Matrix: Solid
% Moisture: 8.3

Date Sampled: 08/11/2015 0000
Date Received: 08/13/2015 0900

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 08/17/2015 1053
Prep Date: 08/14/2015 1635

Analysis Batch: 480-259063
Prep Batch: 480-258781

Instrument ID: ICAP1
Lab File ID: I1081715A-3.asc
Initial Weight/Volume: +0.5085 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)		Qualifier	MDL	RL
Aluminum		15200	J		4.7	10.7
Antimony		ND	J		0.43	16.1
Arsenic		3.1			0.43	2.1
Barium		45.9	J		0.12	0.54
Beryllium		0.74			0.030	0.21
Cadmium		0.048		J	0.032	0.21
Calcium		41800	J	~~B~~	3.5	53.6
Chromium		23.8	J		0.21	0.54
Cobalt		13.3			0.054	0.54
Copper		27.3			0.23	1.1
Iron		22400	J		3.8	10.7
Lead		11.2			0.26	1.1
Magnesium		7520	J		0.99	21.5
Manganese		304	J		0.034	0.21
Nickel		41.6			0.25	5.4
Potassium		2750	J		21.5	32.2
Selenium		ND			0.43	4.3
Silver		ND			0.21	0.64
Sodium		163			13.9	150
Thallium		ND			0.32	6.4
Vanadium		17.2	J		0.12	0.54
Zinc		76.4	J		0.69	2.1

General Chemistry

Client Sample ID: **MW-5 (10-12)**

Lab Sample ID: 480-85554-1 Date Sampled: 08/11/2015 1530
Client Matrix: Solid % Moisture: 12.4 Date Received: 08/13/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	2.9		mg/Kg	0.53	1.1	1.0	9012B
Analysis Batch: 480-259694	Analysis Date: 08/20/2015 1323						DryWt Corrected: Y
Prep Batch: 480-259547	Prep Date: 08/20/2015 0725						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	12		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N
Percent Solids	88		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N

General Chemistry

Client Sample ID: **MW-5 (12-14)**

Lab Sample ID: 480-85554-2 Date Sampled: 08/11/2015 1550
Client Matrix: Solid % Moisture: 8.1 Date Received: 08/13/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	3.8		mg/Kg	0.51	1.1	1.0	9012B
Analysis Batch: 480-259694	Analysis Date: 08/20/2015 1326						DryWt Corrected: Y
Prep Batch: 480-259547	Prep Date: 08/20/2015 0725						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	8.1		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N
Percent Solids	92		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N

General Chemistry

Client Sample ID: **MW-6 (9-11)**

Lab Sample ID: 480-85554-3 Date Sampled: 08/12/2015 1230
Client Matrix: Solid % Moisture: 5.6 Date Received: 08/13/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.50	1.0	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1010						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	5.6		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N
Percent Solids	94		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N

General Chemistry

Client Sample ID: **MW-6 (13-14.2)**

Lab Sample ID: 480-85554-4 Date Sampled: 08/12/2015 1250
Client Matrix: Solid % Moisture: 5.4 Date Received: 08/13/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.49	1.0	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1014						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	5.4		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N
Percent Solids	95		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N

General Chemistry

Client Sample ID: **MW-4 (5-7)**

Lab Sample ID: 480-85554-5 Date Sampled: 08/10/2015 1340
Client Matrix: Solid % Moisture: 18.1 Date Received: 08/13/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	5.8		mg/Kg	0.57	1.2	1.0	9012B
Analysis Batch: 480-259694	Analysis Date: 08/20/2015 1329						DryWt Corrected: Y
Prep Batch: 480-259547	Prep Date: 08/20/2015 0725						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	18		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N
Percent Solids	82		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N

General Chemistry

Client Sample ID: **MW-4 (13-14.5)**

Lab Sample ID: 480-85554-6 Date Sampled: 08/10/2015 1400
Client Matrix: Solid % Moisture: 13.9 Date Received: 08/13/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.53	1.1	1.0	9012B
Analysis Batch: 480-259694	Analysis Date: 08/20/2015 1330						DryWt Corrected: Y
Prep Batch: 480-259547	Prep Date: 08/20/2015 0725						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	14		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N
Percent Solids	86		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N

General Chemistry

Client Sample ID: **MW-1 (5-7)**

Lab Sample ID: 480-85554-7 Date Sampled: 08/11/2015 1340
Client Matrix: Solid % Moisture: 12.6 Date Received: 08/13/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.55	1.1	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1015						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	13		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N
Percent Solids	87		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N

General Chemistry

Client Sample ID: **MW-1 (9-11)**

Lab Sample ID: 480-85554-8 Date Sampled: 08/11/2015 1400
Client Matrix: Solid % Moisture: 14.9 Date Received: 08/13/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	0.86	J	mg/Kg	0.56	1.2	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1017						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	15		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N
Percent Solids	85		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N

General Chemistry

Client Sample ID: DUP-081115

Lab Sample ID: 480-85554-9 Date Sampled: 08/11/2015 0000
Client Matrix: Solid % Moisture: 8.3 Date Received: 08/13/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	0.55	J	mg/Kg	0.52	1.1	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1018						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	8.3		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N
Percent Solids	92		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258632	Analysis Date: 08/13/2015 2303						DryWt Corrected: N

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
ARCADIS/RGE	Bruce Ahrens	8.13.15	297361
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 1
295 Woodcliff Drive	585-385-0090		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Fairport / NY / 14450	Kevin Boyce	Melissa Sayo	
Project Name and Location (State)	**Carrier/Waybill Number**		
Genesee Park Street			
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

480-85640 Chain of Custody

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	MeOH	TCL VOC	TCL SVOC	TAL Metals	Cyanide	3/10.13	
MW-2 (5-7)	8.12.15	1530				X	4	2					1	X	X	X	X		
MW-2 (9-13)	↓	1550				↓	↓	↓					↓	↓	↓	↓	↓		
MW-7 (4-6)		1400												↓	↓	↓	↓		
MW-7 (6-8.3)	↓	1430					↓	↓					↓	X	X	X	X		
MW-3 (7-9)	8.13.15	1000					13	6					3	X	X	X	X	X	MS/MSD
MW-3 (9-10.2)	8.13.15	1015					4	2					1	X	X	X	X		
TRIP BLANK	8.13.15	—		X						1				X					

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Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (per contract)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Standard

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	8.13.15	1400	1. Received By	8/14/15	Overnight
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

2.4 °C

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

10/21/2015

DATA REPORTING QUALIFIERS

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Lab Section	Qualifier	Description
GC/MS VOA		
	*	LCS or LCSD is outside acceptance limits.
	F1	MS and/or MSD Recovery is outside acceptance limits.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	F2	MS/MSD RPD exceeds control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
GC/MS Semi VOA		
	F1	MS and/or MSD Recovery is outside acceptance limits.
	F2	MS/MSD RPD exceeds control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Metals		
	B	Compound was found in the blank and sample.
	F1	MS and/or MSD Recovery is outside acceptance limits.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	W	PS: Post-digestion spike was outside control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	V	Serial Dilution exceeds the control limits

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: MW-2 (5-7)

Lab Sample ID: 480-85640-1
Client Matrix: Solid

% Moisture: 7.9

Date Sampled: 08/12/2015 1530
Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/21/2015 0621
Prep Date: 08/14/2015 1300

Analysis Batch: 480-259752
Prep Batch: 480-259754

Instrument ID: HP5973P
Lab File ID: P9367.D
Initial Weight/Volume: 7.221 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.27	3.8
1,1,2,2-Tetrachloroethane		ND		0.61	3.8
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.86	3.8
1,1,2-Trichloroethane		ND		0.49	3.8
1,1-Dichloroethane		ND		0.46	3.8
1,1-Dichloroethene		ND		0.46	3.8
1,2,4-Trichlorobenzene		ND		0.23	3.8
1,2-Dibromo-3-Chloropropane		ND		1.9	3.8
1,2-Dibromoethane		ND		0.48	3.8
1,2-Dichlorobenzene		ND		0.29	3.8
1,2-Dichloroethane		ND		0.19	3.8
1,2-Dichloropropane		ND		1.9	3.8
1,3-Dichlorobenzene		ND		0.19	3.8
1,4-Dichlorobenzene		ND		0.53	3.8
2-Butanone (MEK)		ND		1.4	19
2-Hexanone		ND		1.9	19
4-Methyl-2-pentanone (MIBK)		ND		1.2	19
Acetone		22	UB	3.2	19
Benzene		ND		0.18	3.8
Bromodichloromethane		ND		0.50	3.8
Bromoform		ND	*	1.9	3.8
Bromomethane		ND		0.34	3.8
Carbon disulfide		ND		1.9	3.8
Carbon tetrachloride		ND		0.36	3.8
Chlorobenzene		ND		0.50	3.8
Chloroethane		ND	J *	0.85	3.8
Chloroform		ND		0.23	3.8
Chloromethane		ND	J	0.23	3.8
cis-1,2-Dichloroethene		ND		0.48	3.8
cis-1,3-Dichloropropene		ND		0.54	3.8
Cyclohexane		ND		0.53	3.8
Dibromochloromethane		ND		0.48	3.8
Dichlorodifluoromethane		ND		0.31	3.8
Ethylbenzene		ND		0.26	3.8
Isopropylbenzene		ND		0.57	3.8
Methyl acetate		ND		2.3	3.8
Methyl tert-butyl ether		ND		0.37	3.8
Methylcyclohexane		0.91	J	0.57	3.8
Methylene Chloride		ND	J	1.7	3.8
Styrene		ND		0.19	3.8
Tetrachloroethene		ND		0.50	3.8
Toluene		0.52	J	0.28	3.8
trans-1,2-Dichloroethene		ND		0.39	3.8
trans-1,3-Dichloropropene		ND		1.7	3.8
Trichloroethene		ND		0.83	3.8
Trichlorofluoromethane		ND		0.36	3.8

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-2 (5-7)

Lab Sample ID: 480-85640-1 Date Sampled: 08/12/2015 1530
Client Matrix: Solid % Moisture: 7.9 Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259752	Instrument ID:	HP5973P
Prep Method:	5035A	Prep Batch:	480-259754	Lab File ID:	P9367.D
Dilution:	1.0			Initial Weight/Volume:	7.221 g
Analysis Date:	08/21/2015 0621			Final Weight/Volume:	5 mL
Prep Date:	08/14/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.46	3.8
Xylenes, Total		1.2	J	0.63	7.5

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		64 - 126
4-Bromofluorobenzene (Surr)	124		72 - 126
Dibromofluoromethane (Surr)	109		60 - 140
Toluene-d8 (Surr)	116		71 - 125

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: **MW-2 (9-13)**

Lab Sample ID: 480-85640-2
Client Matrix: Solid
% Moisture: 7.5

Date Sampled: 08/12/2015 1550
Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/21/2015 0648
Prep Date: 08/14/2015 1300

Analysis Batch: 480-259752
Prep Batch: 480-259754

Instrument ID: HP5973P
Lab File ID: P9368.D
Initial Weight/Volume: 7.319 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.27	3.7
1,1,2,2-Tetrachloroethane		ND		0.60	3.7
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.84	3.7
1,1,2-Trichloroethane		ND		0.48	3.7
1,1-Dichloroethane		ND		0.45	3.7
1,1-Dichloroethene		ND		0.45	3.7
1,2,4-Trichlorobenzene		ND		0.22	3.7
1,2-Dibromo-3-Chloropropane		ND		1.8	3.7
1,2-Dibromoethane		ND		0.47	3.7
1,2-Dichlorobenzene		ND		0.29	3.7
1,2-Dichloroethane		0.32	J	0.19	3.7
1,2-Dichloropropane		ND		1.8	3.7
1,3-Dichlorobenzene		ND		0.19	3.7
1,4-Dichlorobenzene		ND		0.52	3.7
2-Butanone (MEK)		ND		1.4	18
2-Hexanone		ND		1.8	18
4-Methyl-2-pentanone (MIBK)		ND		1.2	18
Acetone		ND		3.1	18
Benzene		ND		0.18	3.7
Bromodichloromethane		ND		0.49	3.7
Bromoform		ND	*	1.8	3.7
Bromomethane		ND		0.33	3.7
Carbon disulfide		ND		1.8	3.7
Carbon tetrachloride		ND		0.36	3.7
Chlorobenzene		ND		0.49	3.7
Chloroethane		ND	J *	0.83	3.7
Chloroform		ND		0.23	3.7
Chloromethane		ND	J	0.22	3.7
cis-1,2-Dichloroethene		ND		0.47	3.7
cis-1,3-Dichloropropene		ND		0.53	3.7
Cyclohexane		ND		0.52	3.7
Dibromochloromethane		ND		0.47	3.7
Dichlorodifluoromethane		ND		0.30	3.7
Ethylbenzene		ND		0.25	3.7
Isopropylbenzene		ND		0.56	3.7
Methyl acetate		ND		2.2	3.7
Methyl tert-butyl ether		ND		0.36	3.7
Methylcyclohexane		ND		0.56	3.7
Methylene Chloride		ND	J	1.7	3.7
Styrene		ND		0.18	3.7
Tetrachloroethene		ND		0.50	3.7
Toluene		ND		0.28	3.7
trans-1,2-Dichloroethene		ND		0.38	3.7
trans-1,3-Dichloropropene		ND		1.6	3.7
Trichloroethene		ND		0.81	3.7
Trichlorofluoromethane		ND		0.35	3.7

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-2 (9-13)

Lab Sample ID: 480-85640-2 Date Sampled: 08/12/2015 1550
Client Matrix: Solid % Moisture: 7.5 Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259752	Instrument ID:	HP5973P
Prep Method:	5035A	Prep Batch:	480-259754	Lab File ID:	P9368.D
Dilution:	1.0			Initial Weight/Volume:	7.319 g
Analysis Date:	08/21/2015 0648			Final Weight/Volume:	5 mL
Prep Date:	08/14/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.45	3.7
Xylenes, Total		ND		0.62	7.4

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		64 - 126
4-Bromofluorobenzene (Surr)	124		72 - 126
Dibromofluoromethane (Surr)	102		60 - 140
Toluene-d8 (Surr)	100		71 - 125

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: MW-7 (4-6)

Lab Sample ID: 480-85640-3
Client Matrix: Solid
% Moisture: 13.5

Date Sampled: 08/12/2015 1400
Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/21/2015 0716
Prep Date: 08/14/2015 1300

Analysis Batch: 480-259752
Prep Batch: 480-259754

Instrument ID: HP5973P
Lab File ID: P9369.D
Initial Weight/Volume: 7.226 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.29	4.0
1,1,2,2-Tetrachloroethane		ND		0.65	4.0
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.91	4.0
1,1,2-Trichloroethane		ND		0.52	4.0
1,1-Dichloroethane		ND		0.49	4.0
1,1-Dichloroethene		ND		0.49	4.0
1,2,4-Trichlorobenzene		ND		0.24	4.0
1,2-Dibromo-3-Chloropropane		ND		2.0	4.0
1,2-Dibromoethane		ND		0.51	4.0
1,2-Dichlorobenzene		ND		0.31	4.0
1,2-Dichloroethane		ND		0.20	4.0
1,2-Dichloropropane		ND		2.0	4.0
1,3-Dichlorobenzene		ND		0.21	4.0
1,4-Dichlorobenzene		ND		0.56	4.0
2-Butanone (MEK)		ND		1.5	20
2-Hexanone		ND		2.0	20
4-Methyl-2-pentanone (MIBK)		ND		1.3	20
Acetone	20	~~8.5~~	~~J~~ UB	3.4	20
Benzene		ND		0.20	4.0
Bromodichloromethane		ND		0.54	4.0
Bromoform		ND	*	2.0	4.0
Bromomethane		ND		0.36	4.0
Carbon disulfide		ND		2.0	4.0
Carbon tetrachloride		ND		0.39	4.0
Chlorobenzene		ND		0.53	4.0
Chloroethane		ND	J *	0.90	4.0
Chloroform		ND		0.25	4.0
Chloromethane		ND	J	0.24	4.0
cis-1,2-Dichloroethene		ND		0.51	4.0
cis-1,3-Dichloropropene		ND		0.58	4.0
Cyclohexane		ND		0.56	4.0
Dibromochloromethane		ND		0.51	4.0
Dichlorodifluoromethane		ND		0.33	4.0
Ethylbenzene		ND		0.28	4.0
Isopropylbenzene		ND		0.60	4.0
Methyl acetate		ND		2.4	4.0
Methyl tert-butyl ether		ND		0.39	4.0
Methylcyclohexane		ND		0.61	4.0
Methylene Chloride		ND	J	1.8	4.0
Styrene		ND		0.20	4.0
Tetrachloroethene		ND		0.54	4.0
Toluene		ND		0.30	4.0
trans-1,2-Dichloroethene		ND		0.41	4.0
trans-1,3-Dichloropropene		ND		1.8	4.0
Trichloroethene		ND		0.88	4.0
Trichlorofluoromethane		ND		0.38	4.0

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-7 (4-6)

Lab Sample ID: 480-85640-3 Date Sampled: 08/12/2015 1400
Client Matrix: Solid % Moisture: 13.5 Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259752	Instrument ID:	HP5973P
Prep Method:	5035A	Prep Batch:	480-259754	Lab File ID:	P9369.D
Dilution:	1.0			Initial Weight/Volume:	7.226 g
Analysis Date:	08/21/2015 0716			Final Weight/Volume:	5 mL
Prep Date:	08/14/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.49	4.0
Xylenes, Total		1.0	J	0.67	8.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		64 - 126
4-Bromofluorobenzene (Surr)	123		72 - 126
Dibromofluoromethane (Surr)	99		60 - 140
Toluene-d8 (Surr)	104		71 - 125

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: **MW-7 (6-8.3)**

Lab Sample ID: 480-85640-4
Client Matrix: Solid
% Moisture: 9.4

Date Sampled: 08/12/2015 1430
Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 1.0
Analysis Date: 08/24/2015 1338
Prep Date: 08/14/2015 1300

Analysis Batch: 480-260056
Prep Batch: 480-260092

Instrument ID: HP5973F
Lab File ID: F0341.D
Initial Weight/Volume: 7.22 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.28	3.8
1,1,2,2-Tetrachloroethane		ND		0.62	3.8
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.87	3.8
1,1,2-Trichloroethane		ND		0.50	3.8
1,1-Dichloroethane		ND		0.47	3.8
1,1-Dichloroethene		ND		0.47	3.8
1,2,4-Trichlorobenzene		ND		0.23	3.8
1,2-Dibromo-3-Chloropropane		ND		1.9	3.8
1,2-Dibromoethane		ND		0.49	3.8
1,2-Dichlorobenzene		ND		0.30	3.8
1,2-Dichloroethane		ND		0.19	3.8
1,2-Dichloropropane		ND		1.9	3.8
1,3-Dichlorobenzene		ND		0.20	3.8
1,4-Dichlorobenzene		ND		0.54	3.8
2-Butanone (MEK)		ND	~~*~~	1.4	19
2-Hexanone		ND		1.9	19
4-Methyl-2-pentanone (MIBK)		ND		1.3	19
Acetone	19	~~3.2~~	~~J~~ UB	3.2	19
Benzene		ND		0.19	3.8
Bromodichloromethane		ND		0.51	3.8
Bromoform		ND		1.9	3.8
Bromomethane		ND		0.34	3.8
Carbon disulfide		ND		1.9	3.8
Carbon tetrachloride		ND		0.37	3.8
Chlorobenzene		ND		0.50	3.8
Chloroethane		ND		0.86	3.8
Chloroform		ND		0.24	3.8
Chloromethane		ND		0.23	3.8
cis-1,2-Dichloroethene		ND		0.49	3.8
cis-1,3-Dichloropropene		ND		0.55	3.8
Cyclohexane		ND		0.54	3.8
Dibromochloromethane		ND J		0.49	3.8
Dichlorodifluoromethane		ND J		0.32	3.8
Ethylbenzene		0.91	J	0.26	3.8
Isopropylbenzene		ND		0.58	3.8
Methyl acetate		ND		2.3	3.8
Methyl tert-butyl ether		ND		0.38	3.8
Methylcyclohexane		2.4	J	0.58	3.8
Methylene Chloride		ND		1.8	3.8
Styrene		ND		0.19	3.8
Tetrachloroethene		ND		0.51	3.8
Toluene		ND		0.29	3.8
trans-1,2-Dichloroethene		ND		0.39	3.8
trans-1,3-Dichloropropene		ND		1.7	3.8
Trichloroethene		ND		0.84	3.8
Trichlorofluoromethane		ND		0.36	3.8

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-7 (6-8.3)

Lab Sample ID: 480-85640-4 Date Sampled: 08/12/2015 1430
Client Matrix: Solid % Moisture: 9.4 Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-260056	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-260092	Lab File ID:	F0341.D
Dilution:	1.0			Initial Weight/Volume:	7.22 g
Analysis Date:	08/24/2015 1338			Final Weight/Volume:	5 mL
Prep Date:	08/14/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.47	3.8
Xylenes, Total		6.4	J	0.64	7.6

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		64 - 126
4-Bromofluorobenzene (Surr)	81		72 - 126
Dibromofluoromethane (Surr)	97		60 - 140
Toluene-d8 (Surr)	105		71 - 125

Client: ARCADIS U.S. Inc | Job Number: 480-85640-1

Client Sample ID: **MW-3 (7-9)**

Lab Sample ID: 480-85640-5 | Date Sampled: 08/13/2015 1000
Client Matrix: Solid | % Moisture: 7.0 | Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C | Analysis Batch: 480-259939 | Instrument ID: HP5973G
Prep Method: 5035A | Prep Batch: 480-259918 | Lab File ID: G41656.D
Dilution: 10 | Initial Weight/Volume: 7.268 g
Analysis Date: 08/22/2015 0136 | Final Weight/Volume: 5 mL
Prep Date: 08/14/2015 1300

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND	F1 F2	110	410
1,1,2,2-Tetrachloroethane		ND	F1 F2	66	410
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	F1	200	410
1,1,2-Trichloroethane		ND	F1 F2	86	410
1,1-Dichloroethane		ND	F1 F2	130	410
1,1-Dichloroethene		ND	F1 F2	140	410
1,2,4-Trichlorobenzene		ND	F1	150	410
1,2-Dibromo-3-Chloropropane		ND J	F1 F2	200	410
1,2-Dibromoethane		ND	F1 F2	71	410
1,2-Dichlorobenzene		ND	F1 F2	100	410
1,2-Dichloroethane		ND	F1 F2	170	410
1,2-Dichloropropane		ND	F1 F2	66	410
1,3-Dichlorobenzene		ND	F1 F2	110	410
1,4-Dichlorobenzene		ND	F1 F2	57	410
2-Butanone (MEK)		ND	F1 F2	1200	2000
2-Hexanone		ND	F1 F2	840	2000
4-Methyl-2-pentanone (MIBK)		ND	F1 F2	130	2000
Acetone		ND	F1 F2	1700	2000
Benzene		100	J F1 F2	77	410
Bromodichloromethane		ND	F1 F2	82	410
Bromoform		ND J	F1 F2	200	410
Bromomethane		ND	F1	90	410
Carbon disulfide		ND	F1 F2	190	410
Carbon tetrachloride		ND	F1 F2	100	410
Chlorobenzene		ND	F1 F2	54	410
Chloroethane		ND	F1	85	410
Chloroform		ND	F1 F2	280	410
Chloromethane		ND	F1	97	410
cis-1,2-Dichloroethene		ND	F1 F2	110	410
cis-1,3-Dichloropropene		ND	F1 F2	97	410
Cyclohexane		1500 J	F1	90	410
Dibromochloromethane		ND J	F1 F2	200	410
Dichlorodifluoromethane		ND	F1	180	410
Ethylbenzene		2500 J	F1	120	410
Isopropylbenzene		320	J F1 F2	61	410
Methyl acetate		ND	F1 F2	190	410
Methyl tert-butyl ether		ND	F1 F2	150	410
Methylcyclohexane		4900 J	F1	190	410
Methylene Chloride		ND J	F1 F2	81	410
Styrene		ND	F1 F2	98	410
Tetrachloroethene		ND	F1 F2	55	410
Toluene		ND	F1 F2	110	410
trans-1,2-Dichloroethene		ND	F1 F2	96	410
trans-1,3-Dichloropropene		ND	F1 F2	40	410
Trichloroethene		ND	F1 F2	110	410
Trichlorofluoromethane		ND	F1	190	410

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: **MW-3 (7-9)**

Lab Sample ID: 480-85640-5
Client Matrix: Solid
% Moisture: 7.0

Date Sampled: 08/13/2015 1000
Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259939	Instrument ID:	HP5973G
Prep Method:	5035A	Prep Batch:	480-259918	Lab File ID:	G41656.D
Dilution:	10			Initial Weight/Volume:	7.268 g
Analysis Date:	08/22/2015 0136			Final Weight/Volume:	5 mL
Prep Date:	08/14/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		~~ND~~	~~F1~~	140	410
Xylenes, Total		14000	J	230	820

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	89		53 - 146
4-Bromofluorobenzene (Surr)	99		49 - 148
Dibromofluoromethane (Surr)	90		60 - 140
Toluene-d8 (Surr)	95		50 - 149

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-3 (9-10.2)

Lab Sample ID: 480-85640-6 Date Sampled: 08/13/2015 1015
Client Matrix: Solid % Moisture: 7.7 Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-260056	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-260092	Lab File ID:	F0342.D
Dilution:	1.0			Initial Weight/Volume:	8.808 g
Analysis Date:	08/24/2015 1404			Final Weight/Volume:	5 mL
Prep Date:	08/14/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.22	3.1
1,1,2,2-Tetrachloroethane		ND		0.50	3.1
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.70	3.1
1,1,2-Trichloroethane		ND		0.40	3.1
1,1-Dichloroethane		ND		0.38	3.1
1,1-Dichloroethene		ND		0.38	3.1
1,2,4-Trichlorobenzene		ND		0.19	3.1
1,2-Dibromo-3-Chloropropane		ND		1.5	3.1
1,2-Dibromoethane		ND		0.39	3.1
1,2-Dichlorobenzene		ND		0.24	3.1
1,2-Dichloroethane		1.6	J	0.15	3.1
1,2-Dichloropropane		ND		1.5	3.1
1,3-Dichlorobenzene		ND		0.16	3.1
1,4-Dichlorobenzene		ND		0.43	3.1
2-Butanone (MEK)		ND	*	1.1	15
2-Hexanone		ND		1.5	15
4-Methyl-2-pentanone (MIBK)		ND		1.0	15
Acetone		ND		2.6	15
Benzene		2.0	J	0.15	3.1
Bromodichloromethane		ND		0.41	3.1
Bromoform		ND		1.5	3.1
Bromomethane		ND		0.28	3.1
Carbon disulfide		ND		1.5	3.1
Carbon tetrachloride		ND		0.30	3.1
Chlorobenzene		ND		0.41	3.1
Chloroethane		ND		0.69	3.1
Chloroform		ND		0.19	3.1
Chloromethane		ND		0.19	3.1
cis-1,2-Dichloroethene		ND		0.39	3.1
cis-1,3-Dichloropropene		ND		0.44	3.1
Cyclohexane		23		0.43	3.1
Dibromochloromethane		ND	J	0.39	3.1
Dichlorodifluoromethane		ND	J	0.25	3.1
Ethylbenzene		1.5	J	0.21	3.1
Isopropylbenzene		ND		0.46	3.1
Methyl acetate		ND		1.9	3.1
Methyl tert-butyl ether		7.9		0.30	3.1
Methylcyclohexane		25		0.47	3.1
Methylene Chloride		ND		1.4	3.1
Styrene		ND		0.15	3.1
Tetrachloroethene		ND		0.41	3.1
Toluene		0.25	J	0.23	3.1
trans-1,2-Dichloroethene		ND		0.32	3.1
trans-1,3-Dichloropropene		ND		1.4	3.1
Trichloroethene		ND		0.68	3.1
Trichlorofluoromethane		ND		0.29	3.1

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-3 (9-10.2)

Lab Sample ID: 480-85640-6 Date Sampled: 08/13/2015 1015
Client Matrix: Solid % Moisture: 7.7 Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-260056	Instrument ID:	HP5973F
Prep Method:	5035A	Prep Batch:	480-260092	Lab File ID:	F0342.D
Dilution:	1.0			Initial Weight/Volume:	8.808 g
Analysis Date:	08/24/2015 1404			Final Weight/Volume:	5 mL
Prep Date:	08/14/2015 1300				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.38	3.1
Xylenes, Total		5.6	J	0.52	6.1

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		64 - 126
4-Bromofluorobenzene (Surr)	97		72 - 126
Dibromofluoromethane (Surr)	97		60 - 140
Toluene-d8 (Surr)	100		71 - 125

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: **TRIP BLANK**

Lab Sample ID: 480-85640-7
Client Matrix: Water

Date Sampled: 08/13/2015 0000
Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259173	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T7505.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	08/18/2015 1348			Final Weight/Volume:	5 mL
Prep Date:	08/18/2015 1348				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	3.8	J	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Ethylbenzene	ND		0.74	1.0
Isopropylbenzene	ND		0.79	1.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: **TRIP BLANK**

Lab Sample ID: 480-85640-7
Client Matrix: Water

Date Sampled: 08/13/2015 0000
Date Received: 08/14/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259173	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T7505.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	08/18/2015 1348			Final Weight/Volume:	5 mL
Prep Date:	08/18/2015 1348				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		66 - 137
Toluene-d8 (Surr)	97		71 - 126
4-Bromofluorobenzene (Surr)	99		73 - 120
Dibromofluoromethane (Surr)	100		60 - 140

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-2 (5-7)

Lab Sample ID: 480-85640-1 Date Sampled: 08/12/2015 1530
Client Matrix: Solid % Moisture: 7.9 Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012409.D
Dilution:	5.0			Initial Weight/Volume:	+30.07 g
Analysis Date:	08/18/2015 2153			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		140	920
bis (2-chloroisopropyl) ether		ND		180	920
2,4,5-Trichlorophenol		ND		250	920
2,4,6-Trichlorophenol		ND		180	920
2,4-Dichlorophenol		ND		98	920
2,4-Dimethylphenol		ND		220	920
2,4-Dinitrophenol		ND		4200	9000
2,4-Dinitrotoluene		ND		190	920
2,6-Dinitrotoluene		ND		110	920
2-Chloronaphthalene		ND		150	920
2-Chlorophenol		ND		170	920
2-Methylnaphthalene		ND		180	920
2-Methylphenol		ND		110	920
2-Nitroaniline		ND		140	1800
2-Nitrophenol		ND		260	920
3,3'-Dichlorobenzidine		ND		1100	1800
3-Nitroaniline		ND		250	1800
4,6-Dinitro-2-methylphenol		ND		920	1800
4-Bromophenyl phenyl ether		ND		130	920
4-Chloro-3-methylphenol		ND		230	920
4-Chloroaniline		ND		230	920
4-Chlorophenyl phenyl ether		ND		110	920
4-Methylphenol		ND		110	1800
4-Nitroaniline		ND		480	1800
4-Nitrophenol		ND		640	1800
Acenaphthene		ND		140	920
Acenaphthylene		ND		120	920
Acetophenone		ND		120	920
Anthracene		ND		230	920
Atrazine		ND		320	920
Benzaldehyde		ND		730	920
Benzo[a]anthracene		ND		92	920
Benzo[a]pyrene		ND		140	920
Benzo[b]fluoranthene		ND		150	920
Benzo[g,h,i]perylene		ND		98	920
Benzo[k]fluoranthene		ND		120	920
Bis(2-chloroethoxy)methane		ND		200	920
Bis(2-chloroethyl)ether		ND		120	920
Bis(2-ethylhexyl) phthalate		ND		310	920
Butyl benzyl phthalate		ND		150	920
Caprolactam		ND		280	920
Carbazole		ND		110	920
Chrysene		ND		210	920
Di-n-butyl phthalate		ND		160	920
Di-n-octyl phthalate		ND		110	920
Dibenz(a,h)anthracene		ND		160	920

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-2 (5-7)

Lab Sample ID: 480-85640-1 Date Sampled: 08/12/2015 1530
Client Matrix: Solid % Moisture: 7.9 Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012409.D
Dilution:	5.0			Initial Weight/Volume:	+30.07 g
Analysis Date:	08/18/2015 2153			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		110	920
Diethyl phthalate		ND		120	920
Dimethyl phthalate		ND		110	920
Fluoranthene		ND		98	920
Fluorene		ND		110	920
Hexachlorobenzene		ND		120	920
Hexachlorobutadiene		ND		140	920
Hexachlorocyclopentadiene		ND		120	920
Hexachloroethane		ND		120	920
Indeno[1,2,3-cd]pyrene		ND		110	920
Isophorone		ND		200	920
N-Nitrosodi-n-propylamine		ND		160	920
N-Nitrosodiphenylamine		ND		750	920
Naphthalene		ND		120	920
Nitrobenzene		ND		100	920
Pentachlorophenol		ND		920	1800
Phenanthrene		ND		140	920
Phenol		ND		140	920
Pyrene		ND		110	920

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	72		39 - 146
2-Fluorobiphenyl	76		37 - 120
2-Fluorophenol	70		18 - 120
Nitrobenzene-d5	69		34 - 132
p-Terphenyl-d14	81		65 - 153
Phenol-d5	68		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-2 (9-13)

Lab Sample ID: 480-85640-2 Date Sampled: 08/12/2015 1550
Client Matrix: Solid % Moisture: 7.5 Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259368	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012435.D
Dilution:	10			Initial Weight/Volume:	+30.06 g
Analysis Date:	08/19/2015 1300			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		270	1800
bis (2-chloroisopropyl) ether		ND		370	1800
2,4,5-Trichlorophenol		ND		500	1800
2,4,6-Trichlorophenol		ND		370	1800
2,4-Dichlorophenol		ND		190	1800
2,4-Dimethylphenol		ND		440	1800
2,4-Dinitrophenol		ND		8500	18000
2,4-Dinitrotoluene		ND		380	1800
2,6-Dinitrotoluene		ND		220	1800
2-Chloronaphthalene		ND		300	1800
2-Chlorophenol		ND		330	1800
2-Methylnaphthalene		ND		370	1800
2-Methylphenol		ND		220	1800
2-Nitroaniline		ND		270	3600
2-Nitrophenol		ND		520	1800
3,3'-Dichlorobenzidine		ND		2200	3600
3-Nitroaniline		ND		510	3600
4,6-Dinitro-2-methylphenol		ND		1800	3600
4-Bromophenyl phenyl ether		ND		260	1800
4-Chloro-3-methylphenol		ND		450	1800
4-Chloroaniline		ND		450	1800
4-Chlorophenyl phenyl ether		ND		230	1800
4-Methylphenol		ND		220	3600
4-Nitroaniline		ND		960	3600
4-Nitrophenol		ND		1300	3600
Acenaphthene		ND		270	1800
Acenaphthylene		ND		240	1800
Acetophenone		ND		250	1800
Anthracene		ND		450	1800
Atrazine		ND		640	1800
Benzaldehyde		ND		1500	1800
Benzo[a]anthracene		ND		180	1800
Benzo[a]pyrene		ND		270	1800
Benzo[b]fluoranthene		ND		290	1800
Benzo[g,h,i]perylene		ND		190	1800
Benzo[k]fluoranthene		ND		240	1800
Bis(2-chloroethoxy)methane		ND		390	1800
Bis(2-chloroethyl)ether		ND		240	1800
Bis(2-ethylhexyl) phthalate		ND		630	1800
Butyl benzyl phthalate		ND		300	1800
Caprolactam		ND		550	1800
Carbazole		ND		220	1800
Chrysene		ND		410	1800
Di-n-butyl phthalate		ND		310	1800
Di-n-octyl phthalate		ND		220	1800
Dibenz(a,h)anthracene		ND		320	1800

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-2 (9-13)

Lab Sample ID: 480-85640-2 Date Sampled: 08/12/2015 1550
Client Matrix: Solid % Moisture: 7.5 Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259368	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012435.D
Dilution:	10			Initial Weight/Volume:	+30.06 g
Analysis Date:	08/19/2015 1300			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		220	1800
Diethyl phthalate		ND		240	1800
Dimethyl phthalate		ND		220	1800
Fluoranthene		ND		190	1800
Fluorene		ND		220	1800
Hexachlorobenzene		ND		250	1800
Hexachlorobutadiene		ND		270	1800
Hexachlorocyclopentadiene		ND		250	1800
Hexachloroethane		ND		240	1800
Indeno[1,2,3-cd]pyrene		ND		230	1800
Isophorone		ND		390	1800
N-Nitrosodi-n-propylamine		ND		310	1800
N-Nitrosodiphenylamine		ND		1500	1800
Naphthalene		ND		240	1800
Nitrobenzene		ND		200	1800
Pentachlorophenol		ND		1800	3600
Phenanthrene		ND		270	1800
Phenol		ND		280	1800
Pyrene		ND		220	1800

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	67		39 - 146
2-Fluorobiphenyl	77		37 - 120
2-Fluorophenol	74		18 - 120
Nitrobenzene-d5	71		34 - 132
p-Terphenyl-d14	98		65 - 153
Phenol-d5	79		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-7 (4-6)

Lab Sample ID: 480-85640-3 Date Sampled: 08/12/2015 1400
Client Matrix: Solid % Moisture: 13.5 Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012411.D
Dilution:	5.0			Initial Weight/Volume:	+30.19 g
Analysis Date:	08/18/2015 2246			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		140	980
bis (2-chloroisopropyl) ether		ND		200	980
2,4,5-Trichlorophenol		ND		260	980
2,4,6-Trichlorophenol		ND		200	980
2,4-Dichlorophenol		ND		100	980
2,4-Dimethylphenol		ND		240	980
2,4-Dinitrophenol		ND		4500	9500
2,4-Dinitrotoluene		ND		200	980
2,6-Dinitrotoluene		ND		110	980
2-Chloronaphthalene		ND		160	980
2-Chlorophenol		ND		180	980
2-Methylnaphthalene		ND		200	980
2-Methylphenol		ND		110	980
2-Nitroaniline		ND		140	1900
2-Nitrophenol		ND		280	980
3,3'-Dichlorobenzidine		ND		1100	1900
3-Nitroaniline		ND		270	1900
4,6-Dinitro-2-methylphenol		ND		980	1900
4-Bromophenyl phenyl ether		ND		140	980
4-Chloro-3-methylphenol		ND		240	980
4-Chloroaniline		ND		240	980
4-Chlorophenyl phenyl ether		ND		120	980
4-Methylphenol		ND		110	1900
4-Nitroaniline		ND		510	1900
4-Nitrophenol		ND		680	1900
Acenaphthene		ND		140	980
Acenaphthylene		ND		130	980
Acetophenone		ND		130	980
Anthracene		ND		240	980
Atrazine		ND		340	980
Benzaldehyde		ND		780	980
Benzo[a]anthracene		ND		98	980
Benzo[a]pyrene		ND		140	980
Benzo[b]fluoranthene		ND		160	980
Benzo[g,h,i]perylene		ND		100	980
Benzo[k]fluoranthene		ND		130	980
Bis(2-chloroethoxy)methane		ND		210	980
Bis(2-chloroethyl)ether		ND		130	980
Bis(2-ethylhexyl) phthalate		ND		330	980
Butyl benzyl phthalate		ND		160	980
Caprolactam		ND		290	980
Carbazole		ND		110	980
Chrysene		ND		220	980
Di-n-butyl phthalate		ND		170	980
Di-n-octyl phthalate		ND		110	980
Dibenz(a,h)anthracene		ND		170	980

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-7 (4-6)

Lab Sample ID: 480-85640-3 Date Sampled: 08/12/2015 1400
Client Matrix: Solid % Moisture: 13.5 Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012411.D
Dilution:	5.0			Initial Weight/Volume:	+30.19 g
Analysis Date:	08/18/2015 2246			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		110	980
Diethyl phthalate		ND		130	980
Dimethyl phthalate		ND		110	980
Fluoranthene		ND		100	980
Fluorene		ND		110	980
Hexachlorobenzene		ND		130	980
Hexachlorobutadiene		ND		140	980
Hexachlorocyclopentadiene		ND		130	980
Hexachloroethane		ND		130	980
Indeno[1,2,3-cd]pyrene		ND		120	980
Isophorone		ND		210	980
N-Nitrosodi-n-propylamine		ND		170	980
N-Nitrosodiphenylamine		ND		790	980
Naphthalene		ND		130	980
Nitrobenzene		ND		110	980
Pentachlorophenol		ND		980	1900
Phenanthrene		ND		140	980
Phenol		ND		150	980
Pyrene		ND		110	980

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	67		39 - 146
2-Fluorobiphenyl	72		37 - 120
2-Fluorophenol	70		18 - 120
Nitrobenzene-d5	66		34 - 132
p-Terphenyl-d14	84		65 - 153
Phenol-d5	73		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-7 (6-8.3)

Lab Sample ID: 480-85640-4 Date Sampled: 08/12/2015 1430
Client Matrix: Solid % Moisture: 9.4 Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012412.D
Dilution:	50			Initial Weight/Volume:	+30.24 g
Analysis Date:	08/18/2015 2313			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		1400	9300
bis (2-chloroisopropyl) ether		ND		1900	9300
2,4,5-Trichlorophenol		ND		2500	9300
2,4,6-Trichlorophenol		ND		1900	9300
2,4-Dichlorophenol		ND		990	9300
2,4-Dimethylphenol		ND		2200	9300
2,4-Dinitrophenol		ND		43000	91000
2,4-Dinitrotoluene		ND		1900	9300
2,6-Dinitrotoluene		ND		1100	9300
2-Chloronaphthalene		ND		1500	9300
2-Chlorophenol		ND		1700	9300
2-Methylnaphthalene		ND		1900	9300
2-Methylphenol		ND		1100	9300
2-Nitroaniline		ND		1400	18000
2-Nitrophenol		ND		2600	9300
3,3'-Dichlorobenzidine		ND		11000	18000
3-Nitroaniline		ND		2600	18000
4,6-Dinitro-2-methylphenol		ND		9300	18000
4-Bromophenyl phenyl ether		ND		1300	9300
4-Chloro-3-methylphenol		ND		2300	9300
4-Chloroaniline		ND		2300	9300
4-Chlorophenyl phenyl ether		ND		1100	9300
4-Methylphenol		ND		1100	18000
4-Nitroaniline		ND		4900	18000
4-Nitrophenol		ND		6500	18000
Acenaphthene		ND		1400	9300
Acenaphthylene		ND		1200	9300
Acetophenone		ND		1300	9300
Anthracene		ND		2300	9300
Atrazine		ND		3200	9300
Benzaldehyde		ND		7400	9300
Benzo[a]anthracene		ND		930	9300
Benzo[a]pyrene		ND		1400	9300
Benzo[b]fluoranthene		ND		1500	9300
Benzo[g,h,i]perylene		ND		990	9300
Benzo[k]fluoranthene		ND		1200	9300
Bis(2-chloroethoxy)methane		ND		2000	9300
Bis(2-chloroethyl)ether		ND		1200	9300
Bis(2-ethylhexyl) phthalate		ND		3200	9300
Butyl benzyl phthalate		ND		1500	9300
Caprolactam		ND		2800	9300
Carbazole		ND		1100	9300
Chrysene		ND		2100	9300
Di-n-butyl phthalate		ND		1600	9300
Di-n-octyl phthalate		ND		1100	9300
Dibenz(a,h)anthracene		ND		1600	9300

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-7 (6-8.3)

