



**CONESTOGA-ROVERS
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January 27, 2015

Reference No. 080987-20

Mr. Daniel J. Eaton
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7015

Dear Sir:

Re: Pre-Design Investigation Report
OU-1 and Upland Source Soils in OU-3,
Friedrichsohn Cooperage Site, 153-155 Saratoga Avenue, Waterford, New York

On behalf of SI Group Inc. and the General Electric Company (Companies), we have enclosed the Pre-Design Investigation Report for Upland Source Soil OU-3 for New York State Department of Environmental Conservation (NYSDEC) review and approval. The Pre-Design Investigation Report presents the results of the pre-design investigation work that was conducted in accordance with the NYSDEC approved RD/RA Work Plan.

The Pre-Design Investigation Report is being submitted in electronic (PDF) format and hard copies.

CRA anticipates that the Pre-Design Investigation Report for OU-3 Sediments will be submitted to NYSDEC in February.

Should you have any questions or require additional information or clarification, please do not hesitate to contact the undersigned.



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January 27, 2015

Reference No. 080987-20

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Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Jamie Puskas, P.Eng.

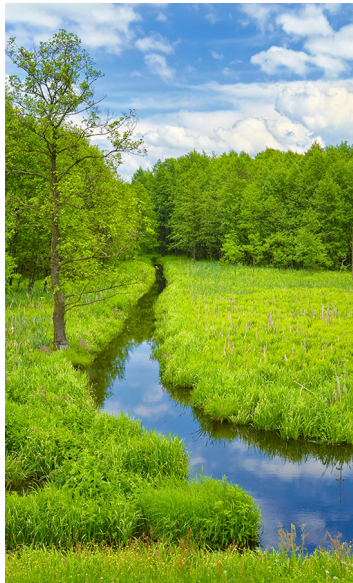
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Encl.

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Draft Report

Pre-Design Investigation Report

Upland Source Soils for OU-3

Friedrichsohn Cooperage Site
153-155 Saratoga Avenue
Town of Waterford, New York

Prepared for: General Electric Company and SI Group, Inc.

Conestoga-Rovers & Associates

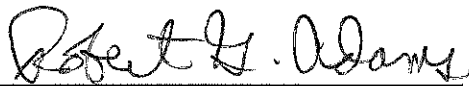
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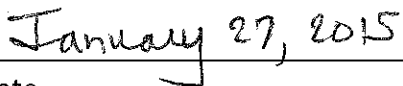


Certification

I certify that I am currently a NYS registered professional engineer and that this Pre-Design Investigation Report Upland Source Soil for OU-3 for the Friedrichsohn Cooperage Site was prepared in accordance with applicable statutes and regulations and in substantial conformance with the New York State Department of Environmental conservation (NYSDEC) DER Technical Guidance for Site Investigation and Remediation (DER-10).



Robert G. Adams, P.E.
CRA Infrastructure & Engineering, Inc.
Registration No. 064918



Date

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Section 1.0 Introduction

The Friedrichsohn Cooperage inactive hazardous waste site (the Site) is located at 153-155 Saratoga Avenue in the Town of Waterford, New York (see Figure 1.1 for the Site location). The Site is comprised of three Operable Units (OUs). OU-1 is comprised of the on-Site and off-Site contaminated soils associated with the former cooperage operation. OU-2 is comprised of the on-Site and off-Site groundwater. OU-3 is comprised primarily of the sediments in the Old Champlain Canal between O'Connor Drive and Burton Avenue, and also includes on-Site source area soils.

On behalf of General Electric Company and SI Group, Inc. (the Companies), Conestoga-Rovers & Associates (CRA) prepared and submitted to New York State Department of Environmental Conservation (NYSDEC) a Remedial Design/Remedial Action Work Plan (Work Plan) dated February 4, 2014 for OU-1 and the upland source soils in OU-3. The Work Plan provides for the development and implementation of final plans and specifications for implementing the remedial alternative for OU-1 on-Site soils and the upland source soils in OU-3. The Work Plan also presents a pre-design investigation program aimed at collecting the additional data necessary to complete the remedial design. This Pre-Design Investigation (PDI) Report presents the pre-design data collected in accordance with the NYSDEC approved Work Plan.

This PDI Report has been prepared by CRA in accordance with the NYSDEC approved Work Plan and the Order on Consent (Consent Order) between the NYSDEC and the Companies, which became effective February 7, 2013 (Index No. A5-0784-1202). A separate PDI report will be submitted for OU-3 sediments.

The PDI Report is organized as follows:

Section 1.0 – Introduction

Section 2.0 – Background Information

Section 3.0 – Pre-design Investigation Objectives

Section 4.0 – Historical Data

Section 5.0 – Pre-Design Data Collection and Results

Section 6.0 – Overview

Section 2.0 Background Information

2.1 Site Location and Description

The Site is located at 153-155 Saratoga Avenue, Waterford, Saratoga County, New York. A Site location map is presented as Figure 1.1. The Site is approximately 0.45 acres in size and has approximately 315 feet of frontage on Saratoga Avenue (Route 32). The Old Champlain Canal borders the Site on the side opposite the road. Residential properties are adjacent to the Site on Saratoga Avenue; residential and commercial properties are also located across from the Site on Saratoga Avenue. The Site is currently a vacant lot. The approximate boundaries of the Site are shown on Figure 2.1.

Access to the Site is limited by an 8-foot tall, lockable, chain-link fence that has been installed around the former Friedrichsohn Cooperage property. Warning signs have been installed on the fencing.

The Site is currently zoned as residential (R-75) and is served by the public water supply system and the public storm water and sanitary systems. The commercial properties across from the Site are located on property formerly known as the Friedrichsohn Cooperage Lot, which was used to store drums.

2.2 Site History

A cooperage operated at this location from 1817 to 1991. During the early operations the cooperage made and refurbished wooden kegs and barrels. When the cooperage closed in 1991, the primary business had been cleaning and refurbishing metal drums. Industrial facilities in the area used materials shipped in drums in their industrial processes. Drums would be sent to the cooperage to be cleaned, repainted, and resold. The drum cleaning and refurbishing operations are alleged to be the source of the contamination that was identified at the Site.

During its most recent history, the cooperage operated out of five buildings at the Site. Three of the five buildings were constructed as slab-on-grade. Two of the buildings contained structures below grade. One of the buildings had a basement area, below grade, where sumps were located. One of the buildings on the southwest end of the Site is labeled as a garage on historical drawings, and had an automobile service trench associated with it. The service trench is below grade and provided access to the undercarriage of vehicles.

Inspection and examination of the abandoned business in 1994 revealed many metal drums, and the buildings to be unstable and in poor condition. The USEPA conducted an emergency removal action between 1994 and 1996. The cooperage buildings were demolished, and clean

fill was imported to replace contaminated soil that was removed. In the spring of 2008, NYSDEC collected samples of soil, groundwater, and surface water and sediment in the canal. The analytical results formed the basis for the listing of the Site in December 2008 as a Class 2 on the NYS Registry of Inactive Hazardous Waste Disposal Sites.

The contaminants of concern (COCs) at the Site include polychlorinated biphenyls (PCBs), chlorinated volatile organic compounds (VOCs) (tetrachloroethane, trichloroethane, dichloroethene, vinyl chloride, and chlorobenzene), benzene, toluene, ethylbenzene, xylenes (BTX), phenolic compounds (phenol and dimethylphenol), hexachlorobenzene, and metals (arsenic, barium, chrome, and lead).

NYSDEC issued a ROD for OU-1 in December 2012 and a ROD for OU-3 in March 2011. In the OU-1 ROD, NYSDEC selected the Site Cover remedy to achieve restricted residential soil cleanup objective (SCOs). In addition to the Site cover component, the remedy also included Institutional Controls. In the OU-3 ROD, the remedy pertinent to the on-Site source area included excavating the source soil down to bedrock and transporting it off-Site for disposal. The areas identified for remediation in the ROD are shown on Figure 2.1. The components of the remedy as specified in the RODs are as follows:

- A remedial design program to provide the details necessary to implement the remedial program
- Construction of a Site cover to allow for restricted residential use of the Site, including any soil excavation to make room for the full thickness of the Site cover
- Excavation of on-Site source soils down to bedrock
- Off-Site transport and disposal of excavated soils to a permitted disposal facility
- Development of a Site management plan to address residual contamination and any use restrictions
- Imposition of an environmental easement
- Annual certification of the institutional and engineering controls.

In January 2013, the Companies and NYSDEC entered into a Consent Order to conduct and implement a Work Plan. The objective of the Work Plan is to provide for the development and implementation of final plans and specifications for implementing the remedial alternative set forth in the NYSDEC RODs, dated March 2011 and December 2012.

Section 3.0 Pre-Design Investigation Objectives

The OU-1 Area remediation activities involve shallow soil excavation ranging in depth from 0 to 2 feet bgs for the purpose of installing a soil cover. PCB concentrations within the OU-1 Area are all below 50 ppm PCBs. As a result, no additional sampling to characterize the presence of PCBs according to TSCA Subpart N is required for the removal of soil in the OU-1 Area. Additionally, shallow excavations are standard remediation activities. No additional data is necessary to complete the OU-1 Area remedial design.

The OU-3 upland soil source area remediation activities will involve deeper excavation below the groundwater table. PCBs with concentrations above 50 ppm are present in the OU-3 upland source area. Additional pre-design data has been collected in order to complete the remedial design for soil remediation in OU-3 upland source area. Specific pre-design data collection tasks are:

- Collect geotechnical data for the overburden and bedrock to allow for the design of a shoring plan for the OU-3 upland source area excavation activities
- Complete the characterization of PCBs between the existing OU-3 upland source area sampling and the canal top-of-bank
- Estimate groundwater flow from the overburden and bedrock aquifers to develop estimates of the amount of water that will require management during excavation activities below the water table
- Obtain representative groundwater samples from the OU-3 upland source area to evaluate the quality of groundwater that will require management during dewatering activities
- Characterize soil for disposal purposes

This report presents the pre-design data collected in accordance with the Work Plan.

Section 4.0 Historical Data

The available historic soil and groundwater data for OU-1 and OU-3 areas were reviewed as a part of the preparation of the Work Plan. Soil and groundwater data are included in the following reports that were available during the preparation of the Work Plan:

- Focused Remedial Investigation Feasibility Study (RI/FS), Malcolm Pirnie, April 2010
- Record of Decision – Operable Unit Number 01 Remedial Program, On-Site and Off-Site Soil (OU-1 ROD), December 2012
- Record of Decision – Operable Unit Number 03 Remedial Program (OU-3 ROD), March 2011

- Proposed Remedial Action Plan Operable Unit 01 Remedial Program – Onsite and Offsite Soil (OU-1 PRAP), October 2012
- Proposed Remedial Action Plan Operable Unit 03 Remedial Program (OU-3 PRAP) February 2011

Of the five documents listed above, only the RI/FS includes tabulated data for subsurface and surface soil samples. The remaining documents include summary statistics for the data but not the parent data. The parent data for the soil data summaries presented in the OU-1 and OU-3 RODs and PRAPs were provided by the NYSDEC in electronic Equis file format.

4.1 Soil Data

The OU-1 and OU-3 RODs and OU-1 and OU-3 PRAPs provide general information regarding the number of analyses, concentration ranges for the various chemical parameters detected and frequency of exceedances at the Site. A summary of the number of subsurface soil analyses within the OU-1 soil area and the OU-3 upland source area are as follows:

OU-1 Soil Area

- VOCs – 52 samples
- SVOCs – 52 samples
- Inorganics – 41 samples
- Pesticides – 22 samples
- PCBs – 124 samples

OU-3 Upland Source Area

- VOCs – 76 samples
- SVOCs – 76 samples
- Inorganics – 56 samples
- Pesticides – (Not Provided in OU-3 ROD)
- PCBs – 173 samples

The above soil sampling completed by NYSDEC was conducted in phases as follows:

- 2009 – A biased surface and subsurface sampling program (SB-01 to SB-30) was completed in 2009 that included both on-Site and off-Site soil sample collection. Samples were collected in both the OU-1 and OU-3 upland source areas.

- 2010 – A grid-based subsurface soil sampling program (SB-31 to SB-91) was completed in 2010. The grid-based sampling was conducted in the eastern portion of the Site and included sample collection in both the OU-1 and OU-3 upland source areas. A limited amount surface soil sample collection was completed during the 2010 grid-based sampling that appears to be related to localized surface soil removals.
- 2011 – Off-site subsurface soil sampling (SB-91 to SB-104) was completed in 2011 outside the boundaries of the OU-1 and OU-3 upland source areas. A limited amount of surface soil sample collection was completed in 2011 in the eastern portion of the OU-1 upland soils area.

Soil boring locations are identified on Figure 4.1. A summary of the soil data is presented below.