Lab Sample ID: 480-85640-4 Date Sampled: 08/12/2015 1430
Client Matrix: Solid % Moisture: 9.4 Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012412.D
Dilution:	50			Initial Weight/Volume:	+30.24 g
Analysis Date:	08/18/2015 2313			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		1100	9300
Diethyl phthalate		ND		1200	9300
Dimethyl phthalate		ND		1100	9300
Fluoranthene		ND		990	9300
Fluorene		ND		1100	9300
Hexachlorobenzene		ND		1300	9300
Hexachlorobutadiene		ND		1400	9300
Hexachlorocyclopentadiene		ND		1300	9300
Hexachloroethane		ND		1200	9300
Indeno[1,2,3-cd]pyrene		ND		1100	9300
Isophorone		ND		2000	9300
N-Nitrosodi-n-propylamine		ND		1600	9300
N-Nitrosodiphenylamine		ND		7600	9300
Naphthalene		ND		1200	9300
Nitrobenzene		ND		1000	9300
Pentachlorophenol		ND		9300	18000
Phenanthrene		ND		1400	9300
Phenol		ND		1400	9300
Pyrene		ND		1100	9300

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	40		39 - 146
2-Fluorobiphenyl	70		37 - 120
2-Fluorophenol	67		18 - 120
Nitrobenzene-d5	44		34 - 132
p-Terphenyl-d14	76		65 - 153
Phenol-d5	79		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-3 (7-9)

Lab Sample ID: 480-85640-5 Date Sampled: 08/13/2015 1000
Client Matrix: Solid % Moisture: 7.0 Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012408.D
Dilution:	20			Initial Weight/Volume:	+30.25 g
Analysis Date:	08/18/2015 2126			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		530	3600
bis (2-chloroisopropyl) ether		ND		730	3600
2,4,5-Trichlorophenol		ND	~~F2~~	980	3600
2,4,6-Trichlorophenol		ND	~~F2~~	730	3600
2,4-Dichlorophenol		ND		380	3600
2,4-Dimethylphenol		ND		870	3600
2,4-Dinitrophenol		ND		17000	35000
2,4-Dinitrotoluene		ND		750	3600
2,6-Dinitrotoluene		ND		430	3600
2-Chloronaphthalene		ND		600	3600
2-Chlorophenol		ND		660	3600
2-Methylnaphthalene		1200	J ~~F2 F1~~	730	3600
2-Methylphenol		ND		430	3600
2-Nitroaniline		ND		530	7000
2-Nitrophenol		ND	~~F2~~	1000	3600
3,3'-Dichlorobenzidine		ND		4300	7000
3-Nitroaniline		ND	~~F2~~	1000	7000
4,6-Dinitro-2-methylphenol		ND		3600	7000
4-Bromophenyl phenyl ether		ND		510	3600
4-Chloro-3-methylphenol		ND		900	3600
4-Chloroaniline		ND		900	3600
4-Chlorophenyl phenyl ether		ND		450	3600
4-Methylphenol		ND		430	7000
4-Nitroaniline		ND		1900	7000
4-Nitrophenol		ND		2500	7000
Acenaphthene		ND		530	3600
Acenaphthylene		ND		470	3600
Acetophenone		ND		490	3600
Anthracene		ND		900	3600
Atrazine		ND		1300	3600
Benzaldehyde		ND	~~F1~~	2900	3600
Benzo[a]anthracene		ND		360	3600
Benzo[a]pyrene		ND		530	3600
Benzo[b]fluoranthene		ND		580	3600
Benzo[g,h,i]perylene		ND		380	3600
Benzo[k]fluoranthene		ND		470	3600
Bis(2-chloroethoxy)methane		ND		770	3600
Bis(2-chloroethyl)ether		ND		470	3600
Bis(2-ethylhexyl) phthalate		ND		1200	3600
Butyl benzyl phthalate		ND		600	3600
Caprolactam		ND		1100	3600
Carbazole		ND		430	3600
Chrysene		ND		810	3600
Di-n-butyl phthalate		ND		620	3600
Di-n-octyl phthalate		ND	~~F1~~	430	3600
Dibenz(a,h)anthracene		ND		640	3600

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: MW-3 (7-9)

Lab Sample ID: 480-85640-5
Client Matrix: Solid
% Moisture: 7.0

Date Sampled: 08/13/2015 1000
Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012408.D
Dilution:	20			Initial Weight/Volume:	+30.25 g
Analysis Date:	08/18/2015 2126			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		430	3600
Diethyl phthalate		ND		470	3600
Dimethyl phthalate		ND		430	3600
Fluoranthene		ND		380	3600
Fluorene		ND		430	3600
Hexachlorobenzene		ND		490	3600
Hexachlorobutadiene		ND		530	3600
Hexachlorocyclopentadiene		ND		490	3600
Hexachloroethane		ND	~~F1~~	470	3600
Indeno[1,2,3-cd]pyrene		ND		450	3600
Isophorone		ND		770	3600
N-Nitrosodi-n-propylamine		ND		620	3600
N-Nitrosodiphenylamine		ND		2900	3600
Naphthalene		940	J	470	3600
Nitrobenzene		ND		410	3600
Pentachlorophenol		ND		3600	7000
Phenanthrene		ND		530	3600
Phenol		ND		550	3600
Pyrene		ND		430	3600

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	69		39 - 146
2-Fluorobiphenyl	75		37 - 120
2-Fluorophenol	68		18 - 120
Nitrobenzene-d5	72		34 - 132
p-Terphenyl-d14	92		65 - 153
Phenol-d5	71		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-3 (9-10.2)

Lab Sample ID: 480-85640-6 Date Sampled: 08/13/2015 1015
Client Matrix: Solid % Moisture: 7.7 Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012413.D
Dilution:	20			Initial Weight/Volume:	+30.59 g
Analysis Date:	08/18/2015 2339			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		530	3600
bis (2-chloroisopropyl) ether		ND		720	3600
2,4,5-Trichlorophenol		ND		980	3600
2,4,6-Trichlorophenol		ND		720	3600
2,4-Dichlorophenol		ND		380	3600
2,4-Dimethylphenol		ND		870	3600
2,4-Dinitrophenol		ND		17000	35000
2,4-Dinitrotoluene		ND		740	3600
2,6-Dinitrotoluene		ND		420	3600
2-Chloronaphthalene		ND		590	3600
2-Chlorophenol		ND		660	3600
2-Methylnaphthalene		ND		720	3600
2-Methylphenol		ND		420	3600
2-Nitroaniline		ND		530	7000
2-Nitrophenol		ND		1000	3600
3,3'-Dichlorobenzidine		ND		4200	7000
3-Nitroaniline		ND		1000	7000
4,6-Dinitro-2-methylphenol		ND		3600	7000
4-Bromophenyl phenyl ether		ND		510	3600
4-Chloro-3-methylphenol		ND		890	3600
4-Chloroaniline		ND		890	3600
4-Chlorophenyl phenyl ether		ND		450	3600
4-Methylphenol		ND		420	7000
4-Nitroaniline		ND		1900	7000
4-Nitrophenol		ND		2500	7000
Acenaphthene		ND		530	3600
Acenaphthylene		ND		470	3600
Acetophenone		ND		490	3600
Anthracene		ND		890	3600
Atrazine		ND		1300	3600
Benzaldehyde		ND		2900	3600
Benzo[a]anthracene		ND		360	3600
Benzo[a]pyrene		ND		530	3600
Benzo[b]fluoranthene		ND		570	3600
Benzo[g,h,i]perylene		ND		380	3600
Benzo[k]fluoranthene		ND		470	3600
Bis(2-chloroethoxy)methane		ND		760	3600
Bis(2-chloroethyl)ether		ND		470	3600
Bis(2-ethylhexyl) phthalate		ND		1200	3600
Butyl benzyl phthalate		ND		590	3600
Caprolactam		ND		1100	3600
Carbazole		ND		420	3600
Chrysene		ND		810	3600
Di-n-butyl phthalate		ND		620	3600
Di-n-octyl phthalate		ND		420	3600
Dibenz(a,h)anthracene		ND		640	3600

Client: ARCADIS U.S. Inc Job Number: 480-85640-1

Client Sample ID: MW-3 (9-10.2)

Lab Sample ID: 480-85640-6 Date Sampled: 08/13/2015 1015
Client Matrix: Solid % Moisture: 7.7 Date Received: 08/14/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012413.D
Dilution:	20			Initial Weight/Volume:	+30.59 g
Analysis Date:	08/18/2015 2339			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		420	3600
Diethyl phthalate		ND		470	3600
Dimethyl phthalate		ND		420	3600
Fluoranthene		ND		380	3600
Fluorene		ND		420	3600
Hexachlorobenzene		ND		490	3600
Hexachlorobutadiene		ND		530	3600
Hexachlorocyclopentadiene		ND		490	3600
Hexachloroethane		ND		470	3600
Indeno[1,2,3-cd]pyrene		ND		450	3600
Isophorone		ND		760	3600
N-Nitrosodi-n-propylamine		ND		620	3600
N-Nitrosodiphenylamine		ND		2900	3600
Naphthalene		ND		470	3600
Nitrobenzene		ND		400	3600
Pentachlorophenol		ND		3600	7000
Phenanthrene		ND		530	3600
Phenol		ND		550	3600
Pyrene		ND		420	3600

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	41		39 - 146
2-Fluorobiphenyl	79		37 - 120
2-Fluorophenol	77		18 - 120
Nitrobenzene-d5	66		34 - 132
p-Terphenyl-d14	90		65 - 153
Phenol-d5	78		11 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: **MW-3 (7-9)**

Lab Sample ID: 480-85640-5
Client Matrix: Solid
% Moisture: 7.0

Date Sampled: 08/13/2015 1000
Date Received: 08/14/2015 0900

310.13 Identification of Routine Petroleum Products

Analysis Method:	310.13	Analysis Batch:	480-259453	Instrument ID:	HP5890-24
Prep Method:	3550C	Prep Batch:	480-259270	Lab File ID:	24a100_281.d
Dilution:	1.0			Initial Weight/Volume:	+30.44 g
Analysis Date:	08/19/2015 1914			Final Weight/Volume:	1 mL
Prep Date:	08/18/2015 1436			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline		210		7.1	7.1
Kerosene		140		18	18
Motor Oil		160		35	35
Fuel Oil #2		150		18	18
Fuel Oil #4		ND		18	18
Fuel Oil #6		ND		18	18
Unknown Hydrocarbons		ND		18	18

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: MW-2 (5-7)

Lab Sample ID: 480-85640-1
Client Matrix: Solid
% Moisture: 7.9

Date Sampled: 08/12/2015 1530
Date Received: 08/14/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-258989	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.4908 g
Analysis Date:	08/18/2015 1059			Final Weight/Volume:	50 mL
Prep Date:	08/17/2015 1140				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11200 J		4.9	11.1
Antimony		ND J		0.44	16.6
Arsenic		3.6		0.44	2.2
Barium		55.3 J		0.12	0.55
Beryllium		0.55		0.031	0.22
Cadmium		0.094	J	0.033	0.22
Calcium		72200 J	~~B~~	3.7	55.3
Chromium		16.8 J		0.22	0.55
Cobalt		10.4		0.055	0.55
Copper		27.7 J		0.23	1.1
Iron		16500 J		3.9	11.1
Lead		12.2		0.27	1.1
Magnesium		17200 J		1.0	22.1
Manganese		321 J		0.035	0.22
Nickel		34.0		0.25	5.5
Potassium		2750 J		22.1	33.2
Selenium		ND		0.44	4.4
Silver		ND		0.22	0.66
Sodium		524		14.4	155
Thallium		ND		0.33	6.6
Vanadium		17.7 J		0.12	0.55
Zinc		57.7 J		0.71	2.2

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: **MW-2 (9-13)**

Lab Sample ID: 480-85640-2
Client Matrix: Solid
% Moisture: 7.5

Date Sampled: 08/12/2015 1550
Date Received: 08/14/2015 0900

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 08/18/2015 1102
Prep Date: 08/17/2015 1140

Analysis Batch: 480-259355
Prep Batch: 480-258989

Instrument ID: ICAP1
Lab File ID: I1081815A-7.asc
Initial Weight/Volume: +0.4976 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)		Qualifier	MDL	RL
Aluminum		16700	J		4.8	10.9
Antimony		ND	J		0.43	16.3
Arsenic		4.0			0.43	2.2
Barium		67.7	J		0.12	0.54
Beryllium		0.82			0.030	0.22
Cadmium		0.034		J	0.033	0.22
Calcium		53400	J	~~B~~	3.6	54.3
Chromium		24.3	J		0.22	0.54
Cobalt		15.4			0.054	0.54
Copper		30.5	J		0.23	1.1
Iron		21400	J		3.8	10.9
Lead		12.2			0.26	1.1
Magnesium		7380	J		1.0	21.7
Manganese		410	J		0.035	0.22
Nickel		42.2			0.25	5.4
Potassium		3850	J		21.7	32.6
Selenium		0.50		J	0.43	4.3
Silver		ND			0.22	0.65
Sodium		235			14.1	152
Thallium		ND			0.33	6.5
Vanadium		21.8	J		0.12	0.54
Zinc		56.2	J		0.70	2.2

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: **MW-7 (4-6)**

Lab Sample ID: 480-85640-3
Client Matrix: Solid
% Moisture: 13.5

Date Sampled: 08/12/2015 1400
Date Received: 08/14/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-258989	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.5220 g
Analysis Date:	08/18/2015 1105			Final Weight/Volume:	50 mL
Prep Date:	08/17/2015 1140				

Analyte	DryWt Corrected: Y	Result (mg/Kg)		Qualifier	MDL	RL
Aluminum		20300	J		4.9	11.1
Antimony		ND	J		0.44	16.6
Arsenic		2.4			0.44	2.2
Barium		75.1	J		0.12	0.55
Beryllium		0.88			0.031	0.22
Cadmium		0.074		J	0.033	0.22
Calcium		37500	J	~~B~~	3.7	55.4
Chromium		26.4	J		0.22	0.55
Cobalt		8.7			0.055	0.55
Copper		17.3	J		0.23	1.1
Iron		19300	J		3.9	11.1
Lead		9.1			0.27	1.1
Magnesium		7770	J		1.0	22.2
Manganese		254	J		0.035	0.22
Nickel		36.7			0.25	5.5
Potassium		4200	J		22.2	33.2
Selenium		0.78		J	0.44	4.4
Silver		ND			0.22	0.66
Sodium		186			14.4	155
Thallium		ND			0.33	6.6
Vanadium		26.7	J		0.12	0.55
Zinc		64.7	J		0.71	2.2

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: **MW-7 (6-8.3)**

Lab Sample ID: 480-85640-4
Client Matrix: Solid
% Moisture: 9.4
Date Sampled: 08/12/2015 1430
Date Received: 08/14/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-258989	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.4922 g
Analysis Date:	08/18/2015 1108			Final Weight/Volume:	50 mL
Prep Date:	08/17/2015 1140				

Analyte	DryWt Corrected: Y	Result (mg/Kg)		Qualifier	MDL	RL
Aluminum		15700	J		4.9	11.2
Antimony		ND	J		0.45	16.8
Arsenic		5.6			0.45	2.2
Barium		57.8	J		0.12	0.56
Beryllium		0.74			0.031	0.22
Cadmium		0.16		J	0.034	0.22
Calcium		46500	J	~~B~~	3.7	56.1
Chromium		24.3	J		0.22	0.56
Cobalt		10.7			0.056	0.56
Copper		34.1	J		0.24	1.1
Iron		21100	J		3.9	11.2
Lead		13.2			0.27	1.1
Magnesium		6450	J		1.0	22.4
Manganese		249	J		0.036	0.22
Nickel		46.8			0.26	5.6
Potassium		3520	J		22.4	33.6
Selenium		2.1		J	0.45	4.5
Silver		ND			0.22	0.67
Sodium		189			14.6	157
Thallium		ND			0.34	6.7
Vanadium		25.7	J		0.12	0.56
Zinc		82.1	J		0.72	2.2

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: **MW-3 (7-9)**

Lab Sample ID: 480-85640-5
Client Matrix: Solid
% Moisture: 7.0

Date Sampled: 08/13/2015 1000
Date Received: 08/14/2015 0900

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 08/18/2015 1111
Prep Date: 08/17/2015 1140

Analysis Batch: 480-259355
Prep Batch: 480-258989

Instrument ID: ICAP1
Lab File ID: I1081815A-7.asc
Initial Weight/Volume: +0.5096 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)		Qualifier	MDL	RL
Aluminum		10400	J		4.6	10.6
Antimony		ND	J	~~F1~~	0.42	15.8
Arsenic		3.6			0.42	2.1
Barium		44.3	J	~~F1~~	0.12	0.53
Beryllium		0.49			0.030	0.21
Cadmium		0.14		J	0.032	0.21
Calcium		54500	J	~~B~~	3.5	52.8
Chromium		15.1	J		0.21	0.53
Cobalt		10.8			0.053	0.53
Copper		32.1	J		0.22	1.1
Iron		15500	J		3.7	10.6
Lead		12.2			0.25	1.1
Magnesium		12700	J		0.98	21.1
Manganese		368	J		0.034	0.21
Nickel		32.4			0.24	5.3
Potassium		2700	J	~~F1~~	21.1	31.7
Selenium		ND			0.42	4.2
Silver		ND			0.21	0.63
Sodium		173			13.7	148
Thallium		ND			0.32	6.3
Vanadium		17.6	J		0.12	0.53
Zinc		66.2	J		0.68	2.1

Client: ARCADIS U.S. Inc

Job Number: 480-85640-1

Client Sample ID: **MW-3 (9-10.2)**

Lab Sample ID: 480-85640-6
Client Matrix: Solid
% Moisture: 7.7

Date Sampled: 08/13/2015 1015
Date Received: 08/14/2015 0900

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3050B
Dilution: 1.0
Analysis Date: 08/18/2015 1135
Prep Date: 08/17/2015 1140

Analysis Batch: 480-259355
Prep Batch: 480-258989

Instrument ID: ICAP1
Lab File ID: I1081815A-7.asc
Initial Weight/Volume: +0.5388 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: Y	Result (mg/Kg)		Qualifier	MDL	RL
Aluminum		12700	J		4.4	10.1
Antimony		ND	J		0.40	15.1
Arsenic		3.6			0.40	2.0
Barium		47.2	J		0.11	0.50
Beryllium		0.64			0.028	0.20
Cadmium		0.072		J	0.030	0.20
Calcium		59200	J	~~B~~	3.3	50.3
Chromium		19.2	J		0.20	0.50
Cobalt		12.5			0.050	0.50
Copper		28.0	J		0.21	1.0
Iron		18300	J		3.5	10.1
Lead		13.8			0.24	1.0
Magnesium		9390	J		0.93	20.1
Manganese		345	J		0.032	0.20
Nickel		38.9			0.23	5.0
Potassium		3070	J		20.1	30.2
Selenium		ND			0.40	4.0
Silver		ND			0.20	0.60
Sodium		234			13.1	141
Thallium		ND			0.30	6.0
Vanadium		19.1	J		0.11	0.50
Zinc		50.8	J		0.64	2.0

General Chemistry

Client Sample ID: **MW-2 (5-7)**

Lab Sample ID: 480-85640-1 Date Sampled: 08/12/2015 1530
Client Matrix: Solid % Moisture: 7.9 Date Received: 08/14/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.52	1.1	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1020						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	7.9		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159						DryWt Corrected: N
Percent Solids	92		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159						DryWt Corrected: N

General Chemistry

Client Sample ID: **MW-2 (9-13)**

Lab Sample ID: 480-85640-2 Date Sampled: 08/12/2015 1550
Client Matrix: Solid % Moisture: 7.5 Date Received: 08/14/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	1.1		mg/Kg	0.51	1.1	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1021						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	7.5		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159						DryWt Corrected: N
Percent Solids	93		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159						DryWt Corrected: N

General Chemistry

Client Sample ID: **MW-7 (4-6)**

Lab Sample ID: 480-85640-3 Date Sampled: 08/12/2015 1400
Client Matrix: Solid % Moisture: 13.5 Date Received: 08/14/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.55	1.1	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1023					DryWt Corrected: Y	
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	14		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159					DryWt Corrected: N	
Percent Solids	86		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159					DryWt Corrected: N	

General Chemistry

Client Sample ID: **MW-7 (6-8.3)**

Lab Sample ID: 480-85640-4 Date Sampled: 08/12/2015 1430
Client Matrix: Solid % Moisture: 9.4 Date Received: 08/14/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.53	1.1	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1027						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	9.4		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159						DryWt Corrected: N
Percent Solids	91		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159						DryWt Corrected: N

General Chemistry

Client Sample ID: **MW-3 (7-9)**

Lab Sample ID: 480-85640-5 Date Sampled: 08/13/2015 1000
Client Matrix: Solid % Moisture: 7.0 Date Received: 08/14/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.50	1.0	1.0	9012B
Analysis Batch: 480-260093	Analysis Date: 08/24/2015 1054						DryWt Corrected: Y
Prep Batch: 480-260082	Prep Date: 08/24/2015 0740						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	7.0		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159						DryWt Corrected: N
Percent Solids	93		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159						DryWt Corrected: N

General Chemistry

Client Sample ID: **MW-3 (9-10.2)**

Lab Sample ID: 480-85640-6 Date Sampled: 08/13/2015 1015
Client Matrix: Solid % Moisture: 7.7 Date Received: 08/14/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.51	1.1	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1031						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	7.7		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159						DryWt Corrected: N
Percent Solids	92		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258869	Analysis Date: 08/14/2015 2159						DryWt Corrected: N

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Rochester Gas & Electric – Geneseo Park Street Site

Data Usability Summary Report

GENESEO, NEW YORK

Volatile, Semivolatile, Metals and Cyanide Analyses

SDG #480-85696-1

Analyses Performed By:
TestAmerica
Amherst, New York

Report #24468R
Review Level: Tier III
Project: B0013138.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #480-85696-1 for samples collected in association with the Rochester Gas & Electric Geneseo Park Street Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	TPH	MET	MISC
480-85696	SB-2 (7-9)	480-85696-1	Soil	8/13/2015		X	X		X	X
	TRIP BLANK	480-85696-10	Water	8/14/2015		X				
	SB-2 (9-11)	480-85696-2	Soil	8/13/2015		X	X		X	X
	SB-1 (7-9)	480-85696-3	Soil	8/13/2015		X	X		X	X
	SB-1 (9-11)	480-85696-4	Soil	8/13/2015		X	X		X	X
	DUP-081315	480-85696-5	Soil	8/13/2015	SB-2 (7-9)	X	X		X	X
	SB-3 (7-9)	480-85696-6	Soil	8/13/2015		X	X		X	X
	SB-3 (9-11)	480-85696-7	Soil	8/13/2015		X	X		X	X
	SB-5 (9-11)	480-85696-8	Soil	8/14/2015		X	X		X	X
	SB-5 (11-13.5)	480-85696-9	Soil	8/14/2015		X	X		X	X

Note:
1. Miscellaneous parameters include total cyanide.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 8260C and 8270D. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis (preserved) 7 days from collection to analysis (non-preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.
	Soil	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
SB-3 (9-11) SB-5 (11-13.5)	Acetone (TB)	Detected sample results <RL and <BAL	"UB" at the RL
SB-2 (7-9) DUP-081315	Methylene chloride (MB)	Detected sample results >RL and <BAL	"UB" at detected sample concentration
SB-2 (9-11)	2-Butanone	Detected sample results <RL and <BAL	"UB" at the RL
SB-2 (9-11) SB-1 (9-11)	Acetone (TB)	Detected sample results >RL and <BAL	"UB" at detected sample concentration

RL Reporting limit
TB Trip Blank
MB Method Blank

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
SB-2 (9-11) SB-1 (7-9) SB-1 (9-11) SB-3 (7-9) SB-3 (9-11) SB-5 (9-11) SB-5 (11-13.5)	ICV %RSD	Dichlorodifluoromethane	17.6%
		Dibromchloromethane	17.0%
	CCV %D	Vinyl chloride	22.1%
DUP-081315 SB-2 (7-9)	ICV %RSD	Methylene chloride	16.9%
		Dibromchloromethane	20.0%
		Bromoform	18.2%
		1,2-Dibromo-3-Chloropropane	18.7%
DUP-081315	CCV %D	Bromoform	20.1%
TRIP BLANK	CCV %D	Dichlorodifluoromethane	-22.1%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established

acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location within this SDG.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SB-2 (7-9)/ DUP-081315	Cyclohexane	5000	890 U	NC
	Ethylbenzene	370	680 J	AC
	Isopropylbenzene	370	620 J	AC
	Methylcyclohexane	17000	30000	55.3%
	Total Xylenes	1100	1900	AC

AC Acceptable
NC Not compliant

The compound Cyclohexane associated with sample locations SB-2 (7-9) and DUP-081315 exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
SB-2 (9-11)	Cyclohexane	180 E	2300 D	2300 D
	Methylcyclohexane	310 E	7600 D	7600 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
C. Trip blanks		X	X		
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X	X		
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present				X	

VOCs: SW-846 8260C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
All samples associated with this SDG	CCV %D	Benzaldehyde	50.1%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
SB-5 (9-11)	Phenol-d6	D
	2-Fluorophenol	D
	2,4,6-Tribromophenol	D
	Nitrobenzene-d5	D
	2-Fluorobiphenyl	D
	Terphenyl-d14	D

D Dilution

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	J[1]
	Detect	

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location within this SDG.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Please note a reduced list of target analytes was used for the LCS analysis. All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SB-2 (7-9)/ DUP-081315	Acetophenone	1800 U	230 J	AC
	Naphthalene	1800 U	170 J	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

The laboratory noted the samples associated with SDG 480-85696 were analyzed at dilutions due to the extract appearance and viscosity; therefore elevated detection limits were provided.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate (MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010C and 9012B. Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

  B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

  E The reported value is estimated due to the presence of interference.

  N Spiked sample recovery is not within control limits.

  * Duplicate analysis is not within control limits.

- Validation Qualifiers

  J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Preserve to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. All initial calibration verification standard recoveries were within control limits.

All continuing calibration verification standard recoveries were within the control limit.

3.2 Low Level Continuing Calibration Standard

The low level continuing calibration check standard (ICVL/CCVL) serves to verify the linearity of calibration of the analysis at the RL.

The ICVL/CCVL standard recoveries were within the control limits of 70 to 130%.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location within this SDG.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices.

A laboratory duplicate analysis was not performed on a sample location within this SDG.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SB-2 (7-9)/ DUP-081315	Aluminum	11200	11200	0%
	Antimony	0.65 J	17.0 U	AC
	Arsenic	3.7	4.4	AC
	Barium	48.3	42.9	11.8%
	Beryllium	0.59	0.57	AC
	Cadmium	0.061 J	0.036 J	AC

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Calcium	60400	60200	0.3%
	Chromium	17.5	18.2	3.9%
	Cobalt	10.8	12.3	13.0%
	Copper	26.5	28.7	8.0%
	Iron	17100	19700	14.1%
	Lead	12.2	12.9	5.6%
	Magnesium	11100	11300	1.8%
	Manganese	349	374	6.9%
	Nickel	34.2	39.2	13.6%
	Potassium	2510	2200	13.2%
	Selenium	1.0 J	0.64 J	AC
	Sodium	407	336	19.1%
	Vanadium	16.9	15.8	6.7%
	Zinc	52.4	52.0	0.8%

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

A serial dilution analysis was not performed on a sample location within this SDG.

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS; SW-846 6010C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X		X	
B. Method Blanks		X		X	
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate (MSD) %R					X
MS/MSD Precision (RPD)					X
Lab Duplicate (RPD)					X
Field Duplicate (RPD)		X		X	
ICP Serial Dilution					X
Reporting Limit Verification		X		X	
Raw Data		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CCVL Standard		X		X	
ICP Interference Check		X		X	
Transcription/calculations acceptable		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Total Cyanide SW-846 9012B	Water	14 days from collection to analysis	Cool to <6°C; preserved to a pH of greater than 12.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of

four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier “N” will be removed.

The MS analysis exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate analysis exhibited recoveries within the control limits.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SB-2 (7-9)/DUP-081315	Cyanide	U	U	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit recoveries between the control limits of 80% and 120%.

All LCS recoveries were within control limits, with the exception of the analytes associated with sample locations, as presented in the following table.

Sample Location	Analytes	LCS Recovery
SB-5 (11-13.5)	Cyanide	>UL

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of an LCS deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: SW-846 9012B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present				X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	TPH	MET	MISC	
480-85696	8/13/2015	SW846	SB-2 (7-9)	Soil	No	Yes	-	Yes	Yes	VOC: ICV %RSD, Meth Blk, FD%RPD
	8/14/2015	SW846	TRIP BLANK	Soil	No	-	-	-	-	VOC: CCV %D
	8/13/2015	SW846	SB-2 (9-11)	Soil	No	Yes	-	Yes	Yes	VOC: ICV %RSD, Trip Blk
	8/13/2015	SW846	SB-1 (7-9)	Soil	No	Yes	-	Yes	Yes	VOC: ICV %RSD
	8/13/2015	SW846	SB-1 (9-11)	Soil	No	Yes	-	Yes	Yes	VOC: ICV %RSD, Trip Blk
	8/13/2015	SW846	DUP-081315	Soil	No	Yes	-	Yes	Yes	VOC: ICV %RSD, Meth Blk, FD%RPD
	8/13/2015	SW846	SB-3 (7-9)	Soil	No	Yes	-	Yes	Yes	VOC: ICV %RSD
	8/13/2015	SW846	SB-3 (9-11)	Soil	No	Yes	-	Yes	Yes	VOC: ICV %RSD, Trip Blk
	8/14/2015	SW846	SB-5 (9-11)	Soil	No	No	-	Yes	Yes	VOC: ICV %RSD SVOC: Surrogate %Rec
	8/14/2015	SW846	SB-5 (11-13.5)	Soil	No	Yes	-	Yes	Yes	VOC: ICV %RSD, Trip Blk

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

VALIDATION PERFORMED BY: Jeffrey L. Davin

SIGNATURE: 

DATE: October 21, 2015

PEER REVIEW: Joseph C. Houser

DATE: October 23, 2015

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAme

THE LEADER IN ENVIRONME

480-85696 Chain of Custody

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
ARCADIS/RGE	Bruce Ahrens	8.14.15	297360
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
295 woodcliff Drive	585-385-0090		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Fairport / NY / 14450	Klaus Beyle	Melissa Deyo	
Project Name and Location (State)	**Carrier/Waybill Number**		
Genesee Park street			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	Analysis: TCL VOC	TCL SVOC	TAL metals	Cyanide	Special Instructions/ Conditions of Receipt
SB-2 (7-9)	8.13.15	1500				X	1	2					1	X	X	X	X	
SB-2 (9-11)	↓	1510				↓	↓	↓					↓	↓	↓	↓	↓	
SB-1 (7-9)		1550																
SB-1 (9-11)		1600																
DUP-081315		~~1515~~																
SB-3 (7-9)		1515																
SB-3 (9-11)	↓	1525				↓	↓	↓					↓	X	X	X	X	
SB-5 (9-11)	8.14.15	0800				X	1	2					1	X	X	X	X	
SB-5 (11-13.5)	↓	0820				X	1	2					1	X	X	X	X	
TRIP BLANK	8.14.15	—		X						1				X				

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

G Per Contract

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Standard

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	8.14.15	1008	1. Received By Cameron Wallace	8/15/15	9:00
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

WHITE - Stays with the Sample; PINK - Field Copy

HI 2.9

DATA REPORTING QUALIFIERS

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Lab Section	Qualifier	Description
GC/MS VOA		
	B	Compound was found in the blank and sample.
	E	Result exceeded calibration range.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
GC/MS Semi VOA		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate is outside control limits
Metals		
	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry		
	*	LCS or LCSD is outside acceptance limits.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-2 (7-9)

Lab Sample ID: 480-85696-1 Date Sampled: 08/13/2015 1500
Client Matrix: Solid % Moisture: 8.6 Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259811	Instrument ID:	HP5973G
Prep Method:	5035A	Prep Batch:	480-259512	Lab File ID:	G41628.D
Dilution:	4.0			Initial Weight/Volume:	6.629 g
Analysis Date:	08/21/2015 1452			Final Weight/Volume:	10 mL
Prep Date:	08/13/2015 1130				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		97	350
1,1,2,2-Tetrachloroethane		ND		57	350
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		170	350
1,1,2-Trichloroethane		ND		73	350
1,1-Dichloroethane		ND		110	350
1,1-Dichloroethene		ND		120	350
1,2,4-Trichlorobenzene		ND		130	350
1,2-Dibromo-3-Chloropropane		ND	J	170	350
1,2-Dibromoethane		ND		61	350
1,2-Dichlorobenzene		ND		89	350
1,2-Dichloroethane		ND		140	350
1,2-Dichloropropane		ND		57	350
1,3-Dichlorobenzene		ND		93	350
1,4-Dichlorobenzene		ND		49	350
2-Butanone (MEK)		ND		1000	1700
2-Hexanone		ND		720	1700
4-Methyl-2-pentanone (MIBK)		ND		110	1700
Acetone		ND		1400	1700
Benzene		ND		66	350
Bromodichloromethane		ND		70	350
Bromoform		ND	J	170	350
Bromomethane		ND		77	350
Carbon disulfide		ND		160	350
Carbon tetrachloride		ND		89	350
Chlorobenzene		ND		46	350
Chloroethane		ND		73	350
Chloroform		ND		240	350
Chloromethane		ND		83	350
cis-1,2-Dichloroethene		ND		96	350
cis-1,3-Dichloropropene		ND		83	350
Cyclohexane		5000	J	78	350
Dibromochloromethane		ND	J	170	350
Dichlorodifluoromethane		ND		150	350
Ethylbenzene		370		100	350
Isopropylbenzene		370		52	350
Methyl acetate		ND		170	350
Methyl tert-butyl ether		ND		130	350
Methylcyclohexane		17000		160	350
Methylene Chloride		750	~~B~~ UB J	69	350
Styrene		ND		84	350
Tetrachloroethene		ND		47	350
Toluene		ND		94	350
trans-1,2-Dichloroethene		ND		82	350
trans-1,3-Dichloropropene		ND		34	350
Trichloroethene		ND		97	350
Trichlorofluoromethane		ND		160	350

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-2 (7-9)

Lab Sample ID: 480-85696-1 Date Sampled: 08/13/2015 1500
Client Matrix: Solid % Moisture: 8.6 Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259811	Instrument ID:	HP5973G
Prep Method:	5035A	Prep Batch:	480-259512	Lab File ID:	G41628.D
Dilution:	4.0			Initial Weight/Volume:	6.629 g
Analysis Date:	08/21/2015 1452			Final Weight/Volume:	10 mL
Prep Date:	08/13/2015 1130				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		120	350
Xylenes, Total		1100		190	700

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	112		53 - 146
4-Bromofluorobenzene (Surr)	86		49 - 148
Dibromofluoromethane (Surr)	102		60 - 140
Toluene-d8 (Surr)	85		50 - 149

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-2 (9-11)

Lab Sample ID: 480-85696-2
Client Matrix: Solid

Date Sampled: 08/13/2015 1510
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035
Dilution: 1.0
Analysis Date: 08/19/2015 1328
Prep Date: 08/15/2015 1130

Analysis Batch: 480-259347
Prep Batch: 480-259392

Instrument ID: HP5973F
Lab File ID: F0241.D
Initial Weight/Volume: 6.764 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.27	3.7
1,2-Dichlorobenzene		ND		0.29	3.7
1,1,2,2-Tetrachloroethane		ND		0.60	3.7
1,1,2-Trichloroethane		ND		0.48	3.7
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.84	3.7
1,1-Dichloroethane		ND		0.45	3.7
1,1-Dichloroethene		ND		0.45	3.7
1,2,4-Trichlorobenzene		ND		0.22	3.7
1,2-Dibromo-3-Chloropropane		ND		1.8	3.7
1,2-Dichloroethane		ND		0.19	3.7
1,2-Dichloropropane		ND		1.8	3.7
1,3-Dichlorobenzene		ND		0.19	3.7
1,4-Dichlorobenzene		ND		0.52	3.7
2-Butanone (MEK)	18	~~3.6~~	~~J~~ UB	1.4	18
2-Hexanone		ND		1.8	18
4-Methyl-2-pentanone (MIBK)		ND		1.2	18
Acetone		18	UB	3.1	18
Benzene		2.4	J	0.18	3.7
Bromodichloromethane		ND		0.50	3.7
Bromoform		ND		1.8	3.7
Bromomethane		ND		0.33	3.7
Carbon disulfide		ND		1.8	3.7
Carbon tetrachloride		ND		0.36	3.7
Chlorobenzene		ND		0.49	3.7
Dibromochloromethane		ND J		0.47	3.7
Chloroethane		ND		0.84	3.7
Chloroform		ND		0.23	3.7
Chloromethane		ND		0.22	3.7
cis-1,2-Dichloroethene		ND		0.47	3.7
cis-1,3-Dichloropropene		ND		0.53	3.7
Cyclohexane	2300	~~180~~	~~E~~ D	0.52	3.7
Dichlorodifluoromethane		ND J		0.31	3.7
Ethylbenzene		37		0.26	3.7
1,2-Dibromoethane		ND		0.47	3.7
Isopropylbenzene		22		0.56	3.7
Methyl acetate		ND		2.2	3.7
Methyl tert-butyl ether		ND		0.36	3.7
Methylcyclohexane	7600	~~310~~	~~E~~ D	0.56	3.7
Methylene Chloride		ND		1.7	3.7
Styrene		ND		0.18	3.7
Tetrachloroethene		ND		0.50	3.7
Toluene		10		0.28	3.7
trans-1,2-Dichloroethene		ND		0.38	3.7
trans-1,3-Dichloropropene		ND		1.6	3.7
Trichloroethene		ND		0.81	3.7
Trichlorofluoromethane		ND		0.35	3.7

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-2 (9-11)**

Lab Sample ID: 480-85696-2
Client Matrix: Solid

Date Sampled: 08/13/2015 1510
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259347	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-259392	Lab File ID:	F0241.D
Dilution:	1.0			Initial Weight/Volume:	6.764 g
Analysis Date:	08/19/2015 1328			Final Weight/Volume:	5 mL
Prep Date:	08/15/2015 1130				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.45	3.7
Xylenes, Total		67		0.62	7.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	119		71 - 125
1,2-Dichloroethane-d4 (Surr)	110		64 - 126
4-Bromofluorobenzene (Surr)	95		72 - 126
Dibromofluoromethane (Surr)	69		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-2 (9-11)**

Lab Sample ID: 480-85696-2
Client Matrix: Solid
% Moisture: 5.7

Date Sampled: 08/13/2015 1510
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259811	Instrument ID:	HP5973G
Prep Method:	5035A	Prep Batch:	480-259512	Lab File ID:	G41629.D
Dilution:	2.0			Initial Weight/Volume:	6.687 g
Analysis Date:	08/21/2015 1514	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	08/13/2015 1130				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		46	160
1,1,2,2-Tetrachloroethane		ND		27	160
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		82	160
1,1,2-Trichloroethane		ND		35	160
1,1-Dichloroethane		ND		51	160
1,1-Dichloroethene		ND		57	160
1,2,4-Trichlorobenzene		ND		62	160
1,2-Dibromo-3-Chloropropane		ND		82	160
1,2-Dibromoethane		ND		29	160
1,2-Dichlorobenzene		ND		42	160
1,2-Dichloroethane		ND		67	160
1,2-Dichloropropane		ND		27	160
1,3-Dichlorobenzene		ND		44	160
1,4-Dichlorobenzene		ND		23	160
2-Butanone (MEK)		ND		490	820
2-Hexanone		ND		340	820
4-Methyl-2-pentanone (MIBK)		ND		53	820
Acetone		ND		680	820
Benzene		43	J	31	160
Bromodichloromethane		ND		33	160
Bromoform		ND		82	160
Bromomethane		ND		36	160
Carbon disulfide		ND		75	160
Carbon tetrachloride		ND		42	160
Chlorobenzene		ND		22	160
Chloroethane		ND		34	160
Chloroform		ND		110	160
Chloromethane		ND		39	160
cis-1,2-Dichloroethene		ND		45	160
cis-1,3-Dichloropropene		ND		39	160
Cyclohexane		2300		37	160
Dibromochloromethane		ND		80	160
Dichlorodifluoromethane		ND		72	160
Ethylbenzene		230		48	160
Isopropylbenzene		130	J	25	160
Methyl acetate		ND		78	160
Methyl tert-butyl ether		ND		62	160
Methylcyclohexane		7600		77	160
Methylene Chloride		250	B	33	160
Styrene		ND		40	160
Tetrachloroethene		ND		22	160
Toluene		82	J	44	160
trans-1,2-Dichloroethene		ND		39	160
trans-1,3-Dichloropropene		ND		16	160
Trichloroethene		ND		46	160
Trichlorofluoromethane		ND		77	160

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-2 (9-11)

Lab Sample ID: 480-85696-2
Client Matrix: Solid
% Moisture: 5.7

Date Sampled: 08/13/2015 1510
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259811	Instrument ID:	HP5973G
Prep Method:	5035A	Prep Batch:	480-259512	Lab File ID:	G41629.D
Dilution:	2.0			Initial Weight/Volume:	6.687 g
Analysis Date:	08/21/2015 1514	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	08/13/2015 1130				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		55	160
Xylenes, Total		410		91	330

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		53 - 146
4-Bromofluorobenzene (Surr)	90		49 - 148
Dibromofluoromethane (Surr)	105		60 - 140
Toluene-d8 (Surr)	89		50 - 149

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-1 (7-9)**

Lab Sample ID: 480-85696-3
Client Matrix: Solid

Date Sampled: 08/13/2015 1550
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259347	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-259392	Lab File ID:	F0242.D
Dilution:	1.0			Initial Weight/Volume:	7.357 g
Analysis Date:	08/19/2015 1354			Final Weight/Volume:	5 mL
Prep Date:	08/15/2015 1130				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.25	3.4
1,2-Dichlorobenzene		ND		0.27	3.4
1,1,2,2-Tetrachloroethane		ND		0.55	3.4
1,1,2-Trichloroethane		ND		0.44	3.4
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.77	3.4
1,1-Dichloroethane		ND		0.41	3.4
1,1-Dichloroethene		ND		0.42	3.4
1,2,4-Trichlorobenzene		ND		0.21	3.4
1,2-Dibromo-3-Chloropropane		ND		1.7	3.4
1,2-Dichloroethane		ND		0.17	3.4
1,2-Dichloropropane		ND		1.7	3.4
1,3-Dichlorobenzene		ND		0.17	3.4
1,4-Dichlorobenzene		ND		0.48	3.4
2-Butanone (MEK)		ND		1.2	17
2-Hexanone		ND		1.7	17
4-Methyl-2-pentanone (MIBK)		ND		1.1	17
Acetone		ND		2.9	17
Benzene		ND		0.17	3.4
Bromodichloromethane		ND		0.46	3.4
Bromoform		ND		1.7	3.4
Bromomethane		ND		0.31	3.4
Carbon disulfide		ND		1.7	3.4
Carbon tetrachloride		ND		0.33	3.4
Chlorobenzene		ND		0.45	3.4
Dibromochloromethane		ND	J	0.43	3.4
Chloroethane		ND		0.77	3.4
Chloroform		ND		0.21	3.4
Chloromethane		ND		0.21	3.4
cis-1,2-Dichloroethene		ND		0.43	3.4
cis-1,3-Dichloropropene		ND		0.49	3.4
Cyclohexane		ND		0.48	3.4
Dichlorodifluoromethane		ND	J	0.28	3.4
Ethylbenzene		ND		0.23	3.4
1,2-Dibromoethane		ND		0.44	3.4
Isopropylbenzene		ND		0.51	3.4
Methyl acetate		ND		2.1	3.4
Methyl tert-butyl ether		ND		0.33	3.4
Methylcyclohexane		ND		0.52	3.4
Methylene Chloride		ND		1.6	3.4
Styrene		ND		0.17	3.4
Tetrachloroethene		ND		0.46	3.4
Toluene		ND		0.26	3.4
trans-1,2-Dichloroethene		ND		0.35	3.4
trans-1,3-Dichloropropene		ND		1.5	3.4
Trichloroethene		ND		0.75	3.4
Trichlorofluoromethane		ND		0.32	3.4

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-1 (7-9)**

Lab Sample ID: 480-85696-3
Client Matrix: Solid

Date Sampled: 08/13/2015 1550
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259347	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-259392	Lab File ID:	F0242.D
Dilution:	1.0			Initial Weight/Volume:	7.357 g
Analysis Date:	08/19/2015 1354			Final Weight/Volume:	5 mL
Prep Date:	08/15/2015 1130				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.41	3.4
Xylenes, Total		ND		0.57	6.8

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	105		71 - 125
1,2-Dichloroethane-d4 (Surr)	116		64 - 126
4-Bromofluorobenzene (Surr)	106		72 - 126
Dibromofluoromethane (Surr)	109		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-1 (9-11)

Lab Sample ID: 480-85696-4
Client Matrix: Solid

Date Sampled: 08/13/2015 1600
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259347	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-259392	Lab File ID:	F0243.D
Dilution:	1.0			Initial Weight/Volume:	6.345 g
Analysis Date:	08/19/2015 1420			Final Weight/Volume:	5 mL
Prep Date:	08/15/2015 1130				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.29	3.9
1,2-Dichlorobenzene		ND		0.31	3.9
1,1,2,2-Tetrachloroethane		ND		0.64	3.9
1,1,2-Trichloroethane		ND		0.51	3.9
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.90	3.9
1,1-Dichloroethane		ND		0.48	3.9
1,1-Dichloroethene		ND		0.48	3.9
1,2,4-Trichlorobenzene		ND		0.24	3.9
1,2-Dibromo-3-Chloropropane		ND		2.0	3.9
1,2-Dichloroethane		ND		0.20	3.9
1,2-Dichloropropane		ND		2.0	3.9
1,3-Dichlorobenzene		ND		0.20	3.9
1,4-Dichlorobenzene		ND		0.55	3.9
2-Butanone (MEK)		ND		1.4	20
2-Hexanone		ND		2.0	20
4-Methyl-2-pentanone (MIBK)		ND		1.3	20
Acetone	20	~~6.7~~	~~J~~ UB	3.3	20
Benzene		ND		0.19	3.9
Bromodichloromethane		ND		0.53	3.9
Bromoform		ND		2.0	3.9
Bromomethane		ND		0.35	3.9
Carbon disulfide		ND		2.0	3.9
Carbon tetrachloride		ND		0.38	3.9
Chlorobenzene		ND		0.52	3.9
Dibromochloromethane		ND J		0.50	3.9
Chloroethane		ND		0.89	3.9
Chloroform		ND		0.24	3.9
Chloromethane		ND		0.24	3.9
cis-1,2-Dichloroethene		ND		0.50	3.9
cis-1,3-Dichloropropene		ND		0.57	3.9
Cyclohexane		2.7	J	0.55	3.9
Dichlorodifluoromethane		ND J		0.33	3.9
Ethylbenzene		ND		0.27	3.9
1,2-Dibromoethane		ND		0.51	3.9
Isopropylbenzene		ND		0.59	3.9
Methyl acetate		ND		2.4	3.9
Methyl tert-butyl ether		ND		0.39	3.9
Methylcyclohexane		2.7	J	0.60	3.9
Methylene Chloride		ND		1.8	3.9
Styrene		ND		0.20	3.9
Tetrachloroethene		ND		0.53	3.9
Toluene		ND		0.30	3.9
trans-1,2-Dichloroethene		ND		0.41	3.9
trans-1,3-Dichloropropene		ND		1.7	3.9
Trichloroethene		ND		0.87	3.9
Trichlorofluoromethane		ND		0.37	3.9

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-1 (9-11)**

Lab Sample ID: 480-85696-4
Client Matrix: Solid

Date Sampled: 08/13/2015 1600
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259347	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-259392	Lab File ID:	F0243.D
Dilution:	1.0			Initial Weight/Volume:	6.345 g
Analysis Date:	08/19/2015 1420			Final Weight/Volume:	5 mL
Prep Date:	08/15/2015 1130				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.48	3.9
Xylenes, Total		ND		0.66	7.9

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	107		71 - 125
1,2-Dichloroethane-d4 (Surr)	108		64 - 126
4-Bromofluorobenzene (Surr)	91		72 - 126
Dibromofluoromethane (Surr)	105		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **DUP-081315**

Lab Sample ID: 480-85696-5
Client Matrix: Solid

% Moisture: 12.2

Date Sampled: 08/13/2015 0000
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035A
Dilution: 10
Analysis Date: 08/21/2015 0405
Prep Date: 08/13/2015 1130

Analysis Batch: 480-259737
Prep Batch: 480-259512

Instrument ID: HP5973G
Lab File ID: G41637.D
Initial Weight/Volume: 6.968 g
Final Weight/Volume: 10 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		250	890
1,1,2,2-Tetrachloroethane		ND		140	890
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		440	890
1,1,2-Trichloroethane		ND		190	890
1,1-Dichloroethane		ND		270	890
1,1-Dichloroethene		ND		310	890
1,2,4-Trichlorobenzene		ND		340	890
1,2-Dibromo-3-Chloropropane		ND	J	440	890
1,2-Dibromoethane		ND		160	890
1,2-Dichlorobenzene		ND		230	890
1,2-Dichloroethane		ND		360	890
1,2-Dichloropropane		ND		140	890
1,3-Dichlorobenzene		ND		240	890
1,4-Dichlorobenzene		ND		120	890
2-Butanone (MEK)		ND		2600	4400
2-Hexanone		ND		1800	4400
4-Methyl-2-pentanone (MIBK)		ND		280	4400
Acetone		ND		3600	4400
Benzene		ND		170	890
Bromodichloromethane		ND		180	890
Bromoform		ND	J	440	890
Bromomethane		ND		200	890
Carbon disulfide		ND		400	890
Carbon tetrachloride		ND		230	890
Chlorobenzene		ND		120	890
Chloroethane		ND		180	890
Chloroform		ND		610	890
Chloromethane		ND		210	890
cis-1,2-Dichloroethene		ND		240	890
cis-1,3-Dichloropropene		ND		210	890
Cyclohexane		ND	J	200	890
Dibromochloromethane		ND	J	430	890
Dichlorodifluoromethane		ND		390	890
Ethylbenzene		680	J	260	890
Isopropylbenzene		620	J	130	890
Methyl acetate		ND		420	890
Methyl tert-butyl ether		ND		340	890
Methylcyclohexane		30000		420	890
Methylene Chloride		2100	~~B~~ UB J	180	890
Styrene		ND		210	890
Tetrachloroethene		ND		120	890
Toluene		ND		240	890
trans-1,2-Dichloroethene		ND		210	890
trans-1,3-Dichloropropene		ND		87	890
Trichloroethene		ND		250	890
Trichlorofluoromethane		ND		420	890

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: DUP-081315

Lab Sample ID: 480-85696-5 Date Sampled: 08/13/2015 0000
Client Matrix: Solid % Moisture: 12.2 Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259737	Instrument ID:	HP5973G
Prep Method:	5035A	Prep Batch:	480-259512	Lab File ID:	G41637.D
Dilution:	10			Initial Weight/Volume:	6.968 g
Analysis Date:	08/21/2015 0405			Final Weight/Volume:	10 mL
Prep Date:	08/13/2015 1130				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		300	890
Xylenes, Total		1900		490	1800

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108		53 - 146
4-Bromofluorobenzene (Surr)	91		49 - 148
Dibromofluoromethane (Surr)	106		60 - 140
Toluene-d8 (Surr)	90		50 - 149

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-3 (7-9)**

Lab Sample ID: 480-85696-6
Client Matrix: Solid

Date Sampled: 08/13/2015 1515
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259347	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-259392	Lab File ID:	F0245.D
Dilution:	1.0			Initial Weight/Volume:	7.037 g
Analysis Date:	08/19/2015 1511			Final Weight/Volume:	5 mL
Prep Date:	08/15/2015 1130				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.26	3.6
1,2-Dichlorobenzene		ND		0.28	3.6
1,1,2,2-Tetrachloroethane		ND		0.58	3.6
1,1,2-Trichloroethane		ND		0.46	3.6
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.81	3.6
1,1-Dichloroethane		ND		0.43	3.6
1,1-Dichloroethene		ND		0.43	3.6
1,2,4-Trichlorobenzene		ND		0.22	3.6
1,2-Dibromo-3-Chloropropane		ND		1.8	3.6
1,2-Dichloroethane		ND		0.18	3.6
1,2-Dichloropropane		ND		1.8	3.6
1,3-Dichlorobenzene		ND		0.18	3.6
1,4-Dichlorobenzene		ND		0.50	3.6
2-Butanone (MEK)		ND		1.3	18
2-Hexanone		ND		1.8	18
4-Methyl-2-pentanone (MIBK)		ND		1.2	18
Acetone		ND		3.0	18
Benzene		ND		0.17	3.6
Bromodichloromethane		ND		0.48	3.6
Bromoform		ND		1.8	3.6
Bromomethane		ND		0.32	3.6
Carbon disulfide		ND		1.8	3.6
Carbon tetrachloride		ND		0.34	3.6
Chlorobenzene		ND		0.47	3.6
Dibromochloromethane		ND	J	0.45	3.6
Chloroethane		ND		0.80	3.6
Chloroform		ND		0.22	3.6
Chloromethane		ND		0.21	3.6
cis-1,2-Dichloroethene		ND		0.45	3.6
cis-1,3-Dichloropropene		ND		0.51	3.6
Cyclohexane		ND		0.50	3.6
Dichlorodifluoromethane		ND	J	0.29	3.6
Ethylbenzene		ND		0.25	3.6
1,2-Dibromoethane		ND		0.46	3.6
Isopropylbenzene		ND		0.54	3.6
Methyl acetate		ND		2.1	3.6
Methyl tert-butyl ether		ND		0.35	3.6
Methylcyclohexane		2.3	J	0.54	3.6
Methylene Chloride		ND		1.6	3.6
Styrene		ND		0.18	3.6
Tetrachloroethene		ND		0.48	3.6
Toluene		ND		0.27	3.6
trans-1,2-Dichloroethene		ND		0.37	3.6
trans-1,3-Dichloropropene		ND		1.6	3.6
Trichloroethene		ND		0.78	3.6
Trichlorofluoromethane		ND		0.34	3.6

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-3 (7-9)**

Lab Sample ID: 480-85696-6
Client Matrix: Solid

Date Sampled: 08/13/2015 1515
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259347	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-259392	Lab File ID:	F0245.D
Dilution:	1.0			Initial Weight/Volume:	7.037 g
Analysis Date:	08/19/2015 1511			Final Weight/Volume:	5 mL
Prep Date:	08/15/2015 1130				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.43	3.6
Xylenes, Total		ND		0.60	7.1

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	104		71 - 125
1,2-Dichloroethane-d4 (Surr)	107		64 - 126
4-Bromofluorobenzene (Surr)	98		72 - 126
Dibromofluoromethane (Surr)	105		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-3 (9-11)

Lab Sample ID: 480-85696-7
Client Matrix: Solid

Date Sampled: 08/13/2015 1525
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035
Dilution: 1.0
Analysis Date: 08/19/2015 1537
Prep Date: 08/15/2015 1130

Analysis Batch: 480-259347
Prep Batch: 480-259392

Instrument ID: HP5973F
Lab File ID: F0246.D
Initial Weight/Volume: 6.679 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.27	3.7
1,2-Dichlorobenzene		ND		0.29	3.7
1,1,2,2-Tetrachloroethane		ND		0.61	3.7
1,1,2-Trichloroethane		ND		0.49	3.7
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.85	3.7
1,1-Dichloroethane		ND		0.46	3.7
1,1-Dichloroethene		ND		0.46	3.7
1,2,4-Trichlorobenzene		ND		0.23	3.7
1,2-Dibromo-3-Chloropropane		ND		1.9	3.7
1,2-Dichloroethane		ND		0.19	3.7
1,2-Dichloropropane		ND		1.9	3.7
1,3-Dichlorobenzene		ND		0.19	3.7
1,4-Dichlorobenzene		ND		0.52	3.7
2-Butanone (MEK)		ND		1.4	19
2-Hexanone		ND		1.9	19
4-Methyl-2-pentanone (MIBK)		ND		1.2	19
Acetone	19	~~14~~	~~J~~ UB	3.2	19
Benzene		ND		0.18	3.7
Bromodichloromethane		ND		0.50	3.7
Bromoform		ND		1.9	3.7
Bromomethane		ND		0.34	3.7
Carbon disulfide		ND		1.9	3.7
Carbon tetrachloride		ND		0.36	3.7
Chlorobenzene		ND		0.49	3.7
Dibromochloromethane		ND J		0.48	3.7
Chloroethane		ND		0.85	3.7
Chloroform		ND		0.23	3.7
Chloromethane		ND		0.23	3.7
cis-1,2-Dichloroethene		ND		0.48	3.7
cis-1,3-Dichloropropene		ND		0.54	3.7
Cyclohexane		2.4	J	0.52	3.7
Dichlorodifluoromethane		ND J		0.31	3.7
Ethylbenzene		ND		0.26	3.7
1,2-Dibromoethane		ND		0.48	3.7
Isopropylbenzene		ND		0.56	3.7
Methyl acetate		ND		2.3	3.7
Methyl tert-butyl ether		ND		0.37	3.7
Methylcyclohexane		2.5	J	0.57	3.7
Methylene Chloride		ND		1.7	3.7
Styrene		ND		0.19	3.7
Tetrachloroethene		ND		0.50	3.7
Toluene		ND		0.28	3.7
trans-1,2-Dichloroethene		ND		0.39	3.7
trans-1,3-Dichloropropene		ND		1.6	3.7
Trichloroethene		ND		0.82	3.7
Trichlorofluoromethane		ND		0.35	3.7

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-3 (9-11)**

Lab Sample ID: 480-85696-7
Client Matrix: Solid

Date Sampled: 08/13/2015 1525
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259347	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-259392	Lab File ID:	F0246.D
Dilution:	1.0			Initial Weight/Volume:	6.679 g
Analysis Date:	08/19/2015 1537			Final Weight/Volume:	5 mL
Prep Date:	08/15/2015 1130				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.46	3.7
Xylenes, Total		ND		0.63	7.5

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	106		71 - 125
1,2-Dichloroethane-d4 (Surr)	110		64 - 126
4-Bromofluorobenzene (Surr)	85		72 - 126
Dibromofluoromethane (Surr)	105		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-5 (9-11)**

Lab Sample ID: 480-85696-8
Client Matrix: Solid

Date Sampled: 08/14/2015 0800
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259347	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-259392	Lab File ID:	F0247.D
Dilution:	1.0			Initial Weight/Volume:	6.57 g
Analysis Date:	08/19/2015 1602			Final Weight/Volume:	5 mL
Prep Date:	08/15/2015 1130				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.28	3.8
1,2-Dichlorobenzene		ND		0.30	3.8
1,1,2,2-Tetrachloroethane		ND		0.62	3.8
1,1,2-Trichloroethane		ND		0.49	3.8
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.87	3.8
1,1-Dichloroethane		ND		0.46	3.8
1,1-Dichloroethene		ND		0.47	3.8
1,2,4-Trichlorobenzene		ND		0.23	3.8
1,2-Dibromo-3-Chloropropane		ND		1.9	3.8
1,2-Dichloroethane		ND		0.19	3.8
1,2-Dichloropropane		ND		1.9	3.8
1,3-Dichlorobenzene		ND		0.20	3.8
1,4-Dichlorobenzene		ND		0.53	3.8
2-Butanone (MEK)		ND		1.4	19
2-Hexanone		ND		1.9	19
4-Methyl-2-pentanone (MIBK)		ND		1.2	19
Acetone		ND		3.2	19
Benzene		1.2	J	0.19	3.8
Bromodichloromethane		ND		0.51	3.8
Bromoform		ND		1.9	3.8
Bromomethane		ND		0.34	3.8
Carbon disulfide		ND		1.9	3.8
Carbon tetrachloride		ND		0.37	3.8
Chlorobenzene		ND		0.50	3.8
Dibromochloromethane		ND	J	0.49	3.8
Chloroethane		ND		0.86	3.8
Chloroform		ND		0.24	3.8
Chloromethane		ND		0.23	3.8
cis-1,2-Dichloroethene		ND		0.49	3.8
cis-1,3-Dichloropropene		ND		0.55	3.8
Cyclohexane		ND		0.53	3.8
Dichlorodifluoromethane		ND	J	0.31	3.8
Ethylbenzene		ND		0.26	3.8
1,2-Dibromoethane		ND		0.49	3.8
Isopropylbenzene		ND		0.57	3.8
Methyl acetate		ND		2.3	3.8
Methyl tert-butyl ether		ND		0.37	3.8
Methylcyclohexane		ND		0.58	3.8
Methylene Chloride		ND		1.8	3.8
Styrene		0.70	J	0.19	3.8
Tetrachloroethene		ND		0.51	3.8
Toluene		2.6	J	0.29	3.8
trans-1,2-Dichloroethene		ND		0.39	3.8
trans-1,3-Dichloropropene		ND		1.7	3.8
Trichloroethene		ND		0.84	3.8
Trichlorofluoromethane		ND		0.36	3.8

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-5 (9-11)**

Lab Sample ID: 480-85696-8
Client Matrix: Solid

Date Sampled: 08/14/2015 0800
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259347	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-259392	Lab File ID:	F0247.D
Dilution:	1.0			Initial Weight/Volume:	6.57 g
Analysis Date:	08/19/2015 1602			Final Weight/Volume:	5 mL
Prep Date:	08/15/2015 1130				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.46	3.8
Xylenes, Total		3.5	J	0.64	7.6

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	104		71 - 125
1,2-Dichloroethane-d4 (Surr)	108		64 - 126
4-Bromofluorobenzene (Surr)	92		72 - 126
Dibromofluoromethane (Surr)	105		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-5 (11-13.5)**

Lab Sample ID: 480-85696-9
Client Matrix: Solid

Date Sampled: 08/14/2015 0820
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5035
Dilution: 1.0
Analysis Date: 08/19/2015 1628
Prep Date: 08/15/2015 1130

Analysis Batch: 480-259347
Prep Batch: 480-259392

Instrument ID: HP5973F
Lab File ID: F0248.D
Initial Weight/Volume: 6.976 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.26	3.6
1,2-Dichlorobenzene		ND		0.28	3.6
1,1,2,2-Tetrachloroethane		ND		0.58	3.6
1,1,2-Trichloroethane		ND		0.47	3.6
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		0.82	3.6
1,1-Dichloroethane		ND		0.44	3.6
1,1-Dichloroethene		ND		0.44	3.6
1,2,4-Trichlorobenzene		ND		0.22	3.6
1,2-Dibromo-3-Chloropropane		ND		1.8	3.6
1,2-Dichloroethane		ND		0.18	3.6
1,2-Dichloropropane		ND		1.8	3.6
1,3-Dichlorobenzene		ND		0.18	3.6
1,4-Dichlorobenzene		ND		0.50	3.6
2-Butanone (MEK)		ND		1.3	18
2-Hexanone		ND		1.8	18
4-Methyl-2-pentanone (MIBK)		ND		1.2	18
Acetone	18	~~6.1~~	~~J~~ UB	3.0	18
Benzene		1.8	J	0.18	3.6
Bromodichloromethane		ND		0.48	3.6
Bromoform		ND		1.8	3.6
Bromomethane		ND		0.32	3.6
Carbon disulfide		ND		1.8	3.6
Carbon tetrachloride		ND		0.35	3.6
Chlorobenzene		ND		0.47	3.6
Dibromochloromethane		ND J		0.46	3.6
Chloroethane		ND		0.81	3.6
Chloroform		ND		0.22	3.6
Chloromethane		ND		0.22	3.6
cis-1,2-Dichloroethene		ND		0.46	3.6
cis-1,3-Dichloropropene		ND		0.52	3.6
Cyclohexane		ND		0.50	3.6
Dichlorodifluoromethane		ND J		0.30	3.6
Ethylbenzene		0.57	J	0.25	3.6
1,2-Dibromoethane		ND		0.46	3.6
Isopropylbenzene		ND		0.54	3.6
Methyl acetate		ND		2.2	3.6
Methyl tert-butyl ether		ND		0.35	3.6
Methylcyclohexane		ND		0.54	3.6
Methylene Chloride		ND		1.6	3.6
Styrene		ND		0.18	3.6
Tetrachloroethene		ND		0.48	3.6
Toluene		ND		0.27	3.6
trans-1,2-Dichloroethene		ND		0.37	3.6
trans-1,3-Dichloropropene		ND		1.6	3.6
Trichloroethene		ND		0.79	3.6
Trichlorofluoromethane		ND		0.34	3.6

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-5 (11-13.5)**

Lab Sample ID: 480-85696-9
Client Matrix: Solid

Date Sampled: 08/14/2015 0820
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259347	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-259392	Lab File ID:	F0248.D
Dilution:	1.0			Initial Weight/Volume:	6.976 g
Analysis Date:	08/19/2015 1628			Final Weight/Volume:	5 mL
Prep Date:	08/15/2015 1130				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.44	3.6
Xylenes, Total		ND		0.60	7.2

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	103		71 - 125
1,2-Dichloroethane-d4 (Surr)	117		64 - 126
4-Bromofluorobenzene (Surr)	105		72 - 126
Dibromofluoromethane (Surr)	108		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **TRIP BLANK**

Lab Sample ID: 480-85696-10
Client Matrix: Water

Date Sampled: 08/14/2015 0000
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259393	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T7562.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	08/19/2015 1215			Final Weight/Volume:	5 mL
Prep Date:	08/19/2015 1215				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	1.7	J	1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	4.4	J	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dichlorodifluoromethane	ND	J	0.68	1.0
Ethylbenzene	ND		0.74	1.0
Isopropylbenzene	ND		0.79	1.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **TRIP BLANK**

Lab Sample ID: 480-85696-10
Client Matrix: Water

Date Sampled: 08/14/2015 0000
Date Received: 08/15/2015 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-259393	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T7562.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	08/19/2015 1215			Final Weight/Volume:	5 mL
Prep Date:	08/19/2015 1215				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		66 - 137
Toluene-d8 (Surr)	99		71 - 126
4-Bromofluorobenzene (Surr)	97		73 - 120
Dibromofluoromethane (Surr)	101		60 - 140

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-2 (7-9)

Lab Sample ID: 480-85696-1 Date Sampled: 08/13/2015 1500
Client Matrix: Solid % Moisture: 8.6 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012414.D
Dilution:	10			Initial Weight/Volume:	+30.24 g
Analysis Date:	08/19/2015 0006			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		270	1800
bis (2-chloroisopropyl) ether		ND		370	1800
2,4,5-Trichlorophenol		ND		500	1800
2,4,6-Trichlorophenol		ND		370	1800
2,4-Dichlorophenol		ND		200	1800
2,4-Dimethylphenol		ND		450	1800
2,4-Dinitrophenol		ND		8500	18000
2,4-Dinitrotoluene		ND		380	1800
2,6-Dinitrotoluene		ND		220	1800
2-Chloronaphthalene		ND		300	1800
2-Chlorophenol		ND		340	1800
2-Methylnaphthalene		ND		370	1800
2-Methylphenol		ND		220	1800
2-Nitroaniline		ND		270	3600
2-Nitrophenol		ND		520	1800
3,3'-Dichlorobenzidine		ND		2200	3600
3-Nitroaniline		ND		510	3600
4,6-Dinitro-2-methylphenol		ND		1800	3600
4-Bromophenyl phenyl ether		ND		260	1800
4-Chloro-3-methylphenol		ND		460	1800
4-Chloroaniline		ND		460	1800
4-Chlorophenyl phenyl ether		ND		230	1800
4-Methylphenol		ND		220	3600
4-Nitroaniline		ND		970	3600
4-Nitrophenol		ND		1300	3600
Acenaphthene		ND		270	1800
Acenaphthylene		ND		240	1800
Acetophenone		ND		250	1800
Anthracene		ND		460	1800
Atrazine		ND		640	1800
Benzaldehyde		ND		1500	1800
Benzo[a]anthracene		ND		180	1800
Benzo[a]pyrene		ND		270	1800
Benzo[b]fluoranthene		ND		290	1800
Benzo[g,h,i]perylene		ND		200	1800
Benzo[k]fluoranthene		ND		240	1800
Bis(2-chloroethoxy)methane		ND		390	1800
Bis(2-chloroethyl)ether		ND		240	1800
Bis(2-ethylhexyl) phthalate		ND		630	1800
Butyl benzyl phthalate		ND		300	1800
Caprolactam		ND		550	1800
Carbazole		ND		220	1800
Chrysene		ND		410	1800
Di-n-butyl phthalate		ND		310	1800
Di-n-octyl phthalate		ND		220	1800
Dibenz(a,h)anthracene		ND		330	1800

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-2 (7-9)

Lab Sample ID: 480-85696-1 Date Sampled: 08/13/2015 1500
Client Matrix: Solid % Moisture: 8.6 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012414.D
Dilution:	10			Initial Weight/Volume:	+30.24 g
Analysis Date:	08/19/2015 0006			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		220	1800
Diethyl phthalate		ND		240	1800
Dimethyl phthalate		ND		220	1800
Fluoranthene		ND		200	1800
Fluorene		ND		220	1800
Hexachlorobenzene		ND		250	1800
Hexachlorobutadiene		ND		270	1800
Hexachlorocyclopentadiene		ND		250	1800
Hexachloroethane		ND		240	1800
Indeno[1,2,3-cd]pyrene		ND		230	1800
Isophorone		ND		390	1800
N-Nitrosodi-n-propylamine		ND		310	1800
N-Nitrosodiphenylamine		ND		1500	1800
Naphthalene		ND		240	1800
Nitrobenzene		ND		210	1800
Pentachlorophenol		ND		1800	3600
Phenanthrene		ND		270	1800
Phenol		ND		280	1800
Pyrene		ND		220	1800

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	70		39 - 146
2-Fluorobiphenyl	85		37 - 120
2-Fluorophenol	80		18 - 120
Nitrobenzene-d5	77		34 - 132
p-Terphenyl-d14	91		65 - 153
Phenol-d5	71		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-2 (9-11)

Lab Sample ID: 480-85696-2 Date Sampled: 08/13/2015 1510
Client Matrix: Solid % Moisture: 5.7 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012415.D
Dilution:	20			Initial Weight/Volume:	+30.76 g
Analysis Date:	08/19/2015 0032			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		520	3500
bis (2-chloroisopropyl) ether		ND		700	3500
2,4,5-Trichlorophenol		ND		950	3500
2,4,6-Trichlorophenol		ND		700	3500
2,4-Dichlorophenol		ND		370	3500
2,4-Dimethylphenol		ND		850	3500
2,4-Dinitrophenol		ND		16000	34000
2,4-Dinitrotoluene		ND		720	3500
2,6-Dinitrotoluene		ND		410	3500
2-Chloronaphthalene		ND		580	3500
2-Chlorophenol		ND		640	3500
2-Methylnaphthalene		ND		700	3500
2-Methylphenol		ND		410	3500
2-Nitroaniline		ND		520	6800
2-Nitrophenol		ND		990	3500
3,3'-Dichlorobenzidine		ND		4100	6800
3-Nitroaniline		ND		970	6800
4,6-Dinitro-2-methylphenol		ND		3500	6800
4-Bromophenyl phenyl ether		ND		500	3500
4-Chloro-3-methylphenol		ND		870	3500
4-Chloroaniline		ND		870	3500
4-Chlorophenyl phenyl ether		ND		430	3500
4-Methylphenol		ND		410	6800
4-Nitroaniline		ND		1800	6800
4-Nitrophenol		ND		2500	6800
Acenaphthene		ND		520	3500
Acenaphthylene		ND		450	3500
Acetophenone		ND		480	3500
Anthracene		ND		870	3500
Atrazine		ND		1200	3500
Benzaldehyde		ND		2800	3500
Benzo[a]anthracene		ND		350	3500
Benzo[a]pyrene		ND		520	3500
Benzo[b]fluoranthene		ND		560	3500
Benzo[g,h,i]perylene		ND		370	3500
Benzo[k]fluoranthene		ND		450	3500
Bis(2-chloroethoxy)methane		ND		740	3500
Bis(2-chloroethyl)ether		ND		450	3500
Bis(2-ethylhexyl) phthalate		ND		1200	3500
Butyl benzyl phthalate		ND		580	3500
Caprolactam		ND		1100	3500
Carbazole		ND		410	3500
Chrysene		ND		790	3500
Di-n-butyl phthalate		ND		600	3500
Di-n-octyl phthalate		ND		410	3500
Dibenz(a,h)anthracene		ND		620	3500

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-2 (9-11)

Lab Sample ID: 480-85696-2 Date Sampled: 08/13/2015 1510
Client Matrix: Solid % Moisture: 5.7 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012415.D
Dilution:	20			Initial Weight/Volume:	+30.76 g
Analysis Date:	08/19/2015 0032			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		410	3500
Diethyl phthalate		ND		450	3500
Dimethyl phthalate		ND		410	3500
Fluoranthene		ND		370	3500
Fluorene		ND		410	3500
Hexachlorobenzene		ND		480	3500
Hexachlorobutadiene		ND		520	3500
Hexachlorocyclopentadiene		ND		480	3500
Hexachloroethane		ND		450	3500
Indeno[1,2,3-cd]pyrene		ND		430	3500
Isophorone		ND		740	3500
N-Nitrosodi-n-propylamine		ND		600	3500
N-Nitrosodiphenylamine		ND		2900	3500
Naphthalene		ND		450	3500
Nitrobenzene		ND		390	3500
Pentachlorophenol		ND		3500	6800
Phenanthrene		ND		520	3500
Phenol		ND		540	3500
Pyrene		ND		410	3500

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	57		39 - 146
2-Fluorobiphenyl	78		37 - 120
2-Fluorophenol	62		18 - 120
Nitrobenzene-d5	69		34 - 132
p-Terphenyl-d14	82		65 - 153
Phenol-d5	68		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-1 (7-9)

Lab Sample ID: 480-85696-3 Date Sampled: 08/13/2015 1550
Client Matrix: Solid % Moisture: 19.2 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012416.D
Dilution:	10			Initial Weight/Volume:	+30.65 g
Analysis Date:	08/19/2015 0059			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		300	2100
bis (2-chloroisopropyl) ether		ND		410	2100
2,4,5-Trichlorophenol		ND		560	2100
2,4,6-Trichlorophenol		ND		410	2100
2,4-Dichlorophenol		ND		220	2100
2,4-Dimethylphenol		ND		500	2100
2,4-Dinitrophenol		ND		9500	20000
2,4-Dinitrotoluene		ND		420	2100
2,6-Dinitrotoluene		ND		240	2100
2-Chloronaphthalene		ND		340	2100
2-Chlorophenol		ND		380	2100
2-Methylnaphthalene		ND		410	2100
2-Methylphenol		ND		240	2100
2-Nitroaniline		ND		300	4000
2-Nitrophenol		ND		580	2100
3,3'-Dichlorobenzidine		ND		2400	4000
3-Nitroaniline		ND		570	4000
4,6-Dinitro-2-methylphenol		ND		2100	4000
4-Bromophenyl phenyl ether		ND		290	2100
4-Chloro-3-methylphenol		ND		510	2100
4-Chloroaniline		ND		510	2100
4-Chlorophenyl phenyl ether		ND		250	2100
4-Methylphenol		ND		240	4000
4-Nitroaniline		ND		1100	4000
4-Nitrophenol		ND		1400	4000
Acenaphthene		ND		300	2100
Acenaphthylene		ND		270	2100
Acetophenone		ND		280	2100
Anthracene		ND		510	2100
Atrazine		ND		720	2100
Benzaldehyde		ND		1600	2100
Benzo[a]anthracene		ND		210	2100
Benzo[a]pyrene		ND		300	2100
Benzo[b]fluoranthene		ND		330	2100
Benzo[g,h,i]perylene		ND		220	2100
Benzo[k]fluoranthene		ND		270	2100
Bis(2-chloroethoxy)methane		ND		440	2100
Bis(2-chloroethyl)ether		ND		270	2100
Bis(2-ethylhexyl) phthalate		ND		700	2100
Butyl benzyl phthalate		ND		340	2100
Caprolactam		ND		620	2100
Carbazole		ND		240	2100
Chrysene		ND		460	2100
Di-n-butyl phthalate		ND		350	2100
Di-n-octyl phthalate		ND		240	2100
Dibenz(a,h)anthracene		ND		360	2100

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-1 (7-9)

Lab Sample ID: 480-85696-3 Date Sampled: 08/13/2015 1550
Client Matrix: Solid % Moisture: 19.2 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012416.D
Dilution:	10			Initial Weight/Volume:	+30.65 g
Analysis Date:	08/19/2015 0059			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		240	2100
Diethyl phthalate		ND		270	2100
Dimethyl phthalate		ND		240	2100
Fluoranthene		340	J	220	2100
Fluorene		ND		240	2100
Hexachlorobenzene		ND		280	2100
Hexachlorobutadiene		ND		300	2100
Hexachlorocyclopentadiene		ND		280	2100
Hexachloroethane		ND		270	2100
Indeno[1,2,3-cd]pyrene		ND		250	2100
Isophorone		ND		440	2100
N-Nitrosodi-n-propylamine		ND		350	2100
N-Nitrosodiphenylamine		ND		1700	2100
Naphthalene		ND		270	2100
Nitrobenzene		ND		230	2100
Pentachlorophenol		ND		2100	4000
Phenanthrene		ND		300	2100
Phenol		ND		320	2100
Pyrene		280	J	240	2100

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	64		39 - 146
2-Fluorobiphenyl	74		37 - 120
2-Fluorophenol	74		18 - 120
Nitrobenzene-d5	71		34 - 132
p-Terphenyl-d14	84		65 - 153
Phenol-d5	82		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-1 (9-11)

Lab Sample ID: 480-85696-4 Date Sampled: 08/13/2015 1600
Client Matrix: Solid % Moisture: 15.6 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012417.D
Dilution:	20			Initial Weight/Volume:	+30.50 g
Analysis Date:	08/19/2015 0125			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		580	4000
bis (2-chloroisopropyl) ether		ND		790	4000
2,4,5-Trichlorophenol		ND		1100	4000
2,4,6-Trichlorophenol		ND		790	4000
2,4-Dichlorophenol		ND		420	4000
2,4-Dimethylphenol		ND		960	4000
2,4-Dinitrophenol		ND		18000	39000
2,4-Dinitrotoluene		ND		820	4000
2,6-Dinitrotoluene		ND		470	4000
2-Chloronaphthalene		ND		650	4000
2-Chlorophenol		ND		720	4000
2-Methylnaphthalene		ND		790	4000
2-Methylphenol		ND		470	4000
2-Nitroaniline		ND		580	7700
2-Nitrophenol		ND		1100	4000
3,3'-Dichlorobenzidine		ND		4700	7700
3-Nitroaniline		ND		1100	7700
4,6-Dinitro-2-methylphenol		ND		4000	7700
4-Bromophenyl phenyl ether		ND		560	4000
4-Chloro-3-methylphenol		ND		980	4000
4-Chloroaniline		ND		980	4000
4-Chlorophenyl phenyl ether		ND		490	4000
4-Methylphenol		ND		470	7700
4-Nitroaniline		ND		2100	7700
4-Nitrophenol		ND		2800	7700
Acenaphthene		ND		580	4000
Acenaphthylene		ND		510	4000
Acetophenone		ND		540	4000
Anthracene		ND		980	4000
Atrazine		ND		1400	4000
Benzaldehyde		ND		3100	4000
Benzo[a]anthracene		ND		400	4000
Benzo[a]pyrene		ND		580	4000
Benzo[b]fluoranthene		ND		630	4000
Benzo[g,h,i]perylene		ND		420	4000
Benzo[k]fluoranthene		ND		510	4000
Bis(2-chloroethoxy)methane		ND		840	4000
Bis(2-chloroethyl)ether		ND		510	4000
Bis(2-ethylhexyl) phthalate		ND		1400	4000
Butyl benzyl phthalate		ND		650	4000
Caprolactam		ND		1200	4000
Carbazole		ND		470	4000
Chrysene		ND		890	4000
Di-n-butyl phthalate		ND		680	4000
Di-n-octyl phthalate		ND		470	4000
Dibenz(a,h)anthracene		ND		700	4000

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-1 (9-11)

Lab Sample ID: 480-85696-4 Date Sampled: 08/13/2015 1600
Client Matrix: Solid % Moisture: 15.6 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012417.D
Dilution:	20			Initial Weight/Volume:	+30.50 g
Analysis Date:	08/19/2015 0125			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		470	4000
Diethyl phthalate		ND		510	4000
Dimethyl phthalate		ND		470	4000
Fluoranthene		ND		420	4000
Fluorene		ND		470	4000
Hexachlorobenzene		ND		540	4000
Hexachlorobutadiene		ND		580	4000
Hexachlorocyclopentadiene		ND		540	4000
Hexachloroethane		ND		510	4000
Indeno[1,2,3-cd]pyrene		ND		490	4000
Isophorone		ND		840	4000
N-Nitrosodi-n-propylamine		ND		680	4000
N-Nitrosodiphenylamine		ND		3200	4000
Naphthalene		ND		510	4000
Nitrobenzene		ND		440	4000
Pentachlorophenol		ND		4000	7700
Phenanthrene		ND		580	4000
Phenol		ND		610	4000
Pyrene		ND		470	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	58		39 - 146
2-Fluorobiphenyl	82		37 - 120
2-Fluorophenol	85		18 - 120
Nitrobenzene-d5	79		34 - 132
p-Terphenyl-d14	90		65 - 153
Phenol-d5	82		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: DUP-081315

Lab Sample ID: 480-85696-5 Date Sampled: 08/13/2015 0000
Client Matrix: Solid % Moisture: 12.2 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012418.D
Dilution:	5.0			Initial Weight/Volume:	+30.27 g
Analysis Date:	08/19/2015 0152			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		140	960
bis (2-chloroisopropyl) ether		ND		190	960
2,4,5-Trichlorophenol		ND		260	960
2,4,6-Trichlorophenol		ND		190	960
2,4-Dichlorophenol		ND		100	960
2,4-Dimethylphenol		ND		230	960
2,4-Dinitrophenol		ND		4400	9400
2,4-Dinitrotoluene		ND		200	960
2,6-Dinitrotoluene		ND		110	960
2-Chloronaphthalene		ND		160	960
2-Chlorophenol		ND		170	960
2-Methylnaphthalene		ND		190	960
2-Methylphenol		ND		110	960
2-Nitroaniline		ND		140	1900
2-Nitrophenol		ND		270	960
3,3'-Dichlorobenzidine		ND		1100	1900
3-Nitroaniline		ND		270	1900
4,6-Dinitro-2-methylphenol		ND		960	1900
4-Bromophenyl phenyl ether		ND		140	960
4-Chloro-3-methylphenol		ND		240	960
4-Chloroaniline		ND		240	960
4-Chlorophenyl phenyl ether		ND		120	960
4-Methylphenol		ND		110	1900
4-Nitroaniline		ND		500	1900
4-Nitrophenol		ND		670	1900
Acenaphthene		ND		140	960
Acenaphthylene		ND		120	960
Acetophenone		230	J	130	960
Anthracene		ND		240	960
Atrazine		ND		330	960
Benzaldehyde		ND		760	960
Benzo[a]anthracene		ND		96	960
Benzo[a]pyrene		ND		140	960
Benzo[b]fluoranthene		ND		150	960
Benzo[g,h,i]perylene		ND		100	960
Benzo[k]fluoranthene		ND		120	960
Bis(2-chloroethoxy)methane		ND		200	960
Bis(2-chloroethyl)ether		ND		120	960
Bis(2-ethylhexyl) phthalate		ND		330	960
Butyl benzyl phthalate		ND		160	960
Caprolactam		ND		290	960
Carbazole		ND		110	960
Chrysene		ND		210	960
Di-n-butyl phthalate		ND		160	960
Di-n-octyl phthalate		ND		110	960
Dibenz(a,h)anthracene		ND		170	960

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: DUP-081315

Lab Sample ID: 480-85696-5 Date Sampled: 08/13/2015 0000
Client Matrix: Solid % Moisture: 12.2 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012418.D
Dilution:	5.0			Initial Weight/Volume:	+30.27 g
Analysis Date:	08/19/2015 0152			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		110	960
Diethyl phthalate		ND		120	960
Dimethyl phthalate		ND		110	960
Fluoranthene		ND		100	960
Fluorene		ND		110	960
Hexachlorobenzene		ND		130	960
Hexachlorobutadiene		ND		140	960
Hexachlorocyclopentadiene		ND		130	960
Hexachloroethane		ND		120	960
Indeno[1,2,3-cd]pyrene		ND		120	960
Isophorone		ND		200	960
N-Nitrosodi-n-propylamine		ND		160	960
N-Nitrosodiphenylamine		ND		780	960
Naphthalene		170	J	120	960
Nitrobenzene		ND		110	960
Pentachlorophenol		ND		960	1900
Phenanthrene		ND		140	960
Phenol		ND		150	960
Pyrene		ND		110	960

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	73		39 - 146
2-Fluorobiphenyl	74		37 - 120
2-Fluorophenol	72		18 - 120
Nitrobenzene-d5	70		34 - 132
p-Terphenyl-d14	84		65 - 153
Phenol-d5	75		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-3 (7-9)

Lab Sample ID: 480-85696-6 Date Sampled: 08/13/2015 1515
Client Matrix: Solid % Moisture: 8.6 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012419.D
Dilution:	4.0			Initial Weight/Volume:	+30.16 g
Analysis Date:	08/19/2015 0218			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		110	740
bis (2-chloroisopropyl) ether		ND		150	740
2,4,5-Trichlorophenol		ND		200	740
2,4,6-Trichlorophenol		ND		150	740
2,4-Dichlorophenol		ND		78	740
2,4-Dimethylphenol		ND		180	740
2,4-Dinitrophenol		ND		3400	7200
2,4-Dinitrotoluene		ND		150	740
2,6-Dinitrotoluene		ND		87	740
2-Chloronaphthalene		ND		120	740
2-Chlorophenol		ND		130	740
2-Methylnaphthalene		ND		150	740
2-Methylphenol		ND		87	740
2-Nitroaniline		ND		110	1400
2-Nitrophenol		ND		210	740
3,3'-Dichlorobenzidine		ND		870	1400
3-Nitroaniline		ND		200	1400
4,6-Dinitro-2-methylphenol		ND		740	1400
4-Bromophenyl phenyl ether		ND		100	740
4-Chloro-3-methylphenol		ND		180	740
4-Chloroaniline		ND		180	740
4-Chlorophenyl phenyl ether		ND		91	740
4-Methylphenol		ND		87	1400
4-Nitroaniline		ND		390	1400
4-Nitrophenol		ND		520	1400
Acenaphthene		ND		110	740
Acenaphthylene		ND		96	740
Acetophenone		ND		100	740
Anthracene		ND		180	740
Atrazine		ND		260	740
Benzaldehyde		ND		590	740
Benzo[a]anthracene		ND		74	740
Benzo[a]pyrene		ND		110	740
Benzo[b]fluoranthene		ND		120	740
Benzo[g,h,i]perylene		ND		78	740
Benzo[k]fluoranthene		ND		96	740
Bis(2-chloroethoxy)methane		ND		160	740
Bis(2-chloroethyl)ether		ND		96	740
Bis(2-ethylhexyl) phthalate		ND		250	740
Butyl benzyl phthalate		ND		120	740
Caprolactam		ND		220	740
Carbazole		ND		87	740
Chrysene		ND		170	740
Di-n-butyl phthalate		ND		130	740
Di-n-octyl phthalate		ND		87	740
Dibenz(a,h)anthracene		ND		130	740