OU-1

The OU-1 ROD presents a summary of surface and subsurface soil data for on-Site sample locations for samples collected outside the source areas. The soil data for the OU-1 and OU-3 upland source areas were provided in Table 2.1 and Table 2.2, respectively, of the Work Plan. The surface soil samples were collected from 0 to 2 inches below ground surface (bgs) and the subsurface samples were collected from 2 to 20 feet bgs.

Several of the surface soil results exceeded the NYSDEC unrestricted use Soil Cleanup Objectives (SCOs, Subpart 375-6.3) for PCBs, several metals (chromium, lead, mercury), and some SVOCs, particularly phenol.

Several of the subsurface soil results exceeded the unrestricted SCOs for PCBs, lead, mercury, and phenol. PCBs were detected exceeding both unrestricted and restricted SCOs. The highest PCB concentration reported in the OU-1 Area was 12 parts per million (ppm) reported at a depth of 9 to 12 feet bgs at soil boring location SB-42.

OU-3

The OU-3 ROD presents a summary of surface and subsurface soil data for on-Site sample locations in OU-3 and the vicinity, and were provided in Table 2.3 and Table 2.4, respectively of the Work Plan. These soil samples were collected across the property in areas of the former cooperage buildings and were used to delineate the on-Site source area. One of the cooperage buildings, Building #3, was located within the on-Site source area. Surface soil samples were collected from 0 to 2 inches bgs, and subsurface soil samples were collected from 0 to 18 feet bgs.

Several of the surface soil results exceeded the unrestricted SCOs for PCBs, several metals (chromium, lead, mercury), and phenol. The only parameter with a significant frequency of exceeding the restricted SCOs was chromium.

Several of the subsurface soil results exceeded the unrestricted SCOs for PCBs, metals (particularly lead, arsenic), ethylbenzene, toluene, xylenes, hexachlorobenzene, and phenol. Parameters that exceeded the restricted SCOs were metals and PCBs. The main parameter exceeding both unrestricted and restricted SCOs was PCBs. There are two soil boring locations in the OU-3 upland source area, SB-74 and SB-76, that reported PCB concentrations above 50 ppm. The Toxic Substance Control Act (TSCA) requires disposal of soil containing PCBs at concentrations greater than 50 ppm in a hazardous waste landfill permitted under Section 3004 of the Resource Conservation and Recovery Act (RCRA), or by a State authorized facility under Section 3006 of RCRA or a PCB disposal facility approved under TSCA.

VOCs, SVOCs, pesticides, metals, and PCBs exceeded SCOs. In general, higher concentrations of PCBs and SVOCs were detected at depths of approximately 10 feet bgs and deeper within the limits of the OU-3 upland source area.

4.2 OU-3 Groundwater Data

The OU-3 remediation activities will involve excavation of soils below the water table. As a result, a discussion of groundwater quality in relation to the anticipated excavation activities is relevant. There are two historic groundwater monitoring wells (MW-09 [bedrock] and MW-10 [overburden]) located in the OU-3 upland source area. There is also a piezometer (PES-1) located in the OU-3 upland source area. Both the monitoring wells and the piezometer are installed in or downgradient to the area that has the highest PCB concentrations in soils (greater than 50 ppm) on Site. These monitoring points represent the highest level of PCB contamination observed on Site to date. A summary of OU-3 groundwater quality is presented in Table 1 of the OU-3 ROD.

The groundwater data presented in the April 2010 Malcolm Pirnie Focused Remedial Investigation Feasibility Study (FS) indicate that the groundwater in the OU-1 and OU-3 upland source areas have concentrations of SVOCs, VOCs, and PCBs above the NYDEC Class GA Standards or Guidance Values (Groundwater Criteria). There are three historic monitoring locations on-Site that monitor overburden groundwater quality (MW-10 and PES-1 in the OU-3 source area and MW-8 in the OU-1 soil area). Parameters identified in the monitoring locations within the OU-1 and OU-3 upland source areas with concentrations above the Groundwater Criteria include:

- VOCs – chlorinated solvents, acetone, benzene, toluene, ethylbenzene, and xylene (BTEX)

- SVOCs – phenols, bis(2-ethylhexyl)phthalate, polynuclear aromatic hydrocarbons (PAHs)
- Metals
- PCBs

Section 5.0 Pre-Design Data Collection and Results

Pre-design data collection activities included the following tasks.

- Surveying of new boreholes and monitoring wells
- PCB Soil Sampling
- Geotechnical soil boring investigation
- In-situ hydraulic conductivity testing
- Monitoring well installation and groundwater sampling

A description of each of the pre-design investigation activities are presented in the following subsections.

5.1 Surveying

CRA was provided a surveyed base map of the Site by the NYSDEC. The surveyed base map has been reviewed and CRA confirmed that there is sufficient ground surface elevation detail to develop the Remedial Design. Based on this information, the existing site survey drawing provided by NYSDEC will be utilized in the development of the excavation and grading plans for the Remedial Design and no additional topographic surveying was necessary.

CRA retained Bryant Associates to survey the new borehole and monitoring well locations on May 22, 2014. The purpose of the survey was to provide x, y and z coordinates for the 26 borings, 2 monitoring wells, and 2 geotechnical boring locations that were advanced as part of the pre-design investigation.

Upon completion of all surveying activities, Bryant Associates, P.C. provided CRA with an AutoCAD drawing file that identified the x, y, and z coordinates of the newly surveyed locations in NAD 83 datum. The Site Plan presented on Figure 2.1 includes the new borehole and monitoring well locations completed by CRA in 2014, the historic monitoring well locations installed by Malcolm Pirnie in 2009 and borehole locations installed by Malcolm Pirnie from 2009 to 2011.

5.2 PCB Soil Sampling

Soils within the OU-3 upland source area are to be excavated down to bedrock. This will involve the excavation of approximately 2,800 cubic yards of soil. The depth to bedrock in this area is approximately 16 feet. PCB soil sampling was conducted as part of the pre-design investigation to collect additional data to better define the extent of soils with PCB concentrations above 50 ppm that will require management as a TSCA waste.

Four locations were initially identified within the OU-3 Area that have PCBs above 50 ppm, which will require disposal at a hazardous waste landfill permitted under section 3004 of the RCRA, or by a State authorized facility under section 3006 of RCRA or a PCB disposal facility approved under TSCA consistent with 40 CFR 761.61 of TSCA. To further define the boundary of soils with PCBs above 50 ppm additional soil sampling was proposed in the Work Plan.

As presented in Section 5.2 of the Work Plan, a 25-foot wide data gap was identified between the southernmost PCB sampling and the sediment sampling completed at the northern bank of the canal. 40 CFR 761.61 of the Toxic Substance Control Act (TSCA) Subpart N requires characterization sampling prior to conducting PCB removals. The spacing of the existing grid sampling in the OU-3 upland source area is consistent with Subpart N. However, there are gaps between SPB-8, SPB-9 and SPB-10 along the northern canal bank. As a result, additional soil sampling was proposed in this area.

5.2.1 Field Investigation Summary

A total of 26 soil borings were completed by CRA in May 2014 to further delineate both vertically and horizontally the presence of greater than 50 ppm PCB concentrations in the OU-3 upland source area. Six borings were advanced to a depth of approximately 5 feet bgs, 8 borings to a depth of approximately 9 to 10 feet bgs and 12 borings to a depth of approximately 15 ft bgs. Borings were advanced by Aquifer Drilling & Testing, INC (ADT) using a track mounted Geoprobe. Borehole locations are shown on Figure 5.1, stratigraphic information was recorded by a CRA field geologist and boring logs are provided in Appendix A.

Soil samples were collected at various depths consistent with the procedures described in the Field Sampling Plan (FSP). Table 5.1 presents the soil sample key. All soil samples were submitted to Spectrum Analytical Inc. for PCB analysis consistent with the procedures defined in the Quality Assurance Project Plan (QAPP). In accordance with the Work Plan, some samples were held in the laboratory pending receipt of soil samples collected from shallower depths or from boreholes located closer to the previously defined area with PCBs greater than 50 ppm. The laboratory was directed to analyze the held samples if delineation of greater than 50 ppm PCBs was not achieved. Soil analytical data reports from Spectrum Analytical Inc. are provided in Appendix B and the results are summarized on Table 5.2. All 2014 soil data has been

validated and a validation memorandum is provided in Appendix C of this report. All soil borings were surveyed on May 22, 2014. Survey information is included with the boring logs.

5.2.2 PCB Soil Sampling Results

Soil results from the current investigation were reviewed and compiled with the historical sampling results. Historical sampling results along with the recent investigation results for the boring locations within the OU-3 upland source area are provided in Table 5.2 and are also presented in Figure 5.1. Proposed excavation limits based on results with soil concentrations greater than 50 ppm are also included in Figure 5.1. Three excavation areas of approximately 131 ft² for Area 1, 69 ft² for Area 2 and 965 ft² for Area 3 were identified on Figure 5.1 that contain greater than 50 ppm PCBs.

A summary of recent and historical samples with concentrations of PCBs > 50 ppm for Area 1 are listed below:

- SB-31 sample depth 5 to 6 feet bgs – 110 ppm PCBs – Dec 2010

The horizontal extent of greater than 50 ppm PCBs at the above locations is defined by soil borings surrounding SB-31. The horizontal extent of greater than 50 ppm PCBs is presented on Figure 5.1. The presence of greater than 50 ppm PCBs at Area 1 is defined vertically by a not detected 4 to 5 feet bgs PCB result and a 5.7 ppm 7 to 8 feet bgs PCB result at soil boring SB-31a.

A summary of recent and historical samples with concentrations of PCBs > 50 ppm for Area 2 are listed below:

- SB-76 sample depth 4 to 5 feet bgs – 72 ppm PCBs - December 2010

The horizontal extent of greater than 50 ppm PCBs at the above location is contained by soil borings surrounding SB-76. The horizontal extent of greater than 50 ppm PCBs is presented on Figure 5.1. The presence of greater than 50 ppm PCBs at Area 2 is defined vertically by a not detected 3 to 4 feet bgs PCB result and a 0.95 ppm 7 to 8 feet bgs PCB result at soil boring SB-76a.

A summary of recent and historical samples with concentrations of PCBs > 50 ppm for Area 3 are listed below:

- SB-74 sample depth 7 to 8 feet bgs – 1,000 ppm PCBs - December 2010
- SPB-9 sample depth 3 to 4 feet bgs – 230 ppm PCBs – February 2011

- SPB-9a sample depth 1 to 2 feet bgs – 1,600 ppm PCBs – May 2014
- SB-99a sample depth 1 to 6 feet bgs – 130 ppm PCBs – May 2014

These locations are all contained either by the canal boundary or by samples with PCBs less than or equal to 50 ppm. The horizontal extent of Area 3 greater than 50 ppm PCBs is defined by soil boring locations surrounding SB-74, SPB-9, SPB-9a and SB-99a. The extent of Area 3 greater than 50 ppm PCBs is presented on Figure 5.1. The southern excavation limit for Area 3 is defined by the New York State Canal Corporation boundary line. The presence of PCBs within the Canal Corporation Boundary will be evaluated and addressed, as necessary, as a part of the OU-3 Sediments Work Plan/Remedial Design. The presence of PCBs has been defined vertically between 1 and 10 feet bgs in Area 3. The sequencing of excavations and soil depths that will require disposal as greater than 50 ppm material will be included in the soil removal design.

5.3 Geotechnical Soil Borings

As mentioned in Section 4.3 of the Work Plan, the northern edge of the OU-3 upland source area is in close proximity to Saratoga Avenue and the sidewalk. As the depth of excavation is anticipated to be approximately 16 feet, the excavation must be shored in order to maintain the road and sidewalk during the remedial work. Similarly, the southern edge of the OU-3 upland source area is adjacent to the canal. Shoring will likely be necessary along the entire boundary of the OU-3 upland source area excavation. The Work Plan specified that additional geotechnical information be obtained during the pre-design investigation. The data will be used to develop design criteria for any shoring necessary for the OU-3 upland source area excavation.

Two geotechnical borings (GB-01 and GB-02) were advanced by ADT using a truck mounted drill rig and hollow stem augers (HSA). The borehole locations are shown on Figure 5.2. Each boring was advanced approximately 12-16 ft into the overburden and then approximately 15 ft further into the sedimentary bedrock using an HQ sized core barrel. The stratigraphy information and sample intervals were recorded for each boring by a CRA field geologist. CRA collected a total of six overburden samples (three from above the water table and three from below the water table). The samples were submitted to Inspec-Sol located in Waterloo, Ontario for grain size analysis (ASTM422), water content (ASTM D2216), unit weight determination (ASTM D653) and specific gravity (ASTM D584). Additionally, 4 bedrock samples were collected from each boring and submitted to Inspec-Sol for point load testing and unconfined compression testing.