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-3 (7-9)

Lab Sample ID: 480-85696-6 Date Sampled: 08/13/2015 1515
Client Matrix: Solid % Moisture: 8.6 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012419.D
Dilution:	4.0			Initial Weight/Volume:	+30.16 g
Analysis Date:	08/19/2015 0218			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		87	740
Diethyl phthalate		ND		96	740
Dimethyl phthalate		ND		87	740
Fluoranthene		ND		78	740
Fluorene		ND		87	740
Hexachlorobenzene		ND		100	740
Hexachlorobutadiene		ND		110	740
Hexachlorocyclopentadiene		ND		100	740
Hexachloroethane		ND		96	740
Indeno[1,2,3-cd]pyrene		ND		91	740
Isophorone		ND		160	740
N-Nitrosodi-n-propylamine		ND		130	740
N-Nitrosodiphenylamine		ND		600	740
Naphthalene		ND		96	740
Nitrobenzene		ND		83	740
Pentachlorophenol		ND		740	1400
Phenanthrene		ND		110	740
Phenol		ND		110	740
Pyrene		ND		87	740

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	73		39 - 146
2-Fluorobiphenyl	77		37 - 120
2-Fluorophenol	71		18 - 120
Nitrobenzene-d5	74		34 - 132
p-Terphenyl-d14	86		65 - 153
Phenol-d5	73		11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-3 (9-11)

Lab Sample ID: 480-85696-7 Date Sampled: 08/13/2015 1525
Client Matrix: Solid % Moisture: 4.9 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012420.D
Dilution:	50			Initial Weight/Volume:	+30.13 g
Analysis Date:	08/19/2015 0245			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		1300	8900
bis (2-chloroisopropyl) ether		ND		1800	8900
2,4,5-Trichlorophenol		ND		2400	8900
2,4,6-Trichlorophenol		ND		1800	8900
2,4-Dichlorophenol		ND		940	8900
2,4-Dimethylphenol		ND		2100	8900
2,4-Dinitrophenol		ND		41000	87000
2,4-Dinitrotoluene		ND		1800	8900
2,6-Dinitrotoluene		ND		1000	8900
2-Chloronaphthalene		ND		1500	8900
2-Chlorophenol		ND		1600	8900
2-Methylnaphthalene		ND		1800	8900
2-Methylphenol		ND		1000	8900
2-Nitroaniline		ND		1300	17000
2-Nitrophenol		ND		2500	8900
3,3'-Dichlorobenzidine		ND		10000	17000
3-Nitroaniline		ND		2500	17000
4,6-Dinitro-2-methylphenol		ND		8900	17000
4-Bromophenyl phenyl ether		ND		1300	8900
4-Chloro-3-methylphenol		ND		2200	8900
4-Chloroaniline		ND		2200	8900
4-Chlorophenyl phenyl ether		ND		1100	8900
4-Methylphenol		ND		1000	17000
4-Nitroaniline		ND		4700	17000
4-Nitrophenol		ND		6200	17000
Acenaphthene		ND		1300	8900
Acenaphthylene		ND		1200	8900
Acetophenone		ND		1200	8900
Anthracene		ND		2200	8900
Atrazine		ND		3100	8900
Benzaldehyde		ND		7100	8900
Benzo[a]anthracene		ND		890	8900
Benzo[a]pyrene		ND		1300	8900
Benzo[b]fluoranthene		ND		1400	8900
Benzo[g,h,i]perylene		ND		940	8900
Benzo[k]fluoranthene		ND		1200	8900
Bis(2-chloroethoxy)methane		ND		1900	8900
Bis(2-chloroethyl)ether		ND		1200	8900
Bis(2-ethylhexyl) phthalate		ND		3000	8900
Butyl benzyl phthalate		ND		1500	8900
Caprolactam		ND		2700	8900
Carbazole		ND		1000	8900
Chrysene		ND		2000	8900
Di-n-butyl phthalate		ND		1500	8900
Di-n-octyl phthalate		ND		1000	8900
Dibenz(a,h)anthracene		ND		1600	8900

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-3 (9-11)

Lab Sample ID: 480-85696-7 Date Sampled: 08/13/2015 1525
Client Matrix: Solid % Moisture: 4.9 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012420.D
Dilution:	50			Initial Weight/Volume:	+30.13 g
Analysis Date:	08/19/2015 0245			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		1000	8900
Diethyl phthalate		ND		1200	8900
Dimethyl phthalate		ND		1000	8900
Fluoranthene		ND		940	8900
Fluorene		ND		1000	8900
Hexachlorobenzene		ND		1200	8900
Hexachlorobutadiene		ND		1300	8900
Hexachlorocyclopentadiene		ND		1200	8900
Hexachloroethane		ND		1200	8900
Indeno[1,2,3-cd]pyrene		ND		1100	8900
Isophorone		ND		1900	8900
N-Nitrosodi-n-propylamine		ND		1500	8900
N-Nitrosodiphenylamine		ND		7200	8900
Naphthalene		ND		1200	8900
Nitrobenzene		ND		990	8900
Pentachlorophenol		ND		8900	17000
Phenanthrene		ND		1300	8900
Phenol		ND		1400	8900
Pyrene		ND		1000	8900

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	48		39 - 146
2-Fluorobiphenyl	81		37 - 120
2-Fluorophenol	70		18 - 120
Nitrobenzene-d5	80		34 - 132
p-Terphenyl-d14	96		65 - 153
Phenol-d5	81		11 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-5 (9-11)

Lab Sample ID: 480-85696-8
Client Matrix: Solid
% Moisture: 20.1

Date Sampled: 08/14/2015 0800
Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D
Prep Method: 3550C
Dilution: 100
Analysis Date: 08/19/2015 0311
Prep Date: 08/17/2015 0827

Analysis Batch: 480-259277
Prep Batch: 480-258952

Instrument ID: HP5973X
Lab File ID: X009012421.D
Initial Weight/Volume: +30.45 g
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND	J	3100	21000
bis (2-chloroisopropyl) ether		ND		4200	21000
2,4,5-Trichlorophenol		ND		5700	21000
2,4,6-Trichlorophenol		ND		4200	21000
2,4-Dichlorophenol		ND		2200	21000
2,4-Dimethylphenol		ND		5100	21000
2,4-Dinitrophenol		ND		97000	200000
2,4-Dinitrotoluene		ND		4300	21000
2,6-Dinitrotoluene		ND		2500	21000
2-Chloronaphthalene		ND		3500	21000
2-Chlorophenol		ND		3800	21000
2-Methylnaphthalene		ND		4200	21000
2-Methylphenol		ND		2500	21000
2-Nitroaniline		ND		3100	41000
2-Nitrophenol		ND		5900	21000
3,3'-Dichlorobenzidine		ND		25000	41000
3-Nitroaniline		ND		5800	41000
4,6-Dinitro-2-methylphenol		ND		21000	41000
4-Bromophenyl phenyl ether		ND		3000	21000
4-Chloro-3-methylphenol		ND		5200	21000
4-Chloroaniline		ND		5200	21000
4-Chlorophenyl phenyl ether		ND		2600	21000
4-Methylphenol		ND		2500	41000
4-Nitroaniline		ND		11000	41000
4-Nitrophenol		ND		15000	41000
Acenaphthene		ND		3100	21000
Acenaphthylene		8600	J	2700	21000
Acetophenone		ND	J	2800	21000
Anthracene		18000	J	5200	21000
Atrazine		ND	J	7300	21000
Benzaldehyde		ND		17000	21000
Benzo[a]anthracene		36000		2100	21000
Benzo[a]pyrene		30000		3100	21000
Benzo[b]fluoranthene		32000		3300	21000
Benzo[g,h,i]perylene		16000	J	2200	21000
Benzo[k]fluoranthene		25000	J	2700	21000
Bis(2-chloroethoxy)methane		ND		4400	21000
Bis(2-chloroethyl)ether		ND		2700	21000
Bis(2-ethylhexyl) phthalate		ND		7200	21000
Butyl benzyl phthalate		ND		3500	21000
Caprolactam		ND		6300	21000
Carbazole		2500	J	2500	21000
Chrysene		45000	J	4700	21000
Di-n-butyl phthalate		ND		3600	21000
Di-n-octyl phthalate		ND		2500	21000
Dibenz(a,h)anthracene		5000	J	3700	21000

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-5 (9-11)**

Lab Sample ID: 480-85696-8
Client Matrix: Solid
% Moisture: 20.1

Date Sampled: 08/14/2015 0800
Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D
Prep Method: 3550C
Dilution: 100
Analysis Date: 08/19/2015 0311
Prep Date: 08/17/2015 0827

Analysis Batch: 480-259277
Prep Batch: 480-258952

Instrument ID: HP5973X
Lab File ID: X009012421.D
Initial Weight/Volume: +30.45 g
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		4400	J	2500	21000
Diethyl phthalate		ND	J	2700	21000
Dimethyl phthalate		ND		2500	21000
Fluoranthene		82000		2200	21000
Fluorene		8800	J	2500	21000
Hexachlorobenzene		ND	J	2800	21000
Hexachlorobutadiene		ND		3100	21000
Hexachlorocyclopentadiene		ND		2800	21000
Hexachloroethane		ND		2700	21000
Indeno[1,2,3-cd]pyrene		15000	J	2600	21000
Isophorone		ND	J	4400	21000
N-Nitrosodi-n-propylamine		ND		3600	21000
N-Nitrosodiphenylamine		ND		17000	21000
Naphthalene		ND		2700	21000
Nitrobenzene		ND		2300	21000
Pentachlorophenol		ND		21000	41000
Phenanthrene		59000		3100	21000
Phenol		ND		3200	21000
Pyrene		71000		2500	21000

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	0	X	39 - 146
2-Fluorobiphenyl	0	X	37 - 120
2-Fluorophenol	0	X	18 - 120
Nitrobenzene-d5	0	X	34 - 132
p-Terphenyl-d14	0	X	65 - 153
Phenol-d5	0	X	11 - 120

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-5 (11-13.5)

Lab Sample ID: 480-85696-9 Date Sampled: 08/14/2015 0820
Client Matrix: Solid % Moisture: 15.8 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012422.D
Dilution:	20			Initial Weight/Volume:	+30.21 g
Analysis Date:	08/19/2015 0338			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		590	4000
bis (2-chloroisopropyl) ether		ND		800	4000
2,4,5-Trichlorophenol		ND		1100	4000
2,4,6-Trichlorophenol		ND		800	4000
2,4-Dichlorophenol		ND		420	4000
2,4-Dimethylphenol		ND		970	4000
2,4-Dinitrophenol		ND		18000	39000
2,4-Dinitrotoluene		ND		830	4000
2,6-Dinitrotoluene		ND		470	4000
2-Chloronaphthalene		ND		660	4000
2-Chlorophenol		ND		730	4000
2-Methylnaphthalene		ND		800	4000
2-Methylphenol		ND		470	4000
2-Nitroaniline		ND		590	7800
2-Nitrophenol		ND		1100	4000
3,3'-Dichlorobenzidine		ND		4700	7800
3-Nitroaniline		ND		1100	7800
4,6-Dinitro-2-methylphenol		ND		4000	7800
4-Bromophenyl phenyl ether		ND		570	4000
4-Chloro-3-methylphenol		ND		990	4000
4-Chloroaniline		ND		990	4000
4-Chlorophenyl phenyl ether		ND		500	4000
4-Methylphenol		ND		470	7800
4-Nitroaniline		ND		2100	7800
4-Nitrophenol		ND		2800	7800
Acenaphthene		ND		590	4000
Acenaphthylene		ND		520	4000
Acetophenone		ND		540	4000
Anthracene		ND		990	4000
Atrazine		ND		1400	4000
Benzaldehyde		ND		3200	4000
Benzo[a]anthracene		800	J	400	4000
Benzo[a]pyrene		740	J	590	4000
Benzo[b]fluoranthene		ND		640	4000
Benzo[g,h,i]perylene		ND		420	4000
Benzo[k]fluoranthene		ND		520	4000
Bis(2-chloroethoxy)methane		ND		850	4000
Bis(2-chloroethyl)ether		ND		520	4000
Bis(2-ethylhexyl) phthalate		ND		1400	4000
Butyl benzyl phthalate		ND		660	4000
Caprolactam		ND		1200	4000
Carbazole		ND		470	4000
Chrysene		1200	J	900	4000
Di-n-butyl phthalate		ND		680	4000
Di-n-octyl phthalate		ND		470	4000
Dibenz(a,h)anthracene		ND		710	4000

Client: ARCADIS U.S. Inc Job Number: 480-85696-1

Client Sample ID: SB-5 (11-13.5)

Lab Sample ID: 480-85696-9 Date Sampled: 08/14/2015 0820
Client Matrix: Solid % Moisture: 15.8 Date Received: 08/15/2015 0900

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-259277	Instrument ID:	HP5973X
Prep Method:	3550C	Prep Batch:	480-258952	Lab File ID:	X009012422.D
Dilution:	20			Initial Weight/Volume:	+30.21 g
Analysis Date:	08/19/2015 0338			Final Weight/Volume:	1 mL
Prep Date:	08/17/2015 0827			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		470	4000
Diethyl phthalate		ND		520	4000
Dimethyl phthalate		ND		470	4000
Fluoranthene		1800	J	420	4000
Fluorene		ND		470	4000
Hexachlorobenzene		ND		540	4000
Hexachlorobutadiene		ND		590	4000
Hexachlorocyclopentadiene		ND		540	4000
Hexachloroethane		ND		520	4000
Indeno[1,2,3-cd]pyrene		ND		500	4000
Isophorone		ND		850	4000
N-Nitrosodi-n-propylamine		ND		680	4000
N-Nitrosodiphenylamine		ND		3300	4000
Naphthalene		ND		520	4000
Nitrobenzene		ND		450	4000
Pentachlorophenol		ND		4000	7800
Phenanthrene		1700	J	590	4000
Phenol		ND		610	4000
Pyrene		1300	J	470	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	73		39 - 146
2-Fluorobiphenyl	81		37 - 120
2-Fluorophenol	66		18 - 120
Nitrobenzene-d5	64		34 - 132
p-Terphenyl-d14	87		65 - 153
Phenol-d5	74		11 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-2 (7-9)

Lab Sample ID: 480-85696-1
Client Matrix: Solid

% Moisture: 8.6

Date Sampled: 08/13/2015 1500
Date Received: 08/15/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-259089	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.5173 g
Analysis Date:	08/18/2015 2041			Final Weight/Volume:	50 mL
Prep Date:	08/18/2015 0855				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11200	~~B~~	4.7	10.6
Antimony		0.65	J	0.42	15.9
Arsenic		3.7		0.42	2.1
Barium		48.3		0.12	0.53
Beryllium		0.59		0.030	0.21
Cadmium		0.061	J	0.032	0.21
Calcium		60400	~~B~~	3.5	52.9
Chromium		17.5		0.21	0.53
Cobalt		10.8		0.053	0.53
Copper		26.5		0.22	1.1
Iron		17100	~~B~~	3.7	10.6
Lead		12.2		0.25	1.1
Magnesium		11100	~~B~~	0.98	21.2
Manganese		349	~~B~~	0.034	0.21
Nickel		34.2		0.24	5.3
Potassium		2510		21.2	31.7
Selenium		1.0	J	0.42	4.2
Silver		ND		0.21	0.63
Sodium		407	~~B~~	13.8	148
Thallium		ND		0.32	6.3
Vanadium		16.9		0.12	0.53
Zinc		52.4		0.68	2.1

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-2 (9-11)

Lab Sample ID: 480-85696-2
Client Matrix: Solid

% Moisture: 5.7

Date Sampled: 08/13/2015 1510
Date Received: 08/15/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-259089	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.4980 g
Analysis Date:	08/18/2015 2044			Final Weight/Volume:	50 mL
Prep Date:	08/18/2015 0855				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		12800	~~B~~	4.7	10.6
Antimony		ND		0.43	16.0
Arsenic		4.0		0.43	2.1
Barium		99.5		0.12	0.53
Beryllium		0.69		0.030	0.21
Cadmium		ND		0.032	0.21
Calcium		71300	~~B~~	3.5	53.2
Chromium		20.2		0.21	0.53
Cobalt		12.2		0.053	0.53
Copper		29.1		0.22	1.1
Iron		19700	~~B~~	3.7	10.6
Lead		13.4		0.26	1.1
Magnesium		7240	~~B~~	0.99	21.3
Manganese		388	~~B~~	0.034	0.21
Nickel		39.1		0.24	5.3
Potassium		2990		21.3	31.9
Selenium		0.44	J	0.43	4.3
Silver		ND		0.21	0.64
Sodium		264	~~B~~	13.8	149
Thallium		ND		0.32	6.4
Vanadium		17.1		0.12	0.53
Zinc		50.8		0.68	2.1

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-1 (7-9)

Lab Sample ID: 480-85696-3
Client Matrix: Solid
% Moisture: 19.2

Date Sampled: 08/13/2015 1550
Date Received: 08/15/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-259089	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.4885 g
Analysis Date:	08/18/2015 2047			Final Weight/Volume:	50 mL
Prep Date:	08/18/2015 0855				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		12600	~~B~~	5.6	12.7
Antimony		ND		0.51	19.0
Arsenic		7.3		0.51	2.5
Barium		92.7		0.14	0.63
Beryllium		0.58		0.035	0.25
Cadmium		0.15	J	0.038	0.25
Calcium		24000	~~B~~	4.2	63.4
Chromium		16.8		0.25	0.63
Cobalt		8.6		0.063	0.63
Copper		27.4		0.27	1.3
Iron		17100	~~B~~	4.4	12.7
Lead		130		0.30	1.3
Magnesium		6110	~~B~~	1.2	25.3
Manganese		332	~~B~~	0.041	0.25
Nickel		24.8		0.29	6.3
Potassium		2720		25.3	38.0
Selenium		0.58	J	0.51	5.1
Silver		ND		0.25	0.76
Sodium		916	~~B~~	16.5	177
Thallium		ND		0.38	7.6
Vanadium		21.8		0.14	0.63
Zinc		99.9		0.81	2.5

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-1 (9-11)

Lab Sample ID: 480-85696-4
Client Matrix: Solid
% Moisture: 15.6

Date Sampled: 08/13/2015 1600
Date Received: 08/15/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-259089	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.5092 g
Analysis Date:	08/18/2015 2059			Final Weight/Volume:	50 mL
Prep Date:	08/18/2015 0855				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		15500	~~B~~	5.1	11.6
Antimony		ND		0.47	17.5
Arsenic		3.4		0.47	2.3
Barium		54.9		0.13	0.58
Beryllium		0.79		0.033	0.23
Cadmium		0.064	J	0.035	0.23
Calcium		37900	~~B~~	3.8	58.2
Chromium		25.3		0.23	0.58
Cobalt		15.1		0.058	0.58
Copper		27.1		0.24	1.2
Iron		24500	~~B~~	4.1	11.6
Lead		13.4		0.28	1.2
Magnesium		8300	~~B~~	1.1	23.3
Manganese		355	~~B~~	0.037	0.23
Nickel		45.4		0.27	5.8
Potassium		3000		23.3	34.9
Selenium		ND		0.47	4.7
Silver		ND		0.23	0.70
Sodium		627	~~B~~	15.1	163
Thallium		ND		0.35	7.0
Vanadium		19.7		0.13	0.58
Zinc		76.0		0.74	2.3

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: DUP-081315

Lab Sample ID: 480-85696-5
Client Matrix: Solid
% Moisture: 12.2
Date Sampled: 08/13/2015 0000
Date Received: 08/15/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-259089	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.5036 g
Analysis Date:	08/18/2015 2102			Final Weight/Volume:	50 mL
Prep Date:	08/18/2015 0855				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		11200	~~B~~	5.0	11.3
Antimony		ND		0.45	17.0
Arsenic		4.4		0.45	2.3
Barium		42.9		0.12	0.57
Beryllium		0.57		0.032	0.23
Cadmium		0.036	J	0.034	0.23
Calcium		60200	~~B~~	3.7	56.5
Chromium		18.2		0.23	0.57
Cobalt		12.3		0.057	0.57
Copper		28.7		0.24	1.1
Iron		19700	~~B~~	4.0	11.3
Lead		12.9		0.27	1.1
Magnesium		11300	~~B~~	1.0	22.6
Manganese		374	~~B~~	0.036	0.23
Nickel		39.2		0.26	5.7
Potassium		2200		22.6	33.9
Selenium		0.64	J	0.45	4.5
Silver		ND		0.23	0.68
Sodium		336	~~B~~	14.7	158
Thallium		ND		0.34	6.8
Vanadium		15.8		0.12	0.57
Zinc		52.0		0.72	2.3

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-3 (7-9)

Lab Sample ID: 480-85696-6
Client Matrix: Solid

% Moisture: 8.6

Date Sampled: 08/13/2015 1515
Date Received: 08/15/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-259089	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.5060 g
Analysis Date:	08/18/2015 2105			Final Weight/Volume:	50 mL
Prep Date:	08/18/2015 0855				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		14400	~~B~~	4.8	10.8
Antimony		ND		0.43	16.2
Arsenic		4.1		0.43	2.2
Barium		71.1		0.12	0.54
Beryllium		0.75		0.030	0.22
Cadmium		ND		0.032	0.22
Calcium		56300	~~B~~	3.6	54.1
Chromium		22.4		0.22	0.54
Cobalt		14.2		0.054	0.54
Copper		29.2		0.23	1.1
Iron		21400	~~B~~	3.8	10.8
Lead		12.1		0.26	1.1
Magnesium		7540	~~B~~	1.0	21.6
Manganese		361	~~B~~	0.035	0.22
Nickel		42.9		0.25	5.4
Potassium		3020		21.6	32.4
Selenium		ND		0.43	4.3
Silver		ND		0.22	0.65
Sodium		642	~~B~~	14.1	151
Thallium		ND		0.32	6.5
Vanadium		18.6		0.12	0.54
Zinc		50.8		0.69	2.2

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-3 (9-11)

Lab Sample ID: 480-85696-7
Client Matrix: Solid
% Moisture: 4.9

Date Sampled: 08/13/2015 1525
Date Received: 08/15/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-259089	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.5023 g
Analysis Date:	08/18/2015 2108			Final Weight/Volume:	50 mL
Prep Date:	08/18/2015 0855				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		14100	~~B~~	4.6	10.5
Antimony		ND		0.42	15.7
Arsenic		3.8		0.42	2.1
Barium		63.6		0.12	0.52
Beryllium		0.75		0.029	0.21
Cadmium		0.036	J	0.031	0.21
Calcium		47600	~~B~~	3.5	52.3
Chromium		22.3		0.21	0.52
Cobalt		15.5		0.052	0.52
Copper		28.0		0.22	1.0
Iron		21700	~~B~~	3.7	10.5
Lead		11.4		0.25	1.0
Magnesium		7570	~~B~~	0.97	20.9
Manganese		360	~~B~~	0.033	0.21
Nickel		41.6		0.24	5.2
Potassium		3010		20.9	31.4
Selenium		0.65	J	0.42	4.2
Silver		ND		0.21	0.63
Sodium		327	~~B~~	13.6	147
Thallium		ND		0.31	6.3
Vanadium		17.7		0.12	0.52
Zinc		63.5		0.67	2.1

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: SB-5 (9-11)

Lab Sample ID: 480-85696-8
Client Matrix: Solid

% Moisture: 20.1

Date Sampled: 08/14/2015 0800
Date Received: 08/15/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-259089	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.5040 g
Analysis Date:	08/18/2015 2111			Final Weight/Volume:	50 mL
Prep Date:	08/18/2015 0855				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		17300	~~B~~	5.5	12.4
Antimony		ND		0.50	18.6
Arsenic		5.0		0.50	2.5
Barium		123		0.14	0.62
Beryllium		0.86		0.035	0.25
Cadmium		0.61		0.037	0.25
Calcium		8180	~~B~~	4.1	62.1
Chromium		23.9		0.25	0.62
Cobalt		12.2		0.062	0.62
Copper		18.4		0.26	1.2
Iron		23300	~~B~~	4.3	12.4
Lead		63.6		0.30	1.2
Magnesium		5550	~~B~~	1.2	24.8
Manganese		389	~~B~~	0.040	0.25
Nickel		35.7		0.29	6.2
Potassium		2960		24.8	37.2
Selenium		0.73	J	0.50	5.0
Silver		ND		0.25	0.74
Sodium		752	~~B~~	16.1	174
Thallium		ND		0.37	7.4
Vanadium		27.6		0.14	0.62
Zinc		887		0.79	2.5

Client: ARCADIS U.S. Inc

Job Number: 480-85696-1

Client Sample ID: **SB-5 (11-13.5)**

Lab Sample ID: 480-85696-9
Client Matrix: Solid
% Moisture: 15.8

Date Sampled: 08/14/2015 0820
Date Received: 08/15/2015 0900

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-259355	Instrument ID:	ICAP1
Prep Method:	3050B	Prep Batch:	480-259089	Lab File ID:	I1081815A-7.asc
Dilution:	1.0			Initial Weight/Volume:	+0.4959 g
Analysis Date:	08/18/2015 2114			Final Weight/Volume:	50 mL
Prep Date:	08/18/2015 0855				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		18600	~~B~~	5.3	12.0
Antimony		ND		0.48	18.0
Arsenic		3.6		0.48	2.4
Barium		76.6		0.13	0.60
Beryllium		0.96		0.034	0.24
Cadmium		0.057	J	0.036	0.24
Calcium		11400	~~B~~	4.0	59.9
Chromium		28.8		0.24	0.60
Cobalt		17.1		0.060	0.60
Copper		27.0		0.25	1.2
Iron		27300	~~B~~	4.2	12.0
Lead		13.5		0.29	1.2
Magnesium		7880	~~B~~	1.1	23.9
Manganese		307	~~B~~	0.038	0.24
Nickel		48.0		0.28	6.0
Potassium		3120		23.9	35.9
Selenium		ND		0.48	4.8
Silver		ND		0.24	0.72
Sodium		321	~~B~~	15.6	168
Thallium		ND		0.36	7.2
Vanadium		23.9		0.13	0.60
Zinc		79.0		0.77	2.4

General Chemistry

Client Sample ID: SB-2 (7-9)

Lab Sample ID: 480-85696-1 Date Sampled: 08/13/2015 1500
Client Matrix: Solid % Moisture: 8.6 Date Received: 08/15/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.52	1.1	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1028						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	8.6		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N
Percent Solids	91		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-2 (9-11)

Lab Sample ID: 480-85696-2 Date Sampled: 08/13/2015 1510
Client Matrix: Solid % Moisture: 5.7 Date Received: 08/15/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.50	1.0	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1030						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	5.7		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N
Percent Solids	94		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-1 (7-9)

Lab Sample ID: 480-85696-3 Date Sampled: 08/13/2015 1550
Client Matrix: Solid % Moisture: 19.2 Date Received: 08/15/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.58	1.2	1.0	9012B
Analysis Batch: 480-260089	Analysis Date: 08/24/2015 1034						DryWt Corrected: Y
Prep Batch: 480-260006	Prep Date: 08/24/2015 0155						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	19		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N
Percent Solids	81		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-1 (9-11)

Lab Sample ID: 480-85696-4 Date Sampled: 08/13/2015 1600
Client Matrix: Solid % Moisture: 15.6 Date Received: 08/15/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.57	1.2	1.0	9012B
Analysis Batch: 480-260093	Analysis Date: 08/24/2015 1058						DryWt Corrected: Y
Prep Batch: 480-260082	Prep Date: 08/24/2015 0740						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	16		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N
Percent Solids	84		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N

General Chemistry

Client Sample ID: DUP-081315

Lab Sample ID: 480-85696-5 Date Sampled: 08/13/2015 0000
Client Matrix: Solid % Moisture: 12.2 Date Received: 08/15/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.55	1.1	1.0	9012B
Analysis Batch: 480-260093	Analysis Date: 08/24/2015 1100						DryWt Corrected: Y
Prep Batch: 480-260082	Prep Date: 08/24/2015 0740						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	12		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N
Percent Solids	88		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-3 (7-9)

Lab Sample ID: 480-85696-6 Date Sampled: 08/13/2015 1515
Client Matrix: Solid % Moisture: 8.6 Date Received: 08/15/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.52	1.1	1.0	9012B
Analysis Batch: 480-260093	Analysis Date: 08/24/2015 1101					DryWt Corrected: Y	
Prep Batch: 480-260082	Prep Date: 08/24/2015 0740						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	8.6		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533					DryWt Corrected: N	
Percent Solids	91		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533					DryWt Corrected: N	

General Chemistry

Client Sample ID: **SB-3 (9-11)**

Lab Sample ID: 480-85696-7 Date Sampled: 08/13/2015 1525
Client Matrix: Solid % Moisture: 4.9 Date Received: 08/15/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/Kg	0.49	1.0	1.0	9012B
Analysis Batch: 480-260093	Analysis Date: 08/24/2015 1103						DryWt Corrected: Y
Prep Batch: 480-260082	Prep Date: 08/24/2015 0740						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	4.9		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N
Percent Solids	95		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-5 (9-11)

Lab Sample ID: 480-85696-8 Date Sampled: 08/14/2015 0800
Client Matrix: Solid % Moisture: 20.1 Date Received: 08/15/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	469		mg/Kg	6.0	12.5	10	9012B
Analysis Batch: 480-260955	Analysis Date: 08/28/2015 0942						DryWt Corrected: Y
Prep Batch: 480-260793	Prep Date: 08/27/2015 1345						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	20		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N
Percent Solids	80		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-5 (11-13.5)

Lab Sample ID: 480-85696-9 Date Sampled: 08/14/2015 0820
Client Matrix: Solid % Moisture: 15.8 Date Received: 08/15/2015 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND	*	mg/Kg	0.57	1.2	1.0	9012B
Analysis Batch: 480-260544	Analysis Date: 08/26/2015 0955						DryWt Corrected: Y
Prep Batch: 480-260328	Prep Date: 08/25/2015 1050						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	16		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N
Percent Solids	84		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-258906	Analysis Date: 08/15/2015 1533						DryWt Corrected: N

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Rochester Gas & Electric – Geneseo Park Street Site

Data Usability Summary Report

GENESEO, NEW YORK

Volatile Analyses

SDG# 200-29600-1

Analyses Performed By:
TestAmerica Laboratories
Burlington, Vermont

Report: #24497R
Review Level: Tier III
Project: B0013138.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #200-29600-1 for samples collected in association with the Rochester Gas & Electric Geneseo Park Street Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	PCB	MET	MISC
SV-1	200-29600-1	Air	9/2/2015		X				
SV-2	200-29600-2	Air	9/2/2015		X				
SV-3	200-29600-3	Air	9/2/2015		X				
SV-4	200-29600-4	Air	9/2/2015		X				
SV-5	200-29600-5	Air	9/2/2015		X				
SV-6	200-29600-6	Air	9/2/2015		X				
SV-7	200-29600-7	Air	9/2/2015		X				
DUP-090215	200-29600-8	Air	9/2/2015	SV-6	X				

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Sample receipt condition		X		X	
Requested analyses and sample results		X		X	
Collection Technique (grab, composite, etc.)		X		X	
Methods of analysis		X		X	
Reporting limits		X		X	
Sample collection date		X		X	
Laboratory sample received date		X		X	
Sample preservation verification (as applicable)		X		X	
Sample preparation/extraction/analysis dates		X		X	
Fully executed Chain-of-Custody (COC) form completed		X		X	
Narrative summary of QA or sample problems provided		X		X	
Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method TO-15. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999, USEPA Region II SOP HW-31- Validating Air Samples Volatile Organic Analysis of Ambient Air In Canister by Method TO-15 of October 2006, New York State DEC Analytical Method ASP 2005 TO-15 (QA/QC Criteria R9 TO-15), NYSDEC Modifications to R9 TO-15 QA/QC Criteria October 2009.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on

data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation	Return Canister Pressure
EPA TO-15	Air	30 days from collection to analysis	Ambient Temperature	< -1" Hg

All samples met return canister pressure criteria and were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
SV-1 SV-2 SV-3 SV-4 SV-5 SV-6 SV-7	Methylene Chloride	Detected sample results <RL and <BAL	"UB" at the PQL

RL Reporting limit

3. Mass Spectrometer Tuning

A few sample locations were compliant with the Method TO-15 requirement of analysis within a 24-hour tune clock but not compliant with the NYSDEC requirement of analysis within a 12-hour tune clock. The data were not qualified.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (30%) and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (30%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
SV-1 SV-2 SV-3 SV-4 SV-5 SV-6 SV-7	CCV %D	Bromoform	38.0%
DUP-090215	CCV %D	Bromoform	35.0%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 30%	Non-detect	UJ
		Detect	J
Continuing Calibration	%D >30% (increase in sensitivity)	Non-detect	No Action
		Detect	J

Initial/Continuing	Criteria	Sample Result	Qualification
	%D >30% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

1 RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than 40% or less than 40% of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the established acceptance limits of 70% to 130%. The relative percent difference (RPD) between the LCS recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
All sample locations within this SDG	Bromoform	>UL

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of an LCS deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
LCS percent recovery >130%	Non-detect	No Action
	Detect	J
LCS percent recovery <70% but > 10%	Non-detect	J
	Detect	J
< 10%	Non-detect	R
	Detect	J

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for air matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for

air matrices.

Laboratory duplicates were not performed as part of this SDG.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for air matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for air matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SV-6/DUP-090215	Acetone	240	200 J	AC
	Bromodichloromethane	4.3 J	27 U	AC
	Carbon disulfide	31 U	4 J	AC
	Chloroform	46	45	AC
	4-Isopropyltoluene (Cymene)	22 U	200	NC
	Dichlorodifluoromethane	310	290	6.6%
	MEK (2-Butanone)	6.8 J	8.3 J	AC
	n-Decane	44 J	38 J	AC
	n-Dodecane	63 J	700 U	AC
	n-Nonane	22	19 J	AC
	n-Octane	9.8 J	9.4 J	AC
	n-Undecane	100 J	78 J	AC
	Toluene	14 J	14 J	AC

U = Not detected.
AC = Acceptable.

The compound 4-Isopropyltoluene (Cymene) associated with sample locations SV-6 and DUP-090215 exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated.

9. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

Tentatively identified compounds (TICs) were identified in all sample locations associated with this SDG. VOC analysis requires that TICs be qualified as estimated (JN).

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: TO-15	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Canister return pressure (<-1"Hg)		X		X	
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS)		X	X		
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Field/Lab Duplicate (%D)		X	X		
Surrogate Spike Recoveries					X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

VOCs: TO-15	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					

%RSD Percent relative difference
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB/PEST /HERB	MET	MISC	
200-29600-1	9/2/2015	TO-15	SV-1	Air	No	--	--	--	--	VOC – Associated Blanks
	9/2/2015	TO-15	SV-2	Air	No	--	--	--	--	VOC – Associated Blanks
	9/2/2015	TO-15	SV-3	Air	No	--	--	--	--	VOC – Associated Blanks
	9/2/2015	TO-15	SV-4	Air	No	--	--	--	--	VOC – Associated Blanks
	9/2/2015	TO-15	SV-5	Air	No	--	--	--	--	VOC – Associated Blanks
	9/2/2015	TO-15	SV-6	Air	No	--	--	--	--	VOC – Associated Blanks, Field Duplicate RPD
	9/2/2015	TO-15	SV-7	Air	No	--	--	--	--	VOC – Associated Blanks
	9/2/2015	TO-15	DUP-090215	Air	No	--	--	--	--	VOC – Field Duplicate RPD

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable

VALIDATION PERFORMED BY: Joseph C. Houser

SIGNATURE: 

DATE: October 21, 2015

PEER REVIEW BY: Dennis Capria

DATE: October 22, 2015

CORRECTED SAMPLE ANALYSIS DATA SHEETS AND COCs

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-1

Lab Sample ID: 200-29600-1
Client Matrix: Air

Date Sampled: 09/02/2015 1440
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_05.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1126			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1126			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.030	0.20
1,1,2,2-Tetrachloroethane	0.088	J	0.034	0.20
1,1,2-Trichloroethane	ND		0.037	0.20
1,1-Dichloroethane	ND		0.028	0.20
1,1-Dichloroethene	ND		0.010	0.20
1,2,4-Trichlorobenzene	ND		0.034	0.50
1,2,4-Trimethylbenzene	0.86		0.016	0.20
1,2-Dibromoethane	ND		0.018	0.20
1,2-Dichlorobenzene	ND		0.018	0.20
1,2-Dichloroethane	ND		0.052	0.20
1,2-Dichloroethene, Total	ND		0.053	0.40
1,2-Dichloropropane	ND		0.035	0.20
1,3,5-Trimethylbenzene	0.20		0.019	0.20
1,3-Butadiene	ND		0.036	0.20
1,3-Dichlorobenzene	ND		0.020	0.20
1,4-Dichlorobenzene	ND		0.019	0.20
1,4-Dioxane	ND		0.16	5.0
2-Chlorotoluene	ND		0.031	0.20
3-Chloropropene	ND		0.16	0.50
4-Ethyltoluene	0.084	J	0.020	0.20
4-Isopropyltoluene	0.035	J	0.020	0.20
Acetone	22		0.69	5.0
Benzene	0.046	J	0.029	0.20
Benzyl chloride	ND		0.018	0.20
Bromodichloromethane	ND		0.029	0.20
Bromoethene(Vinyl Bromide)	ND		0.020	0.20
Bromoform	ND		0.025	0.20
Bromomethane	ND		0.044	0.20
Carbon disulfide	0.23	J	0.030	0.50
Carbon tetrachloride	ND		0.011	0.20
Chlorobenzene	ND		0.018	0.20
Chloroethane	ND		0.061	0.50
Chloroform	1.0		0.038	0.20
Chloromethane	0.080	J	0.060	0.50
cis-1,2-Dichloroethene	ND		0.030	0.20
cis-1,3-Dichloropropene	ND		0.029	0.20
Cyclohexane	0.23		0.010	0.20
Dibromochloromethane	ND		0.020	0.20
Dichlorodifluoromethane	0.46	J	0.056	0.50
Dichlorotetrafluoroethane	ND		0.052	0.20
Ethylbenzene	0.099	J	0.020	0.20
Freon 22	ND		0.080	0.50
Hexachlorobutadiene	ND		0.036	0.20
Isooctane	0.062	J	0.023	0.20
Isopentane	ND		0.055	0.20
Isopropyl alcohol	0.29	J	0.15	5.0

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-1

Lab Sample ID: 200-29600-1
Client Matrix: Air

Date Sampled: 09/02/2015 1440
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

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Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_05.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1126			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1126			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Isopropylbenzene	ND		0.019	0.20
m,p-Xylene	0.78		0.025	0.50
Methyl Butyl Ketone (2-Hexanone)	0.19	J	0.17	0.50
Methyl Ethyl Ketone	1.2		0.092	0.50
methyl isobutyl ketone	ND		0.18	0.50
Methyl methacrylate	ND		0.096	0.50
Methyl tert-butyl ether	ND		0.022	0.20
Methylene Chloride	~~0.18~~ 0.5	~~J B~~ UB	0.12	0.50
Naphthalene	0.14	J	0.030	0.50
n-Butane	ND		0.18	0.50
n-Butylbenzene	ND		0.028	0.20
n-Decane	ND		0.13	0.50
n-Dodecane	ND		0.25	5.0
n-Heptane	ND		0.037	0.20
n-Hexane	0.12	J	0.028	0.20
n-Octane	ND		0.031	0.20
Nonane	ND		0.022	0.20
n-Propylbenzene	0.044	J	0.027	0.20
n-Undecane	ND		0.18	5.0
Pentane	ND		0.12	0.50
sec-Butylbenzene	ND		0.021	0.20
Styrene	ND		0.016	0.20
tert-Butyl alcohol	0.55	J	0.12	5.0
tert-Butylbenzene	ND		0.020	0.20
Tetrachloroethene	0.89		0.030	0.20
Tetrahydrofuran	ND		0.18	5.0
Toluene	0.18	J	0.025	0.20
trans-1,2-Dichloroethene	ND		0.027	0.20
trans-1,3-Dichloropropene	ND		0.026	0.20
Trichloroethene	ND		0.030	0.20
Trichlorofluoromethane	0.27		0.045	0.20
Trichlorotrifluoroethane	0.067	J	0.041	0.20
Vinyl chloride	ND		0.026	0.20
Xylene (total)	1.2		0.041	0.70
Xylene, o-	0.41		0.018	0.20

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.16	1.1
1,1,2,2-Tetrachloroethane	0.60	J	0.23	1.4
1,1,2-Trichloroethane	ND		0.20	1.1
1,1-Dichloroethane	ND		0.11	0.81
1,1-Dichloroethene	ND		0.040	0.79
1,2,4-Trichlorobenzene	ND		0.25	3.7
1,2,4-Trimethylbenzene	4.2		0.079	0.98
1,2-Dibromoethane	ND		0.14	1.5
1,2-Dichlorobenzene	ND		0.11	1.2

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-1

Lab Sample ID: 200-29600-1
Client Matrix: Air

Date Sampled: 09/02/2015 1440
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

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Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_05.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1126			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1126			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,2-Dichloroethane	ND		0.21	0.81
1,2-Dichloroethene, Total	ND		0.21	1.6
1,2-Dichloropropane	ND		0.16	0.92
1,3,5-Trimethylbenzene	0.99		0.093	0.98
1,3-Butadiene	ND		0.080	0.44
1,3-Dichlorobenzene	ND		0.12	1.2
1,4-Dichlorobenzene	ND		0.11	1.2
1,4-Dioxane	ND		0.58	18
2-Chlorotoluene	ND		0.16	1.0
3-Chloropropene	ND		0.50	1.6
4-Ethyltoluene	0.41	J	0.098	0.98
4-Isopropyltoluene	0.19	J	0.11	1.1
Acetone	52		1.6	12
Benzene	0.15	J	0.093	0.64
Benzyl chloride	ND		0.093	1.0
Bromodichloromethane	ND		0.19	1.3
Bromoethene(Vinyl Bromide)	ND		0.087	0.87
Bromoform	ND		0.26	2.1
Bromomethane	ND		0.17	0.78
Carbon disulfide	0.71	J	0.093	1.6
Carbon tetrachloride	ND		0.069	1.3
Chlorobenzene	ND		0.083	0.92
Chloroethane	ND		0.16	1.3
Chloroform	5.1		0.19	0.98
Chloromethane	0.16	J	0.12	1.0
cis-1,2-Dichloroethene	ND		0.12	0.79
cis-1,3-Dichloropropene	ND		0.13	0.91
Cyclohexane	0.79		0.034	0.69
Dibromochloromethane	ND		0.17	1.7
Dichlorodifluoromethane	2.3	J	0.28	2.5
Dichlorotetrafluoroethane	ND		0.36	1.4
Ethylbenzene	0.43	J	0.087	0.87
Freon 22	ND		0.28	1.8
Hexachlorobutadiene	ND		0.38	2.1
Isooctane	0.29	J	0.11	0.93
Isopentane	ND		0.16	0.59
Isopropyl alcohol	0.72	J	0.37	12
Isopropylbenzene	ND		0.093	0.98
m,p-Xylene	3.4		0.11	2.2
Methyl Butyl Ketone (2-Hexanone)	0.79	J	0.70	2.0
Methyl Ethyl Ketone	3.5		0.27	1.5
methyl isobutyl ketone	ND		0.74	2.0
Methyl methacrylate	ND		0.39	2.0
Methyl tert-butyl ether	ND		0.079	0.72
Methylene Chloride	~~0.64~~ 1.7	~~J B~~ 03	0.42	1.7
Naphthalene	0.71	J	0.16	2.6

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-1

Lab Sample ID: 200-29600-1
Client Matrix: Air

Date Sampled: 09/02/2015 1440
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_05.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1126			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1126			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
n-Butane	ND		0.43	1.2
n-Butylbenzene	ND		0.15	1.1
n-Decane	ND		0.76	2.9
n-Dodecane	ND		1.7	35
n-Heptane	ND		0.15	0.82
n-Hexane	0.42	J	0.099	0.70
n-Octane	ND		0.14	0.93
Nonane	ND		0.12	1.0
n-Propylbenzene	0.22	J	0.13	0.98
n-Undecane	ND		1.2	32
Pentane	ND		0.35	1.5
sec-Butylbenzene	ND		0.12	1.1
Styrene	ND		0.068	0.85
tert-Butyl alcohol	1.7	J	0.36	15
tert-Butylbenzene	ND		0.11	1.1
Tetrachloroethene	6.1		0.20	1.4
Tetrahydrofuran	ND		0.53	15
Toluene	0.69	J	0.094	0.75
trans-1,2-Dichloroethene	ND		0.11	0.79
trans-1,3-Dichloropropene	ND		0.12	0.91
Trichloroethene	ND		0.16	1.1
Trichlorofluoromethane	1.5		0.25	1.1
Trichlorotrifluoroethane	0.52	J	0.31	1.5
Vinyl chloride	ND		0.066	0.51
Xylene (total)	5.2		0.18	3.0
Xylene, o-	1.8		0.078	0.87

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: **SV-1**

Lab Sample ID: 200-29600-1
Client Matrix: Air

Date Sampled: 09/02/2015 1440
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_05.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1126			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1126			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 2**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
	Unknown	3.02	16	T J N
	Unknown	3.35	7.4	T J N

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-2

Lab Sample ID: 200-29600-2
Client Matrix: Air

Date Sampled: 09/02/2015 1500
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_06.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1215			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1215			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.74		0.030	0.20
1,1,2,2-Tetrachloroethane	ND		0.034	0.20
1,1,2-Trichloroethane	ND		0.037	0.20
1,1-Dichloroethane	ND		0.028	0.20
1,1-Dichloroethene	ND		0.010	0.20
1,2,4-Trichlorobenzene	ND		0.034	0.50
1,2,4-Trimethylbenzene	0.25		0.016	0.20
1,2-Dibromoethane	ND		0.018	0.20
1,2-Dichlorobenzene	ND		0.018	0.20
1,2-Dichloroethane	ND		0.052	0.20
1,2-Dichloroethene, Total	ND		0.053	0.40
1,2-Dichloropropane	ND		0.035	0.20
1,3,5-Trimethylbenzene	0.11	J	0.019	0.20
1,3-Butadiene	ND		0.036	0.20
1,3-Dichlorobenzene	ND		0.020	0.20
1,4-Dichlorobenzene	ND		0.019	0.20
1,4-Dioxane	ND		0.16	5.0
2-Chlorotoluene	ND		0.031	0.20
3-Chloropropene	ND		0.16	0.50
4-Ethyltoluene	ND		0.020	0.20
4-Isopropyltoluene	0.058	J	0.020	0.20
Acetone	19		0.69	5.0
Benzene	0.49		0.029	0.20
Benzyl chloride	ND		0.018	0.20
Bromodichloromethane	0.58		0.029	0.20
Bromoethene(Vinyl Bromide)	ND		0.020	0.20
Bromoform	ND		0.025	0.20
Bromomethane	ND		0.044	0.20
Carbon disulfide	0.70		0.030	0.50
Carbon tetrachloride	ND		0.011	0.20
Chlorobenzene	ND		0.018	0.20
Chloroethane	ND		0.061	0.50
Chloroform	6.6		0.038	0.20
Chloromethane	0.33	J	0.060	0.50
cis-1,2-Dichloroethene	ND		0.030	0.20
cis-1,3-Dichloropropene	ND		0.029	0.20
Cyclohexane	1.7		0.010	0.20
Dibromochloromethane	ND		0.020	0.20
Dichlorodifluoromethane	0.58		0.056	0.50
Dichlorotetrafluoroethane	ND		0.052	0.20
Ethylbenzene	0.12	J	0.020	0.20
Freon 22	ND		0.080	0.50
Hexachlorobutadiene	ND		0.036	0.20
Isooctane	ND		0.023	0.20
Isopentane	2.2		0.055	0.20
Isopropyl alcohol	ND		0.15	5.0

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-2

Lab Sample ID: 200-29600-2
Client Matrix: Air

Date Sampled: 09/02/2015 1500
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_06.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1215			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1215			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Isopropylbenzene	0.048	J	0.019	0.20
m,p-Xylene	0.57		0.025	0.50
Methyl Butyl Ketone (2-Hexanone)	ND		0.17	0.50
Methyl Ethyl Ketone	0.80		0.092	0.50
methyl isobutyl ketone	ND		0.18	0.50
Methyl methacrylate	ND		0.096	0.50
Methyl tert-butyl ether	ND		0.022	0.20
Methylene Chloride	~~0.22~~ 0,5	~~J B~~ U B	0.12	0.50
Naphthalene	0.39	J	0.030	0.50
n-Butane	ND		0.18	0.50
n-Butylbenzene	ND		0.028	0.20
n-Decane	0.17	J	0.13	0.50
n-Dodecane	ND		0.25	5.0
n-Heptane	0.46		0.037	0.20
n-Hexane	0.65		0.028	0.20
n-Octane	0.40		0.031	0.20
Nonane	0.21		0.022	0.20
n-Propylbenzene	0.042	J	0.027	0.20
n-Undecane	ND		0.18	5.0
Pentane	0.90		0.12	0.50
sec-Butylbenzene	ND		0.021	0.20
Styrene	ND		0.016	0.20
tert-Butyl alcohol	ND		0.12	5.0
tert-Butylbenzene	ND		0.020	0.20
Tetrachloroethene	5.6		0.030	0.20
Tetrahydrofuran	ND		0.18	5.0
Toluene	1.0		0.025	0.20
trans-1,2-Dichloroethene	ND		0.027	0.20
trans-1,3-Dichloropropene	ND		0.026	0.20
Trichloroethene	ND		0.030	0.20
Trichlorofluoromethane	0.48		0.045	0.20
Trichlorotrifluoroethane	0.12	J	0.041	0.20
Vinyl chloride	ND		0.026	0.20
Xylene (total)	0.94		0.041	0.70
Xylene, o-	0.37		0.018	0.20

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,1,1-Trichloroethane	4.0		0.16	1.1
1,1,2,2-Tetrachloroethane	ND		0.23	1.4
1,1,2-Trichloroethane	ND		0.20	1.1
1,1-Dichloroethane	ND		0.11	0.81
1,1-Dichloroethene	ND		0.040	0.79
1,2,4-Trichlorobenzene	ND		0.25	3.7
1,2,4-Trimethylbenzene	1.3		0.079	0.98
1,2-Dibromoethane	ND		0.14	1.5
1,2-Dichlorobenzene	ND		0.11	1.2

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-2

Lab Sample ID: 200-29600-2
Client Matrix: Air

Date Sampled: 09/02/2015 1500
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15
Prep Method: Summa Canister
Dilution: 1.0
Analysis Date: 09/08/2015 1215
Prep Date: 09/08/2015 1215

Analysis Batch: 200-93675
Prep Batch: N/A

Instrument ID: CHX.i
Lab File ID: 15638_06.D
Initial Weight/Volume: 200 mL
Final Weight/Volume: 200 mL
Injection Volume: 200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,2-Dichloroethane	ND		0.21	0.81
1,2-Dichloroethene, Total	ND		0.21	1.6
1,2-Dichloropropane	ND		0.16	0.92
1,3,5-Trimethylbenzene	0.54	J	0.093	0.98
1,3-Butadiene	ND		0.080	0.44
1,3-Dichlorobenzene	ND		0.12	1.2
1,4-Dichlorobenzene	ND		0.11	1.2
1,4-Dioxane	ND		0.58	18
2-Chlorotoluene	ND		0.16	1.0
3-Chloropropene	ND		0.50	1.6
4-Ethyltoluene	ND		0.098	0.98
4-Isopropyltoluene	0.32	J	0.11	1.1
Acetone	45		1.6	12
Benzene	1.6		0.093	0.64
Benzyl chloride	ND		0.093	1.0
Bromodichloromethane	3.9		0.19	1.3
Bromoethene(Vinyl Bromide)	ND		0.087	0.87
Bromoform	ND	*	0.26	2.1
Bromomethane	ND		0.17	0.78
Carbon disulfide	2.2		0.093	1.6
Carbon tetrachloride	ND		0.069	1.3
Chlorobenzene	ND		0.083	0.92
Chloroethane	ND		0.16	1.3
Chloroform	32		0.19	0.98
Chloromethane	0.68	J	0.12	1.0
cis-1,2-Dichloroethene	ND		0.12	0.79
cis-1,3-Dichloropropene	ND		0.13	0.91
Cyclohexane	5.9		0.034	0.69
Dibromochloromethane	ND		0.17	1.7
Dichlorodifluoromethane	2.9		0.28	2.5
Dichlorotetrafluoroethane	ND		0.36	1.4
Ethylbenzene	0.51	J	0.087	0.87
Freon 22	ND		0.28	1.8
Hexachlorobutadiene	ND		0.38	2.1
Isooctane	ND		0.11	0.93
Isopentane	6.5		0.16	0.59
Isopropyl alcohol	ND		0.37	12
Isopropylbenzene	0.24	J	0.093	0.98
m,p-Xylene	2.5		0.11	2.2
Methyl Butyl Ketone (2-Hexanone)	ND		0.70	2.0
Methyl Ethyl Ketone	2.4		0.27	1.5
methyl isobutyl ketone	ND		0.74	2.0
Methyl methacrylate	ND		0.39	2.0
Methyl tert-butyl ether	ND		0.079	0.72
Methylene Chloride	~~0.76~~ 1.7	~~J B~~ U B	0.42	1.7
Naphthalene	2.0	J	0.16	2.6

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-2

Lab Sample ID: 200-29600-2
Client Matrix: Air

Date Sampled: 09/02/2015 1500
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_06.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1215			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1215			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
n-Butane	ND		0.43	1.2
n-Butylbenzene	ND		0.15	1.1
n-Decane	1.0	J	0.76	2.9
n-Dodecane	ND		1.7	35
n-Heptane	1.9		0.15	0.82
n-Hexane	2.3		0.099	0.70
n-Octane	1.9		0.14	0.93
Nonane	1.1		0.12	1.0
n-Propylbenzene	0.20	J	0.13	0.98
n-Undecane	ND		1.2	32
Pentane	2.7		0.35	1.5
sec-Butylbenzene	ND		0.12	1.1
Styrene	ND		0.068	0.85
tert-Butyl alcohol	ND		0.36	15
tert-Butylbenzene	ND		0.11	1.1
Tetrachloroethene	38		0.20	1.4
Tetrahydrofuran	ND		0.53	15
Toluene	3.9		0.094	0.75
trans-1,2-Dichloroethene	ND		0.11	0.79
trans-1,3-Dichloropropene	ND		0.12	0.91
Trichloroethene	ND		0.16	1.1
Trichlorofluoromethane	2.7		0.25	1.1
Trichlorotrifluoroethane	0.94	J	0.31	1.5
Vinyl chloride	ND		0.066	0.51
Xylene (total)	4.1		0.18	3.0
Xylene, o-	1.6		0.078	0.87

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-2

Lab Sample ID: 200-29600-2
Client Matrix: Air

Date Sampled: 09/02/2015 1500
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_06.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1215			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1215			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 7**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
	Unknown	3.01	41	T J N
	Unknown	3.37	7.7	T J N
108-87-2	Cyclohexane, methyl-	13.00	5.5	T J N
638-04-0	Cyclohexane, 1,3-dimethyl-, cis-	15.10	2.6	T J N
6876-23-9	Cyclohexane, 1,2-dimethyl-, trans-	15.88	1.3	T J N
3073-66-3	Cyclohexane, 1,1,3-trimethyl-	17.22	1.5	T J N
14676-29-0	Heptane, 3-ethyl-2-methyl-	20.03	1.1	T J N

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-3

Lab Sample ID: 200-29600-3
Client Matrix: Air

Date Sampled: 09/02/2015 1530
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_07.D
Dilution:	6.02			Initial Weight/Volume:	33 mL
Analysis Date:	09/08/2015 1306			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1306			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.18	1.2
1,1,2,2-Tetrachloroethane	ND		0.20	1.2
1,1,2-Trichloroethane	ND		0.22	1.2
1,1-Dichloroethane	ND		0.17	1.2
1,1-Dichloroethene	ND		0.060	1.2
1,2,4-Trichlorobenzene	ND		0.20	3.0
1,2,4-Trimethylbenzene	9.7		0.096	1.2
1,2-Dibromoethane	ND		0.11	1.2
1,2-Dichlorobenzene	ND		0.11	1.2
1,2-Dichloroethane	ND		0.31	1.2
1,2-Dichloroethene, Total	ND		0.32	2.4
1,2-Dichloropropane	ND		0.21	1.2
1,3,5-Trimethylbenzene	4.0		0.11	1.2
1,3-Butadiene	ND		0.22	1.2
1,3-Dichlorobenzene	ND		0.12	1.2
1,4-Dichlorobenzene	ND		0.11	1.2
1,4-Dioxane	ND		0.96	30
2-Chlorotoluene	ND		0.19	1.2
3-Chloropropene	ND		0.96	3.0
4-Ethyltoluene	2.1		0.12	1.2
4-Isopropyltoluene	0.18	J	0.12	1.2
Acetone	24	J	4.2	30
Benzene	1.3		0.17	1.2
Benzyl chloride	ND		0.11	1.2
Bromodichloromethane	3.6		0.17	1.2
Bromoethene(Vinyl Bromide)	ND		0.12	1.2
Bromoform	ND		0.15	1.2
Bromomethane	ND		0.26	1.2
Carbon disulfide	3.4		0.18	3.0
Carbon tetrachloride	ND		0.066	1.2
Chlorobenzene	ND		0.11	1.2
Chloroethane	ND		0.37	3.0
Chloroform	53		0.23	1.2
Chloromethane	ND		0.36	3.0
cis-1,2-Dichloroethene	ND		0.18	1.2
cis-1,3-Dichloropropene	ND		0.17	1.2
Cyclohexane	14		0.060	1.2
Dibromochloromethane	0.24	J	0.12	1.2
Dichlorodifluoromethane	0.73	J	0.34	3.0
Dichlorotetrafluoroethane	ND		0.31	1.2
Ethylbenzene	2.8		0.12	1.2
Freon 22	0.55	J	0.48	3.0
Hexachlorobutadiene	ND		0.22	1.2
Isooctane	0.61	J	0.14	1.2
Isopentane	50		0.33	1.2
Isopropyl alcohol	ND		0.90	30

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: **SV-3**

Lab Sample ID: 200-29600-3
Client Matrix: Air

Date Sampled: 09/02/2015 1530
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_07.D
Dilution:	6.02			Initial Weight/Volume:	33 mL
Analysis Date:	09/08/2015 1306			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1306			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Isopropylbenzene	0.45	J	0.11	1.2
m,p-Xylene	15		0.15	3.0
Methyl Butyl Ketone (2-Hexanone)	ND		1.0	3.0
Methyl Ethyl Ketone	1.1	J	0.55	3.0
methyl isobutyl ketone	ND		1.1	3.0
Methyl methacrylate	ND		0.58	3.0
Methyl tert-butyl ether	ND		0.13	1.2
Methylene Chloride	~~1.2~~ 3.0	~~J B~~ UB	0.72	3.0
Naphthalene	0.28	J	0.18	3.0
n-Butane	100		1.1	3.0
n-Butylbenzene	ND		0.17	1.2
n-Decane	4.2		0.78	3.0
n-Dodecane	ND		1.5	30
n-Heptane	21		0.22	1.2
n-Hexane	30		0.17	1.2
n-Octane	11		0.19	1.2
Nonane	6.4		0.13	1.2
n-Propylbenzene	1.2		0.16	1.2
n-Undecane	2.3	J	1.1	30
Pentane	53		0.72	3.0
sec-Butylbenzene	ND		0.13	1.2
Styrene	ND		0.096	1.2
tert-Butyl alcohol	ND		0.72	30
tert-Butylbenzene	ND		0.12	1.2
Tetrachloroethene	0.32	J	0.18	1.2
Tetrahydrofuran	ND		1.1	30
Toluene	6.5		0.15	1.2
trans-1,2-Dichloroethene	ND		0.16	1.2
trans-1,3-Dichloropropene	ND		0.16	1.2
Trichloroethene	ND		0.18	1.2
Trichlorofluoromethane	0.70	J	0.27	1.2
Trichlorotrifluoroethane	ND		0.25	1.2
Vinyl chloride	ND		0.16	1.2
Xylene (total)	20		0.25	4.2
Xylene, o-	4.6		0.11	1.2

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.99	6.6
1,1,2,2-Tetrachloroethane	ND		1.4	8.3
1,1,2-Trichloroethane	ND		1.2	6.6
1,1-Dichloroethane	ND		0.68	4.9
1,1-Dichloroethene	ND		0.24	4.8
1,2,4-Trichlorobenzene	ND		1.5	22
1,2,4-Trimethylbenzene	48		0.47	5.9
1,2-Dibromoethane	ND		0.83	9.3
1,2-Dichlorobenzene	ND		0.65	7.2

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: **SV-3**

Lab Sample ID: 200-29600-3
Client Matrix: Air

Date Sampled: 09/02/2015 1530
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_07.D
Dilution:	6.02			Initial Weight/Volume:	33 mL
Analysis Date:	09/08/2015 1306			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1306			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,2-Dichloroethane	ND		1.3	4.9
1,2-Dichloroethene, Total	ND		1.3	9.5
1,2-Dichloropropane	ND		0.97	5.6
1,3,5-Trimethylbenzene	20		0.56	5.9
1,3-Butadiene	ND		0.48	2.7
1,3-Dichlorobenzene	ND		0.72	7.2
1,4-Dichlorobenzene	ND		0.69	7.2
1,4-Dioxane	ND		3.5	110
2-Chlorotoluene	ND		0.97	6.2
3-Chloropropene	ND		3.0	9.4
4-Ethyltoluene	10		0.59	5.9
4-Isopropyltoluene	1.0	J	0.66	6.6
Acetone	58	J	9.9	71
Benzene	4.1		0.56	3.8
Benzyl chloride	ND		0.56	6.2
Bromodichloromethane	24		1.2	8.1
Bromoethene(Vinyl Bromide)	ND		0.53	5.3
Bromoform	ND		1.6	12
Bromomethane	ND		1.0	4.7
Carbon disulfide	11		0.56	9.4
Carbon tetrachloride	ND		0.42	7.6
Chlorobenzene	ND		0.50	5.5
Chloroethane	ND		0.97	7.9
Chloroform	260		1.1	5.9
Chloromethane	ND		0.75	6.2
cis-1,2-Dichloroethene	ND		0.72	4.8
cis-1,3-Dichloropropene	ND		0.79	5.5
Cyclohexane	49		0.21	4.1
Dibromochloromethane	2.0	J	1.0	10
Dichlorodifluoromethane	3.6	J	1.7	15
Dichlorotetrafluoroethane	ND		2.2	8.4
Ethylbenzene	12		0.52	5.2
Freon 22	1.9	J	1.7	11
Hexachlorobutadiene	ND		2.3	13
Isooctane	2.9	J	0.65	5.6
Isopentane	150		0.98	3.6
Isopropyl alcohol	ND		2.2	74
Isopropylbenzene	2.2	J	0.56	5.9
m,p-Xylene	64		0.65	13
Methyl Butyl Ketone (2-Hexanone)	ND		4.2	12
Methyl Ethyl Ketone	3.2	J	1.6	8.9
methyl isobutyl ketone	ND		4.4	12
Methyl methacrylate	ND		2.4	12
Methyl tert-butyl ether	ND		0.48	4.3
Methylene Chloride	~~4.1~~ 10	~~J B~~ UB	2.5	10
Naphthalene	1.4	J	0.95	16

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-3

Lab Sample ID: 200-29600-3
Client Matrix: Air

Date Sampled: 09/02/2015 1530
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_07.D
Dilution:	6.02			Initial Weight/Volume:	33 mL
Analysis Date:	09/08/2015 1306			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1306			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
n-Butane	240		2.6	7.2
n-Butylbenzene	ND		0.93	6.6
n-Decane	25		4.6	18
n-Dodecane	ND		10	210
n-Heptane	85		0.91	4.9
n-Hexane	110		0.59	4.2
n-Octane	50		0.87	5.6
Nonane	33		0.69	6.3
n-Propylbenzene	5.7		0.80	5.9
n-Undecane	15	J	6.9	190
Pentane	160		2.1	8.9
sec-Butylbenzene	ND		0.69	6.6
Styrene	ND		0.41	5.1
tert-Butyl alcohol	ND		2.2	91
tert-Butylbenzene	ND		0.66	6.6
Tetrachloroethene	2.2	J	1.2	8.2
Tetrahydrofuran	ND		3.2	89
Toluene	24		0.57	4.5
trans-1,2-Dichloroethene	ND		0.64	4.8
trans-1,3-Dichloropropene	ND		0.71	5.5
Trichloroethene	ND		0.97	6.5
Trichlorofluoromethane	4.0	J	1.5	6.8
Trichlorotrifluoroethane	ND		1.9	9.2
Vinyl chloride	ND		0.40	3.1
Xylene (total)	85		1.1	18
Xylene, o-	20		0.47	5.2

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-3

Lab Sample ID: 200-29600-3
Client Matrix: Air

Date Sampled: 09/02/2015 1530
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_07.D
Dilution:	6.02			Initial Weight/Volume:	33 mL
Analysis Date:	09/08/2015 1306			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1306			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 8**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
	Unknown	3.08	71	T J N
	Unknown	3.44	24	T J N
107-83-5	Pentane, 2-methyl-	7.23	19	T J N
	Unknown	13.01	24	T J N
	Unknown	14.39	11	T J
	Unknown	17.70	7.4	T J
	Unknown	20.03	11	T J
	Unknown	20.84	9.4	T J

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-4

Lab Sample ID: 200-29600-4
Client Matrix: Air

Date Sampled: 09/02/2015 1630
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_08.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1356			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1356			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.030	0.20
1,1,2,2-Tetrachloroethane	ND		0.034	0.20
1,1,2-Trichloroethane	ND		0.037	0.20
1,1-Dichloroethane	ND		0.028	0.20
1,1-Dichloroethene	ND		0.010	0.20
1,2,4-Trichlorobenzene	ND		0.034	0.50
1,2,4-Trimethylbenzene	0.94		0.016	0.20
1,2-Dibromoethane	ND		0.018	0.20
1,2-Dichlorobenzene	ND		0.018	0.20
1,2-Dichloroethane	ND		0.052	0.20
1,2-Dichloroethene, Total	ND		0.053	0.40
1,2-Dichloropropane	ND		0.035	0.20
1,3,5-Trimethylbenzene	0.12	J	0.019	0.20
1,3-Butadiene	ND		0.036	0.20
1,3-Dichlorobenzene	ND		0.020	0.20
1,4-Dichlorobenzene	ND		0.019	0.20
1,4-Dioxane	ND		0.16	5.0
2-Chlorotoluene	ND		0.031	0.20
3-Chloropropene	ND		0.16	0.50
4-Ethyltoluene	0.16	J	0.020	0.20
4-Isopropyltoluene	0.035	J	0.020	0.20
Acetone	20		0.69	5.0
Benzene	0.075	J	0.029	0.20
Benzyl chloride	ND		0.018	0.20
Bromodichloromethane	3.5		0.029	0.20
Bromoethene(Vinyl Bromide)	ND		0.020	0.20
Bromoform	ND		0.025	0.20
Bromomethane	ND		0.044	0.20
Carbon disulfide	2.0		0.030	0.50
Carbon tetrachloride	0.022	J	0.011	0.20
Chlorobenzene	ND		0.018	0.20
Chloroethane	ND		0.061	0.50
Chloroform	28		0.038	0.20
Chloromethane	0.11	J	0.060	0.50
cis-1,2-Dichloroethene	ND		0.030	0.20
cis-1,3-Dichloropropene	ND		0.029	0.20
Cyclohexane	1.2		0.010	0.20
Dibromochloromethane	0.32		0.020	0.20
Dichlorodifluoromethane	0.59		0.056	0.50
Dichlorotetrafluoroethane	ND		0.052	0.20
Ethylbenzene	0.74		0.020	0.20
Freon 22	0.37	J	0.080	0.50
Hexachlorobutadiene	ND		0.036	0.20
Isooctane	0.17	J	0.023	0.20
Isopentane	2.5		0.055	0.20
Isopropyl alcohol	ND		0.15	5.0

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-4

Lab Sample ID: 200-29600-4
Client Matrix: Air

Date Sampled: 09/02/2015 1630
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_08.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1356			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1356			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Isopropylbenzene	0.061	J	0.019	0.20
m,p-Xylene	2.0		0.025	0.50
Methyl Butyl Ketone (2-Hexanone)	0.33	J	0.17	0.50
Methyl Ethyl Ketone	1.1		0.092	0.50
methyl isobutyl ketone	ND		0.18	0.50
Methyl methacrylate	ND		0.096	0.50
Methyl tert-butyl ether	ND		0.022	0.20
Methylene Chloride	~~0.21~~ 0.5	~~J B~~ UB	0.12	0.50
Naphthalene	0.20	J	0.030	0.50
n-Butane	4.6		0.18	0.50
n-Butylbenzene	ND		0.028	0.20
n-Decane	0.34	J	0.13	0.50
n-Dodecane	0.66	J	0.25	5.0
n-Heptane	0.15	J	0.037	0.20
n-Hexane	1.2		0.028	0.20
n-Octane	0.14	J	0.031	0.20
Nonane	0.19	J	0.022	0.20
n-Propylbenzene	0.097	J	0.027	0.20
n-Undecane	0.43	J	0.18	5.0
Pentane	2.8		0.12	0.50
sec-Butylbenzene	ND		0.021	0.20
Styrene	0.023	J	0.016	0.20
tert-Butyl alcohol	ND		0.12	5.0
tert-Butylbenzene	ND		0.020	0.20
Tetrachloroethene	0.35		0.030	0.20
Tetrahydrofuran	ND		0.18	5.0
Toluene	0.59		0.025	0.20
trans-1,2-Dichloroethene	ND		0.027	0.20
trans-1,3-Dichloropropene	ND		0.026	0.20
Trichloroethene	ND		0.030	0.20
Trichlorofluoromethane	0.34		0.045	0.20
Trichlorotrifluoroethane	0.091	J	0.041	0.20
Vinyl chloride	ND		0.026	0.20
Xylene (total)	3.1		0.041	0.70
Xylene, o-	1.1		0.018	0.20

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.16	1.1
1,1,2,2-Tetrachloroethane	ND		0.23	1.4
1,1,2-Trichloroethane	ND		0.20	1.1
1,1-Dichloroethane	ND		0.11	0.81
1,1-Dichloroethene	ND		0.040	0.79
1,2,4-Trichlorobenzene	ND		0.25	3.7
1,2,4-Trimethylbenzene	4.6		0.079	0.98
1,2-Dibromoethane	ND		0.14	1.5
1,2-Dichlorobenzene	ND		0.11	1.2

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-4

Lab Sample ID: 200-29600-4
Client Matrix: Air

Date Sampled: 09/02/2015 1630
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_08.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1356			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1356			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,2-Dichloroethane	ND		0.21	0.81
1,2-Dichloroethene, Total	ND		0.21	1.6
1,2-Dichloropropane	ND		0.16	0.92
1,3,5-Trimethylbenzene	0.59	J	0.093	0.98
1,3-Butadiene	ND		0.080	0.44
1,3-Dichlorobenzene	ND		0.12	1.2
1,4-Dichlorobenzene	ND		0.11	1.2
1,4-Dioxane	ND		0.58	18
2-Chlorotoluene	ND		0.16	1.0
3-Chloropropene	ND		0.50	1.6
4-Ethyltoluene	0.77	J	0.098	0.98
4-Isopropyltoluene	0.19	J	0.11	1.1
Acetone	47		1.6	12
Benzene	0.24	J	0.093	0.64
Benzyl chloride	ND		0.093	1.0
Bromodichloromethane	24		0.19	1.3
Bromoethene(Vinyl Bromide)	ND		0.087	0.87
Bromoform	ND		0.26	2.1
Bromomethane	ND		0.17	0.78
Carbon disulfide	6.2		0.093	1.6
Carbon tetrachloride	0.14	J	0.069	1.3
Chlorobenzene	ND		0.083	0.92
Chloroethane	ND		0.16	1.3
Chloroform	140		0.19	0.98
Chloromethane	0.23	J	0.12	1.0
cis-1,2-Dichloroethene	ND		0.12	0.79
cis-1,3-Dichloropropene	ND		0.13	0.91
Cyclohexane	4.2		0.034	0.69
Dibromochloromethane	2.7		0.17	1.7
Dichlorodifluoromethane	2.9		0.28	2.5
Dichlorotetrafluoroethane	ND		0.36	1.4
Ethylbenzene	3.2		0.087	0.87
Freon 22	1.3	J	0.28	1.8
Hexachlorobutadiene	ND		0.38	2.1
Isooctane	0.81	J	0.11	0.93
Isopentane	7.5		0.16	0.59
Isopropyl alcohol	ND		0.37	12
Isopropylbenzene	0.30	J	0.093	0.98
m,p-Xylene	8.7		0.11	2.2
Methyl Butyl Ketone (2-Hexanone)	1.3	J	0.70	2.0
Methyl Ethyl Ketone	3.4		0.27	1.5
methyl isobutyl ketone	ND		0.74	2.0
Methyl methacrylate	ND		0.39	2.0
Methyl tert-butyl ether	ND		0.079	0.72
Methylene Chloride	0.72 1.7	J B U3	0.42	1.7
Naphthalene	1.1	J	0.16	2.6

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-4

Lab Sample ID: 200-29600-4
Client Matrix: Air

Date Sampled: 09/02/2015 1630
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_08.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1356			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1356			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
n-Butane	11		0.43	1.2
n-Butylbenzene	ND		0.15	1.1
n-Decane	2.0	J	0.76	2.9
n-Dodecane	4.6	J	1.7	35
n-Heptane	0.60	J	0.15	0.82
n-Hexane	4.4		0.099	0.70
n-Octane	0.67	J	0.14	0.93
Nonane	0.98	J	0.12	1.0
n-Propylbenzene	0.48	J	0.13	0.98
n-Undecane	2.7	J	1.2	32
Pentane	8.3		0.35	1.5
sec-Butylbenzene	ND		0.12	1.1
Styrene	0.10	J	0.068	0.85
tert-Butyl alcohol	ND		0.36	15
tert-Butylbenzene	ND		0.11	1.1
Tetrachloroethene	2.4		0.20	1.4
Tetrahydrofuran	ND		0.53	15
Toluene	2.2		0.094	0.75
trans-1,2-Dichloroethene	ND		0.11	0.79
trans-1,3-Dichloropropene	ND		0.12	0.91
Trichloroethene	ND		0.16	1.1
Trichlorofluoromethane	1.9		0.25	1.1
Trichlorotrifluoroethane	0.70	J	0.31	1.5
Vinyl chloride	ND		0.066	0.51
Xylene (total)	13		0.18	3.0
Xylene, o-	5.0		0.078	0.87

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-4

Lab Sample ID: 200-29600-4
Client Matrix: Air

Date Sampled: 09/02/2015 1630
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_08.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	09/08/2015 1356			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1356			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 3**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
	Unknown	3.03	16	T J N
	Unknown	3.35	8.6	T J N
541-05-9	Cyclotrisiloxane, hexamethyl-	16.07	13	T J N

Client Sample ID: **SV-5**

Lab Sample ID: 200-29600-5
Client Matrix: Air

Date Sampled: 09/02/2015 1640
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_09.D
Dilution:	2.99			Initial Weight/Volume:	67 mL
Analysis Date:	09/08/2015 1446			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1446			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.090	0.60
1,1,2,2-Tetrachloroethane	ND		0.10	0.60
1,1,2-Trichloroethane	ND		0.11	0.60
1,1-Dichloroethane	ND		0.084	0.60
1,1-Dichloroethene	ND		0.030	0.60
1,2,4-Trichlorobenzene	ND		0.10	1.5
1,2,4-Trimethylbenzene	0.72		0.048	0.60
1,2-Dibromoethane	ND		0.054	0.60
1,2-Dichlorobenzene	ND		0.054	0.60
1,2-Dichloroethane	ND		0.16	0.60
1,2-Dichloroethene, Total	ND		0.16	1.2
1,2-Dichloropropane	ND		0.10	0.60
1,3,5-Trimethylbenzene	0.16	J	0.057	0.60
1,3-Butadiene	ND		0.11	0.60
1,3-Dichlorobenzene	ND		0.060	0.60
1,4-Dichlorobenzene	ND		0.057	0.60
1,4-Dioxane	ND		0.48	15
2-Chlorotoluene	ND		0.093	0.60
3-Chloropropene	ND		0.48	1.5
4-Ethyltoluene	0.18	J	0.060	0.60
4-Isopropyltoluene	0.088	J	0.060	0.60
Acetone	22		2.1	15
Benzene	0.14	J	0.087	0.60
Benzyl chloride	ND		0.054	0.60
Bromodichloromethane	3.8		0.087	0.60
Bromoethene(Vinyl Bromide)	ND		0.060	0.60
Bromoform	ND		0.075	0.60
Bromomethane	ND		0.13	0.60
Carbon disulfide	5.0		0.090	1.5
Carbon tetrachloride	0.059	J	0.033	0.60
Chlorobenzene	0.067	J	0.054	0.60
Chloroethane	ND		0.18	1.5
Chloroform	24		0.11	0.60
Chloromethane	ND		0.18	1.5
cis-1,2-Dichloroethene	ND		0.090	0.60
cis-1,3-Dichloropropene	ND		0.087	0.60
Cyclohexane	1.2		0.030	0.60
Dibromochloromethane	0.37	J	0.060	0.60
Dichlorodifluoromethane	0.53	J	0.17	1.5
Dichlorotetrafluoroethane	ND		0.16	0.60
Ethylbenzene	0.59	J	0.060	0.60
Freon 22	43		0.24	1.5
Hexachlorobutadiene	ND		0.11	0.60
Isooctane	ND		0.069	0.60
Isopentane	1.9		0.16	0.60
Isopropyl alcohol	0.49	J	0.45	15

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-5

Lab Sample ID: 200-29600-5
Client Matrix: Air

Date Sampled: 09/02/2015 1640
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15
Prep Method: Summa Canister
Dilution: 2.99
Analysis Date: 09/08/2015 1446
Prep Date: 09/08/2015 1446

Analysis Batch: 200-93675
Prep Batch: N/A

Instrument ID: CHX.i
Lab File ID: 15638_09.D
Initial Weight/Volume: 67 mL
Final Weight/Volume: 200 mL
Injection Volume: 200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Isopropylbenzene	0.090	J	0.057	0.60
m,p-Xylene	2.2		0.075	1.5
Methyl Butyl Ketone (2-Hexanone)	ND		0.51	1.5
Methyl Ethyl Ketone	2.6		0.28	1.5
methyl isobutyl ketone	ND		0.54	1.5
Methyl methacrylate	ND		0.29	1.5
Methyl tert-butyl ether	ND		0.066	0.60
Methylene Chloride	~~0.40~~ 1.5	~~J B~~ UB	0.36	1.5
Naphthalene	0.12	J	0.090	1.5
n-Butane	4.0		0.54	1.5
n-Butylbenzene	ND		0.084	0.60
n-Decane	ND		0.39	1.5
n-Dodecane	ND		0.75	15
n-Heptane	0.54	J	0.11	0.60
n-Hexane	1.5		0.084	0.60
n-Octane	0.34	J	0.093	0.60
Nonane	0.22	J	0.066	0.60
n-Propylbenzene	0.13	J	0.081	0.60
n-Undecane	ND		0.54	15
Pentane	2.9		0.36	1.5
sec-Butylbenzene	ND		0.063	0.60
Styrene	ND		0.048	0.60
tert-Butyl alcohol	0.56	J	0.36	15
tert-Butylbenzene	ND		0.060	0.60
Tetrachloroethene	ND		0.090	0.60
Tetrahydrofuran	0.97	J	0.54	15
Toluene	0.69		0.075	0.60
trans-1,2-Dichloroethene	ND		0.081	0.60
trans-1,3-Dichloropropene	ND		0.078	0.60
Trichloroethene	ND		0.090	0.60
Trichlorofluoromethane	0.86		0.13	0.60
Trichlorotrifluoroethane	ND		0.12	0.60
Vinyl chloride	ND		0.078	0.60
Xylene (total)	3.4		0.12	2.1
Xylene, o-	1.2		0.054	0.60

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.49	3.3
1,1,2,2-Tetrachloroethane	ND		0.70	4.1
1,1,2-Trichloroethane	ND		0.60	3.3
1,1-Dichloroethane	ND		0.34	2.4
1,1-Dichloroethene	ND		0.12	2.4
1,2,4-Trichlorobenzene	ND		0.75	11
1,2,4-Trimethylbenzene	3.5		0.24	2.9
1,2-Dibromoethane	ND		0.41	4.6
1,2-Dichlorobenzene	ND		0.32	3.6

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-5

Lab Sample ID: 200-29600-5
Client Matrix: Air

Date Sampled: 09/02/2015 1640
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15
Prep Method: Summa Canister
Dilution: 2.99
Analysis Date: 09/08/2015 1446
Prep Date: 09/08/2015 1446

Analysis Batch: 200-93675
Prep Batch: N/A

Instrument ID: CHX.i
Lab File ID: 15638_09.D
Initial Weight/Volume: 67 mL
Final Weight/Volume: 200 mL
Injection Volume: 200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,2-Dichloroethane	ND		0.63	2.4
1,2-Dichloroethene, Total	ND		0.63	4.7
1,2-Dichloropropane	ND		0.48	2.8
1,3,5-Trimethylbenzene	0.79	J	0.28	2.9
1,3-Butadiene	ND		0.24	1.3
1,3-Dichlorobenzene	ND		0.36	3.6
1,4-Dichlorobenzene	ND		0.34	3.6
1,4-Dioxane	ND		1.7	54
2-Chlorotoluene	ND		0.48	3.1
3-Chloropropene	ND		1.5	4.7
4-Ethyltoluene	0.88	J	0.29	2.9
4-Isopropyltoluene	0.48	J	0.33	3.3
Acetone	52		4.9	36
Benzene	0.43	J	0.28	1.9
Benzyl chloride	ND		0.28	3.1
Bromodichloromethane	25		0.58	4.0
Bromoethene(Vinyl Bromide)	ND		0.26	2.6
Bromoform	ND		0.77	6.2
Bromomethane	ND		0.51	2.3
Carbon disulfide	16		0.28	4.7
Carbon tetrachloride	0.37	J	0.21	3.8
Chlorobenzene	0.31	J	0.25	2.8
Chloroethane	ND		0.48	3.9
Chloroform	120		0.55	2.9
Chloromethane	ND		0.37	3.1
cis-1,2-Dichloroethene	ND		0.36	2.4
cis-1,3-Dichloropropene	ND		0.39	2.7
Cyclohexane	4.1		0.10	2.1
Dibromochloromethane	3.1	J	0.51	5.1
Dichlorodifluoromethane	2.6	J	0.83	7.4
Dichlorotetrafluoroethane	ND		1.1	4.2
Ethylbenzene	2.6	J	0.26	2.6
Freon 22	150		0.85	5.3
Hexachlorobutadiene	ND		1.1	6.4
Isooctane	ND		0.32	2.8
Isopentane	5.6		0.49	1.8
Isopropyl alcohol	1.2	J	1.1	37
Isopropylbenzene	0.44	J	0.28	2.9
m,p-Xylene	9.4		0.32	6.5
Methyl Butyl Ketone (2-Hexanone)	ND		2.1	6.1
Methyl Ethyl Ketone	7.7		0.81	4.4
methyl isobutyl ketone	ND		2.2	6.1
Methyl methacrylate	ND		1.2	6.1
Methyl tert-butyl ether	ND		0.24	2.2
Methylene Chloride	~~1.4~~ 5.2	~~J B~~ U B	1.2	5.2
Naphthalene	0.64	J	0.47	7.8

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-5

Lab Sample ID: 200-29600-5
Client Matrix: Air

Date Sampled: 09/02/2015 1640
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_09.D
Dilution:	2.99			Initial Weight/Volume:	67 mL
Analysis Date:	09/08/2015 1446			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1446			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
n-Butane	9.6		1.3	3.6
n-Butylbenzene	ND		0.46	3.3
n-Decane	ND		2.3	8.7
n-Dodecane	ND		5.2	100
n-Heptane	2.2	J	0.45	2.5
n-Hexane	5.4		0.30	2.1
n-Octane	1.6	J	0.43	2.8
Nonane	1.1	J	0.35	3.1
n-Propylbenzene	0.64	J	0.40	2.9
n-Undecane	ND		3.4	96
Pentane	8.7		1.1	4.4
sec-Butylbenzene	ND		0.34	3.3
Styrene	ND		0.20	2.5
tert-Butyl alcohol	1.7	J	1.1	45
tert-Butylbenzene	ND		0.33	3.3
Tetrachloroethene	ND		0.61	4.1
Tetrahydrofuran	2.9	J	1.6	44
Toluene	2.6		0.28	2.3
trans-1,2-Dichloroethene	ND		0.32	2.4
trans-1,3-Dichloropropene	ND		0.35	2.7
Trichloroethene	ND		0.48	3.2
Trichlorofluoromethane	4.8		0.76	3.4
Trichlorotrifluoroethane	ND		0.94	4.6
Vinyl chloride	ND		0.20	1.5
Xylene (total)	15		0.53	9.1
Xylene, o-	5.0		0.23	2.6

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-5

Lab Sample ID: 200-29600-5
Client Matrix: Air

Date Sampled: 09/02/2015 1640
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_09.D
Dilution:	2.99			Initial Weight/Volume:	67 mL
Analysis Date:	09/08/2015 1446			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1446			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 2**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
	Unknown	3.03	11	T J N
541-05-9	Cyclotrisiloxane, hexamethyl-	16.08	10	T J N

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: **SV-6**

Lab Sample ID: 200-29600-6
Client Matrix: Air

Date Sampled: 09/02/2015 1740
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15
Prep Method: Summa Canister
Dilution: 20
Analysis Date: 09/08/2015 1536
Prep Date: 09/08/2015 1536