The results of the geotechnical analyses are presented in Appendix D and the boring stratigraphy logs are provided in Appendix A. The geotechnical results will be utilized to calculate the lateral pressures on the shoring system, depth of embedment required to resist

the lateral pressures and to determine the feasibility of installation of different types of shoring systems.

5.4 In-Situ Hydraulic Conductivity Testing

The purpose of the in-situ hydraulic conductivity testing is to allow for an estimate of the volume of water that will require management during the excavation activities.

The hydraulic conductivity testing activities included performing single-well response (slug) tests at selected overburden wells to determine the hydraulic conductivity in the overburden. The bedrock will also contribute water to the OU-3 upland source area excavation. It was proposed that a packer injection test be performed on the one bedrock monitoring well (MW-09) in the OU-3 upland source area. The results from the packer injection test can be used to estimate the hydraulic conductivity of the bedrock.

The Work Plan proposed that pressure transducers and data loggers be installed in the canal adjacent to the new wells and in the two new wells. Canal and groundwater level data were collected for a period of two weeks to evaluate potential hydraulic connectivity between the groundwater and the canal.

5.4.1 Field Investigation Summary

CRA completed slug tests on three overburden wells (MW-8, MW-10, and MW-15) and two bedrock monitoring wells (MW-1S and MW-6S) from May 8 to June 16, 2014. Prior to testing each well, the static water level and depth to well bottom were measured. The slug tests were performed by inserting and removing a solid slug to cause a near-instantaneous change in the water level in the well. The water level data was recorded using a pressure transducer. All data, along with well construction information, were then used to determine the hydraulic conductivity of the aquifer materials in the vicinity of the monitoring well. The data analysis was completed using AQTESOLV (v.4.50) and the Bouwer-Rice (1976) analytical solution.

The Work Plan included performing one packer injection test at existing well MW-09 since it is the only existing bedrock monitoring well located in the OU-3 upland source area. However, during the initial field inspection it was not located and believed to be destroyed. Alternatively, CRA completed pressure injection tests on the newly installed geotechnical borings GB-01 and GB-02 also located in OU-3 upland source area. The packer injection tests were completed by lowering a standard packer to a specific depth in the bedrock, and inflating the packer with nitrogen gas to create a seal. A standard pressure-injection (Lugeon) test consisting of five pressure steps was completed. The volume of water injected and the pressure during each injection step were recorded. These data were then analyzed by calculating the Lugeon values for each of the five steps followed by the interpretation of the pattern of results, and

subsequently the selection of representative hydraulic conductivity. The results of the pressure-injection tests are presented in Appendix E.

CRA installed pressure transducers and data loggers in each of the two new monitoring wells MW-14 and MW-15 and in the canal adjacent to the monitoring wells on June 16, 2014. The three transducers and data loggers recorded water levels for approximately 15 days and were removed on July 1, 2014.

5.4.2 Slug Test Results

The falling head and rising head slug test results are presented in Appendix F. The slug test results are summarized in Table 5.3.

The results of the slug testing will allow for estimates of the volume of water that will require management during excavation activities.

5.4.3 Pressure-Injection Test Results

The pressure-injection test results for the two bedrock boreholes are presented in Appendix E.

The table below provides the hydraulic conductivity calculated from the pressure-injection testing:

<i>Monitoring Well</i>	<i>Hydraulic Conductivity (cm/sec)</i>
GB-01	1.2×10^{-5}
GB-02	1.3×10^{-5}

The packer injection testing results will be used to calculate the hydraulic properties in the sedimentary bedrock to determine the contribution of water from bedrock during excavation.

5.4.4 Canal and OU-3 Groundwater Elevation Connectivity Results

The continuous groundwater elevations in the two monitoring wells (MW-14 and MW-15) and the surface water elevations in the canal adjacent to the monitoring wells are presented in Figure 5.3. Changes in elevation of the canal did not result in a change in groundwater elevation during the monitoring period. The results indicate minimal hydraulic connectivity between the canal and the overburden groundwater at wells MW-14 and MW-15. However, some leakage of water through the excavation shoring along the southern extent of the excavation is likely. A lower water level in the canal will minimize potential water leakage to the excavation during soil removal activities.

5.5 Monitoring Well Installation/Groundwater Sampling

As stated in Section 2.3.2 of the Work Plan there are two existing groundwater monitoring wells; MW-09 (bedrock) and MW-10 (overburden) located in the OU-3 upland source area. There is also a piezometer (PES-1) located in the OU-3 upland source area. Monitoring well MW-09 was not located during the pre-design investigation and is believed to be destroyed (see Section 5.5.1 below). Both the monitoring well and the piezometer are installed in or downgradient of the area that has the highest PCB concentrations (greater than 50 ppm) in soils on Site. These monitoring points represent the highest level of PCB contamination observed on Site to date. In order to further evaluate groundwater quality in the OU-3 upland source area, two additional groundwater monitoring wells were installed. Monitoring well MW-14 was installed adjacent to the shoreline to provide a better indication of the groundwater quality at the downgradient end of the source area. Monitoring well MW-15 was installed on the eastern perimeter of OU-3 upland source area. The purpose of monitoring well MW-15 is to obtain representative groundwater samples from the OU-3 upland source area to further evaluate the groundwater quality that will require management during dewatering activities and evaluate the effect of the OU-3 upland source area soil on groundwater quality. The new monitoring well locations are shown on Figure 5.4 and the monitoring well construction logs are presented in Appendix G.

5.5.1 Monitoring Well Installation and Sampling

The two new overburden monitoring wells (MW-14 and MW-15) were installed by ADT using a truck mounted HSA drill rig on May 19, 2014. Wells MW-14 and MW-15 were installed to depths of 15 ft and 14.5 ft, respectively, and completed with 5 ft long PVC well screens and 2-inch diameter PVC risers. The annular space between the borehole wall and well casing was filled with a cement/bentonite grout mixture. A protective flush mount casing was installed at the ground surface.

CRA completed the development and sampling of the two new wells (MW-14 and MW-15) and the re-development and sampling of one existing monitoring well (MW-10) and one existing piezometer (PES-1) located in the OU-3 upland source area from May 19 to June 6, 2014. Piezometer PES-1 was sampled in place of monitoring well MW-09, which could not be located during the sampling event and is believed to be destroyed. PES-1 is located approximately 10 feet north of MW-09. During the field activities for the sediment investigation during the week of November 10, 2014, a broken monitoring well collar was located lying on the ground in the area adjacent to PES-1, which is believed to be monitoring MW-09. No well riser could be located and a sweep of the area with a metal detector could not locate the well. The well development logs and purging records are presented in Appendix H. Wells MW-10, MW-14, and MW-15 continued to have high turbidity readings despite a total of 10 well volumes being

removed from each well prior to sampling. The CRA field geologist observed an oily sheen and strong odor from the PES-1 groundwater and, as a result, turbidity readings were not taken during redevelopment at this well. All groundwater samples were submitted to Spectrum Analytical Inc. for analyses for TCL VOCs, TCL SVOCs, TAL metals and PCBs. The groundwater analytical data reports from Spectrum Analytical Inc. are presented in Appendix I. The laboratory analytical results were validated by CRA's project chemist and the data validation report is presented in Appendix C.

5.5.2 Groundwater Sampling Results

The historical groundwater analytical results from 2009 and current 2014 groundwater analytical results for the wells located in OU-3 upland source area are presented in Table 5.4. The data was compared to the NYSDEC Class GA Groundwater Standards and the exceedances of the Standards are presented on Figure 5.4. The 2014 analytical results for PES-1, MW-10, MW-14, and MW-15 all reported exceedances for VOCs, SVOCs, metals, and PCBs. The 2014 MW-10 groundwater results are consistent with the 2009 groundwater results. MW-14 reports the highest concentrations of chemical parameters on the OU-3 upland source area monitoring wells. The 2014 PES-1 groundwater analytical results are not consistent with the 2009 MW-09 results. In 2014 there were exceedances detected at PES-1 for VOCs, SVOCs, and PCBs but no detections were observed in the 2009 MW-09 sample. MW-09 was screened in the bedrock; whereas, the PES-1 piezometer is installed in the shallow overburden.

In addition to the samples collected from the above monitoring wells, a sample of the water generated during well development from the two new overburden wells (MW-14 and MW-15) and existing monitoring wells (PES-1 and MW-10) located in the OU-3 upland source area was submitted for chemical analysis. The sample collected will be used to provide representative groundwater quality to evaluate options for water management during excavation activities. The results of the composite sample are presented in Table 5.5. The results indicate that a plan for treatment/disposal of water generated during dewatering activities will be necessary. The wastewater analytical data report from Spectrum Analytical Inc. is presented in Appendix J.

Section 6.0 Overview

Site Survey

CRA was provided a surveyed base map of the site location by the NYSDEC. The surveyed base map has been reviewed and it has been confirmed that there is sufficient ground surface elevation detail to develop the Remedial Design. Based on this information, the provided site survey drawing will be utilized in the development of the excavation and grading plans to be included in the Remedial Design.

PCB Soil Sampling

Soil within the OU-3 upland source area will be excavated to bedrock. The depth to bedrock in this area is approximately 16 feet, and will involve the excavation of approximately 2,800 cubic yards of soil. PCB soil sampling was conducted as part of the pre-design investigation to collect additional data to reduce the volume of soil to be disposed as TSCA (> 50 ppm) vs Non-TSCA material. 2014 and historical PCB soil results were reviewed and no additional sampling is necessary. Soil volume calculations for TSCA and Non-TSCA material will be included in the Preliminary Design Report. Excavated soil will be transported off-Site to a permitted facility for treatment or disposal in accordance with State and Federal regulations. Once sections of the OU-3 upland source area have been fully excavated, clean fill that meets the Restricted Residential use SCOs will be backfilled into the excavation and compacted. The imported fill will be brought up to 6 inches below final grade. Topsoil will be backfilled into the upper 6 inches and then seeded.

Geotechnical Investigation

The northern edge of the OU-3 upland source area is in close proximity to Saratoga Avenue and the sidewalk. As the depth of excavation is anticipated to be approximately 16 feet, the excavation must be shored to prevent damage to the road and sidewalk. Similarly, the southern edge of the OU-3 upland source area is adjacent to the canal. Shoring will be employed along the entire boundary of the OU-3 upland source area excavation as a part of the remedial action. The geotechnical information obtained during the pre-design investigation will be used to develop design criteria for any necessary shoring that takes into account the presence of the road to the north and the presence of the canal to the south of the OU-3 upland source area investigation. Two geotechnical boreholes were installed during the pre-design activities in order to collect bedrock core samples for geotechnical testing (point load testing and unconfined compression testing). This information will be used to develop design criteria for the shoring system employed during the OU-3 Upland Soil excavation activities. Design calculations for the lateral loading on the shoring system and depth of embedment will be included in the Preliminary Design Report.