Analysis Batch: 200-93675
Prep Batch: N/A

Instrument ID: CHX.i
Lab File ID: 15638_10.D
Initial Weight/Volume: 51 mL
Final Weight/Volume: 200 mL
Injection Volume: 200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.60	4.0
1,1,2,2-Tetrachloroethane	ND		0.68	4.0
1,1,2-Trichloroethane	ND		0.74	4.0
1,1-Dichloroethane	ND		0.56	4.0
1,1-Dichloroethene	ND		0.20	4.0
1,2,4-Trichlorobenzene	ND		0.68	10
1,2,4-Trimethylbenzene	ND		0.32	4.0
1,2-Dibromoethane	ND		0.36	4.0
1,2-Dichlorobenzene	ND		0.36	4.0
1,2-Dichloroethane	ND		1.0	4.0
1,2-Dichloroethene, Total	ND		1.1	8.0
1,2-Dichloropropane	ND		0.70	4.0
1,3,5-Trimethylbenzene	ND		0.38	4.0
1,3-Butadiene	ND		0.72	4.0
1,3-Dichlorobenzene	ND		0.40	4.0
1,4-Dichlorobenzene	ND		0.38	4.0
1,4-Dioxane	ND		3.2	100
2-Chlorotoluene	ND		0.62	4.0
3-Chloropropene	ND		3.2	10
4-Ethyltoluene	ND		0.40	4.0
4-Isopropyltoluene	ND	UJ	0.40	4.0
Acetone	100		14	100
Benzene	ND		0.58	4.0
Benzyl chloride	ND		0.36	4.0
Bromodichloromethane	0.64	J	0.58	4.0
Bromoethene(Vinyl Bromide)	ND		0.40	4.0
Bromoform	ND		0.50	4.0
Bromomethane	ND		0.88	4.0
Carbon disulfide	ND		0.60	10
Carbon tetrachloride	ND		0.22	4.0
Chlorobenzene	ND		0.36	4.0
Chloroethane	ND		1.2	10
Chloroform	9.5		0.76	4.0
Chloromethane	ND		1.2	10
cis-1,2-Dichloroethene	ND		0.60	4.0
cis-1,3-Dichloropropene	ND		0.58	4.0
Cyclohexane	ND		0.20	4.0
Dibromochloromethane	ND		0.40	4.0
Dichlorodifluoromethane	63		1.1	10
Dichlorotetrafluoroethane	ND		1.0	4.0
Ethylbenzene	ND		0.40	4.0
Freon 22	ND		1.6	10
Hexachlorobutadiene	ND		0.72	4.0
Isooctane	ND		0.46	4.0
Isopentane	ND		1.1	4.0
Isopropyl alcohol	ND		3.0	100

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-6

Lab Sample ID: 200-29600-6
Client Matrix: Air

Date Sampled: 09/02/2015 1740
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_10.D
Dilution:	20			Initial Weight/Volume:	51 mL
Analysis Date:	09/08/2015 1536			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1536			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Isopropylbenzene	ND		0.38	4.0
m,p-Xylene	ND		0.50	10
Methyl Butyl Ketone (2-Hexanone)	ND		3.4	10
Methyl Ethyl Ketone	2.3	J	1.8	10
methyl isobutyl ketone	ND		3.6	10
Methyl methacrylate	ND		1.9	10
Methyl tert-butyl ether	ND		0.44	4.0
Methylene Chloride	~~2.8~~ 10	~~J B~~ U B	2.4	10
Naphthalene	ND		0.60	10
n-Butane	ND		3.6	10
n-Butylbenzene	ND		0.56	4.0
n-Decane	7.6	J	2.6	10
n-Dodecane	9.1	J	5.0	100
n-Heptane	ND		0.74	4.0
n-Hexane	ND		0.56	4.0
n-Octane	2.1	J	0.62	4.0
Nonane	4.3		0.44	4.0
n-Propylbenzene	ND		0.54	4.0
n-Undecane	16	J	3.6	100
Pentane	ND		2.4	10
sec-Butylbenzene	ND		0.42	4.0
Styrene	ND		0.32	4.0
tert-Butyl alcohol	ND		2.4	100
tert-Butylbenzene	ND		0.40	4.0
Tetrachloroethene	ND		0.60	4.0
Tetrahydrofuran	ND		3.6	100
Toluene	3.8	J	0.50	4.0
trans-1,2-Dichloroethene	ND		0.54	4.0
trans-1,3-Dichloropropene	ND		0.52	4.0
Trichloroethene	ND		0.60	4.0
Trichlorofluoromethane	ND		0.90	4.0
Trichlorotrifluoroethane	ND		0.82	4.0
Vinyl chloride	ND		0.52	4.0
Xylene (total)	ND		0.82	14
Xylene, o-	ND		0.36	4.0

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		3.3	22
1,1,2,2-Tetrachloroethane	ND		4.7	27
1,1,2-Trichloroethane	ND		4.0	22
1,1-Dichloroethane	ND		2.3	16
1,1-Dichloroethene	ND		0.79	16
1,2,4-Trichlorobenzene	ND		5.0	74
1,2,4-Trimethylbenzene	ND		1.6	20
1,2-Dibromoethane	ND		2.8	31
1,2-Dichlorobenzene	ND		2.2	24

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: **SV-6**

Lab Sample ID: 200-29600-6
Client Matrix: Air

Date Sampled: 09/02/2015 1740
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15
Prep Method: Summa Canister
Dilution: 20
Analysis Date: 09/08/2015 1536
Prep Date: 09/08/2015 1536

Analysis Batch: 200-93675
Prep Batch: N/A

Instrument ID: CHX.i
Lab File ID: 15638_10.D
Initial Weight/Volume: 51 mL
Final Weight/Volume: 200 mL
Injection Volume: 200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,2-Dichloroethane	ND		4.2	16
1,2-Dichloroethene, Total	ND		4.2	32
1,2-Dichloropropane	ND		3.2	18
1,3,5-Trimethylbenzene	ND		1.9	20
1,3-Butadiene	ND		1.6	8.8
1,3-Dichlorobenzene	ND		2.4	24
1,4-Dichlorobenzene	ND		2.3	24
1,4-Dioxane	ND		12	360
2-Chlorotoluene	ND		3.2	21
3-Chloropropene	ND		10	31
4-Ethyltoluene	ND		2.0	20
4-Isopropyltoluene	ND	UJ	2.2	22
Acetone	240		33	240
Benzene	ND		1.9	13
Benzyl chloride	ND		1.9	21
Bromodichloromethane	4.3	J	3.9	27
Bromoethene(Vinyl Bromide)	ND		1.7	17
Bromoform	ND		5.2	41
Bromomethane	ND		3.4	16
Carbon disulfide	ND		1.9	31
Carbon tetrachloride	ND		1.4	25
Chlorobenzene	ND		1.7	18
Chloroethane	ND		3.2	26
Chloroform	46		3.7	20
Chloromethane	ND		2.5	21
cis-1,2-Dichloroethene	ND		2.4	16
cis-1,3-Dichloropropene	ND		2.6	18
Cyclohexane	ND		0.69	14
Dibromochloromethane	ND		3.4	34
Dichlorodifluoromethane	310		5.5	49
Dichlorotetrafluoroethane	ND		7.3	28
Ethylbenzene	ND		1.7	17
Freon 22	ND		5.7	35
Hexachlorobutadiene	ND		7.7	43
Isooctane	ND		2.1	19
Isopentane	ND		3.2	12
Isopropyl alcohol	ND		7.4	250
Isopropylbenzene	ND		1.9	20
m,p-Xylene	ND		2.2	43
Methyl Butyl Ketone (2-Hexanone)	ND		14	41
Methyl Ethyl Ketone	6.8	J	5.4	29
methyl isobutyl ketone	ND		15	41
Methyl methacrylate	ND		7.9	41
Methyl tert-butyl ether	ND		1.6	14
Methylene Chloride	~~9.6~~ 35	~~J B~~ UB	8.3	35
Naphthalene	ND		3.1	52

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: **SV-6**

Lab Sample ID: 200-29600-6
Client Matrix: Air

Date Sampled: 09/02/2015 1740
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_10.D
Dilution:	20			Initial Weight/Volume:	51 mL
Analysis Date:	09/08/2015 1536			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1536			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
n-Butane	ND		8.6	24
n-Butylbenzene	ND		3.1	22
n-Decane	44	J	15	58
n-Dodecane	63	J	35	700
n-Heptane	ND		3.0	16
n-Hexane	ND		2.0	14
n-Octane	9.8	J	2.9	19
Nonane	22		2.3	21
n-Propylbenzene	ND		2.7	20
n-Undecane	100	J	23	640
Pentane	ND		7.1	30
sec-Butylbenzene	ND		2.3	22
Styrene	ND		1.4	17
tert-Butyl alcohol	ND		7.3	300
tert-Butylbenzene	ND		2.2	22
Tetrachloroethene	ND		4.1	27
Tetrahydrofuran	ND		11	290
Toluene	14	J	1.9	15
trans-1,2-Dichloroethene	ND		2.1	16
trans-1,3-Dichloropropene	ND		2.4	18
Trichloroethene	ND		3.2	21
Trichlorofluoromethane	ND		5.1	22
Trichlorotrifluoroethane	ND		6.3	31
Vinyl chloride	ND		1.3	10
Xylene (total)	ND		3.6	61
Xylene, o-	ND		1.6	17

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: **SV-6**

Lab Sample ID: 200-29600-6
Client Matrix: Air

Date Sampled: 09/02/2015 1740
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_10.D
Dilution:	20			Initial Weight/Volume:	51 mL
Analysis Date:	09/08/2015 1536			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1536			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 10**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
20185-16-4	3,3-Dimethyl-6-methylenecyclohexene	18.51	180	T J N
508-32-7	Tricyclo[2.2.1.0(2,6)]heptane, 1,7,7-tri	20.02	53	T J N
7785-26-4	1S-.alpha.-Pinene	20.29	7400	T J N
7785-70-8	1R-.alpha.-Pinene	20.35	3900	T J N
	Unknown	20.59	81	T J N
79-92-5	Camphene	20.78	630	T J N
	Unknown	21.35	330	T J N
127-91-3	.beta.-Pinene	21.40	780	T J N
138-86-3	Limonene	22.23	830	T J N
555-10-2	.beta.-Phellandrene	22.38	130	T J N

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-7

Lab Sample ID: 200-29600-7
Client Matrix: Air

Date Sampled: 09/02/2015 1800
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_11.D
Dilution:	19.7			Initial Weight/Volume:	50 mL
Analysis Date:	09/08/2015 1625			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1625			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.59	3.9
1,1,2,2-Tetrachloroethane	ND		0.67	3.9
1,1,2-Trichloroethane	ND		0.73	3.9
1,1-Dichloroethane	ND		0.55	3.9
1,1-Dichloroethene	ND		0.20	3.9
1,2,4-Trichlorobenzene	ND		0.67	9.9
1,2,4-Trimethylbenzene	ND		0.32	3.9
1,2-Dibromoethane	ND		0.35	3.9
1,2-Dichlorobenzene	ND		0.35	3.9
1,2-Dichloroethane	ND		1.0	3.9
1,2-Dichloroethene, Total	ND		1.0	7.9
1,2-Dichloropropane	ND		0.69	3.9
1,3,5-Trimethylbenzene	ND		0.37	3.9
1,3-Butadiene	ND		0.71	3.9
1,3-Dichlorobenzene	ND		0.39	3.9
1,4-Dichlorobenzene	ND		0.37	3.9
1,4-Dioxane	ND		3.2	99
2-Chlorotoluene	ND		0.61	3.9
3-Chloropropene	ND		3.2	9.9
4-Ethyltoluene	ND		0.39	3.9
4-Isopropyltoluene	ND		0.39	3.9
Acetone	18	J	14	99
Benzene	ND		0.57	3.9
Benzyl chloride	ND		0.35	3.9
Bromodichloromethane	ND		0.57	3.9
Bromoethene(Vinyl Bromide)	ND		0.39	3.9
Bromoform	ND		0.49	3.9
Bromomethane	ND		0.87	3.9
Carbon disulfide	ND		0.59	9.9
Carbon tetrachloride	ND		0.22	3.9
Chlorobenzene	ND		0.35	3.9
Chloroethane	ND		1.2	9.9
Chloroform	9.1		0.75	3.9
Chloromethane	ND		1.2	9.9
cis-1,2-Dichloroethene	ND		0.59	3.9
cis-1,3-Dichloropropene	ND		0.57	3.9
Cyclohexane	ND		0.20	3.9
Dibromochloromethane	ND		0.39	3.9
Dichlorodifluoromethane	ND		1.1	9.9
Dichlorotetrafluoroethane	ND		1.0	3.9
Ethylbenzene	ND		0.39	3.9
Freon 22	ND		1.6	9.9
Hexachlorobutadiene	ND		0.71	3.9
Isooctane	ND		0.45	3.9
Isopentane	ND		1.1	3.9
Isopropyl alcohol	ND		3.0	99

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: **SV-7**

Lab Sample ID: 200-29600-7
Client Matrix: Air

Date Sampled: 09/02/2015 1800
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method: TO-15
Prep Method: Summa Canister
Dilution: 19.7
Analysis Date: 09/08/2015 1625
Prep Date: 09/08/2015 1625

Analysis Batch: 200-93675
Prep Batch: N/A

Instrument ID: CHX.i
Lab File ID: 15638_11.D
Initial Weight/Volume: 50 mL
Final Weight/Volume: 200 mL
Injection Volume: 200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Isopropylbenzene	ND		0.37	3.9
m,p-Xylene	ND		0.49	9.9
Methyl Butyl Ketone (2-Hexanone)	ND		3.3	9.9
Methyl Ethyl Ketone	ND		1.8	9.9
methyl isobutyl ketone	ND		3.5	9.9
Methyl methacrylate	ND		1.9	9.9
Methyl tert-butyl ether	ND		0.43	3.9
Methylene Chloride	~~2.5~~ 9.9	~~J B~~ UB	2.4	9.9
Naphthalene	ND		0.59	9.9
n-Butane	ND		3.5	9.9
n-Butylbenzene	ND		0.55	3.9
n-Decane	ND		2.6	9.9
n-Dodecane	ND		4.9	99
n-Heptane	ND		0.73	3.9
n-Hexane	0.72	J	0.55	3.9
n-Octane	7.0		0.61	3.9
Nonane	43		0.43	3.9
n-Propylbenzene	ND		0.53	3.9
n-Undecane	ND		3.5	99
Pentane	ND		2.4	9.9
sec-Butylbenzene	ND		0.41	3.9
Styrene	ND		0.32	3.9
tert-Butyl alcohol	ND		2.4	99
tert-Butylbenzene	ND		0.39	3.9
Tetrachloroethene	ND		0.59	3.9
Tetrahydrofuran	ND		3.5	99
Toluene	3.0	J	0.49	3.9
trans-1,2-Dichloroethene	ND		0.53	3.9
trans-1,3-Dichloropropene	ND		0.51	3.9
Trichloroethene	ND		0.59	3.9
Trichlorofluoromethane	ND		0.89	3.9
Trichlorotrifluoroethane	ND		0.81	3.9
Vinyl chloride	ND		0.51	3.9
Xylene (total)	ND		0.81	14
Xylene, o-	ND		0.35	3.9

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		3.2	21
1,1,2,2-Tetrachloroethane	ND		4.6	27
1,1,2-Trichloroethane	ND		4.0	21
1,1-Dichloroethane	ND		2.2	16
1,1-Dichloroethene	ND		0.78	16
1,2,4-Trichlorobenzene	ND		5.0	73
1,2,4-Trimethylbenzene	ND		1.5	19
1,2-Dibromoethane	ND		2.7	30
1,2-Dichlorobenzene	ND		2.1	24

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-7

Lab Sample ID: 200-29600-7
Client Matrix: Air

Date Sampled: 09/02/2015 1800
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_11.D
Dilution:	19.7			Initial Weight/Volume:	50 mL
Analysis Date:	09/08/2015 1625			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1625			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,2-Dichloroethane	ND		4.1	16
1,2-Dichloroethene, Total	ND		4.1	31
1,2-Dichloropropane	ND		3.2	18
1,3,5-Trimethylbenzene	ND		1.8	19
1,3-Butadiene	ND		1.6	8.7
1,3-Dichlorobenzene	ND		2.4	24
1,4-Dichlorobenzene	ND		2.3	24
1,4-Dioxane	ND		11	350
2-Chlorotoluene	ND		3.2	20
3-Chloropropene	ND		9.9	31
4-Ethyltoluene	ND		1.9	19
4-Isopropyltoluene	ND		2.2	22
Acetone	43	J	32	230
Benzene	ND		1.8	13
Benzyl chloride	ND		1.8	20
Bromodichloromethane	ND		3.8	26
Bromoethene(Vinyl Bromide)	ND		1.7	17
Bromoform	ND	~~+~~	5.1	41
Bromomethane	ND		3.4	15
Carbon disulfide	ND		1.8	31
Carbon tetrachloride	ND		1.4	25
Chlorobenzene	ND		1.6	18
Chloroethane	ND		3.2	26
Chloroform	44		3.7	19
Chloromethane	ND		2.4	20
cis-1,2-Dichloroethene	ND		2.3	16
cis-1,3-Dichloropropene	ND		2.6	18
Cyclohexane	ND		0.68	14
Dibromochloromethane	ND		3.4	34
Dichlorodifluoromethane	ND		5.5	49
Dichlorotetrafluoroethane	ND		7.2	28
Ethylbenzene	ND		1.7	17
Freon 22	ND		5.6	35
Hexachlorobutadiene	ND		7.6	42
Isooctane	ND		2.1	18
Isopentane	ND		3.2	12
Isopropyl alcohol	ND		7.3	240
Isopropylbenzene	ND		1.8	19
m,p-Xylene	ND		2.1	43
Methyl Butyl Ketone (2-Hexanone)	ND		14	40
Methyl Ethyl Ketone	ND		5.3	29
methyl isobutyl ketone	ND		15	40
Methyl methacrylate	ND		7.7	40
Methyl tert-butyl ether	ND		1.6	14
Methylene Chloride	~~8.7~~ 34	~~J B~~ U B	8.2	34
Naphthalene	ND		3.1	52

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-7

Lab Sample ID: 200-29600-7
Client Matrix: Air

Date Sampled: 09/02/2015 1800
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_11.D
Dilution:	19.7			Initial Weight/Volume:	50 mL
Analysis Date:	09/08/2015 1625			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1625			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
n-Butane	ND		8.4	23
n-Butylbenzene	ND		3.0	22
n-Decane	ND		15	57
n-Dodecane	ND		34	690
n-Heptane	ND		3.0	16
n-Hexane	2.5	J	1.9	14
n-Octane	32		2.9	18
Nonane	230		2.3	21
n-Propylbenzene	ND		2.6	19
n-Undecane	ND		23	630
Pentane	ND		7.0	29
sec-Butylbenzene	ND		2.3	22
Styrene	ND		1.3	17
tert-Butyl alcohol	ND		7.2	300
tert-Butylbenzene	ND		2.2	22
Tetrachloroethene	ND		4.0	27
Tetrahydrofuran	ND		10	290
Toluene	11	J	1.9	15
trans-1,2-Dichloroethene	ND		2.1	16
trans-1,3-Dichloropropene	ND		2.3	18
Trichloroethene	ND		3.2	21
Trichlorofluoromethane	ND		5.0	22
Trichlorotrifluoroethane	ND		6.2	30
Vinyl chloride	ND		1.3	10
Xylene (total)	ND		3.5	60
Xylene, o-	ND		1.5	17

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: SV-7

Lab Sample ID: 200-29600-7
Client Matrix: Air

Date Sampled: 09/02/2015 1800
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93675	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15638_11.D
Dilution:	19.7			Initial Weight/Volume:	50 mL
Analysis Date:	09/08/2015 1625			Final Weight/Volume:	200 mL
Prep Date:	09/08/2015 1625			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 10**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
	Unknown	17.70	95	T J N
	Unknown	18.51	960	T J
	Unknown	19.49	90	T J
508-32-7	Tricyclo[2.2.1.0(2,6)]heptane, 1,7,7-tri	20.03	160	T J N
7785-26-4	1S-.alpha.-Pinene	20.29	9500	T J N
7785-26-4	1S-.alpha.-Pinene	20.38	3600	T J N
	Unknown	20.60	210	T J N
79-92-5	Camphene	20.79	840	T J N
	Unknown	21.35	310	T J N
127-91-3	.beta.-Pinene	21.40	490	T J N

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: **DUP-090215**

Lab Sample ID: 200-29600-8
Client Matrix: Air

Date Sampled: 09/02/2015 0000
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93750	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15667_25.D
Dilution:	20.1			Initial Weight/Volume:	57 mL
Analysis Date:	09/10/2015 0644			Final Weight/Volume:	200 mL
Prep Date:	09/10/2015 0644			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.60	4.0
1,1,2,2-Tetrachloroethane	ND		0.68	4.0
1,1,2-Trichloroethane	ND		0.74	4.0
1,1-Dichloroethane	ND		0.56	4.0
1,1-Dichloroethene	ND		0.20	4.0
1,2,4-Trichlorobenzene	ND		0.68	10
1,2,4-Trimethylbenzene	ND		0.32	4.0
1,2-Dibromoethane	ND		0.36	4.0
1,2-Dichlorobenzene	ND		0.36	4.0
1,2-Dichloroethane	ND		1.0	4.0
1,2-Dichloroethene, Total	ND		1.1	8.0
1,2-Dichloropropane	ND		0.70	4.0
1,3,5-Trimethylbenzene	ND		0.38	4.0
1,3-Butadiene	ND		0.72	4.0
1,3-Dichlorobenzene	ND		0.40	4.0
1,4-Dichlorobenzene	ND		0.38	4.0
1,4-Dioxane	ND		3.2	100
2-Chlorotoluene	ND		0.62	4.0
3-Chloropropene	ND		3.2	10
4-Ethyltoluene	ND		0.40	4.0
4-Isopropyltoluene	36	J	0.40	4.0
Acetone	86	J	14	100
Benzene	ND		0.58	4.0
Benzyl chloride	ND		0.36	4.0
Bromodichloromethane	ND		0.58	4.0
Bromoethene(Vinyl Bromide)	ND		0.40	4.0
Bromoform	ND		0.50	4.0
Bromomethane	ND		0.88	4.0
Carbon disulfide	1.3	J	0.60	10
Carbon tetrachloride	ND		0.22	4.0
Chlorobenzene	ND		0.36	4.0
Chloroethane	ND		1.2	10
Chloroform	9.1		0.76	4.0
Chloromethane	ND		1.2	10
cis-1,2-Dichloroethene	ND		0.60	4.0
cis-1,3-Dichloropropene	ND		0.58	4.0
Cyclohexane	ND		0.20	4.0
Dibromochloromethane	ND		0.40	4.0
Dichlorodifluoromethane	59		1.1	10
Dichlorotetrafluoroethane	ND		1.0	4.0
Ethylbenzene	ND		0.40	4.0
Freon 22	ND		1.6	10
Hexachlorobutadiene	ND		0.72	4.0
Isooctane	ND		0.46	4.0
Isopentane	ND		1.1	4.0
Isopropyl alcohol	ND		3.0	100

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: DUP-090215

Lab Sample ID: 200-29600-8
Client Matrix: Air

Date Sampled: 09/02/2015 0000
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93750	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15667_25.D
Dilution:	20.1			Initial Weight/Volume:	57 mL
Analysis Date:	09/10/2015 0644			Final Weight/Volume:	200 mL
Prep Date:	09/10/2015 0644			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	MDL	RL
Isopropylbenzene	ND		0.38	4.0
m,p-Xylene	ND		0.50	10
Methyl Butyl Ketone (2-Hexanone)	ND		3.4	10
Methyl Ethyl Ketone	2.8	J	1.8	10
methyl isobutyl ketone	ND		3.6	10
Methyl methacrylate	ND		1.9	10
Methyl tert-butyl ether	ND		0.44	4.0
Methylene Chloride	2.8	J	2.4	10
Naphthalene	ND		0.60	10
n-Butane	ND		3.6	10
n-Butylbenzene	ND		0.56	4.0
n-Decane	6.6	J	2.6	10
n-Dodecane	ND		5.0	100
n-Heptane	ND		0.74	4.0
n-Hexane	ND		0.56	4.0
n-Octane	2.0	J	0.62	4.0
Nonane	3.5	J	0.44	4.0
n-Propylbenzene	ND		0.54	4.0
n-Undecane	12	J	3.6	100
Pentane	ND		2.4	10
sec-Butylbenzene	ND		0.42	4.0
Styrene	ND		0.32	4.0
tert-Butyl alcohol	ND		2.4	100
tert-Butylbenzene	ND		0.40	4.0
Tetrachloroethene	ND		0.60	4.0
Tetrahydrofuran	ND		3.6	100
Toluene	3.8	J	0.50	4.0
trans-1,2-Dichloroethene	ND		0.54	4.0
trans-1,3-Dichloropropene	ND		0.52	4.0
Trichloroethene	ND		0.60	4.0
Trichlorofluoromethane	ND		0.90	4.0
Trichlorotrifluoroethane	ND		0.82	4.0
Vinyl chloride	ND		0.52	4.0
Xylene (total)	ND		0.82	14
Xylene, o-	ND		0.36	4.0

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		3.3	22
1,1,2,2-Tetrachloroethane	ND		4.7	28
1,1,2-Trichloroethane	ND		4.1	22
1,1-Dichloroethane	ND		2.3	16
1,1-Dichloroethene	ND		0.80	16
1,2,4-Trichlorobenzene	ND		5.1	75
1,2,4-Trimethylbenzene	ND		1.6	20
1,2-Dibromoethane	ND		2.8	31
1,2-Dichlorobenzene	ND		2.2	24

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: DUP-090215

Lab Sample ID: 200-29600-8
Client Matrix: Air

Date Sampled: 09/02/2015 0000
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93750	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15667_25.D
Dilution:	20.1			Initial Weight/Volume:	57 mL
Analysis Date:	09/10/2015 0644			Final Weight/Volume:	200 mL
Prep Date:	09/10/2015 0644			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
1,2-Dichloroethane	ND		4.2	16
1,2-Dichloroethene, Total	ND		4.2	32
1,2-Dichloropropane	ND		3.3	19
1,3,5-Trimethylbenzene	ND		1.9	20
1,3-Butadiene	ND		1.6	8.9
1,3-Dichlorobenzene	ND		2.4	24
1,4-Dichlorobenzene	ND		2.3	24
1,4-Dioxane	ND		12	360
2-Chlorotoluene	ND		3.2	21
3-Chloropropene	ND		10	31
4-Ethyltoluene	ND		2.0	20
4-Isopropyltoluene	200	J	2.2	22
Acetone	200	J	33	240
Benzene	ND		1.9	13
Benzyl chloride	ND		1.9	21
Bromodichloromethane	ND		3.9	27
Bromoethene(Vinyl Bromide)	ND		1.8	18
Bromoform	ND		5.2	42
Bromomethane	ND		3.4	16
Carbon disulfide	4.0	J	1.9	31
Carbon tetrachloride	ND		1.4	25
Chlorobenzene	ND		1.7	19
Chloroethane	ND		3.2	27
Chloroform	45		3.7	20
Chloromethane	ND		2.5	21
cis-1,2-Dichloroethene	ND		2.4	16
cis-1,3-Dichloropropene	ND		2.6	18
Cyclohexane	ND		0.69	14
Dibromochloromethane	ND		3.4	34
Dichlorodifluoromethane	290		5.6	50
Dichlorotetrafluoroethane	ND		7.3	28
Ethylbenzene	ND		1.7	17
Freon 22	ND		5.7	36
Hexachlorobutadiene	ND		7.7	43
Isooctane	ND		2.2	19
Isopentane	ND		3.3	12
Isopropyl alcohol	ND		7.4	250
Isopropylbenzene	ND		1.9	20
m,p-Xylene	ND		2.2	44
Methyl Butyl Ketone (2-Hexanone)	ND		14	41
Methyl Ethyl Ketone	8.3	J	5.5	30
methyl isobutyl ketone	ND		15	41
Methyl methacrylate	ND		7.9	41
Methyl tert-butyl ether	ND		1.6	14
Methylene Chloride	9.6	J	8.4	35
Naphthalene	ND		3.2	53

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: **DUP-090215**

Lab Sample ID: 200-29600-8
Client Matrix: Air

Date Sampled: 09/02/2015 0000
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93750	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15667_25.D
Dilution:	20.1			Initial Weight/Volume:	57 mL
Analysis Date:	09/10/2015 0644			Final Weight/Volume:	200 mL
Prep Date:	09/10/2015 0644			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	MDL	RL
n-Butane	ND		8.6	24
n-Butylbenzene	ND		3.1	22
n-Decane	38	J	15	58
n-Dodecane	ND		35	700
n-Heptane	ND		3.0	16
n-Hexane	ND		2.0	14
n-Octane	9.4	J	2.9	19
Nonane	19	J	2.3	21
n-Propylbenzene	ND		2.7	20
n-Undecane	78	J	23	640
Pentane	ND		7.1	30
sec-Butylbenzene	ND		2.3	22
Styrene	ND		1.4	17
tert-Butyl alcohol	ND		7.3	300
tert-Butylbenzene	ND		2.2	22
Tetrachloroethene	ND		4.1	27
Tetrahydrofuran	ND		11	300
Toluene	14	J	1.9	15
trans-1,2-Dichloroethene	ND		2.2	16
trans-1,3-Dichloropropene	ND		2.4	18
Trichloroethene	ND		3.2	22
Trichlorofluoromethane	ND		5.1	23
Trichlorotrifluoroethane	ND		6.3	31
Vinyl chloride	ND		1.3	10
Xylene (total)	ND		3.6	61
Xylene, o-	ND		1.6	17

Client: ARCADIS U.S. Inc

Job Number: 200-29600-1

Client Sample ID: **DUP-090215**

Lab Sample ID: 200-29600-8
Client Matrix: Air

Date Sampled: 09/02/2015 0000
Date Received: 09/04/2015 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-93750	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	15667_25.D
Dilution:	20.1			Initial Weight/Volume:	57 mL
Analysis Date:	09/10/2015 0644			Final Weight/Volume:	200 mL
Prep Date:	09/10/2015 0644			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 10**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
20185-16-4	3,3-Dimethyl-6-methylenecyclohexene	18.51	170	T J N
498-15-7	Bicyclo[4.1.0]hept-3-ene, 3,7,7-trimethy	20.02	38	T J N
7785-70-8	1R-.alpha.-Pinene	20.29	6000	T J N
7785-26-4	1S-.alpha.-Pinene	20.34	3000	T J N
	Unknown	20.59	61	T J N
	Unknown	20.78	610	T J
	Unknown	21.34	220	T J
127-91-3	.beta.-Pinene	21.40	570	T J N
5989-27-5	D-Limonene	22.23	670	T J N
555-10-2	.beta.-Phellandrene	22.38	54	T J N

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

200-29600 COC

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Bruce Ahrens	**Samples Collected By:** NSB
Company: ARCADIS	Phone: 585-662-4034	1 of 2 COCs
Address: 295 Woodcliff Drive	Email: Bruce.Ahrens@ARCADIS.com	
City/State/Zip Fairport NY 14450		
Phone: 585-385-0090	Site Contact: Klaus Beyer	
FAX:	TA Contact: Melissa Deyo	
Project Name: Genesco Park St	**Analysis Turnaround Time**	
Site: Genesco Park St	Standard (Specify)	
PO #	Rush (Specify)	

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	MA-APH	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SV1 SV-1	9.2.15	0840	1440	-30.0	-6.0	2528	3317	X					X				X		
SV-2		0922	1500	-27.5	-6.5	4937	3641												
SV-3		0955	1530	-28.0	-6.0	5004	2632												
SV-4		1030	1630	-29.5	-6.5	3954	4829												
SV-5		1055	1640	-29.0	-6.5	4766	4076												
SV-6		1140	1740	-30.0	-9.0	~~4087~~ 4752	~~4087~~ 4084												

Temperature (Fahrenheit)	Interior	Ambient
Start		
Stop		

Pressure (inches of Hg)	Interior	Ambient
Start		
Stop		

Special Instructions/QC Requirements & Comments: Project specific compound list as per email from Bruce Ahrens dated 7/30/15 @ 1502

Samples Shipped by:	Date/Time: 9.3.15 0930	Samples Received by: 9/4/15 1030 TP
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Lab Use Only Shipper Name: Opened by: Condition:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Bruce Ahrens	**Samples Collected By:** NJO	2 of 2 COCs
Company: ARCADIS	Phone: 585-662-4034		
Address: 295 Woodcliff Dr. W	Email: Bruce.Ahrens@ARCADIS.com		
City/State/Zip Fairport NY 14450			
Phone: 585-385-0090	Site Contact: Kevin Barry		
FAX:	TA Contact: Melissa Reyo		
Project Name: Genesee Park St	**Analysis Turnaround Time**		
Site: Genesee Park St	(Standard (Specify)		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	MA-APH	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SV-7	9.2.15	1200	1900	-30.0	-6.0	3856	4455	X					X				X		
Dup-090215	9.2.15	—	—	-27.5	-9.0	4049	3539	↓					↓				↓		

Temperature (Fahrenheit)		
	Interior	Ambient
Start		
Stop		

Pressure (inches of Hg)		
	Interior	Ambient
Start		
Stop		

Special Instructions/QC Requirements & Comments: Project specific compound list as per email from Bruce Ahrens dated 7/30/15 @ 1502

Samples Shipped by:	Date/Time: 9.3.15 0930	Samples Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Lab Use Only Shipper Name: Opened by: Condition:

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Rochester Gas & Electric – Geneseo Park Street Site

Data Usability Summary Report

GENESEO, NEW YORK

Volatile, Semivolatile, Dissolved Gases, Metals and General Chemistry Analyses

SDGs #480-86431-1 and 480-86431-2

Analyses Performed By:
TestAmerica
Amherst, New York

Report #24498R
Review Level: Tier III
Project: B0013138.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) #480-86431-1 and 480-86431-2 for samples collected in association with the Rochester Gas & Electric Geneseo Park Street Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	DISS GAS	SVOC	TPH	MET	MISC
480-86431-1	MW-2	480-86431-1	Ground water	8/31/2015		X		X	X	X	X
	MW-3	480-86431-2	Ground water	8/31/2015		X	X	X	X	X	X
	MW-4	480-86431-3	Ground water	8/31/2015		X	X	X	X	X	X
	MW-1	480-86431-4	Ground water	8/31/2015		X		X		X	X
	DUP-083115	480-86431-5	Ground water	8/31/2015	MW-4	X		X	*	X	X
	TRIP BLANK	480-86431-6	Water	8/31/2015		X					
480-86431-2	MW-1	480-86431-4	Ground water	8/31/2015					X		

Notes:

1. MISC- Miscellaneous parameters: Total Cyanide, Nitrogen/Nitrate and/or Sulfide.

2. Matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location MW-2 for volatile, semi-volatile, metals and total cyanide; MS analysis was performed on sample location MW-4 for Sulfide; and, MS analysis was performed on sample location MW-3 for Nitrate.

3. Sample locations MW-3 and MW-4 were sent to TestAmerica Burlington, Vermont facility for RSK-175 (Dissolved Gas) analysis.

4. * The sample container for sample location DUP-083115 was not received by the laboratory; Arcadis was notified.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 8260C, 8270D, RSK-175 and 310.13 (petroleum products). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260C	Water	14 days from collection to analysis	Cool to <6°C; preserved to a pH of less than 2 s.u.

s.u. Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
MW-2 MW-4 DUP-083115 TRIP BLANK	CCV %D	Bromomethane	-21.8%
		Acetone	+22.6%
		2-Butanone	+20.9%
		2-Hexanone	+27.6%
MW-3 MW-1		Trichlorofluoromethane	+24.1%
		Acetone	+25.6%
		Carbon disulfide	+37.5%
		1,1,1-Trichloroethane	+26.1%
		Carbon tetrachloride	+21.5%
		Bromodichloromethane	+21.4%
		2-Hexanone	+21.3%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

Initial/Continuing	Criteria	Sample Result	Qualification
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
MW-2	1,1,1-Trichloroethane	>UL	AC
	1,2-Dibromoethane	>UL	AC
	1,2-Dichlorobenzene	AC	<LL but >10%
	1,2-Dichloropropane	>UL	AC
	1,3-Dichlorobenzene	AC	<LL but >10%
	1,4-Dichlorobenzene	AC	<LL but >10%
	2-Hexanone	>UL	AC
	Bromodichloromethane	>UL	AC

	Carbon disulfide	>UL	AC
	Isopropylbenzene	AC	<LL but >10%
	Toluene	AC	<LL but >10%

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
MW-2	All compounds, except Dichlorodifluoromethane and Trichlorofluoromethane

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent

sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/ Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-4/ DUP-083115	Methyl ethyl ketone (2-Butanone)	2.2 J	2.9 J	AC
	Acetone	7.4 J	11	39.1%
	Benzene	2.0	1.9	AC
	Chloroform	1.4	1.6	AC
	Cyclohexane	41	39	5.0%
	Ethylbenzene	5.9	5.9	0%
	Isopropylbenzene (Cumene)	1.1	1.1	AC
	Methylcyclohexane	32	31	3.1%
	Toluene	4.4	4.3	AC
	Xylenes, total	29	27	7.1%

AC Acceptable
NC Not compliant

The compound Acetone associated with sample locations MW-4 and DUP-083115 exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS)		X	X		
Matrix Spike Duplicate(MSD)		X	X		
MS/MSD Precision (RPD)		X	X		
Field/Lab Duplicate (RPD)		X	X		
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
MW-2 MW-3	Benzaldehyde Phenanthrene (method blank)	Detected sample results <RL and <BAL	"UB" at the RL
MW-4 MW-1 DUP-083115	Phenanthrene (method blank)		

RL Reporting limit

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
MW-2 MW-3 MW-4 MW-1 DUP-083115	ICV %RSD	Benzaldehyde	19.2%
		2-Nitrophenol	17.1%
		Hexachlorocyclopentadiene	19.1%
		2,4-Dinitrophenol	55.0%
		2,4-Dinitrotoluene	19.4%
		Atrazine	16.7%
		Pyrene	16.4%
	CCV %D	Benzaldehyde	-28.1%
		Pentachlorophenol	-39.1%
		Fluoranthene	+21.1%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	

Initial/Continuing	Criteria	Sample Result	Qualification
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
MW-2	2,4,5-Trichlorophenol	AC	<LL but >10%
	2,4,6-Trichlorophenol	AC	<LL but >10%
	2,4-Dichlorophenol	AC	<LL but >10%
	2-Nitroaniline	AC	<LL but >10%
	3-Nitroaniline	AC	<LL but >10%
	4-Bromophenyl phenyl ether	AC	<LL but >10%
	4-Chloroaniline	AC	<LL but >10%
	Benzo(a)pyrene	AC	<LL but >10%
	Benzo(g,h,i)perylene	AC	<LL but >10%
	Benzo(k)fluoranthene	AC	<LL but >10%
	Bis(2-ethylhexyl)phthalate	AC	<LL but >10%
	Caprolactam	<LL but >10%	<10%
	Chrysene	AC	<LL but >10%
	Di n-octyl phthalate	AC	<LL but >10%
	Dibenz(a,h)anthracene	AC	<LL but >10%
	Indeno(1,2,3-cd)pyrene	<LL but >10%	<LL but >10%

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
MW-2	All compounds, except 4-Nitrophenol and Pentachlorophenol

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-4/ DUP-083115	2-Methylnaphthalene	0.79 J	0.69 J	AC
	Acetophenone	0.57 J	5.1 U	
	Phenanthrene	0.66 J	0.55 J	

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X	X		
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

DISSOLVED GASES ANALYSES

1. Holding Times

The EPA-recommended holding time for the specified method is presented in the following table.

Method	Matrix	Holding Time	Preservation
RSK-175	Water	14 days from collection to analysis	Cool to <6°C; preserved to a pH of less than 2 s.u.

All samples were analyzed within the specified holding time criteria.

The analyses that exceeded the temperature criteria are presented in the following table.

Sample Locations	Temperature	Criteria
MW-3 MW-4	24.8°C	<6°C

Sample results associated with sample locations analyzed by analytical method RSK-175 were qualified, as specified in the table below.

Criteria	Qualification	
	Sample Result	Qualification
Temperature > two times the criteria	Non-detect	R
	Detect	J

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks, trip blanks, and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Laboratory method blanks measure laboratory contamination. Trip blanks also measure contamination during sample shipment and storage. Equipment rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of

acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.995.

3.2 Continuing Calibration

All target analytes associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All calibration criteria were within the control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample associated with this SDG.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Sample Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not performed on a sample associated with this SDG for RSK-175 analysis.

7. Analyte Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

Sample results associated with compounds exhibited concentrations within control limits.

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR DISSOLVED GASES

Dissolved Gases: RSK-175	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC)					
Tier II Validation					
Holding times (Temperature)		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment/Field blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Laboratory Duplicate Sample RPD					X
Field Duplicate Sample RPD					X
Dilution Factor		X		X	
Tier III Validation					
Initial calibration %RSDs/correlation coefficients		X		X	
Continuing calibration %Ds		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample analytes within the established RT windows		X		X	
C. Identification/Confirmation		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted for sample dilutions		X		X	

RPD Relative percent difference
%RSD Relative standard deviation
%D Percent difference

PETROLEUM PRODUCT ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Petroleum products By NYSDOH 310.13	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

The analyses that exceeded the holding are presented in the following table.

Sample Locations	Holding Time	Criteria
MW-1	Extraction Completed in 16 days	7 Days

Sample results associated with sample locations analyzed by analytical method SW-846 310.13 were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ
Analysis completed greater than two times holding time	J	R

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% or a correlation coefficient of greater than 0.99 is allowed.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All calibration criteria were within the control limits.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on sample location associated with these SDGs.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

7. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

The field duplicate sample was not submitted for analysis, as indicated on the chain-of-custody.

8. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified compounds met the specified criteria.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PETROLEUM PRODUCTS

TPH; SW-846 310.13	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010C, 353.2 (Nitrate), 9012B (Total Cyanide) and Standard Method (SM) 4500 (Sulfide). Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

    U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

    B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

    E The reported value is estimated due to the presence of interference.

    N Spiked sample recovery is not within control limits.

    * Duplicate analysis is not within control limits.

- Validation Qualifiers

    J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

    UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

    UB Analyte considered non-detect at the listed value due to associated blank contamination.

    R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Preserve to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within control limits.

The correct number and type of standards were analyzed. All initial calibration verification standard recoveries were within control limits.

All initial and continuing calibration verification standard recoveries were within the control limit.

3.2 Low Level Continuing Calibration Standard

The low level continuing calibration check standard (ICVL/CCVL) serves to verify the linearity of calibration of the analysis at the RL.

The ICVL/CCVL standard recoveries were within the control limits of 70 to 130%.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS analysis performed on sample location MW-2 exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices.

MS/MSD analysis was performed in addition to the laboratory duplicate analysis. The laboratory duplicate and MS/MSD recoveries exhibited acceptable RPD.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-4/ DUP-083115	Aluminum	0.068 J	0.076 J	AC
	Arsenic	0.0056 J	0.006 J	AC
	Barium	0.92	0.91	1.0%
	Calcium	124	123	0.8%
	Iron	37.7	37.5	0.5%
	Magnesium	85	83.6	1.6%

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Manganese	0.23	0.22	4.4%
	Nickel	0.0023 J	0.0025 J	AC
	Potassium	10.4	10.2	1.9%
	Sodium	419	416	0.7%
	Zinc	0.0035 J	0.0033 J	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution performed on sample location MW-2 exhibited %D within the control limit.

8. General Assessment – Total vs. Dissolved

The calculated %D between the total and the dissolved sample results were within the control limit

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS; SW-846 6010C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X		X	
B. Method Blanks		X	X		
C. Equipment/Field Blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Lab Duplicate (RPD)		X		X	
Field Duplicate (RPD)		X		X	
ICP Serial Dilution		X		X	
Total vs Dissolved		X		X	
Reporting Limit Verification		X		X	
Raw Data		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CCVL Standard		X		X	
ICP Interference Check		X		X	
Transcription/calculations acceptable		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Nitrite-N by EPA 353.2	Water	48 hours from collection to analysis	Cool to <6 °C.
Total Cyanide by SW-846 9012B	Water	14 days from collection to analysis	Cool to <6°C; preserved to a pH of greater than 12.
Sulfide by SM 4500	Water	7 days from collection to analysis	Zinc acetate; preserved to a pH of greater than 9

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

The MS/MSD analysis exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

MS/MSD analysis was performed in replacement of the laboratory duplicate analysis (for Cyanide). The MS/MSD recoveries exhibited acceptable RPD.

The laboratory duplicate exhibited a recovery within the control limit (for Sulfide)

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-4/ DUP-083115	Cyanide	0.01 U	0.01 U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit recoveries between the control limits of 80% and 120%.

All analytes associated with the LCS analysis exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: SW-846 353.2, 9012B, SM 4500	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]						Noncompliance
					VOC	SVOC	DISS GAS	TPH	MET	MISC	
480-86431-1	8/31/2015	SW-846	MW-2	Ground water	No	No	--	Yes	Yes	Yes	VOC-MS/MSD %R, RPD, Continuing calibration %D SVOC-Method blank, MS/MSD %R, RPD, Initial and continuing calibrations
	8/31/2015	SW-846	MW-3	Ground water	Yes	No	No	Yes	Yes	Yes	SVOC-Method blank, Initial and continuing calibrations Diss Gas-Temperature
	8/31/2015	SW-846	MW-4	Ground water	No	No	No	Yes	Yes	Yes	VOC- Continuing calibration %D, Field Duplicate RPD SVOC-Method blank, Initial and continuing calibrations Diss Gas-Temperature
	8/31/2015	SW-846	MW-1	Ground water	Yes	No	--	--	Yes	Yes	SVOC-Method blank, Initial and continuing calibrations
	8/31/2015	SW-846	DUP-083115	Ground water	No	No	--	--	Yes	Yes	VOC-Continuing calibration %D, Field Duplicate RPD SVOC-Method blank, Initial and continuing calibrations
	8/31/2015	SW-846	TRIP BLANK	Water	No	--	--	--	--	--	VOC-Continuing calibration %D
480-86431-2	8/31/2015	SW-846	MW-1	Ground water	--	--	--	No	--	--	TPH-Hold time

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: 

DATE: October 23, 2015

PEER REVIEW: Joseph C. Houser

DATE: October 23, 2015

CHAIN OF CUSTODY/LABORATORY DATA QUALIFIERS/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

480-86431 Chain of Custody

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
ARCADIS/RGE	Bruce Ahrens	8/31/15	296737
Address 295 Woodcliff Drive	**Telephone Number (Area Code)/Fax Number** 585-385-0090	**Lab Number**	**Page** 1 of 1
City Fairport	**State** NY	**Zip Code** 14450	
Site Contact Kara Bayuk	**Lab Contact** Melissa Deyo		
Project Name and Location (State) Genesee Park Street	**Carrier/Waybill Number**		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: TCL VOC/TCL SVOC	Total Mn/Fe	Total cyanide	310.13	Carbon Dioxide	Methane	Sulfide	Nitrate/Nitrite	Nitrogen	Dissolved Fe, Mn	Special Instructions/ Conditions of Receipt
MW-2	8.31.15	1030		X			6		3	9	3		X	X	X	X							MS/MSD
MW-3	↓	1105		↓			10		1	6	1	1	X	X	X	X	X	X	X	X	X	X	
MW-4		1240					9		1	6	1	1	X	X	X	X	X	X	X	X	X	X	only 2 vials for CO_2
MW-1	↓	1320		↓			[illegible]		1	3	1		X	X	X	X							4 improserved
DUP-083115	8.31.15	—		X			[illegible]		1	3	1		X	X	X	X							2 improserved
TRIP BLANK	—	—		X						1			X										VOC only

Page 1440 of 1444

Possible Hazard Identification
☐ Non-Hazard ☒ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal @ Per contract
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Standard

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Kara Bayuk	8.31.15	1440	1. Received By: C Wallace	9/1/15	10:30
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

09/14/2015

Comments

#1 3.1, 3.4

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

480-86431 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Deyo, Melissa L	COC No: 480-25594.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: melissa.deyo@testamericainc.com	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.			Job #: 480-86431-1
Address: 30 Community Drive, Suite 11,	Due Date Requested: 9/14/2015		
City: South Burlington	TAT Requested (days):		
State, Zip: VT, 05403			
Phone: 802-660-1990(Tel) 802-660-1919(Fax)	PO #:		
Email:	WO #:		
Project Name: RG&E - Geneseo Park Street Project	Project #: 48012426		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175_CO2/ Carbon Dioxide	Total Number of containers	Special Instructions/Note:
			Preservation Code						
MW-3 (480-86431-2)	8/31/15	11:05 Eastern		Water			X	2	
MW-4 (480-86431-3)	8/31/15	12:40 Eastern		Water			X	2	

Possible Hazard Identification

Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:		Method of Shipment:	
Relinquished by: Corin Wallace	Date/Time: 9/1/15 1700	Company TAB	Received by: TABV	Date/Time: 9/3/15 1030	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

DATA REPORTING QUALIFIERS

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Lab Section	Qualifier	Description
GC/MS VOA		
	F1	MS and/or MSD Recovery is outside acceptance limits.
	F2	MS/MSD RPD exceeds control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
GC/MS Semi VOA		
	B	Compound was found in the blank and sample.
	F1	MS and/or MSD Recovery is outside acceptance limits.
	F2	MS/MSD RPD exceeds control limits
	E	Result exceeded calibration range.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate is outside control limits
Metals		
	B	Compound was found in the blank and sample.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	W	PS: Post-digestion spike was outside control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

DATA REPORTING QUALIFIERS

Client: ARCADIS U.S. Inc

Job Number: 480-86431-2

Lab Section	Qualifier	Description
GC Semi VOA		
	H	Sample was prepped or analyzed beyond the specified holding time

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: MW-2

Lab Sample ID: 480-86431-1
Client Matrix: Water

Date Sampled: 08/31/2015 1030
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 09/09/2015 1504
Prep Date: 09/09/2015 1504

Analysis Batch: 480-262527
Prep Batch: N/A

Instrument ID: HP5973S
Lab File ID: S2289.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND J	F1 F2	0.82	1.0
1,1,2,2-Tetrachloroethane	ND	F2	0.21	1.0
1,1,2-Trichloroethane	ND	F2	0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	F2	0.31	1.0
1,1-Dichloroethane	ND	F2	0.38	1.0
1,1-Dichloroethene	ND	F2	0.29	1.0
1,2,4-Trichlorobenzene	ND	F2	0.41	1.0
1,2-Dibromo-3-Chloropropane	ND	F2	0.39	1.0
1,2-Dibromoethane	ND	F1 F2	0.73	1.0
1,2-Dichlorobenzene	ND	F1 F2	0.79	1.0
1,2-Dichloroethane	ND	F2	0.21	1.0
1,2-Dichloropropane	ND	F1 F2	0.72	1.0
1,3-Dichlorobenzene	ND	F1 F2	0.78	1.0
1,4-Dichlorobenzene	ND	F1 F2	0.84	1.0
2-Hexanone	ND	F1 F2	1.2	5.0
2-Butanone (MEK)	ND	F2	1.3	10
4-Methyl-2-pentanone (MIBK)	ND	F2	2.1	5.0
Acetone	ND	F2	3.0	10
Benzene	ND	F2	0.41	1.0
Bromodichloromethane	ND	F1 F2	0.39	1.0
Bromoform	ND	F2	0.26	1.0
Bromomethane	ND	F2	0.69	1.0
Carbon disulfide	ND	F1 F2	0.19	1.0
Carbon tetrachloride	ND	F2	0.27	1.0
Chlorobenzene	ND	F2	0.75	1.0
Dibromochloromethane	ND	F2	0.32	1.0
Chloroethane	ND	F2	0.32	1.0
Chloroform	ND	F2	0.34	1.0
Chloromethane	ND	F2	0.35	1.0
cis-1,2-Dichloroethene	ND	F2	0.81	1.0
cis-1,3-Dichloropropene	ND	F2	0.36	1.0
Cyclohexane	3.8 J	F2	0.18	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Ethylbenzene	ND J	F2	0.74	1.0
Isopropylbenzene	ND	F1 F2	0.79	1.0
Methyl acetate	ND	F2	1.3	2.5
Methyl tert-butyl ether	ND	F2	0.16	1.0
Methylcyclohexane	5.6	F2	0.16	1.0
Methylene Chloride	ND	F2	0.44	1.0
Styrene	ND	F2	0.73	1.0
Tetrachloroethene	ND	F2	0.36	1.0
Toluene	0.65	~~J F1 F2~~	0.51	1.0
trans-1,2-Dichloroethene	ND	F2	0.90	1.0
trans-1,3-Dichloropropene	ND	F2	0.37	1.0
Trichloroethene	ND J	F2	0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-2**

Lab Sample ID: 480-86431-1
Client Matrix: Water

Date Sampled: 08/31/2015 1030
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-262527	Instrument ID:	HP5973S
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	S2289.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/09/2015 1504			Final Weight/Volume:	5 mL
Prep Date:	09/09/2015 1504				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND J	~~F2~~	0.90	1.0
Xylenes, Total	1.5 J	~~J F2~~	0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	112		73 - 120
Dibromofluoromethane (Surr)	104		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-3**

Lab Sample ID: 480-86431-2
Client Matrix: Water

Date Sampled: 08/31/2015 1105
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 09/09/2015 2344
Prep Date: 09/09/2015 2344

Analysis Batch: 480-262721
Prep Batch: N/A

Instrument ID: HP5973S
Lab File ID: S2312.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	0.71	J	0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	0.91	J	0.18	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Ethylbenzene	ND		0.74	1.0
Isopropylbenzene	ND		0.79	1.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	1.6		0.16	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-3**

Lab Sample ID: 480-86431-2
Client Matrix: Water

Date Sampled: 08/31/2015 1105
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-262721	Instrument ID:	HP5973S
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	S2312.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/09/2015 2344			Final Weight/Volume:	5 mL
Prep Date:	09/09/2015 2344				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		66 - 137
Toluene-d8 (Surr)	96		71 - 126
4-Bromofluorobenzene (Surr)	106		73 - 120
Dibromofluoromethane (Surr)	103		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: MW-4

Lab Sample ID: 480-86431-3
Client Matrix: Water

Date Sampled: 08/31/2015 1240
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 09/09/2015 1549
Prep Date: 09/09/2015 1549

Analysis Batch: 480-262527
Prep Batch: N/A

Instrument ID: HP5973S
Lab File ID: S2291.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	2.2	J	1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	7.4	J	3.0	10
Benzene	2.0		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND	J	0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	1.4		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	41		0.18	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Ethylbenzene	5.9		0.74	1.0
Isopropylbenzene	1.1		0.79	1.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	32		0.16	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	4.4		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-4**

Lab Sample ID: 480-86431-3
Client Matrix: Water

Date Sampled: 08/31/2015 1240
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-262527	Instrument ID:	HP5973S
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	S2291.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/09/2015 1549			Final Weight/Volume:	5 mL
Prep Date:	09/09/2015 1549				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	29		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		66 - 137
Toluene-d8 (Surr)	99		71 - 126
4-Bromofluorobenzene (Surr)	113		73 - 120
Dibromofluoromethane (Surr)	100		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-1**

Lab Sample ID: 480-86431-4
Client Matrix: Water

Date Sampled: 08/31/2015 1320
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 09/10/2015 0006
Prep Date: 09/10/2015 0006

Analysis Batch: 480-262721
Prep Batch: N/A

Instrument ID: HP5973S
Lab File ID: S2313.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Benzene	1.1		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	18		0.18	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Ethylbenzene	0.81	J	0.74	1.0
Isopropylbenzene	ND		0.79	1.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	15		0.16	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	1.4		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-1**

Lab Sample ID: 480-86431-4
Client Matrix: Water

Date Sampled: 08/31/2015 1320
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-262721	Instrument ID:	HP5973S
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	S2313.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/10/2015 0006			Final Weight/Volume:	5 mL
Prep Date:	09/10/2015 0006				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	4.2		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	110		73 - 120
Dibromofluoromethane (Surr)	101		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **DUP-083115**

Lab Sample ID: 480-86431-5
Client Matrix: Water

Date Sampled: 08/31/2015 0000
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 09/09/2015 1635
Prep Date: 09/09/2015 1635

Analysis Batch: 480-262527
Prep Batch: N/A

Instrument ID: HP5973S
Lab File ID: S2293.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	2.9	J	1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	11 J		3.0	10
Benzene	1.9		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND J		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	1.6		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	39		0.18	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Ethylbenzene	5.6		0.74	1.0
Isopropylbenzene	1.1		0.79	1.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	31		0.16	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	4.3		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **DUP-083115**

Lab Sample ID: 480-86431-5
Client Matrix: Water

Date Sampled: 08/31/2015 0000
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-262527	Instrument ID:	HP5973S
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	S2293.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/09/2015 1635			Final Weight/Volume:	5 mL
Prep Date:	09/09/2015 1635				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	27		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	109		73 - 120
Dibromofluoromethane (Surr)	103		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **TRIP BLANK**

Lab Sample ID: 480-86431-6
Client Matrix: Water

Date Sampled: 08/31/2015 0000
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 09/09/2015 1658
Prep Date: 09/09/2015 1658

Analysis Batch: 480-262527
Prep Batch: N/A

Instrument ID: HP5973S
Lab File ID: S2294.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND	J	0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Ethylbenzene	ND		0.74	1.0
Isopropylbenzene	ND		0.79	1.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **TRIP BLANK**

Lab Sample ID: 480-86431-6
Client Matrix: Water

Date Sampled: 08/31/2015 0000
Date Received: 09/01/2015 1030

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-262527	Instrument ID:	HP5973S
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	S2294.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/09/2015 1658			Final Weight/Volume:	5 mL
Prep Date:	09/09/2015 1658				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		66 - 137
Toluene-d8 (Surr)	95		71 - 126
4-Bromofluorobenzene (Surr)	108		73 - 120
Dibromofluoromethane (Surr)	102		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-2**

Lab Sample ID: 480-86431-1
Client Matrix: Water

Date Sampled: 08/31/2015 1030
Date Received: 09/01/2015 1030

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-262233	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-261595	Lab File ID:	W6448.D
Dilution:	1.0			Initial Weight/Volume:	241.5 mL
Analysis Date:	09/05/2015 1731			Final Weight/Volume:	1 mL
Prep Date:	09/02/2015 0935			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Biphenyl	ND J	F2	0.68	5.2
bis (2-chloroisopropyl) ether	ND	F2	0.54	5.2
2,4,5-Trichlorophenol	ND	F2 F1	0.50	5.2
2,4,6-Trichlorophenol	ND	F2 F1	0.63	5.2
2,4-Dichlorophenol	ND	F2 F1	0.53	5.2
2,4-Dimethylphenol	ND	F2	0.52	5.2
2,4-Dinitrophenol	ND	F2	2.3	10
2,4-Dinitrotoluene	ND	F2	0.46	5.2
2,6-Dinitrotoluene	ND	F2	0.41	5.2
2-Chloronaphthalene	ND	F2	0.48	5.2
2-Chlorophenol	ND	F2	0.55	5.2
2-Methylnaphthalene	ND	F2	0.62	5.2
2-Methylphenol	ND	F2	0.41	5.2
2-Nitroaniline	ND	F2 F1	0.43	10
2-Nitrophenol	ND	F2	0.50	5.2
3,3'-Dichlorobenzidine	ND	F2	0.41	5.2
3-Nitroaniline	ND	F2 F1	0.50	10
4,6-Dinitro-2-methylphenol	ND	F2	2.3	10
4-Bromophenyl phenyl ether	ND	F2 F1	0.47	5.2
4-Chloro-3-methylphenol	ND	F2	0.47	5.2
4-Chloroaniline	ND	F2 F1	0.61	5.2
4-Chlorophenyl phenyl ether	ND	F2	0.36	5.2
4-Methylphenol	ND	F2	0.37	10
4-Nitroaniline	ND J	F2	0.26	10
4-Nitrophenol	ND		1.6	10
Acenaphthene	ND J	F2	0.42	5.2
Acenaphthylene	ND	F2	0.39	5.2
Acetophenone	ND	F2	0.56	5.2
Anthracene	ND	F2	0.29	5.2
Atrazine	ND J	F2	0.48	5.2
Benzaldehyde	5.2 ~~0.41~~ UB J	~~J F2 B~~	0.28	5.2
Benzo(a)anthracene	ND J	F2	0.37	5.2
Benzo(a)pyrene	ND	F2 F1	0.49	5.2
Benzo(b)fluoranthene	ND	F2	0.35	5.2
Benzo(g,h,i)perylene	ND	F2 F1	0.36	5.2
Benzo(k)fluoranthene	ND	F2 F1	0.76	5.2
Bis(2-chloroethoxy)methane	ND	F2	0.36	5.2
Bis(2-chloroethyl)ether	ND	F2	0.41	5.2
Bis(2-ethylhexyl) phthalate	ND	F2 F1	1.9	5.2
Butyl benzyl phthalate	ND	F2	0.43	5.2
Caprolactam	29	F2 F1	2.3	5.2
Carbazole	ND	F2	0.31	5.2
Chrysene	ND	F2 F1	0.34	5.2
Di-n-butyl phthalate	ND	F2	0.32	5.2
Di-n-octyl phthalate	ND	F2 F1	0.49	5.2
Dibenz(a,h)anthracene	ND J	F2 F1	0.43	5.2

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-2**

Lab Sample ID: 480-86431-1
Client Matrix: Water

Date Sampled: 08/31/2015 1030
Date Received: 09/01/2015 1030

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-262233	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-261595	Lab File ID:	W6448.D
Dilution:	1.0			Initial Weight/Volume:	241.5 mL
Analysis Date:	09/05/2015 1731			Final Weight/Volume:	1 mL
Prep Date:	09/02/2015 0935			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dibenzofuran	ND J	F2	0.53	10
Diethyl phthalate	ND	F2	0.23	5.2
Dimethyl phthalate	ND	F2	0.37	5.2
Fluoranthene	ND	F2	0.41	5.2
Fluorene	ND	F2	0.37	5.2
Hexachlorobenzene	ND	F2	0.53	5.2
Hexachlorobutadiene	ND	F2	0.70	5.2
Hexachlorocyclopentadiene	ND	F2	0.61	5.2
Hexachloroethane	ND	F2	0.61	5.2
Indeno(1,2,3-cd)pyrene	ND	F2 F1	0.49	5.2
Isophorone	ND	F2	0.45	5.2
N-Nitrosodi-n-propylamine	ND	F2	0.56	5.2
N-Nitrosodiphenylamine	ND	F2	0.53	5.2
Naphthalene	ND	F2	0.79	5.2
Nitrobenzene	ND	F2	0.30	5.2
Pentachlorophenol	ND J		2.3	10
Phenanthrene	5.2 ~~0.90~~ UB J	~~J F2 B~~	0.46	5.2
Phenol	ND J	F2	0.40	5.2
Pyrene	ND J	F2	0.35	5.2

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	115		52 - 132
2-Fluorobiphenyl	107		48 - 120
2-Fluorophenol	79		20 - 120
Nitrobenzene-d5	105		46 - 120
p-Terphenyl-d14	113		67 - 150
Phenol-d5	49		16 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-3**

Lab Sample ID: 480-86431-2
Client Matrix: Water

Date Sampled: 08/31/2015 1105
Date Received: 09/01/2015 1030

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D
Prep Method: 3510C
Dilution: 1.0
Analysis Date: 09/05/2015 1759
Prep Date: 09/02/2015 0935

Analysis Batch: 480-262233
Prep Batch: 480-261595

Instrument ID: HP5973W
Lab File ID: W6449.D
Initial Weight/Volume: 254.2 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Biphenyl	ND		0.64	4.9
bis (2-chloroisopropyl) ether	ND		0.51	4.9
2,4,5-Trichlorophenol	ND		0.47	4.9
2,4,6-Trichlorophenol	ND		0.60	4.9
2,4-Dichlorophenol	ND		0.50	4.9
2,4-Dimethylphenol	ND		0.49	4.9
2,4-Dinitrophenol	ND	J	2.2	9.8
2,4-Dinitrotoluene	ND	J	0.44	4.9
2,6-Dinitrotoluene	ND		0.39	4.9
2-Chloronaphthalene	ND		0.45	4.9
2-Chlorophenol	ND		0.52	4.9
2-Methylnaphthalene	ND		0.59	4.9
2-Methylphenol	ND		0.39	4.9
2-Nitroaniline	ND		0.41	9.8
2-Nitrophenol	ND	J	0.47	4.9
3,3'-Dichlorobenzidine	ND		0.39	4.9
3-Nitroaniline	ND		0.47	9.8
4,6-Dinitro-2-methylphenol	ND		2.2	9.8
4-Bromophenyl phenyl ether	ND		0.44	4.9
4-Chloro-3-methylphenol	ND		0.44	4.9
4-Chloroaniline	ND		0.58	4.9
4-Chlorophenyl phenyl ether	ND		0.34	4.9
4-Methylphenol	ND		0.35	9.8
4-Nitroaniline	ND		0.25	9.8
4-Nitrophenol	ND		1.5	9.8
Acenaphthene	ND		0.40	4.9
Acenaphthylene	ND		0.37	4.9
Acetophenone	ND		0.53	4.9
Anthracene	ND		0.28	4.9
Atrazine	ND	J	0.45	4.9
Benzaldehyde	4.9 ~~0.26~~	UB J ~~J B~~	0.26	4.9
Benzo(a)anthracene	ND		0.35	4.9
Benzo(a)pyrene	ND		0.46	4.9
Benzo(b)fluoranthene	ND		0.33	4.9
Benzo(g,h,i)perylene	ND		0.34	4.9
Benzo(k)fluoranthene	ND		0.72	4.9
Bis(2-chloroethoxy)methane	ND		0.34	4.9
Bis(2-chloroethyl)ether	ND		0.39	4.9
Bis(2-ethylhexyl) phthalate	ND		1.8	4.9
Butyl benzyl phthalate	ND		0.41	4.9
Caprolactam	23		2.2	4.9
Carbazole	ND		0.30	4.9
Chrysene	ND		0.32	4.9
Di-n-butyl phthalate	ND		0.30	4.9
Di-n-octyl phthalate	ND		0.46	4.9
Dibenz(a,h)anthracene	ND		0.41	4.9

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-3**

Lab Sample ID: 480-86431-2
Client Matrix: Water

Date Sampled: 08/31/2015 1105
Date Received: 09/01/2015 1030

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D
Prep Method: 3510C
Dilution: 1.0
Analysis Date: 09/05/2015 1759
Prep Date: 09/02/2015 0935

Analysis Batch: 480-262233
Prep Batch: 480-261595

Instrument ID: HP5973W
Lab File ID: W6449.D
Initial Weight/Volume: 254.2 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dibenzofuran	ND		0.50	9.8
Diethyl phthalate	ND		0.22	4.9
Dimethyl phthalate	ND		0.35	4.9
Fluoranthene	ND		0.39	4.9
Fluorene	ND		0.35	4.9
Hexachlorobenzene	ND		0.50	4.9
Hexachlorobutadiene	ND		0.67	4.9
Hexachlorocyclopentadiene	ND	J	0.58	4.9
Hexachloroethane	ND		0.58	4.9
Indeno(1,2,3-cd)pyrene	ND		0.46	4.9
Isophorone	ND		0.42	4.9
N-Nitrosodi-n-propylamine	ND		0.53	4.9
N-Nitrosodiphenylamine	ND		0.50	4.9
Naphthalene	ND		0.75	4.9
Nitrobenzene	ND		0.29	4.9
Pentachlorophenol	ND	J	2.2	9.8
Phenanthrene	4.9 ~~0.90~~	UB ~~J B~~	0.43	4.9
Phenol	ND		0.38	4.9
Pyrene	ND	J	0.33	4.9

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	98		52 - 132
2-Fluorobiphenyl	100		48 - 120
2-Fluorophenol	70		20 - 120
Nitrobenzene-d5	98		46 - 120
p-Terphenyl-d14	103		67 - 150
Phenol-d5	40		16 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-4**

Lab Sample ID: 480-86431-3
Client Matrix: Water

Date Sampled: 08/31/2015 1240
Date Received: 09/01/2015 1030

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-262233	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-261595	Lab File ID:	W6450.D
Dilution:	1.0			Initial Weight/Volume:	248 mL
Analysis Date:	09/05/2015 1828			Final Weight/Volume:	1 mL
Prep Date:	09/02/2015 0935			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Biphenyl	ND		0.66	5.0
bis (2-chloroisopropyl) ether	ND		0.52	5.0
2,4,5-Trichlorophenol	ND		0.48	5.0
2,4,6-Trichlorophenol	ND		0.61	5.0
2,4-Dichlorophenol	ND		0.51	5.0
2,4-Dimethylphenol	ND		0.50	5.0
2,4-Dinitrophenol	ND J		2.2	10
2,4-Dinitrotoluene	ND J		0.45	5.0
2,6-Dinitrotoluene	ND		0.40	5.0
2-Chloronaphthalene	ND		0.46	5.0
2-Chlorophenol	ND		0.53	5.0
2-Methylnaphthalene	0.79	J	0.60	5.0
2-Methylphenol	ND		0.40	5.0
2-Nitroaniline	ND		0.42	10
2-Nitrophenol	ND J		0.48	5.0
3,3'-Dichlorobenzidine	ND		0.40	5.0
3-Nitroaniline	ND		0.48	10
4,6-Dinitro-2-methylphenol	ND		2.2	10
4-Bromophenyl phenyl ether	ND		0.45	5.0
4-Chloro-3-methylphenol	ND		0.45	5.0
4-Chloroaniline	ND		0.59	5.0
4-Chlorophenyl phenyl ether	ND		0.35	5.0
4-Methylphenol	ND		0.36	10
4-Nitroaniline	ND		0.25	10
4-Nitrophenol	ND		1.5	10
Acenaphthene	ND		0.41	5.0
Acenaphthylene	ND		0.38	5.0
Acetophenone	0.57	J	0.54	5.0
Anthracene	ND		0.28	5.0
Atrazine	ND J		0.46	5.0
Benzaldehyde	ND J		0.27	5.0
Benzo(a)anthracene	ND		0.36	5.0
Benzo(a)pyrene	ND		0.47	5.0
Benzo(b)fluoranthene	ND		0.34	5.0
Benzo(g,h,i)perylene	ND		0.35	5.0
Benzo(k)fluoranthene	ND		0.74	5.0
Bis(2-chloroethoxy)methane	ND		0.35	5.0
Bis(2-chloroethyl)ether	ND		0.40	5.0
Bis(2-ethylhexyl) phthalate	ND		1.8	5.0
Butyl benzyl phthalate	ND		0.42	5.0
Caprolactam	ND		2.2	5.0
Carbazole	ND		0.30	5.0
Chrysene	ND		0.33	5.0
Di-n-butyl phthalate	ND		0.31	5.0
Di-n-octyl phthalate	ND		0.47	5.0
Dibenz(a,h)anthracene	ND		0.42	5.0

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: MW-4

Lab Sample ID: 480-86431-3
Client Matrix: Water

Date Sampled: 08/31/2015 1240
Date Received: 09/01/2015 1030

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-262233	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-261595	Lab File ID:	W6450.D
Dilution:	1.0			Initial Weight/Volume:	248 mL
Analysis Date:	09/05/2015 1828			Final Weight/Volume:	1 mL
Prep Date:	09/02/2015 0935			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dibenzofuran	ND		0.51	10
Diethyl phthalate	ND		0.22	5.0
Dimethyl phthalate	ND		0.36	5.0
Fluoranthene	ND		0.40	5.0
Fluorene	ND		0.36	5.0
Hexachlorobenzene	ND		0.51	5.0
Hexachlorobutadiene	ND		0.69	5.0
Hexachlorocyclopentadiene	ND J		0.59	5.0
Hexachloroethane	ND		0.59	5.0
Indeno(1,2,3-cd)pyrene	ND		0.47	5.0
Isophorone	ND		0.43	5.0
N-Nitrosodi-n-propylamine	ND		0.54	5.0
N-Nitrosodiphenylamine	ND		0.51	5.0
Naphthalene	ND		0.77	5.0
Nitrobenzene	ND		0.29	5.0
Pentachlorophenol	ND J		2.2	10
Phenanthrene	5.0 ~~0.66~~ UB	~~J B~~	0.44	5.0
Phenol	ND		0.39	5.0
Pyrene	ND J		0.34	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	91		52 - 132
2-Fluorobiphenyl	92		48 - 120
2-Fluorophenol	69		20 - 120
Nitrobenzene-d5	92		46 - 120
p-Terphenyl-d14	95		67 - 150
Phenol-d5	39		16 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-1**

Lab Sample ID: 480-86431-4
Client Matrix: Water

Date Sampled: 08/31/2015 1320
Date Received: 09/01/2015 1030

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-262233	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-261595	Lab File ID:	W6451.D
Dilution:	1.0			Initial Weight/Volume:	270.9 mL
Analysis Date:	09/05/2015 1856			Final Weight/Volume:	1 mL
Prep Date:	09/02/2015 0935			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Biphenyl	ND		0.60	4.6
bis (2-chloroisopropyl) ether	ND		0.48	4.6
2,4,5-Trichlorophenol	ND		0.44	4.6
2,4,6-Trichlorophenol	ND		0.56	4.6
2,4-Dichlorophenol	ND		0.47	4.6
2,4-Dimethylphenol	ND		0.46	4.6
2,4-Dinitrophenol	ND	J	2.0	9.2
2,4-Dinitrotoluene	ND	J	0.41	4.6
2,6-Dinitrotoluene	ND		0.37	4.6
2-Chloronaphthalene	ND		0.42	4.6
2-Chlorophenol	ND		0.49	4.6
2-Methylnaphthalene	ND		0.55	4.6
2-Methylphenol	ND		0.37	4.6
2-Nitroaniline	ND		0.39	9.2
2-Nitrophenol	ND	J	0.44	4.6
3,3'-Dichlorobenzidine	ND		0.37	4.6
3-Nitroaniline	ND		0.44	9.2
4,6-Dinitro-2-methylphenol	ND		2.0	9.2
4-Bromophenyl phenyl ether	ND		0.42	4.6
4-Chloro-3-methylphenol	ND		0.42	4.6
4-Chloroaniline	ND		0.54	4.6
4-Chlorophenyl phenyl ether	ND		0.32	4.6
4-Methylphenol	ND		0.33	9.2
4-Nitroaniline	ND		0.23	9.2
4-Nitrophenol	ND		1.4	9.2
Acenaphthene	ND		0.38	4.6
Acenaphthylene	ND		0.35	4.6
Acetophenone	ND		0.50	4.6
Anthracene	ND		0.26	4.6
Atrazine	ND	J	0.42	4.6
Benzaldehyde	ND	J	0.25	4.6
Benzo(a)anthracene	ND		0.33	4.6
Benzo(a)pyrene	ND		0.43	4.6
Benzo(b)fluoranthene	ND		0.31	4.6
Benzo(g,h,i)perylene	ND		0.32	4.6
Benzo(k)fluoranthene	ND		0.67	4.6
Bis(2-chloroethoxy)methane	ND		0.32	4.6
Bis(2-chloroethyl)ether	ND		0.37	4.6
Bis(2-ethylhexyl) phthalate	ND		1.7	4.6
Butyl benzyl phthalate	ND		0.39	4.6
Caprolactam	ND		2.0	4.6
Carbazole	ND		0.28	4.6
Chrysene	ND		0.30	4.6
Di-n-butyl phthalate	ND		0.29	4.6
Di-n-octyl phthalate	ND		0.43	4.6
Dibenz(a,h)anthracene	ND		0.39	4.6

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-1**

Lab Sample ID: 480-86431-4
Client Matrix: Water

Date Sampled: 08/31/2015 1320
Date Received: 09/01/2015 1030

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D
Prep Method: 3510C
Dilution: 1.0
Analysis Date: 09/05/2015 1856
Prep Date: 09/02/2015 0935

Analysis Batch: 480-262233
Prep Batch: 480-261595

Instrument ID: HP5973W
Lab File ID: W6451.D
Initial Weight/Volume: 270.9 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dibenzofuran	ND		0.47	9.2
Diethyl phthalate	ND		0.20	4.6
Dimethyl phthalate	ND		0.33	4.6
Fluoranthene	ND		0.37	4.6
Fluorene	ND		0.33	4.6
Hexachlorobenzene	ND		0.47	4.6
Hexachlorobutadiene	ND		0.63	4.6
Hexachlorocyclopentadiene	ND	J	0.54	4.6
Hexachloroethane	ND		0.54	4.6
Indeno(1,2,3-cd)pyrene	ND		0.43	4.6
Isophorone	ND		0.40	4.6
N-Nitrosodi-n-propylamine	ND		0.50	4.6
N-Nitrosodiphenylamine	ND		0.47	4.6
Naphthalene	ND		0.70	4.6
Nitrobenzene	ND		0.27	4.6
Pentachlorophenol	ND	J	2.0	9.2
Phenanthrene	4.6 ~~0.50~~	UB ~~J B~~	0.41	4.6
Phenol	ND		0.36	4.6
Pyrene	ND	J	0.31	4.6

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	89		52 - 132
2-Fluorobiphenyl	91		48 - 120
2-Fluorophenol	66		20 - 120
Nitrobenzene-d5	90		46 - 120
p-Terphenyl-d14	95		67 - 150
Phenol-d5	35		16 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **DUP-083115**

Lab Sample ID: 480-86431-5
Client Matrix: Water

Date Sampled: 08/31/2015 0000
Date Received: 09/01/2015 1030

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-262233	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-261595	Lab File ID:	W6452.D
Dilution:	1.0			Initial Weight/Volume:	243.7 mL
Analysis Date:	09/05/2015 1925			Final Weight/Volume:	1 mL
Prep Date:	09/02/2015 0935			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Biphenyl	ND		0.67	5.1
bis (2-chloroisopropyl) ether	ND		0.53	5.1
2,4,5-Trichlorophenol	ND		0.49	5.1
2,4,6-Trichlorophenol	ND		0.63	5.1
2,4-Dichlorophenol	ND		0.52	5.1
2,4-Dimethylphenol	ND		0.51	5.1
2,4-Dinitrophenol	ND J		2.3	10
2,4-Dinitrotoluene	ND J		0.46	5.1
2,6-Dinitrotoluene	ND		0.41	5.1
2-Chloronaphthalene	ND		0.47	5.1
2-Chlorophenol	ND		0.54	5.1
2-Methylnaphthalene	0.69	J	0.62	5.1
2-Methylphenol	ND		0.41	5.1
2-Nitroaniline	ND		0.43	10
2-Nitrophenol	ND J		0.49	5.1
3,3'-Dichlorobenzidine	ND		0.41	5.1
3-Nitroaniline	ND		0.49	10
4,6-Dinitro-2-methylphenol	ND		2.3	10
4-Bromophenyl phenyl ether	ND		0.46	5.1
4-Chloro-3-methylphenol	ND		0.46	5.1
4-Chloroaniline	ND		0.61	5.1
4-Chlorophenyl phenyl ether	ND		0.36	5.1
4-Methylphenol	ND		0.37	10
4-Nitroaniline	ND		0.26	10
4-Nitrophenol	ND		1.6	10
Acenaphthene	ND		0.42	5.1
Acenaphthylene	ND		0.39	5.1
Acetophenone	ND		0.55	5.1
Anthracene	ND		0.29	5.1
Atrazine	ND J		0.47	5.1
Benzaldehyde	ND J		0.27	5.1
Benzo(a)anthracene	ND		0.37	5.1
Benzo(a)pyrene	ND		0.48	5.1
Benzo(b)fluoranthene	ND		0.35	5.1
Benzo(g,h,i)perylene	ND		0.36	5.1
Benzo(k)fluoranthene	ND		0.75	5.1
Bis(2-chloroethoxy)methane	ND		0.36	5.1
Bis(2-chloroethyl)ether	ND		0.41	5.1
Bis(2-ethylhexyl) phthalate	ND		1.8	5.1
Butyl benzyl phthalate	ND		0.43	5.1
Caprolactam	ND		2.3	5.1
Carbazole	ND		0.31	5.1
Chrysene	ND		0.34	5.1
Di-n-butyl phthalate	ND		0.32	5.1
Di-n-octyl phthalate	ND		0.48	5.1
Dibenz(a,h)anthracene	ND		0.43	5.1

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **DUP-083115**

Lab Sample ID: 480-86431-5
Client Matrix: Water

Date Sampled: 08/31/2015 0000
Date Received: 09/01/2015 1030

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D
Prep Method: 3510C
Dilution: 1.0
Analysis Date: 09/05/2015 1925
Prep Date: 09/02/2015 0935

Analysis Batch: 480-262233
Prep Batch: 480-261595

Instrument ID: HP5973W
Lab File ID: W6452.D
Initial Weight/Volume: 243.7 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dibenzofuran	ND		0.52	10
Diethyl phthalate	ND		0.23	5.1
Dimethyl phthalate	ND		0.37	5.1
Fluoranthene	ND		0.41	5.1
Fluorene	ND		0.37	5.1
Hexachlorobenzene	ND		0.52	5.1
Hexachlorobutadiene	ND		0.70	5.1
Hexachlorocyclopentadiene	ND J		0.61	5.1
Hexachloroethane	ND		0.61	5.1
Indeno(1,2,3-cd)pyrene	ND		0.48	5.1
Isophorone	ND		0.44	5.1
N-Nitrosodi-n-propylamine	ND		0.55	5.1
N-Nitrosodiphenylamine	ND		0.52	5.1
Naphthalene	ND		0.78	5.1
Nitrobenzene	ND		0.30	5.1
Pentachlorophenol	ND J		2.3	10
Phenanthrene	5.1 ~~0.55~~	UB ~~J B~~	0.45	5.1
Phenol	ND		0.40	5.1
Pyrene	ND J		0.35	5.1

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	86		52 - 132
2-Fluorobiphenyl	81		48 - 120
2-Fluorophenol	63		20 - 120
Nitrobenzene-d5	79		46 - 120
p-Terphenyl-d14	93		67 - 150
Phenol-d5	35		16 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-3**

Lab Sample ID: 480-86431-2
Client Matrix: Water

Date Sampled: 08/31/2015 1105
Date Received: 09/01/2015 1030

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-93634	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	15623019.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	09/04/2015 1405			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Carbon dioxide	16000	J	200	1000

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-3**

Lab Sample ID: 480-86431-2
Client Matrix: Water

Date Sampled: 08/31/2015 1105
Date Received: 09/01/2015 1030

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-262612	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	50			Final Weight/Volume:	
Analysis Date:	09/09/2015 1221			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	5100	J	50	200

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-4**

Lab Sample ID: 480-86431-3
Client Matrix: Water

Date Sampled: 08/31/2015 1240
Date Received: 09/01/2015 1030

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-93634	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	15623020.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	09/04/2015 1414			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Carbon dioxide	24000	J	200	1000

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-4**

Lab Sample ID: 480-86431-3
Client Matrix: Water

Date Sampled: 08/31/2015 1240
Date Received: 09/01/2015 1030

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-262612	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	50			Final Weight/Volume:	
Analysis Date:	09/09/2015 1348			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methane	6000	J	50	200

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-2**

Lab Sample ID: 480-86431-1
Client Matrix: Water

Date Sampled: 08/31/2015 1030
Date Received: 09/01/2015 1030

310.13 Identification of Routine Petroleum Products

Analysis Method:	310.13	Analysis Batch:	480-261827	Instrument ID:	HP5890-24
Prep Method:	3510C	Prep Batch:	480-261603	Lab File ID:	24a102_124.d
Dilution:	1.0			Initial Weight/Volume:	1039 mL
Analysis Date:	09/03/2015 1645			Final Weight/Volume:	1 mL
Prep Date:	09/02/2015 0957			Injection Volume:	1 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	ND		0.19	0.19
Kerosene	ND		0.48	0.48
Motor Oil	ND		0.96	0.96
Fuel Oil #2	ND		0.48	0.48
Fuel Oil #4	ND		0.48	0.48
Fuel Oil #6	ND		0.48	0.48
Unknown Hydrocarbons	ND		0.19	0.19

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-3**

Lab Sample ID: 480-86431-2
Client Matrix: Water

Date Sampled: 08/31/2015 1105
Date Received: 09/01/2015 1030

310.13 Identification of Routine Petroleum Products

Analysis Method:	310.13	Analysis Batch:	480-261827	Instrument ID:	HP5890-24
Prep Method:	3510C	Prep Batch:	480-261603	Lab File ID:	24a102_125.d
Dilution:	1.0			Initial Weight/Volume:	1046.5 mL
Analysis Date:	09/03/2015 1719			Final Weight/Volume:	1 mL
Prep Date:	09/02/2015 0957			Injection Volume:	1 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	ND		0.19	0.19
Kerosene	ND		0.48	0.48
Motor Oil	ND		0.96	0.96
Fuel Oil #2	ND		0.48	0.48
Fuel Oil #4	ND		0.48	0.48
Fuel Oil #6	ND		0.48	0.48
Unknown Hydrocarbons	ND		0.19	0.19

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-4**

Lab Sample ID: 480-86431-3
Client Matrix: Water

Date Sampled: 08/31/2015 1240
Date Received: 09/01/2015 1030

310.13 Identification of Routine Petroleum Products

Analysis Method:	310.13	Analysis Batch:	480-261827	Instrument ID:	HP5890-24
Prep Method:	3510C	Prep Batch:	480-261603	Lab File ID:	24a102_126.d
Dilution:	1.0			Initial Weight/Volume:	960.6 mL
Analysis Date:	09/03/2015 1753			Final Weight/Volume:	1 mL
Prep Date:	09/02/2015 0957			Injection Volume:	1 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	0.36		0.21	0.21
Kerosene	ND		0.52	0.52
Motor Oil	ND		1.0	1.0
Fuel Oil #2	ND		0.52	0.52
Fuel Oil #4	ND		0.52	0.52
Fuel Oil #6	ND		0.52	0.52
Unknown Hydrocarbons	ND		0.21	0.21

Client: ARCADIS U.S. Inc

Job Number: 480-86431-2

Client Sample ID: **MW-1**

Lab Sample ID: 480-86431-4
Client Matrix: Water

Date Sampled: 08/31/2015 1320
Date Received: 09/01/2015 1030

310.13 Identification of Routine Petroleum Products

Analysis Method:	310.13	Analysis Batch:	480-264040	Instrument ID:	HP5890-24
Prep Method:	3510C	Prep Batch:	480-263938	Lab File ID:	24a102_265.d
Dilution:	1.0			Initial Weight/Volume:	1053 mL
Analysis Date:	09/17/2015 0939			Final Weight/Volume:	1 mL
Prep Date:	09/16/2015 1443			Injection Volume:	1 uL