Hydraulic Conductivity Testing

As the depth to water is approximately 7 feet, dewatering will be necessary as the excavation extends down below 7 feet bgs. In order to estimate the rate of groundwater that would flow into the excavation, the hydraulic conductivity of the overburden soil and underlying bedrock was investigated. During the pre-design activities, in-situ hydraulic conductivity tests were conducted in several overburden and bedrock monitoring wells, and packer-injection tests were conducted in geotechnical borings GB-01 and GB-02 located in the OU-3 upland source area. Two additional overburden monitoring wells were installed within the OU-3 upland source area

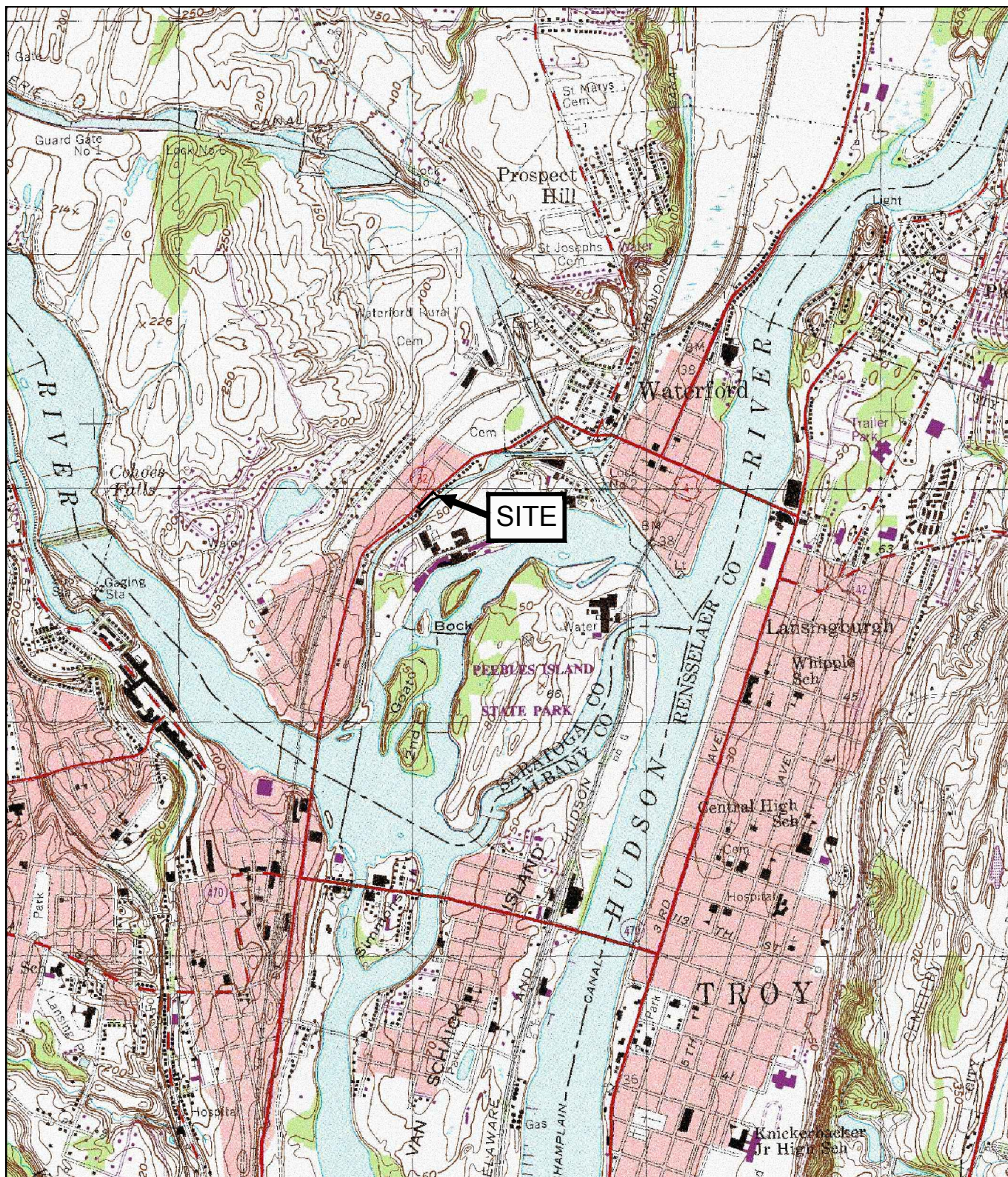
and were used to determine the hydraulic connectivity between the canal and the groundwater in OU-3. The results of the slug testing will be used in the Preliminary Design Report to estimate volume of water that will require management during excavation activities. The packer injection testing results will be used in the Preliminary Design Report to calculate the hydraulic properties in the sedimentary bedrock to determine the contribution of water from bedrock during excavation.

Groundwater Sampling

A sample of the water generated from the two new overburden wells (MW-14 and MW-15) and existing monitoring well (MW-10) and piezometer location PES-1 located in the OU-3 upland source area was submitted for chemical analysis. The sample collected will be used to provide representative groundwater quality to evaluate options for water management during excavation activities. Analytical results from MW-09, MW-10, MW-14, and MW-15 all exceeded the NYSDEC Class GA Groundwater Standards for organics, metals, and PCB's.

Section 7.0 Conclusions

The pre-design sample collection was completed consistent with the Work Plan. No additional data collection is anticipated to support the OU-1 and OU-3 Upland Source Soil Remedial Design at this time.



USGS QUADRANGLE MAP
NORTH TROY, NEW YORK



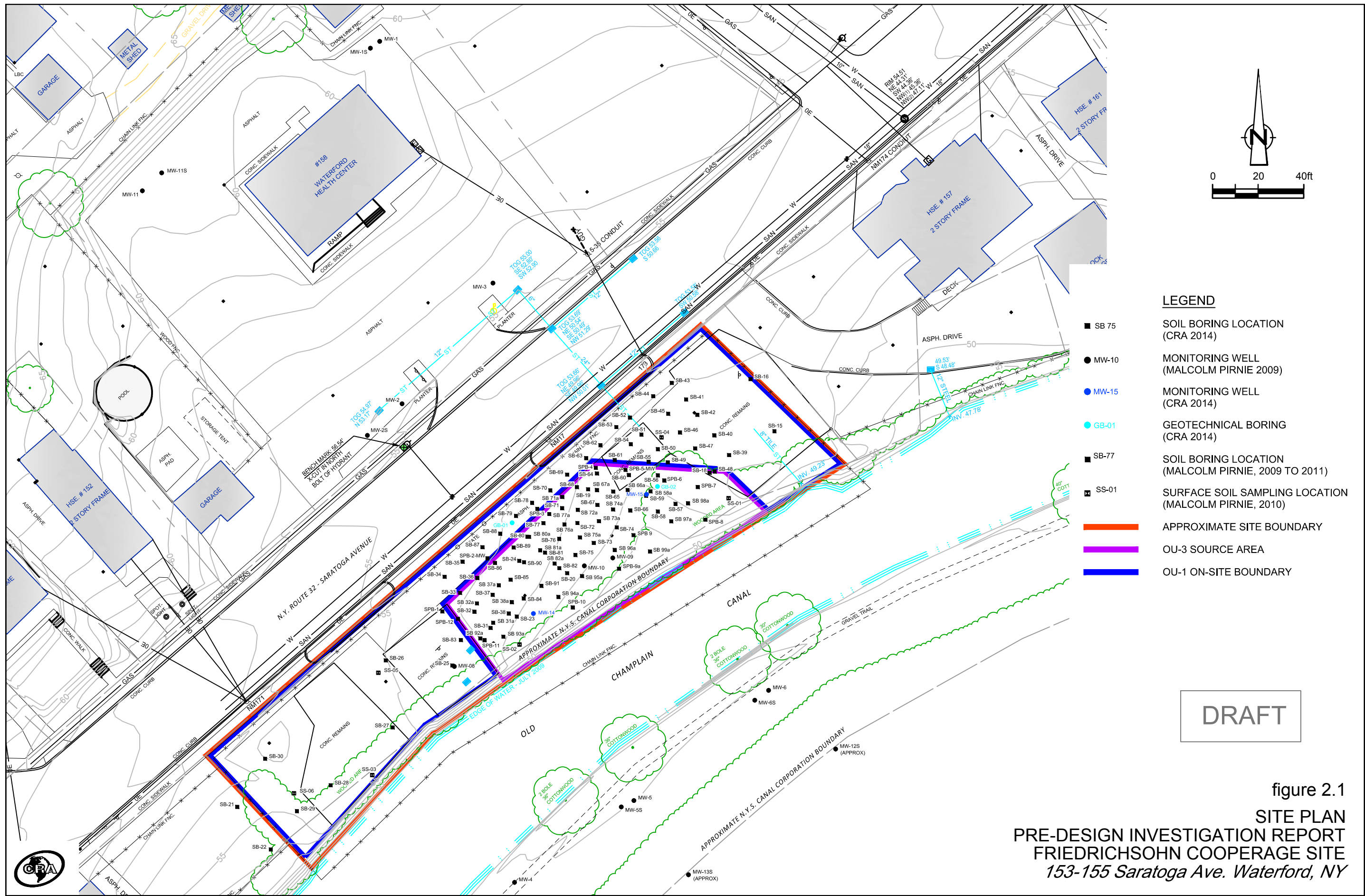
0 1000 2000ft

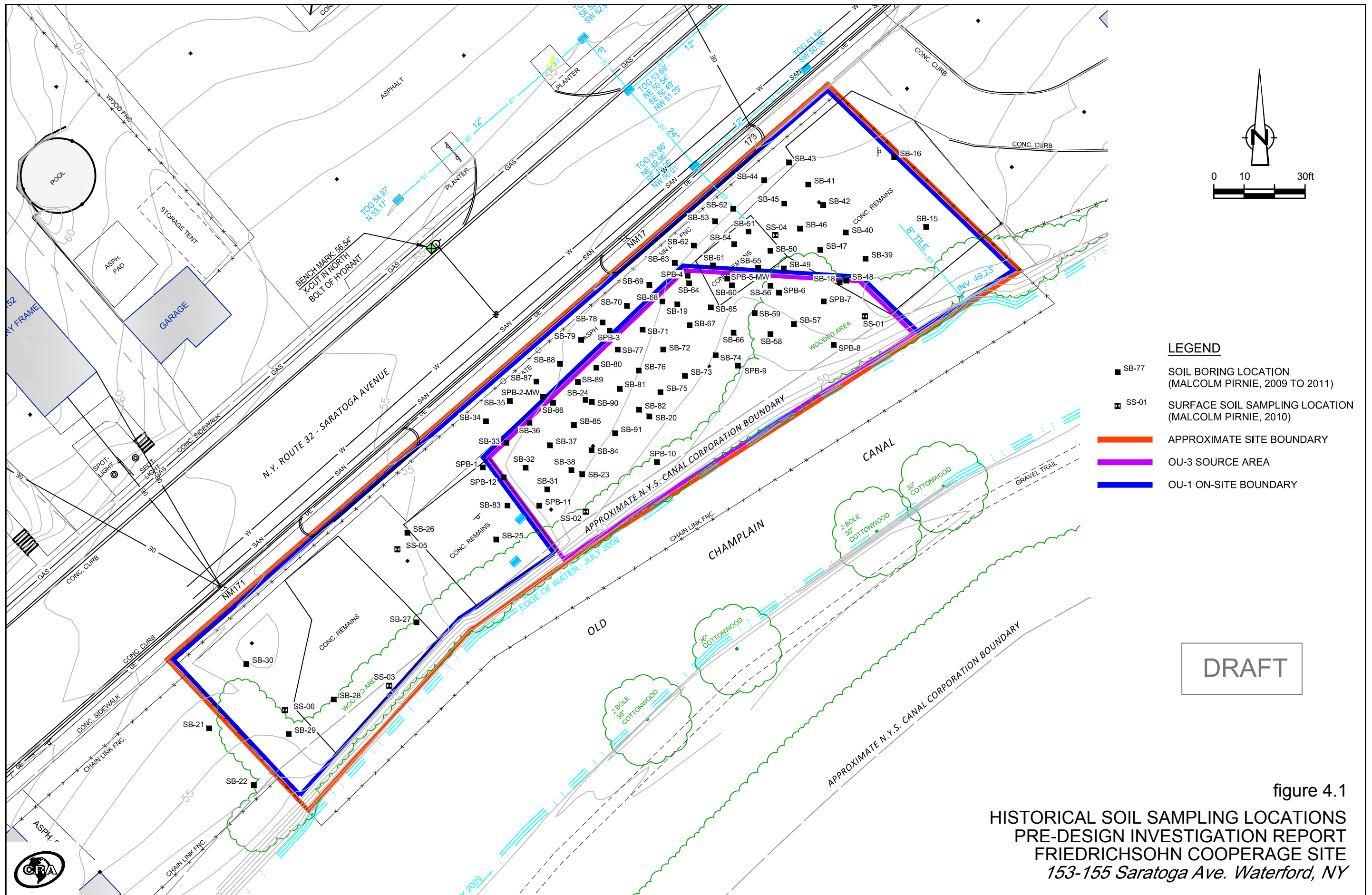
A scale bar with markings for 0, 1000, and 2000 feet.

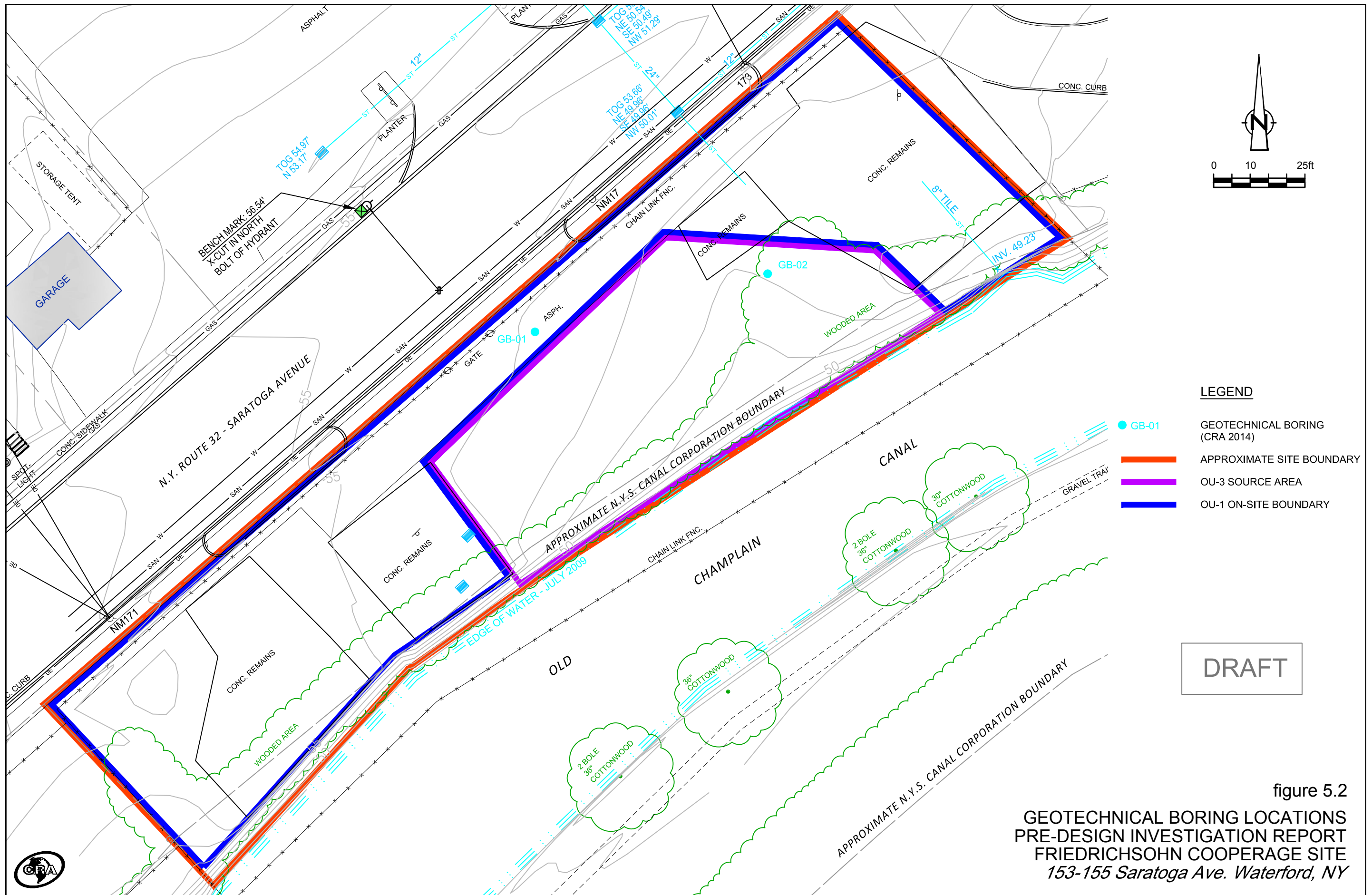


figure 1.1

SITE LOCATION
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 Saratoga Ave., Waterford, N.Y.







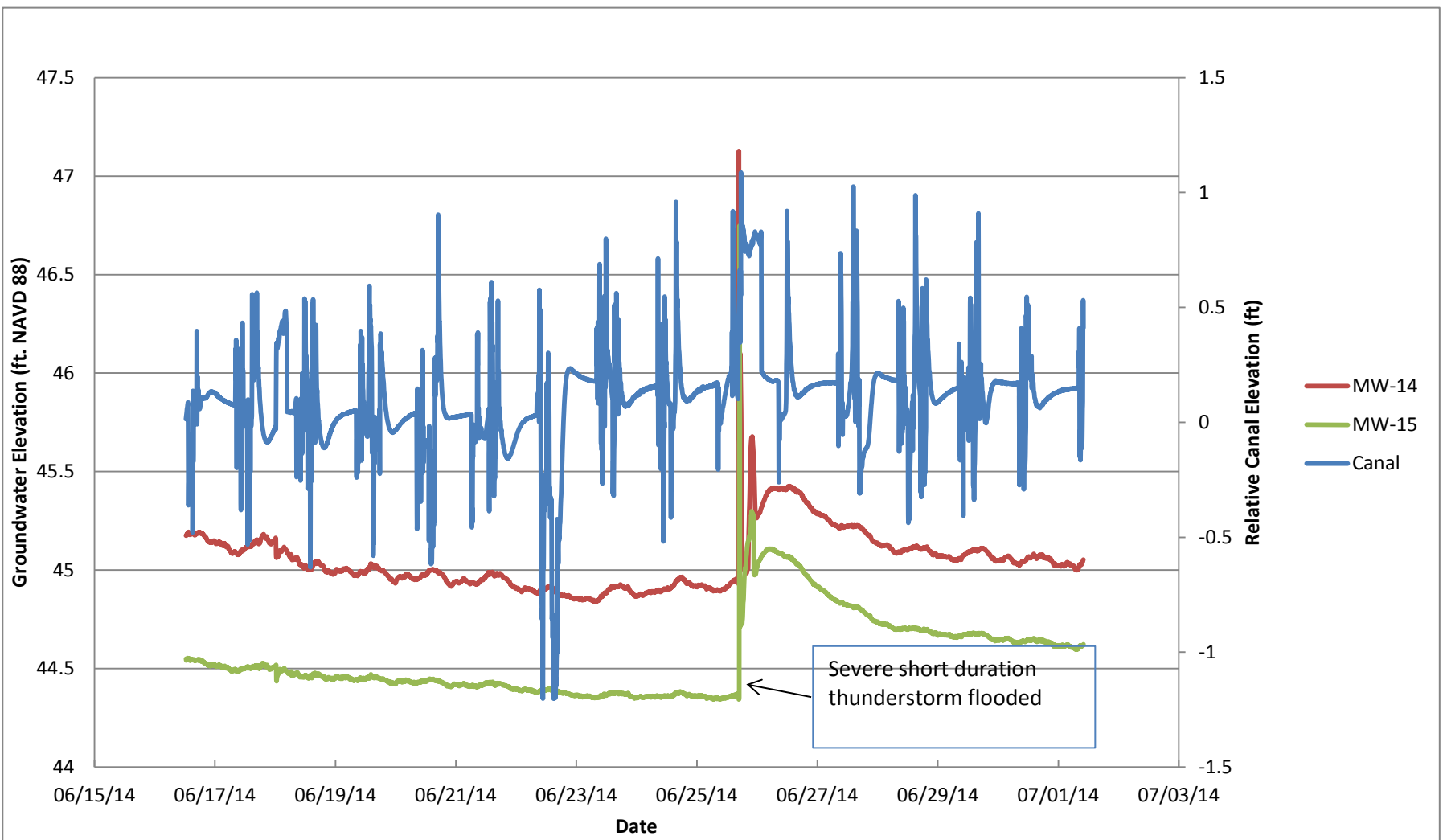


figure 5.3

Groundwater Levels - June 16, 2014 to July 1, 2014

Predesign Investigation Report

Friedrichsohn Cooperage Site

Waterford, NY



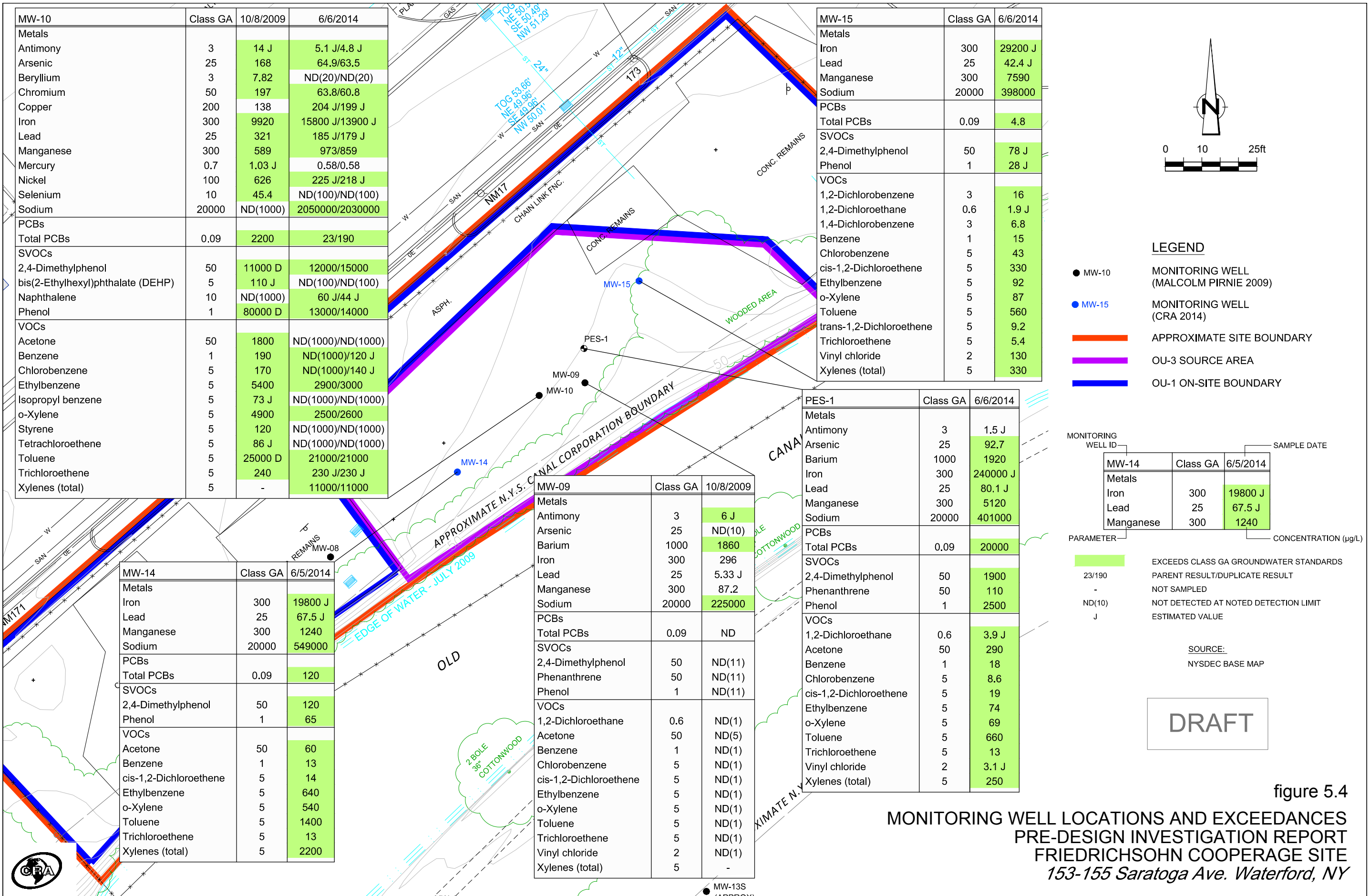


TABLE 5.1

2014 PCB SOIL SAMPLE KEY
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Date	Sample Location	Sample Identification	Sample Interval (ft BGS)	Total PCB Result (mg/Kg)
13-May-14	SB-31a	S-80987-051314-BP-045	2-3	ND
13-May-14	SB-31a	S-80987-051314-BP-046	3-4	0.04
13-May-14	SB-31a	S-80987-051314-BP-047	4-5	ND
13-May-14	SB-31a	S-80987-051314-BP-048	7-8	5.7
13-May-14	SB-31a	S-80987-051314-BP-049	8-9	*
13-May-14	SB-31a	S-80987-051314-BP-050	10-11	*
13-May-14	SB-32a	S-80987-051314-BP-051	2-3	*
13-May-14	SB-32a	S-80987-051314-BP-052	5-6	ND
13-May-14	SB-32a	S-80987-051314-BP-053	7-8	*
13-May-14	SB-32a	S-80987-051314-BP-054	9-10	*
13-May-14	SB-32a	S-80987-051314-BP-055	11-12	*
13-May-14	SB-32a	S-80987-051314-BP-056	12-13	*
13-May-14	SB-37a	S-80987-051314-BP-063	2-3	0.056
13-May-14	SB-37a	S-80987-051314-BP-064	5-6	0.83
13-May-14	SB-37a	S-80987-051314-BP-065	7-8	*
13-May-14	SB-37a	S-80987-051314-BP-066	9-10	*
13-May-14	SB-37a	S-80987-051314-BP-067	11-12	*
13-May-14	SB-37a	S-80987-051314-BP-068	12-13	*
13-May-14	SB-38a	S-80987-051314-BP-057	2-3	ND
13-May-14	SB-38a	S-80987-051314-BP-058	5-6	ND
13-May-14	SB-38a	S-80987-051314-BP-059	7-8	*
13-May-14	SB-38a	S-80987-051314-BP-060	9-10	*
13-May-14	SB-38a	S-80987-051314-BP-061	11-12	*
13-May-14	SB-38a	S-80987-051314-BP-062	12-13	*
12-May-14	SB-58a	S-80987-051214-BP-031	4-5	*
12-May-14	SB-58a	S-80987-051214-BP-032	5-6	*
12-May-14	SB-66a	S-80987-051214-BP-029	4-5	*
12-May-14	SB-66a	S-80987-051214-BP-030	5-6	*