Analyte	Result (mg/L)		Qualifier	MDL	RL
Gasoline	ND	R	H	0.19	0.19
Kerosene	ND		H	0.47	0.47
Motor Oil	ND		H	0.95	0.95
Fuel Oil #2	ND		H	0.47	0.47
Fuel Oil #4	ND		H	0.47	0.47
Fuel Oil #6	ND		H	0.47	0.47
Unknown Hydrocarbons	ND	R	H	0.19	0.19

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-2**

Lab Sample ID: 480-86431-1
Client Matrix: Water

Date Sampled: 08/31/2015 1030
Date Received: 09/01/2015 1030

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3005A
Dilution: 1.0
Analysis Date: 09/02/2015 1737
Prep Date: 09/02/2015 0730

Analysis Batch: 480-261795
Prep Batch: 480-261540

Instrument ID: ICAP1
Lab File ID: I1090215A-7.asc
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Aluminum	0.48		0.060	0.20
Antimony	ND		0.0068	0.020
Arsenic	ND		0.0056	0.015
Barium	2.6		0.00070	0.0020
Beryllium	ND		0.00030	0.0020
Cadmium	ND		0.00050	0.0020
Calcium	142		0.10	0.50
Chromium	0.0015	J	0.0010	0.0040
Cobalt	ND		0.00063	0.0040
Copper	ND		0.0016	0.010
Iron	2.4		0.019	0.050
Lead	ND		0.0030	0.010
Magnesium	91.2		0.043	0.20
Manganese	0.045	B	0.00040	0.0030
Nickel	ND		0.0013	0.010
Potassium	7.4		0.10	0.50
Selenium	ND		0.0087	0.025
Silver	ND		0.0017	0.0060
Sodium	278		0.32	1.0
Thallium	ND		0.010	0.020
Vanadium	ND		0.0015	0.0050
Zinc	0.0036	J	0.0015	0.010

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-3**

Lab Sample ID: 480-86431-2
Client Matrix: Water

Date Sampled: 08/31/2015 1105
Date Received: 09/01/2015 1030

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3005A
Dilution: 1.0
Analysis Date: 09/02/2015 1802
Prep Date: 09/02/2015 0730

Analysis Batch: 480-261795
Prep Batch: 480-261540

Instrument ID: ICAP1
Lab File ID: I1090215A-7.asc
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Aluminum	1.2		0.060	0.20
Antimony	ND		0.0068	0.020
Arsenic	ND		0.0056	0.015
Barium	2.0		0.00070	0.0020
Beryllium	ND		0.00030	0.0020
Cadmium	ND		0.00050	0.0020
Calcium	158		0.10	0.50
Chromium	0.0022	J	0.0010	0.0040
Cobalt	ND		0.00063	0.0040
Copper	ND		0.0016	0.010
Iron	4.7		0.019	0.050
Lead	ND		0.0030	0.010
Magnesium	126		0.043	0.20
Manganese	0.065	B	0.00040	0.0030
Nickel	0.0022	J	0.0013	0.010
Potassium	11.7		0.10	0.50
Selenium	ND		0.0087	0.025
Silver	ND		0.0017	0.0060
Sodium	159		0.32	1.0
Thallium	ND		0.010	0.020
Vanadium	0.0019	J	0.0015	0.0050
Zinc	0.0055	J	0.0015	0.010

6010C Metals (ICP)-Dissolved

Analysis Method: 6010C
Prep Method: 3005A
Dilution: 1.0
Analysis Date: 09/10/2015 2115
Prep Date: 09/10/2015 1116

Analysis Batch: 480-263019
Prep Batch: 480-262435

Instrument ID: ICAP1
Lab File ID: i1091015b-1.asc
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Iron	0.026	J	0.019	0.050
Manganese	0.060		0.00040	0.0030

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-4**

Lab Sample ID: 480-86431-3
Client Matrix: Water

Date Sampled: 08/31/2015 1240
Date Received: 09/01/2015 1030

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-261795	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-261540	Lab File ID:	I1090215A-7.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	09/02/2015 1805			Final Weight/Volume:	50 mL
Prep Date:	09/02/2015 0730				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Aluminum	0.068	J	0.060	0.20
Antimony	ND		0.0068	0.020
Arsenic	0.0056	J	0.0056	0.015
Barium	0.92		0.00070	0.0020
Beryllium	ND		0.00030	0.0020
Cadmium	ND		0.00050	0.0020
Calcium	124		0.10	0.50
Chromium	ND		0.0010	0.0040
Cobalt	ND		0.00063	0.0040
Copper	ND		0.0016	0.010
Iron	37.7		0.019	0.050
Lead	ND		0.0030	0.010
Magnesium	85.0		0.043	0.20
Manganese	0.23	B	0.00040	0.0030
Nickel	0.0023	J	0.0013	0.010
Potassium	10.4		0.10	0.50
Selenium	ND		0.0087	0.025
Silver	ND		0.0017	0.0060
Sodium	419		0.32	1.0
Thallium	ND		0.010	0.020
Vanadium	ND		0.0015	0.0050
Zinc	0.0035	J	0.0015	0.010

6010C Metals (ICP)-Dissolved

Analysis Method:	6010C	Analysis Batch:	480-263019	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-262435	Lab File ID:	i1091015b-1.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	09/10/2015 2118			Final Weight/Volume:	50 mL
Prep Date:	09/10/2015 1116				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Iron	ND		0.019	0.050
Manganese	0.22		0.00040	0.0030

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **MW-1**

Lab Sample ID: 480-86431-4
Client Matrix: Water

Date Sampled: 08/31/2015 1320
Date Received: 09/01/2015 1030

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-261795	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-261540	Lab File ID:	I1090215A-7.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	09/02/2015 1808			Final Weight/Volume:	50 mL
Prep Date:	09/02/2015 0730				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Aluminum	2.0		0.060	0.20
Antimony	ND		0.0068	0.020
Arsenic	ND		0.0056	0.015
Barium	0.47		0.00070	0.0020
Beryllium	ND		0.00030	0.0020
Cadmium	ND		0.00050	0.0020
Calcium	293		0.10	0.50
Chromium	0.0032	J	0.0010	0.0040
Cobalt	ND		0.00063	0.0040
Copper	0.0036	J	0.0016	0.010
Iron	2.0		0.019	0.050
Lead	ND		0.0030	0.010
Magnesium	204		0.043	0.20
Manganese	0.15	B	0.00040	0.0030
Nickel	0.0050	J	0.0013	0.010
Potassium	8.4		0.10	0.50
Selenium	ND		0.0087	0.025
Silver	ND		0.0017	0.0060
Sodium	373		0.32	1.0
Thallium	ND		0.010	0.020
Vanadium	0.0039	J	0.0015	0.0050
Zinc	0.0083	J	0.0015	0.010

Client: ARCADIS U.S. Inc

Job Number: 480-86431-1

Client Sample ID: **DUP-083115**

Lab Sample ID: 480-86431-5
Client Matrix: Water

Date Sampled: 08/31/2015 0000
Date Received: 09/01/2015 1030

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3005A
Dilution: 1.0
Analysis Date: 09/02/2015 1811
Prep Date: 09/02/2015 0730

Analysis Batch: 480-261795
Prep Batch: 480-261540

Instrument ID: ICAP1
Lab File ID: I1090215A-7.asc
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Aluminum	0.076	J	0.060	0.20
Antimony	ND		0.0068	0.020
Arsenic	0.0060	J	0.0056	0.015
Barium	0.91		0.00070	0.0020
Beryllium	ND		0.00030	0.0020
Cadmium	ND		0.00050	0.0020
Calcium	123		0.10	0.50
Chromium	ND		0.0010	0.0040
Cobalt	ND		0.00063	0.0040
Copper	ND		0.0016	0.010
Iron	37.5		0.019	0.050
Lead	ND		0.0030	0.010
Magnesium	83.6		0.043	0.20
Manganese	0.22	B	0.00040	0.0030
Nickel	0.0025	J	0.0013	0.010
Potassium	10.2		0.10	0.50
Selenium	ND		0.0087	0.025
Silver	ND		0.0017	0.0060
Sodium	416		0.32	1.0
Thallium	ND		0.010	0.020
Vanadium	ND		0.0015	0.0050
Zinc	0.0033	J	0.0015	0.010

General Chemistry

Client Sample ID: **MW-2**

Lab Sample ID: 480-86431-1
Client Matrix: Water

Date Sampled: 08/31/2015 1030
Date Received: 09/01/2015 1030

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/L	0.0050	0.010	1.0	9012B
Analysis Batch: 480-261692	Analysis Date: 09/02/2015 1448						
Prep Batch: 480-261556	Prep Date: 09/02/2015 0150						

General Chemistry

Client Sample ID: **MW-3**

Lab Sample ID: 480-86431-2 Date Sampled: 08/31/2015 1105
Client Matrix: Water Date Received: 09/01/2015 1030

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrogen, Nitrate	ND		mg/L	0.020	0.050	1.0	353.2
Analysis Batch: 480-261524	Analysis Date: 09/01/2015 1800						
Cyanide, Total	ND		mg/L	0.0050	0.010	1.0	9012B
Analysis Batch: 480-261692	Analysis Date: 09/02/2015 1453						
Prep Batch: 480-261556	Prep Date: 09/02/2015 0150						
Sulfide	ND		mg/L	0.67	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-261821	Analysis Date: 09/03/2015 0715						

General Chemistry

Client Sample ID: **MW-4**

Lab Sample ID: 480-86431-3
Client Matrix: Water

Date Sampled: 08/31/2015 1240
Date Received: 09/01/2015 1030

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrogen, Nitrate	ND		mg/L	0.020	0.050	1.0	353.2
Analysis Batch: 480-261524	Analysis Date: 09/01/2015 1802						
Cyanide, Total	ND		mg/L	0.0050	0.010	1.0	9012B
Analysis Batch: 480-261692	Analysis Date: 09/02/2015 1454						
Prep Batch: 480-261556	Prep Date: 09/02/2015 0150						
Sulfide	ND		mg/L	0.67	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-261821	Analysis Date: 09/03/2015 0715						

General Chemistry

Client Sample ID: **MW-1**

Lab Sample ID: 480-86431-4 Date Sampled: 08/31/2015 1320
Client Matrix: Water Date Received: 09/01/2015 1030

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/L	0.0050	0.010	1.0	9012B

Analysis Batch: 480-261692 Analysis Date: 09/02/2015 1456
Prep Batch: 480-261556 Prep Date: 09/02/2015 0150

General Chemistry

Client Sample ID: **DUP-083115**

Lab Sample ID: 480-86431-5 Date Sampled: 08/31/2015 0000
Client Matrix: Water Date Received: 09/01/2015 1030

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/L	0.0050	0.010	1.0	9012B

Analysis Batch: 480-261692 Analysis Date: 09/02/2015 1500
Prep Batch: 480-261556 Prep Date: 09/02/2015 0150

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Rochester Gas & Electric – Geneseo Park Street Site

Data Usability Summary Report

GENESEO, NEW YORK

Volatile, Semivolatile, Metals and Cyanide Analyses

SDG #480-86520-1

Analyses Performed By:
TestAmerica
Amherst, New York

Report #24499R
Review Level: Tier III
Project: B0013138.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #480-86520-1 for samples collected in association with the Rochester Gas & Electric Geneseo Park Street Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	DISS GAS	SVOC	TPH	MET	MISC
480-86520-1	MW-6	480-86520-1	Water	8/31/2015		X		X	X	X	X
	MW-7	480-86520-2	Water	8/31/2015		X		X	X	X	X
	RB-083115	480-86520-3	Water	8/31/2015		X		X		X	X
	TRIP BLANK	480-86520-4	Water	8/31/2015		X					

Note:

1. MISC- Miscellaneous parameters: Total Cyanide.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 8260C, 8270D, RSK-175 and 310.13 (petroleum products). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260C	Water	14 days from collection to analysis	Cool to <6°C; preserved to a pH of less than 2 s.u.

s.u. Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
MW-7	Acetone	Detected sample results <RL and <BAL	"UB" at the RL
MW-6		Detected sample results >RL and <BAL	"UB" at detected sample concentration

RL Reporting limit

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of

acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
MW-6 MW-7 RB-083115 TRIP BLANK	CCV %D	Trichlorofluoromethane	+24.1%
		Acetone	+25.6%
		Carbon disulfide	+37.5%
		1,1,1-Trichloroethane	+26.1%
		Carbon tetrachloride	+21.5%
		Bromodichloromethane	+21.4%
		2-Hexanone	+21.3%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J

Initial/Continuing	Criteria	Sample Result	Qualification
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated with this SDG.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected a with sample location associated with this SDG.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X	X		
C. Trip blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
MW-6 MW-7	Phenanthrene (rinsate and method blank)	Detected sample results <RL and <BAL	"UB" at the RL

RL Reporting limit

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of

acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
MW-6 MW-7 RB-083115	ICV %RSD	Benzaldehyde	19.2%
		2-Nitrophenol	17.1%
		Hexachlorocyclopentadiene	19.1%
		2,4-Dinitrophenol	55.0%
		2,4-Dinitrotoluene	19.4%
		Atrazine	16.7%
		Pyrene	16.4%
	CCV %D	Benzaldehyde	-29.1%
		Hexachlorocyclopentadiene	-23.7%
		2,4-Dinitrophenol	-23.1%
		4-Nitrophenol	-22.8%
		Pentachlorophenol	-31.7%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J

Initial/Continuing	Criteria	Sample Result	Qualification
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated with this SDG.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
MW-6 MW-7 RB-083115	2,4-Dinitrophenol	<LL but >10%

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of an LCS deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected a with sample location associated with this SDG.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks		X	X		
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R					X
Matrix Spike Duplicate (MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

PETROLEUM PRODUCTS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Petroleum products By NYSDOH 310.13	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% or a correlation coefficient of greater than 0.99 is allowed.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All calibration criteria were within the control limits.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on sample location associated with these SDGs.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

7. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected a with sample location associated with this SDG.

8. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified compounds met the specified criteria.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PETROLEUM PRODUCTS

TPH; SW-846 310.13	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries					X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010C and 9012B (Total Cyanide). Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

    U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

    B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

    E The reported value is estimated due to the presence of interference.

    N Spiked sample recovery is not within control limits.

    * Duplicate analysis is not within control limits.

- Validation Qualifiers

    J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

    UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

    UB Analyte considered non-detect at the listed value due to associated blank contamination.

    R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Preserve to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. No qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within control limits.

The correct number and type of standards were analyzed. All initial calibration verification standard recoveries were within control limits.

All initial and continuing calibration verification standard recoveries were within the control limit.

3.2 Low Level Continuing Calibration Standard

The low level continuing calibration check standard (ICVL/CCVL) serves to verify the linearity of calibration of the analysis at the RL.

The ICVL/CCVL standard recoveries were within the control limits of 70 to 130%.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS analysis was not performed on sample location associated with this SDG.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices.

A laboratory duplicate analysis was not performed on sample location associated with this SDG.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected a with sample location associated with this SDG.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample

are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

A serial dilution was not performed on sample location associated with this SDG.

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS; SW-846 6010C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X		X	
C. Equipment/Field Blanks		X	X		
Laboratory Control Sample (LCS) %R		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate (MSD) %R					X
MS/MSD Precision (RPD)					X
Lab Duplicate (RPD)					X
Field Duplicate (RPD)					X
ICP Serial Dilution					X
Reporting Limit Verification		X		X	
Total vs. Dissolved					X
Raw Data		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CCVL Standard		X		X	
ICP Interference Check		X		X	
Transcription/calculations acceptable		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Total Cyanide SW-846 9012B	Water	14 days from collection to analysis	Cool to <6°C; preserved to a pH of greater than 12.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the

analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

A MS/MSD analysis was not performed on a sample location associated with this SDG.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate was not performed on a sample location associated with this SDG.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected a with sample location associated with this SDG.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit recoveries between the control limits of 80% and 120%.

All analytes associated with the LCS analysis exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: SW-846 9012B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]						Noncompliance
					VOC	SVOC	DISS GAS	TPH	MET	MISC	
480-86520-1	8/31/2015	SW-846	MW-6	Water	No	No	--	Yes	Yes	Yes	VOC-Rinsate blank SVOC-Method/Rinsate blank, Initial and continuing calibrations, LCS %R
	8/31/2015	SW-846	MW-7	Water	No	No	--	Yes	Yes	Yes	VOC-Rinsate blank SVOC-Method/Rinsate blank, Initial and continuing calibrations, LCS %R
	8/31/2015	SW-846	RB-083115	Water	No	No	--	--	Yes	Yes	VOC- Continuing calibration %D SVOC-Initial and continuing calibrations, LCS %R
	8/31/2015	SW-846	TRIP BLANK	Water	Yes	--	--	--	--	--	

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: 

DATE: October 23, 2015

PEER REVIEW: Joseph C. Houser

DATE: October 23, 2015

CHAIN OF CUSTODY/LABORATORY DATA QUALIFIERS/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
ARCADIS/RGE	Bruce Ahrens	September 1, 2015	296736
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 1
295 Woodcliff Drive	585-385-0090		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Fairport / NY / 14450	Klaus Beyrle	Melissa Dago	
Project Name and Location (State)	**Carrier/Waybill Number**		
Genesee Park Street, Geneseo, NY			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TCL VOC	TCL SVOC	TAL metals	Total Cyanide	310.13	Carbon Dioxide	methane, ethane, ethene	Sulfide	Nitrate
MW-6	8.31.15	1550		X			4		1	3	1		X	X	X	X					
MW-7	↓	1545		X			4		1	3	1		X	X	X	X					
RB-083115	8.31.15	1640		X			2		1	3	1		X	X	X	X					
TRIP BLANK	—	—		X						1			X								

Special Instructions/ Conditions of Receipt

480-86520 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal @ Per Contract
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Standard

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.	[signature]	9.1.15	1300	[signature]	9/2/15	1000
2.						
3.						

Comments

2.0 #1

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

DATA REPORTING QUALIFIERS

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Lab Section	Qualifier	Description
GC/MS VOA		
	^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
GC/MS Semi VOA		
	B	Compound was found in the blank and sample.
	*	LCS or LCSD is outside acceptance limits.
	E	Result exceeded calibration range.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Metals		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-6**

Lab Sample ID: 480-86520-1
Client Matrix: Water

Date Sampled: 08/31/2015 1550
Date Received: 09/02/2015 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 09/10/2015 0138
Prep Date: 09/10/2015 0138

Analysis Batch: 480-262721
Prep Batch: N/A

Instrument ID: HP5973S
Lab File ID: S2317.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	12	UB	3.0	10
Benzene	5.8		0.41	1.0
Bromodichloromethane	1.3	J	0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	6.6		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	43		0.18	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Ethylbenzene	4.4		0.74	1.0
Isopropylbenzene	0.97	J	0.79	1.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	31		0.16	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	3.7		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-6**

Lab Sample ID: 480-86520-1
Client Matrix: Water

Date Sampled: 08/31/2015 1550
Date Received: 09/02/2015 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-262721	Instrument ID:	HP5973S
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	S2317.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/10/2015 0138			Final Weight/Volume:	5 mL
Prep Date:	09/10/2015 0138				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	16		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	112		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	114		73 - 120
Dibromofluoromethane (Surr)	107		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-7**

Lab Sample ID: 480-86520-2
Client Matrix: Water

Date Sampled: 08/31/2015 1545
Date Received: 09/02/2015 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 09/10/2015 0201
Prep Date: 09/10/2015 0201

Analysis Batch: 480-262721
Prep Batch: N/A

Instrument ID: HP5973S
Lab File ID: S2318.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	10 ~~8.9~~ UB	~~J~~	3.0	10
Benzene	4.2		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	2.4		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	1.1		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	58		0.18	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Ethylbenzene	6.2		0.74	1.0
Isopropylbenzene	1.4		0.79	1.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	54		0.16	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	4.9		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-7**

Lab Sample ID: 480-86520-2
Client Matrix: Water

Date Sampled: 08/31/2015 1545
Date Received: 09/02/2015 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-262721	Instrument ID:	HP5973S
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	S2318.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/10/2015 0201			Final Weight/Volume:	5 mL
Prep Date:	09/10/2015 0201				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	30		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	111		73 - 120
Dibromofluoromethane (Surr)	102		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **RB-083115**

Lab Sample ID: 480-86520-3
Client Matrix: Water

Date Sampled: 08/31/2015 1640
Date Received: 09/02/2015 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 09/10/2015 0223
Prep Date: 09/10/2015 0223

Analysis Batch: 480-262721
Prep Batch: N/A

Instrument ID: HP5973S
Lab File ID: S2319.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	2.3	J	1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	8.4	J	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Ethylbenzene	ND		0.74	1.0
Isopropylbenzene	ND		0.79	1.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **RB-083115**

Lab Sample ID: 480-86520-3
Client Matrix: Water

Date Sampled: 08/31/2015 1640
Date Received: 09/02/2015 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-262721	Instrument ID:	HP5973S
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	S2319.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/10/2015 0223			Final Weight/Volume:	5 mL
Prep Date:	09/10/2015 0223				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	112		73 - 120
Dibromofluoromethane (Surr)	107		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **TRIP BLANK**

Lab Sample ID: 480-86520-4
Client Matrix: Water

Date Sampled: 08/31/2015 0000
Date Received: 09/02/2015 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 1.0
Analysis Date: 09/10/2015 0246
Prep Date: 09/10/2015 0246

Analysis Batch: 480-262721
Prep Batch: N/A

Instrument ID: HP5973S
Lab File ID: S2320.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Ethylbenzene	ND		0.74	1.0
Isopropylbenzene	ND		0.79	1.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **TRIP BLANK**

Lab Sample ID: 480-86520-4
Client Matrix: Water

Date Sampled: 08/31/2015 0000
Date Received: 09/02/2015 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-262721	Instrument ID:	HP5973S
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	S2320.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/10/2015 0246			Final Weight/Volume:	5 mL
Prep Date:	09/10/2015 0246				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	109		66 - 137
Toluene-d8 (Surr)	97		71 - 126
4-Bromofluorobenzene (Surr)	115		73 - 120
Dibromofluoromethane (Surr)	112		60 - 140

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-6**

Lab Sample ID: 480-86520-1
Client Matrix: Water

Date Sampled: 08/31/2015 1550
Date Received: 09/02/2015 1000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D
Prep Method: 3510C
Dilution: 1.0
Analysis Date: 09/06/2015 0329
Prep Date: 09/03/2015 1401

Analysis Batch: 480-262234
Prep Batch: 480-261907

Instrument ID: HP5973W
Lab File ID: W6469.D
Initial Weight/Volume: 257.8 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Biphenyl	ND		0.63	4.8
bis (2-chloroisopropyl) ether	ND		0.50	4.8
2,4,5-Trichlorophenol	ND		0.47	4.8
2,4,6-Trichlorophenol	ND		0.59	4.8
2,4-Dichlorophenol	ND		0.49	4.8
2,4-Dimethylphenol	0.86	J	0.48	4.8
2,4-Dinitrophenol	ND J	*	2.2	9.7
2,4-Dinitrotoluene	ND J		0.43	4.8
2,6-Dinitrotoluene	ND		0.39	4.8
2-Chloronaphthalene	ND		0.45	4.8
2-Chlorophenol	ND		0.51	4.8
2-Methylnaphthalene	ND		0.58	4.8
2-Methylphenol	ND		0.39	4.8
2-Nitroaniline	ND		0.41	9.7
2-Nitrophenol	ND J		0.47	4.8
3,3'-Dichlorobenzidine	ND		0.39	4.8
3-Nitroaniline	ND		0.47	9.7
4,6-Dinitro-2-methylphenol	ND		2.1	9.7
4-Bromophenyl phenyl ether	ND		0.44	4.8
4-Chloro-3-methylphenol	ND		0.44	4.8
4-Chloroaniline	ND		0.57	4.8
4-Chlorophenyl phenyl ether	ND		0.34	4.8
4-Methylphenol	ND		0.35	9.7
4-Nitroaniline	ND		0.24	9.7
4-Nitrophenol	ND J		1.5	9.7
Acenaphthene	ND		0.40	4.8
Acenaphthylene	ND		0.37	4.8
Acetophenone	ND		0.52	4.8
Anthracene	ND		0.27	4.8
Atrazine	ND J		0.45	4.8
Benzaldehyde	ND J		0.26	4.8
Benzo(a)anthracene	ND		0.35	4.8
Benzo(a)pyrene	ND		0.46	4.8
Benzo(b)fluoranthene	ND		0.33	4.8
Benzo(g,h,i)perylene	ND		0.34	4.8
Benzo(k)fluoranthene	ND		0.71	4.8
Bis(2-chloroethoxy)methane	ND		0.34	4.8
Bis(2-chloroethyl)ether	ND		0.39	4.8
Bis(2-ethylhexyl) phthalate	ND		1.7	4.8
Butyl benzyl phthalate	ND		0.41	4.8
Caprolactam	ND		2.1	4.8
Carbazole	0.38	J	0.29	4.8
Chrysene	ND		0.32	4.8
Di-n-butyl phthalate	ND		0.30	4.8
Di-n-octyl phthalate	ND		0.46	4.8
Dibenz(a,h)anthracene	ND		0.41	4.8

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-6**

Lab Sample ID: 480-86520-1
Client Matrix: Water

Date Sampled: 08/31/2015 1550
Date Received: 09/02/2015 1000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-262234	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-261907	Lab File ID:	W6469.D
Dilution:	1.0			Initial Weight/Volume:	257.8 mL
Analysis Date:	09/06/2015 0329			Final Weight/Volume:	1 mL
Prep Date:	09/03/2015 1401			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dibenzofuran	ND		0.49	9.7
Diethyl phthalate	ND		0.21	4.8
Dimethyl phthalate	ND		0.35	4.8
Fluoranthene	ND		0.39	4.8
Fluorene	ND		0.35	4.8
Hexachlorobenzene	ND		0.49	4.8
Hexachlorobutadiene	ND		0.66	4.8
Hexachlorocyclopentadiene	ND	J	0.57	4.8
Hexachloroethane	ND		0.57	4.8
Indeno(1,2,3-cd)pyrene	ND		0.46	4.8
Isophorone	ND		0.42	4.8
N-Nitrosodi-n-propylamine	ND		0.52	4.8
N-Nitrosodiphenylamine	ND		0.49	4.8
Naphthalene	ND		0.74	4.8
Nitrobenzene	ND		0.28	4.8
Pentachlorophenol	ND	J	2.1	9.7
Phenanthrene	4.8 ~~1.2~~	UB ~~J B~~	0.43	4.8
Phenol	ND		0.38	4.8
Pyrene	ND	J	0.33	4.8

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	90		52 - 132
2-Fluorobiphenyl	100		48 - 120
2-Fluorophenol	74		20 - 120
Nitrobenzene-d5	90		46 - 120
p-Terphenyl-d14	110		67 - 150
Phenol-d5	31		16 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-7**

Lab Sample ID: 480-86520-2
Client Matrix: Water

Date Sampled: 08/31/2015 1545
Date Received: 09/02/2015 1000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-262234	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-261907	Lab File ID:	W6470.D
Dilution:	1.0			Initial Weight/Volume:	262.5 mL
Analysis Date:	09/06/2015 0358			Final Weight/Volume:	1 mL
Prep Date:	09/03/2015 1401			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Biphenyl	ND		0.62	4.8
bis (2-chloroisopropyl) ether	ND		0.50	4.8
2,4,5-Trichlorophenol	ND		0.46	4.8
2,4,6-Trichlorophenol	ND		0.58	4.8
2,4-Dichlorophenol	ND		0.49	4.8
2,4-Dimethylphenol	ND		0.48	4.8
2,4-Dinitrophenol	ND J		2.1	9.5
2,4-Dinitrotoluene	ND J		0.43	4.8
2,6-Dinitrotoluene	ND		0.38	4.8
2-Chloronaphthalene	ND		0.44	4.8
2-Chlorophenol	ND		0.50	4.8
2-Methylnaphthalene	1.6	J	0.57	4.8
2-Methylphenol	ND		0.38	4.8
2-Nitroaniline	ND		0.40	9.5
2-Nitrophenol	ND J		0.46	4.8
3,3'-Dichlorobenzidine	ND		0.38	4.8
3-Nitroaniline	ND		0.46	9.5
4,6-Dinitro-2-methylphenol	ND		2.1	9.5
4-Bromophenyl phenyl ether	ND		0.43	4.8
4-Chloro-3-methylphenol	ND		0.43	4.8
4-Chloroaniline	ND		0.56	4.8
4-Chlorophenyl phenyl ether	ND		0.33	4.8
4-Methylphenol	ND		0.34	9.5
4-Nitroaniline	ND		0.24	9.5
4-Nitrophenol	ND J		1.4	9.5
Acenaphthene	ND		0.39	4.8
Acenaphthylene	ND		0.36	4.8
Acetophenone	ND		0.51	4.8
Anthracene	ND		0.27	4.8
Atrazine	ND J		0.44	4.8
Benzaldehyde	ND J		0.25	4.8
Benzo(a)anthracene	ND		0.34	4.8
Benzo(a)pyrene	ND		0.45	4.8
Benzo(b)fluoranthene	ND		0.32	4.8
Benzo(g,h,i)perylene	ND		0.33	4.8
Benzo(k)fluoranthene	ND		0.70	4.8
Bis(2-chloroethoxy)methane	ND		0.33	4.8
Bis(2-chloroethyl)ether	ND		0.38	4.8
Bis(2-ethylhexyl) phthalate	ND		1.7	4.8
Butyl benzyl phthalate	ND		0.40	4.8
Caprolactam	ND		2.1	4.8
Carbazole	ND		0.29	4.8
Chrysene	ND		0.31	4.8
Di-n-butyl phthalate	ND		0.30	4.8
Di-n-octyl phthalate	ND		0.45	4.8
Dibenz(a,h)anthracene	ND		0.40	4.8

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-7**

Lab Sample ID: 480-86520-2
Client Matrix: Water

Date Sampled: 08/31/2015 1545
Date Received: 09/02/2015 1000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-262234	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-261907	Lab File ID:	W6470.D
Dilution:	1.0			Initial Weight/Volume:	262.5 mL
Analysis Date:	09/06/2015 0358			Final Weight/Volume:	1 mL
Prep Date:	09/03/2015 1401			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dibenzofuran	ND		0.49	9.5
Diethyl phthalate	ND		0.21	4.8
Dimethyl phthalate	ND		0.34	4.8
Fluoranthene	ND		0.38	4.8
Fluorene	ND		0.34	4.8
Hexachlorobenzene	ND		0.49	4.8
Hexachlorobutadiene	ND		0.65	4.8
Hexachlorocyclopentadiene	ND	J	0.56	4.8
Hexachloroethane	ND		0.56	4.8
Indeno(1,2,3-cd)pyrene	ND		0.45	4.8
Isophorone	ND		0.41	4.8
N-Nitrosodi-n-propylamine	ND		0.51	4.8
N-Nitrosodiphenylamine	ND		0.49	4.8
Naphthalene	1.2	J	0.72	4.8
Nitrobenzene	ND		0.28	4.8
Pentachlorophenol	ND	J	2.1	9.5
Phenanthrene	4.8 ~~1.3~~	UB ~~J B~~	0.42	4.8
Phenol	ND		0.37	4.8
Pyrene	ND	J	0.32	4.8

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	99		52 - 132
2-Fluorobiphenyl	110		48 - 120
2-Fluorophenol	83		20 - 120
Nitrobenzene-d5	104		46 - 120
p-Terphenyl-d14	127		67 - 150
Phenol-d5	34		16 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **RB-083115**

Lab Sample ID: 480-86520-3
Client Matrix: Water

Date Sampled: 08/31/2015 1640
Date Received: 09/02/2015 1000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D
Prep Method: 3510C
Dilution: 1.0
Analysis Date: 09/06/2015 0426
Prep Date: 09/03/2015 1401

Analysis Batch: 480-262234
Prep Batch: 480-261907

Instrument ID: HP5973W
Lab File ID: W6471.D
Initial Weight/Volume: 251 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Biphenyl	ND		0.65	5.0
bis (2-chloroisopropyl) ether	ND		0.52	5.0
2,4,5-Trichlorophenol	ND		0.48	5.0
2,4,6-Trichlorophenol	ND		0.61	5.0
2,4-Dichlorophenol	ND		0.51	5.0
2,4-Dimethylphenol	ND		0.50	5.0
2,4-Dinitrophenol	ND J		2.2	10
2,4-Dinitrotoluene	ND J		0.45	5.0
2,6-Dinitrotoluene	ND		0.40	5.0
2-Chloronaphthalene	ND		0.46	5.0
2-Chlorophenol	ND		0.53	5.0
2-Methylnaphthalene	ND		0.60	5.0
2-Methylphenol	ND		0.40	5.0
2-Nitroaniline	ND		0.42	10
2-Nitrophenol	ND J		0.48	5.0
3,3'-Dichlorobenzidine	ND		0.40	5.0
3-Nitroaniline	ND		0.48	10
4,6-Dinitro-2-methylphenol	ND		2.2	10
4-Bromophenyl phenyl ether	ND		0.45	5.0
4-Chloro-3-methylphenol	ND		0.45	5.0
4-Chloroaniline	ND		0.59	5.0
4-Chlorophenyl phenyl ether	ND		0.35	5.0
4-Methylphenol	ND		0.36	10
4-Nitroaniline	ND		0.25	10
4-Nitrophenol	ND J		1.5	10
Acenaphthene	ND		0.41	5.0
Acenaphthylene	ND		0.38	5.0
Acetophenone	ND		0.54	5.0
Anthracene	ND		0.28	5.0
Atrazine	ND J		0.46	5.0
Benzaldehyde	0.91	J B	0.27	5.0
Benzo(a)anthracene	ND		0.36	5.0
Benzo(a)pyrene	ND		0.47	5.0
Benzo(b)fluoranthene	ND		0.34	5.0
Benzo(g,h,i)perylene	ND		0.35	5.0
Benzo(k)fluoranthene	ND		0.73	5.0
Bis(2-chloroethoxy)methane	ND		0.35	5.0
Bis(2-chloroethyl)ether	ND		0.40	5.0
Bis(2-ethylhexyl) phthalate	ND		1.8	5.0
Butyl benzyl phthalate	ND		0.42	5.0
Caprolactam	ND		2.2	5.0
Carbazole	ND		0.30	5.0
Chrysene	ND		0.33	5.0
Di-n-butyl phthalate	ND		0.31	5.0
Di-n-octyl phthalate	ND		0.47	5.0
Dibenz(a,h)anthracene	ND		0.42	5.0

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **RB-083115**

Lab Sample ID: 480-86520-3
Client Matrix: Water

Date Sampled: 08/31/2015 1640
Date Received: 09/02/2015 1000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-262234	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-261907	Lab File ID:	W6471.D
Dilution:	1.0			Initial Weight/Volume:	251 mL
Analysis Date:	09/06/2015 0426			Final Weight/Volume:	1 mL
Prep Date:	09/03/2015 1401			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dibenzofuran	ND		0.51	10
Diethyl phthalate	ND		0.22	5.0
Dimethyl phthalate	ND		0.36	5.0
Fluoranthene	ND		0.40	5.0
Fluorene	ND		0.36	5.0
Hexachlorobenzene	ND		0.51	5.0
Hexachlorobutadiene	ND		0.68	5.0
Hexachlorocyclopentadiene	ND J		0.59	5.0
Hexachloroethane	ND		0.59	5.0
Indeno(1,2,3-cd)pyrene	ND		0.47	5.0
Isophorone	ND		0.43	5.0
N-Nitrosodi-n-propylamine	ND		0.54	5.0
N-Nitrosodiphenylamine	ND		0.51	5.0
Naphthalene	ND		0.76	5.0
Nitrobenzene	ND		0.29	5.0
Pentachlorophenol	ND J		2.2	10
Phenanthrene	1.1	J B	0.44	5.0
Phenol	ND		0.39	5.0
Pyrene	ND J		0.34	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	84		52 - 132
2-Fluorobiphenyl	105		48 - 120
2-Fluorophenol	82		20 - 120
Nitrobenzene-d5	99		46 - 120
p-Terphenyl-d14	127		67 - 150
Phenol-d5	33		16 - 120

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-6**

Lab Sample ID: 480-86520-1
Client Matrix: Water

Date Sampled: 08/31/2015 1550
Date Received: 09/02/2015 1000

310.13 Identification of Routine Petroleum Products

Analysis Method:	310.13	Analysis Batch:	480-262592	Instrument ID:	HP5890-24
Prep Method:	3510C	Prep Batch:	480-262144	Lab File ID:	24a102_169.d
Dilution:	1.0			Initial Weight/Volume:	978.1 mL
Analysis Date:	09/08/2015 1905			Final Weight/Volume:	1 mL
Prep Date:	09/04/2015 1440			Injection Volume:	1 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	ND		0.20	0.20
Kerosene	ND		0.51	0.51
Motor Oil	ND		1.0	1.0
Fuel Oil #2	ND		0.51	0.51
Fuel Oil #4	ND		0.51	0.51
Fuel Oil #6	ND		0.51	0.51
Unknown Hydrocarbons	0.37		0.20	0.20

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-7**

Lab Sample ID: 480-86520-2
Client Matrix: Water

Date Sampled: 08/31/2015 1545
Date Received: 09/02/2015 1000

310.13 Identification of Routine Petroleum Products

Analysis Method:	310.13	Analysis Batch:	480-262592	Instrument ID:	HP5890-24
Prep Method:	3510C	Prep Batch:	480-262144	Lab File ID:	24a102_170.d
Dilution:	1.0			Initial Weight/Volume:	1056 mL
Analysis Date:	09/08/2015 1939			Final Weight/Volume:	1 mL
Prep Date:	09/04/2015 1440			Injection Volume:	1 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	0.41		0.19	0.19
Kerosene	ND		0.47	0.47
Motor Oil	ND		0.95	0.95
Fuel Oil #2	ND		0.47	0.47
Fuel Oil #4	ND		0.47	0.47
Fuel Oil #6	ND		0.47	0.47
Unknown Hydrocarbons	ND		0.19	0.19

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-6**

Lab Sample ID: 480-86520-1
Client Matrix: Water

Date Sampled: 08/31/2015 1550
Date Received: 09/02/2015 1000

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-262020	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-261682	Lab File ID:	I1090315A-7.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	09/03/2015 1817			Final Weight/Volume:	50 mL
Prep Date:	09/03/2015 0725				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Aluminum	0.20		0.060	0.20
Antimony	ND		0.0068	0.020
Arsenic	ND		0.0056	0.015
Barium	0.90		0.00070	0.0020
Beryllium	ND		0.00030	0.0020
Cadmium	ND		0.00050	0.0020
Calcium	110		0.10	0.50
Chromium	ND		0.0010	0.0040
Cobalt	0.00098	J	0.00063	0.0040
Copper	0.0041	J	0.0016	0.010
Iron	0.44		0.019	0.050
Lead	ND		0.0030	0.010
Magnesium	83.3		0.043	0.20
Manganese	0.030		0.00040	0.0030
Nickel	0.013		0.0013	0.010
Potassium	9.3		0.10	0.50
Selenium	ND		0.0087	0.025
Silver	ND		0.0017	0.0060
Sodium	304		0.32	1.0
Thallium	ND		0.010	0.020
Vanadium	ND		0.0015	0.0050
Zinc	0.0030	J	0.0015	0.010

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **MW-7**

Lab Sample ID: 480-86520-2
Client Matrix: Water

Date Sampled: 08/31/2015 1545
Date Received: 09/02/2015 1000

6010C Metals (ICP)

Analysis Method: 6010C
Prep Method: 3005A
Dilution: 1.0
Analysis Date: 09/03/2015 1820
Prep Date: 09/03/2015 0725

Analysis Batch: 480-262020
Prep Batch: 480-261682

Instrument ID: ICAP1
Lab File ID: I1090315A-7.asc
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Aluminum	0.53		0.060	0.20
Antimony	ND		0.0068	0.020
Arsenic	ND		0.0056	0.015
Barium	0.71		0.00070	0.0020
Beryllium	ND		0.00030	0.0020
Cadmium	ND		0.00050	0.0020
Calcium	121		0.10	0.50
Chromium	0.0013	J	0.0010	0.0040
Cobalt	ND		0.00063	0.0040
Copper	0.0028	J	0.0016	0.010
Iron	1.8		0.019	0.050
Lead	ND		0.0030	0.010
Magnesium	74.3		0.043	0.20
Manganese	0.064		0.00040	0.0030
Nickel	0.0020	J	0.0013	0.010
Potassium	31.1		0.10	0.50
Selenium	ND		0.0087	0.025
Silver	ND		0.0017	0.0060
Sodium	377		0.32	1.0
Thallium	ND		0.010	0.020
Vanadium	ND		0.0015	0.0050
Zinc	0.0049	J	0.0015	0.010

Client: ARCADIS U.S. Inc

Job Number: 480-86520-1

Client Sample ID: **RB-083115**

Lab Sample ID: 480-86520-3
Client Matrix: Water

Date Sampled: 08/31/2015 1640
Date Received: 09/02/2015 1000

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-262020	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-261682	Lab File ID:	I1090315A-7.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	09/03/2015 1823			Final Weight/Volume:	50 mL
Prep Date:	09/03/2015 0725				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Aluminum	ND		0.060	0.20
Antimony	ND		0.0068	0.020
Arsenic	ND		0.0056	0.015
Barium	ND		0.00070	0.0020
Beryllium	ND		0.00030	0.0020
Cadmium	ND		0.00050	0.0020
Calcium	ND		0.10	0.50
Chromium	ND		0.0010	0.0040
Cobalt	ND		0.00063	0.0040
Copper	ND		0.0016	0.010
Iron	ND		0.019	0.050
Lead	ND		0.0030	0.010
Magnesium	ND		0.043	0.20
Manganese	ND		0.00040	0.0030
Nickel	ND		0.0013	0.010
Potassium	0.12	J	0.10	0.50
Selenium	ND		0.0087	0.025
Silver	ND		0.0017	0.0060
Sodium	0.41	J	0.32	1.0
Thallium	ND		0.010	0.020
Vanadium	ND		0.0015	0.0050
Zinc	ND		0.0015	0.010

General Chemistry

Client Sample ID: **MW-6**

Lab Sample ID: 480-86520-1
Client Matrix: Water

Date Sampled: 08/31/2015 1550
Date Received: 09/02/2015 1000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/L	0.0050	0.010	1.0	9012B
Analysis Batch: 480-262224	Analysis Date: 09/05/2015 1012						
Prep Batch: 480-262037	Prep Date: 09/04/2015 0140						

General Chemistry

Client Sample ID: **MW-7**

Lab Sample ID: 480-86520-2
Client Matrix: Water

Date Sampled: 08/31/2015 1545
Date Received: 09/02/2015 1000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/L	0.0050	0.010	1.0	9012B
Analysis Batch: 480-262224	Analysis Date: 09/05/2015 1016						
Prep Batch: 480-262037	Prep Date: 09/04/2015 0140						

General Chemistry

Client Sample ID: **RB-083115**

Lab Sample ID: 480-86520-3
Client Matrix: Water

Date Sampled: 08/31/2015 1640
Date Received: 09/02/2015 1000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Total	ND		mg/L	0.0050	0.010	1.0	9012B
Analysis Batch: 480-262224	Analysis Date: 09/05/2015 1018						
Prep Batch: 480-262037	Prep Date: 09/04/2015 0140						

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