TABLE 5.1

2014 PCB SOIL SAMPLE KEY
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Date	Sample Location	Sample Identification	Sample Interval (ft BGS)	Total PCB Result (mg/Kg)
12-May-14	SB-67a	S-80987-051214-BP-027	4-5	*
12-May-14	SB-67a	S-80987-051214-BP-028	5-6	*
12-May-14	SB-71a	S-80987-051214-BP-022	2-3	14
12-May-14	SB-71a	S-80987-051214-BP-023	3-4	*
12-May-14	SB-72a	S-80987-051214-BP-018	2-3	ND
12-May-14	SB-72a	S-80987-051214-BP-019	3-4	0.047
12-May-14	SB-72a	S-80987-051214-BP-020	4-5	0.1
12-May-14	SB-72a	S-80987-051214-BP-021	5-6	*
12-May-14	SB-73a	S-80987-051214-BP-014	2-3	ND
12-May-14	SB-73a	S-80987-051214-BP-015	3-4	ND
12-May-14	SB-73a	S-80987-051214-BP-016	4-5	*
12-May-14	SB-73a	S-80987-051214-BP-017	5-6	*
12-May-14	SB-74a	S-80987-051214-BP-024	5-6	1.3
12-May-14	SB-74a	S-80987-051214-BP-025	7-8	2
12-May-14	SB-74a	S-80987-051214-BP-026	8-9	1.3
12-May-14	SB-75a	S-80987-051214-BP-007	2-3	ND
12-May-14	SB-75a	S-80987-051214-BP-008	3-4	ND
12-May-14	SB-76a	S-80987-051214-BP-009	2-3	ND
12-May-14	SB-76a	S-80987-051214-BP-010	3-4	ND
12-May-14	SB-76a	S-80987-051214-BP-011	7-8	0.95
12-May-14	SB-77a	S-80987-051214-BP-012	2-3	ND
12-May-14	SB-77a	S-80987-051214-BP-013	3-4	ND
12-May-14	SB-80a	S-80987-051214-BP-005	2-3	1.8
12-May-14	SB-80a	S-80987-051214-BP-006	3-4	0.41

TABLE 5.1

2014 PCB SOIL SAMPLE KEY
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Date	Sample Location	Sample Identification	Sample Interval (ft BGS)	Total PCB Result (mg/Kg)
12-May-14	SB-81a	S-80987-051214-BP-003	2-3	0.28
12-May-14	SB-81a	S-80987-051214-BP-004	3-4	ND
12-May-14	SB-82a	S-80987-051214-BP-001	2-3	ND
12-May-14	SB-82a	S-80987-051214-BP-002	3-4	ND
13-May-14	SB-92a	S-80987-051314-BP-033	2-3	ND
13-May-14	SB-92a	S-80987-051314-BP-034	5-6	14
13-May-14	SB-92a	S-80987-051314-BP-035	7-8	*
13-May-14	SB-92a	S-80987-051314-BP-036	9-10	*
13-May-14	SB-92a	S-80987-051314-BP-037	11-12	*
13-May-14	SB-92a	S-80987-051314-BP-038	12-13	*
13-May-14	SB-93a	S-80987-051314-BP-039	2-3	ND
13-May-14	SB-93a	S-80987-051314-BP-040	5-6	0.15
13-May-14	SB-93a	S-80987-051314-BP-041	7-8	*
13-May-14	SB-93a	S-80987-051314-BP-042	9-10	*
13-May-14	SB-93a	S-80987-051314-BP-043	11-12	*
13-May-14	SB-93a	S-80987-051314-BP-044	12-13	*
14-May-14	SB-94a	S-80987-051414-BP-069	0-1	3
14-May-14	SB-94a	S-80987-051414-BP-070	1-6	0.29
14-May-14	SB-94a	S-80987-051414-BP-071	6-11	1.1
14-May-14	SB-94a	S-80987-051414-BP-072	11-16(BR)	3.9
14-May-14	SB-95a	S-80987-051414-BP-073	0-1	ND
14-May-14	SB-95a	S-80987-051414-BP-074	1-6	34
14-May-14	SB-95a	S-80987-051414-BP-075	6-11	8.6
14-May-14	SB-95a	S-80987-051414-BP-076	11-16(BR)	6
14-May-14	SB-96a	S-80987-051414-BP-077	0-1	3.3
14-May-14	SB-96a	S-80987-051414-BP-078	1-2	1.4
14-May-14	SB-96a	S-80987-051414-BP-079	1-6	2.3

TABLE 5.1

2014 PCB SOIL SAMPLE KEY
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Date	Sample Location	Sample Identification	Sample Interval (ft BGS)	Total PCB Result (mg/Kg)
14-May-14	SB-96a	S-80987-051414-BP-080	6-11	ND
14-May-14	SB-96a	S-80987-051414-BP-081	11-16(BR)	13
14-May-14	SB-97a	S-80987-051414-BP-089	0-1	0.2
14-May-14	SB-97a	S-80987-051414-BP-090	1-2	ND
14-May-14	SB-97a	S-80987-051414-BP-091	1-6	20
14-May-14	SB-97a	S-80987-051414-BP-092	6-11	32
14-May-14	SB-97a	S-80987-051414-BP-093	11-16(BR)	15
14-May-14	SB-98a	S-80987-051414-BP-094	0-1	0.17
14-May-14	SB-98a	S-80987-051414-BP-095	1-6	0.041
14-May-14	SB-98a	S-80987-051414-BP-096	6-11	5.6
14-May-14	SB-98a	S-80987-051414-BP-097	11-16(BR)	4.7
14-May-14	SB-99a	S-80987-051414-BP-084	0-1	9.8
14-May-14	SB-99a	S-80987-051414-BP-085	1-2	15
14-May-14	SB-99a	S-80987-051414-BP-086	1-6	130
14-May-14	SB-99a	S-80987-051414-BP-087	6-11	4.4
14-May-14	SB-99a	S-80987-051414-BP-088	11-16(BR)	14
14-May-14	SPB-9a	S-80987-051414-BP-082	0-1	7.1
14-May-14	SPB-9a	S-80987-051414-BP-083	1-2	1,600

Notes:

ND - Not Detected

ft BGS - Feet Below Ground Surface

BR - Bedrock

1,600 > 50 ppm TSCA Limit

TSCA- Toxic Substance Control Act

ppm - parts per million

* Sample was not analyzed based on the evaluation of historical and 2014 results

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-18	SB-18	SB-18	SB-19	SB-19	SB-19
Sample ID:			-	-	-	-	-	-
Sample Date:			8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009
Sample Depth:			2-3 ft BGS	14-15 ft BGS	18.5-19.5 ft BGS	4-5 ft BGS	9-10 ft BGS	12.5-13.5 ft BGS
Parameters	Units	TSCA Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.021 U	0.022 U	0.21 U	0.02 U	0.97 U	0.18 U
Aroclor-1221 (PCB-1221)	mg/kg		0.021 U	0.022 U	0.21 U	0.02 U	0.97 U	0.18 U
Aroclor-1232 (PCB-1232)	mg/kg		0.021 U	0.022 U	0.21 U	0.02 U	0.97 U	0.18 U
Aroclor-1242 (PCB-1242)	mg/kg		0.021 U	0.022 U	0.21 U	0.02 U	0.97 U	0.18 U
Aroclor-1248 (PCB-1248)	mg/kg		0.021 U	0.18	1.5	0.036	9.2	0.76
Aroclor-1254 (PCB-1254)	mg/kg		0.035 p	0.027 p	0.21 U	0.02 U	0.97 U	0.18 U
Aroclor-1260 (PCB-1260)	mg/kg		0.018 J	0.022 U	0.087 J	0.02 U	0.28 Jp	0.063 J
Total PCBs (calculated)	mg/kg	50	0.053	0.207	1.587	0.036	9.48	0.823

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-20	SB-20	SB-20	SB-23	SB-23	SB-23
Sample ID:			-	-	-	-	-	-
Sample Date:			8/7/2009	8/7/2009	8/7/2009	8/13/2009	8/13/2009	8/13/2009
Sample Depth:			0-1 ft BGS	10-11 ft BGS	15.5-16.5 ft BGS	4-5 ft BGS	9-10 ft BGS	11-12 ft BGS
Parameters	Units	TSCA Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.02 U	0.2 U	0.98 U	0.96 U	1.9 U	1.9 U
Aroclor-1221 (PCB-1221)	mg/kg		0.02 U	0.2 U	0.98 U	0.96 U	1.9 U	1.9 U
Aroclor-1232 (PCB-1232)	mg/kg		0.02 U	0.2 U	0.98 U	0.96 U	1.9 U	1.9 U
Aroclor-1242 (PCB-1242)	mg/kg		0.02 U	0.2 U	0.98 U	6.8	16	17
Aroclor-1248 (PCB-1248)	mg/kg		0.034	1.4	6.3	0.96 U	1.9 U	1.9 U
Aroclor-1254 (PCB-1254)	mg/kg		0.02 U	0.2 U	0.98 U	0.96 U	1.9 U	1.9 U
Aroclor-1260 (PCB-1260)	mg/kg		0.02 U	0.066 J	0.27 J	0.96 U	1.9 U	1.9 U
Total PCBs (calculated)	mg/kg	50	0.034	1.466	6.57	6.8	16	17

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-23	SB-24	SB-24	SB-31a	SB-31a
Sample ID:			-	-	-	S-80987-051314-BP-045	S-80987-051314-BP-046
Sample Date:			8/13/2009	8/13/2009	8/13/2009	5/13/2014	5/13/2014
Sample Depth:			15-15.5 ft BGS	2-3 ft BGS	11-12 ft BGS	2-3 ft BGS	3-4 ft BGS
Parameters	Units	TSCA Limit					
PCBs							
Aroclor-1016 (PCB-1016)	mg/kg		0.19 U	0.02 U	0.037 U	0.038 U	0.038 U
Aroclor-1221 (PCB-1221)	mg/kg		0.19 U	0.02 U	0.037 U	0.038 U	0.038 U
Aroclor-1232 (PCB-1232)	mg/kg		0.19 U	0.02 U	0.037 U	0.038 U	0.038 U
Aroclor-1242 (PCB-1242)	mg/kg		2.3	0.02 U	0.29 p	0.038 U	0.04 J
Aroclor-1248 (PCB-1248)	mg/kg		0.19 U	0.02 U	0.037 U	0.038 U	0.038 U
Aroclor-1254 (PCB-1254)	mg/kg		0.19 U	0.12	0.037 U	0.038 U	0.038 U
Aroclor-1260 (PCB-1260)	mg/kg		0.19 U	0.04	0.037 U	0.038 U	0.038 U
Total PCBs (calculated)	mg/kg	50	2.3	0.16	0.29	ND	0.04

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-31a	SB-31	SB-31a	SB-31	SB-32	SB-32a
Sample ID:			S-80987-051314-BP-047	-	S-80987-051314-BP-048	-	-	S-80987-051314-BP-052
Sample Date:			5/13/2014	12/3/2010	5/13/2014	12/3/2010	12/3/2010	5/13/2014
Sample Depth:			4-5 ft BGS	5-6 ft BGS	7-8 ft BGS	12-13 ft BGS	0-1 ft BGS	5-6 ft BGS
		TSCA						
Parameters	Units	Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.038 U	14 U	0.73 U	6.5 U	0.27 U	0.038 U
Aroclor-1221 (PCB-1221)	mg/kg		0.038 U	15 U	0.73 U	6.5 U	0.27 U	0.038 U
Aroclor-1232 (PCB-1232)	mg/kg		0.038 U	16 U	0.73 U	6.5 U	0.27 U	0.038 U
Aroclor-1242 (PCB-1242)	mg/kg		0.038 U	110	5.7 J	34	0.27 U	0.038 UJ
Aroclor-1248 (PCB-1248)	mg/kg		0.038 U	14 U	0.73 U	6.5 U	0.27 U	0.038 UJ
Aroclor-1254 (PCB-1254)	mg/kg		0.038 U	14 U	0.73 U	6.5 U	0.27 U	0.038 UJ
Aroclor-1260 (PCB-1260)	mg/kg		0.038 U	14 U	0.73 U	6.5 U	0.27 U	0.038 UJ
Total PCBs (calculated)	mg/kg	50	ND	110	5.7	34	ND	ND

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-32	SB-32	SB-33	SB-33	SB-33	SB-36	SB-36	SB-36
Sample ID:			-	-	-	-	-	-	-	-
Sample Date:			12/3/2010	12/3/2010	12/3/2010	12/3/2010	12/3/2010	12/3/2010	12/3/2010	12/3/2010
Sample Depth:			6-7 ft BGS	10-11 ft BGS	5-6 ft BGS	7.5-8 ft BGS	10-11 ft BGS	0-1 ft BGS	4-6 ft BGS	9-10 ft BGS
Parameters	Units	TSCA Limit								
PCBs										
Aroclor-1016 (PCB-1016)	mg/kg		4.1 U	0.3 U	0.27 U	0.28 U	0.3 U	0.28 U	0.27 U	0.26 U
Aroclor-1221 (PCB-1221)	mg/kg		4.1 U	0.3 U	0.27 U	0.28 U	0.3 U	0.28 U	0.27 U	0.26 U
Aroclor-1232 (PCB-1232)	mg/kg		4.1 U	0.3 U	0.27 U	0.28 U	0.3 U	0.28 U	0.27 U	0.26 U
Aroclor-1242 (PCB-1242)	mg/kg		30	3.7	1.7	0.51	0.57	0.23 J	0.27 U	0.26 U
Aroclor-1248 (PCB-1248)	mg/kg		4.1 U	0.3 U	0.27 U	0.28 U	0.3 U	0.28 U	0.27 U	0.26 U
Aroclor-1254 (PCB-1254)	mg/kg		4.1 U	0.3 U	0.27 U	0.28 U	0.3 U	0.28 U	0.27 U	0.26 U
Aroclor-1260 (PCB-1260)	mg/kg		4.1 U	0.3 U	0.27 U	0.28 U	0.3 U	0.28 U	0.27 U	0.26 U
Total PCBs (calculated)	mg/kg	50	30	3.7	1.7	0.51	0.57	0.23 J	ND	ND

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-37a	SB-37a	SB-37	SB-37	SB-37	SB-38a
Sample ID:			S-80987-051314-BP-063	S-80987-051314-BP-064	-	-	-	S-80987-051314-BP-057
Sample Date:			5/13/2014	5/13/2014	12/3/2010	12/3/2010	12/3/2010	5/13/2014
Sample Depth:			2-3 ft BGS	5-6 ft BGS	7-9 ft BGS	7-9 ft BGS	10-11 ft BGS	2-3 ft BGS
						Duplicate		
Parameters	Units	TSCA Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.035 U	0.18 U	13 U	5.5 U	0.55 U	0.034 U
Aroclor-1221 (PCB-1221)	mg/kg		0.035 U	0.18 U	13 U	5.5 U	0.55 U	0.034 U
Aroclor-1232 (PCB-1232)	mg/kg		0.035 U	0.18 U	13 U	5.5 U	0.55 U	0.034 U
Aroclor-1242 (PCB-1242)	mg/kg		0.056 J	0.83	19	44	8.2 J	0.034 UJ
Aroclor-1248 (PCB-1248)	mg/kg		0.035 UJ	0.18 U	5.5 U	13 U	0.55 U	0.034 UJ
Aroclor-1254 (PCB-1254)	mg/kg		0.035 UJ	0.18 U	5.5 U	13 U	0.55 U	0.034 UJ
Aroclor-1260 (PCB-1260)	mg/kg		0.035 UJ	0.18 U	5.5 U	13 U	0.55 U	0.034 UJ
Total PCBs (calculated)	mg/kg	50	0.056	0.83	19	44	8.2	ND

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-38a	SB-38	SB-38	SB-48	SB-48	SB-48	SB-56
Sample ID:			S-80987-051314-BP-058	-	-	-	-	-	-
Sample Date:			5/13/2014	12/3/2010	12/3/2010	12/9/2010	12/9/2010	12/9/2010	12/10/2010
Sample Depth:			5-6 ft BGS	6-7 ft BGS	10-11 ft BGS	0.5-1.5 ft BGS	11-12 ft BGS	19-20 ft BGS	0.5-1.5 ft BGS
Parameters	Units	TSCA Limit							
PCBs									
Aroclor-1016 (PCB-1016)	mg/kg		0.035 U	0.67 U	3.2 U	0.019 U	0.83 U	0.48 U	0.021 U
Aroclor-1221 (PCB-1221)	mg/kg		0.035 U	0.67 U	3.2 U	0.019 U	0.83 U	0.48 U	0.021 U
Aroclor-1232 (PCB-1232)	mg/kg		0.035 U	0.67 U	3.2 U	0.019 U	0.83 U	0.48 U	0.021 U
Aroclor-1242 (PCB-1242)	mg/kg		0.035 UJ	31	42	0.019 U	6.2	3.3	0.021 U
Aroclor-1248 (PCB-1248)	mg/kg		0.035 UJ	0.67 U	3.2 U	0.019 U	0.83 U	0.48 U	0.017 Jp
Aroclor-1254 (PCB-1254)	mg/kg		0.035 UJ	0.67 U	3.2 U	0.0054 Jp	0.83 U	0.48 U	0.008 Jp
Aroclor-1260 (PCB-1260)	mg/kg		0.035 UJ	0.67 U	3.2 U	0.0074 J	0.83 U	0.48 U	0.0087 J
Total PCBs (calculated)	mg/kg	50	ND	31	42	0.0128	6.2	3.3	0.0337

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-56	SB-56	SB-57	SB-57	SB-57	SB-58	SB-58	SB-59
Sample ID:			-	-	-	-	-	-	-	-
Sample Date:			12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010
Sample Depth:			9-10 ft BGS	14-15 ft BGS	1-2 ft BGS	5-6 ft BGS	14-15 ft BGS	4-5 ft BGS	9-10 ft BGS	13-14 ft BGS
Parameters	Units	TSCA Limit								
PCBs										
Aroclor-1016 (PCB-1016)	mg/kg		0.019 U	0.49 U	0.02 U	0.04 U	0.48 U	0.11 U	2 U	0.41 U
Aroclor-1221 (PCB-1221)	mg/kg		0.019 U	0.49 U	0.02 U	0.04 U	0.48 U	0.11 U	2 U	0.41 U
Aroclor-1232 (PCB-1232)	mg/kg		0.019 U	0.49 U	0.02 U	0.04 U	0.48 U	0.11 U	2 U	0.41 U
Aroclor-1242 (PCB-1242)	mg/kg		0.019 U	6.3	0.02 U	0.61	7	0.56	27	5.2
Aroclor-1248 (PCB-1248)	mg/kg		0.019 U	0.49 U	0.0066 J	0.04 U	0.48 U	0.11 U	2 U	0.41 U
Aroclor-1254 (PCB-1254)	mg/kg		0.019 U	0.49 U	0.019 J	0.04 U	0.48 U	0.11 U	2 U	0.41 U
Aroclor-1260 (PCB-1260)	mg/kg		0.019 U	0.49 U	0.02 U	0.04 U	0.48 U	0.11 U	2 U	0.16 J
Total PCBs (calculated)	mg/kg	50	ND	6.3	0.0256	0.61	7	0.56	27	5.36

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

<i>Sample Location:</i>			<i>SB-59</i>	<i>SB-59</i>	<i>SB-60</i>	<i>SB-60</i>	<i>SB-64</i>	<i>SB-64</i>	<i>SB-64</i>	<i>SB-65</i>
<i>Sample ID:</i>			-	-	-	-	-	-	-	-
<i>Sample Date:</i>			<i>12/10/2010</i>	<i>12/10/2010</i>	<i>12/10/2010</i>	<i>12/10/2010</i>	<i>12/16/2010</i>	<i>12/16/2010</i>	<i>12/16/2010</i>	<i>12/16/2010</i>
<i>Sample Depth:</i>			<i>4-5 ft BGS</i>	<i>4-5 ft BGS</i>	<i>4-5 ft BGS</i>	<i>11-12 ft BGS</i>	<i>0-1 ft BGS</i>	<i>6-7 ft BGS</i>	<i>11-12 ft BGS</i>	<i>1-2 ft BGS</i>
<i>Parameters</i>	<i>Units</i>	<i>TSCA Limit</i>	<i>Duplicate</i>							
<i>PCBs</i>										
Aroclor-1016 (PCB-1016)	mg/kg		0.21 U	1 U	0.021 U	0.1 U	0.38 U	0.19 U	0.44 U	0.019 U
Aroclor-1221 (PCB-1221)	mg/kg		0.21 U	1 U	0.021 U	0.1 U	0.38 U	0.19 U	0.44 U	0.019 U
Aroclor-1232 (PCB-1232)	mg/kg		0.21 U	1 U	0.021 U	0.1 U	0.38 U	0.19 U	0.44 U	0.019 U
Aroclor-1242 (PCB-1242)	mg/kg		0.21 U	1 U	0.021 U	1.3	4.6	2.3	4.3	0.011 J
Aroclor-1248 (PCB-1248)	mg/kg		1.7	14	0.028	0.1 U	0.38 U	0.19 U	0.44 U	0.019 U
Aroclor-1254 (PCB-1254)	mg/kg		0.74	2.8 p	0.031	0.1 U	0.38 U	0.26 p	0.44 U	0.019 U
Aroclor-1260 (PCB-1260)	mg/kg		0.074 J	0.47 J	0.021 U	0.1 U	0.38 U	0.19 U	0.44 U	0.019 U
Total PCBs (calculated)	mg/kg	50	2.514	17.27	0.059	1.3	4.6	2.56	4.3	0.011

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-65	SB-65	SB-65	SB-66	SB-66	SB-66	SB-67	SB-67
Sample ID:			-	-	-	-	-	-	-	-
Sample Date:			12/16/2010	12/16/2010	12/16/2010	12/16/2010	12/16/2010	12/16/2010	12/16/2010	12/16/2010
Sample Depth:			4-5 ft BGS	4-5 ft BGS	10-11 ft BGS	3-4 ft BGS	6-7 ft BGS	14-15 ft BGS	4-5 ft BGS	7-8 ft BGS
Parameters	Units	TSCA Limit	Duplicate							
PCBs										
Aroclor-1016 (PCB-1016)	mg/kg		0.02 U	0.021 U	2 U	0.097 U	0.2 U	0.54 U	2.1 U	0.49 U
Aroclor-1221 (PCB-1221)	mg/kg		0.02 U	0.021 U	2 U	0.097 U	0.2 U	0.54 U	2.1 U	0.49 U
Aroclor-1232 (PCB-1232)	mg/kg		0.02 U	0.021 U	2 U	0.097 U	0.2 U	0.54 U	2.1 U	0.49 U
Aroclor-1242 (PCB-1242)	mg/kg		0.02 U	0.021 U	20	1.1	2.7	8.2	19	6.5
Aroclor-1248 (PCB-1248)	mg/kg		0.02 U	0.021 U	2 U	0.097 U	0.2 U	0.54 U	2.1 U	0.49 U
Aroclor-1254 (PCB-1254)	mg/kg		0.02 U	0.021 U	2 U	0.097 U	0.2 U	0.54 U	2.1 U	0.49 U
Aroclor-1260 (PCB-1260)	mg/kg		0.02 U	0.021 U	2 U	0.097 U	0.2 U	0.54 U	2.1 U	0.49 U
Total PCBs (calculated)	mg/kg	50	ND	ND	20	1.1	2.7	8.2	19	6.5

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-67	SB-68	SB-68	SB-68	SB-71a	SB-71	SB-71
Sample ID:			-	-	-	-	S-80987-051214-BP-022	-	-
Sample Date:			12/16/2010	12/16/2010	12/16/2010	12/16/2010	5/12/2014	12/16/2010	12/16/2010
Sample Depth:			10-12 ft BGS	4-5 ft BGS	8-9 ft BGS	12-13 ft BGS	2-3 ft BGS	3-4 ft BGS	6-7 ft BGS
Parameters	Units	TSCA Limit							
PCBs									
Aroclor-1016 (PCB-1016)	mg/kg		0.46 U	0.024 U	0.045 U	0.19 U	2 U	0.022 U	0.041 U
Aroclor-1221 (PCB-1221)	mg/kg		0.46 U	0.024 U	0.045 U	0.19 U	2 U	0.022 U	0.041 U
Aroclor-1232 (PCB-1232)	mg/kg		0.46 U	0.024 U	0.045 U	0.19 U	2 U	0.022 U	0.041 U
Aroclor-1242 (PCB-1242)	mg/kg		6	0.33	0.48	2.7	14	0.26	0.54
Aroclor-1248 (PCB-1248)	mg/kg		0.46 U	0.024 U	0.045 U	0.19 U	2 U	0.022 U	0.041 U
Aroclor-1254 (PCB-1254)	mg/kg		0.46 U	0.024 U	0.045 U	0.19 U	2 U	0.022 U	0.041 U
Aroclor-1260 (PCB-1260)	mg/kg		0.46 U	0.024 U	0.045 U	0.19 U	2 U	0.022 U	0.041 U
Total PCBs (calculated)	mg/kg	50	6	0.33	0.48	2.7	14	0.26	0.54

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-71	SB-71	SB-72	SB-72a	SB-72a	SB-72a
Sample ID:			-	-	-	S-80987-051214-BP-018	S-80987-051214-BP-019	S-80987-051214-BP-020
Sample Date:			12/16/2010	12/16/2010	12/16/2010	5/12/2014	5/12/2014	5/12/2014
Sample Depth:			6-7 ft BGS	10-11 ft BGS	1-2 ft BGS	2-3 ft BGS	3-4 ft BGS	4-5 ft BGS
Parameters	Units	TSCA Limit	Duplicate					
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.021 U	0.2 U	0.018 U	0.037 U	0.037 U	0.037 U
Aroclor-1221 (PCB-1221)	mg/kg		0.021 U	0.2 U	0.018 U	0.037 U	0.037 U	0.037 U
Aroclor-1232 (PCB-1232)	mg/kg		0.021 U	0.2 U	0.018 U	0.037 U	0.037 U	0.037 U
Aroclor-1242 (PCB-1242)	mg/kg		0.074	1.6	0.023	0.037 U	0.047	0.1
Aroclor-1248 (PCB-1248)	mg/kg		0.021 U	0.2 U	0.018 U	0.037 U	0.037 U	0.037 U
Aroclor-1254 (PCB-1254)	mg/kg		0.021 U	0.2 U	0.006 Jp	0.037 U	0.037 U	0.037 U
Aroclor-1260 (PCB-1260)	mg/kg		0.021 U	0.2 U	0.018 U	0.037 U	0.037 U	0.037 U
Total PCBs (calculated)	mg/kg	50	0.074	1.6	0.029	ND	0.047	0.1

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-72	SB-72	SB-73a	SB-73a	SB-73	SB-73
Sample ID:			-	-	S-80987-051214-BP-014	S-80987-051214-BP-015	-	-
Sample Date:			12/16/2010	12/16/2010	5/12/2014	5/12/2014	12/16/2010	12/16/2010
Sample Depth:			5-6 ft BGS	11-12 ft BGS	2-3 ft BGS	3-4 ft BGS	4-5 ft BGS	6-7 ft BGS
			TSCA					
Parameters	Units	Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.19 U	0.097 U	0.038 U	0.039 U	0.8 U	1.1 U
Aroclor-1221 (PCB-1221)	mg/kg		0.19 U	0.097 U	0.038 U	0.039 U	0.8 U	1.1 U
Aroclor-1232 (PCB-1232)	mg/kg		0.19 U	0.097 U	0.038 U	0.039 U	0.8 U	1.1 U
Aroclor-1242 (PCB-1242)	mg/kg		3	1.5	0.038 U	0.039 U	12	14
Aroclor-1248 (PCB-1248)	mg/kg		0.19 U	0.097 U	0.038 U	0.039 U	0.8 U	1.1 U
Aroclor-1254 (PCB-1254)	mg/kg		0.19 U	0.097 U	0.038 U	0.039 U	0.8 U	1.1 U
Aroclor-1260 (PCB-1260)	mg/kg		0.19 U	0.097 U	0.038 U	0.039 U	0.8 U	1.1 U
Total PCBs (calculated)	mg/kg	50	3	1.5	ND	ND	12	14

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-73	SB-74	SB-74a	SB-74	SB-74a	SB-74a
Sample ID:			-	-	S-80987-051214-BP-024	-	S-80987-051214-BP-025	S-80987-051214-BP-026
Sample Date:			12/16/2010	12/16/2010	5/12/2014	12/16/2010	5/12/2014	5/12/2014
Sample Depth:			11-12 ft BGS	4-5 ft BGS	5-6 ft BGS	7-8 ft BGS	7-8 ft BGS	8-9 ft BGS
Parameters	Units	TSCA Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.38 U	0.19 U	0.16 U	130 U	0.38 U	0.36 U
Aroclor-1221 (PCB-1221)	mg/kg		0.38 U	0.19 U	0.16 U	130 U	0.38 U	0.36 U
Aroclor-1232 (PCB-1232)	mg/kg		0.38 U	0.19 U	0.16 U	130 U	0.38 U	0.36 U
Aroclor-1242 (PCB-1242)	mg/kg		5.8	2.3	1.3 J	1000	2 J	1.3
Aroclor-1248 (PCB-1248)	mg/kg		0.38 U	0.19 U	0.16 U	130 U	0.38 U	0.36 U
Aroclor-1254 (PCB-1254)	mg/kg		0.38 U	0.19 U	0.16 U	130 U	0.38 U	0.36 U
Aroclor-1260 (PCB-1260)	mg/kg		0.38 U	0.19 U	0.16 U	130 U	0.38 U	0.36 U
Total PCBs (calculated)	mg/kg	50	5.8	2.3	1.3	1000	2	1.3

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-74	SB-75a	SB-75a	SB-75	SB-75	SB-75
Sample ID:			-	S-80987-051214-BP-007	S-80987-051214-BP-008	-	-	-
Sample Date:			12/16/2010	5/12/2014	5/12/2014	12/16/2010	12/16/2010	12/16/2010
Sample Depth:			10-11 ft BGS	2-3 ft BGS	3-4 ft BGS	5-6 ft BGS	9-10 ft BGS	13-14 ft BGS
Parameters	Units	TSCA Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.79 U	0.038 U	0.039 U	2 U	2 U	0.2 U
Aroclor-1221 (PCB-1221)	mg/kg		0.79 U	0.038 U	0.039 U	2 U	2 U	0.2 U
Aroclor-1232 (PCB-1232)	mg/kg		0.79 U	0.038 U	0.039 U	2 U	2 U	0.2 U
Aroclor-1242 (PCB-1242)	mg/kg		12	0.038 U	0.039 U	15	8.9	3.1
Aroclor-1248 (PCB-1248)	mg/kg		0.79 U	0.038 U	0.039 U	2 U	2 U	0.2 U
Aroclor-1254 (PCB-1254)	mg/kg		0.79 U	0.038 U	0.039 U	2 U	2 U	0.2 U
Aroclor-1260 (PCB-1260)	mg/kg		0.79 U	0.038 U	0.039 U	2 U	2 U	0.2 U
Total PCBs (calculated)	mg/kg	50	12	ND	ND	15	8.9	3.1

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-76	SB-76a	SB-76a	SB-76	SB-76a	SB-76
Sample ID:			-	S-80987-051214-BP-009	S-80987-051214-BP-010	-	S-80987-051214-BP-011	-
Sample Date:			12/16/2010	5/12/2014	5/12/2014	12/16/2010	5/12/2014	12/16/2010
Sample Depth:			0-1 ft BGS	2-3 ft BGS	3-4 ft BGS	4-5 ft BGS	7-8 ft BGS	9-10 ft BGS
Parameters	Units	TSCA Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.018 U	0.036 U	0.038 U	8.3 U	0.15 U	0.2 U
Aroclor-1221 (PCB-1221)	mg/kg		0.018 U	0.036 U	0.038 U	8.3 U	0.15 U	0.2 U
Aroclor-1232 (PCB-1232)	mg/kg		0.018 U	0.036 U	0.038 U	8.3 U	0.15 U	0.2 U
Aroclor-1242 (PCB-1242)	mg/kg		0.18	0.036 U	0.038 U	72	0.95 J	2.1
Aroclor-1248 (PCB-1248)	mg/kg		0.018 U	0.036 U	0.038 U	8.3 U	0.15 UJ	0.2 U
Aroclor-1254 (PCB-1254)	mg/kg		0.018 U	0.036 U	0.038 U	8.3 U	0.15 UJ	0.2 U
Aroclor-1260 (PCB-1260)	mg/kg		0.018 U	0.036 U	0.038 U	8.3 U	0.15 UJ	0.2 U
Total PCBs (calculated)	mg/kg	50	0.18	ND	ND	72	0.95	2.1

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-77a	SB-77	SB-77a	SB-77	SB-77	SB-80a
Sample ID:			S-80987-051214-BP-012	-	S-80987-051214-BP-013	-	-	S-80987-051214-BP-005
Sample Date:			5/12/2014	12/16/2010	5/12/2014	12/16/2010	12/16/2010	5/12/2014
Sample Depth:			2-3 ft BGS	3-4 ft BGS	3-4 ft BGS	6-7 ft BGS	11-12 ft BGS	2-3 ft BGS
Parameters	Units	TSCA Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.047 U	0.12 U	0.039 U	0.02 U	0.044 U	0.37 U
Aroclor-1221 (PCB-1221)	mg/kg		0.047 U	0.12 U	0.039 U	0.02 U	0.044 U	0.37 U
Aroclor-1232 (PCB-1232)	mg/kg		0.047 U	0.12 U	0.039 U	0.02 U	0.044 U	0.37 U
Aroclor-1242 (PCB-1242)	mg/kg		0.047 U	1.3	0.039 U	0.28	0.51	1.8
Aroclor-1248 (PCB-1248)	mg/kg		0.047 U	0.12 U	0.039 U	0.02 U	0.044 U	0.37 U
Aroclor-1254 (PCB-1254)	mg/kg		0.047 U	0.12 U	0.039 U	0.02 U	0.044 U	0.37 U
Aroclor-1260 (PCB-1260)	mg/kg		0.047 U	0.12 U	0.039 U	0.02 U	0.044 U	0.37 U
Total PCBs (calculated)	mg/kg	50	ND	1.3	ND	0.28	0.51	1.8

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-80a	SB-80	SB-80	SB-80	SB-80	SB-81a
Sample ID:			S-80987-051214-BP-006	-	-	-	-	S-80987-051214-BP-003
Sample Date:			5/12/2014	12/16/2010	12/16/2010	12/16/2010	12/16/2010	5/12/2014
Sample Depth:			3-4 ft BGS	4-5 ft BGS	7-8 ft BGS	7-8 ft BGS	10-11 ft BGS	2-3 ft BGS
						Duplicate		
Parameters	Units	TSCA Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.042 U	0.11 U	0.021 U	0.02 U	0.2 U	0.038 U
Aroclor-1221 (PCB-1221)	mg/kg		0.042 U	0.11 U	0.021 U	0.02 U	0.2 U	0.038 U
Aroclor-1232 (PCB-1232)	mg/kg		0.042 U	0.11 U	0.021 U	0.02 U	0.2 U	0.038 U
Aroclor-1242 (PCB-1242)	mg/kg		0.042 U	0.67	0.016 J	0.15	1.1	0.28 J
Aroclor-1248 (PCB-1248)	mg/kg		0.042 U	0.11 U	0.021 U	0.02 U	0.2 U	0.038 UJ
Aroclor-1254 (PCB-1254)	mg/kg		0.042 U	0.11 U	0.021 U	0.02 U	0.2 U	0.038 UJ
Aroclor-1260 (PCB-1260)	mg/kg		0.41 J	0.11 U	0.021 U	0.02 U	0.2 U	0.038 UJ
Total PCBs (calculated)	mg/kg	50	0.41	0.67	0.016	0.15	1.1	0.28

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-81a	SB-81	SB-81	SB-81	SB-82a	SB-82a
Sample ID:			S-80987-051214-BP-004	-	-	-	S-80987-051214-BP-001	S-80987-051214-BP-002
Sample Date:			5/12/2014	12/16/2010	12/16/2010	12/16/2010	5/12/2014	5/12/2014
Sample Depth:			3-4 ft BGS	5-6 ft BGS	8-9 ft BGS	10-11 ft BGS	2-3 ft BGS	3-4 ft BGS
Parameters	Units	TSCA Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.037 U	0.038 U	0.2 U	1 U	0.037 U	0.038 U
Aroclor-1221 (PCB-1221)	mg/kg		0.037 U	0.038 U	0.2 U	1 U	0.037 U	0.038 U
Aroclor-1232 (PCB-1232)	mg/kg		0.037 U	0.038 U	0.2 U	1 U	0.037 U	0.038 U
Aroclor-1242 (PCB-1242)	mg/kg		0.037 U	0.53	1.5	6.4	0.037 U	0.038 U
Aroclor-1248 (PCB-1248)	mg/kg		0.037 U	0.038 U	0.2 U	1 U	0.037 U	0.038 U
Aroclor-1254 (PCB-1254)	mg/kg		0.037 U	0.038 U	0.2 U	1 U	0.037 U	0.038 U
Aroclor-1260 (PCB-1260)	mg/kg		0.037 U	0.038 U	0.2 U	1 U	0.037 U	0.038 U
Total PCBs (calculated)	mg/kg	50	ND	0.53	1.5	6.4	ND	ND

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

<i>Sample Location:</i>			<i>SB-82</i>	<i>SB-82</i>	<i>SB-83</i>	<i>SB-83</i>	<i>SB-83</i>	<i>SB-84</i>	<i>SB-84</i>	<i>SB-84</i>
<i>Sample ID:</i>			-	-	-	-	-	-	-	-
<i>Sample Date:</i>			<i>12/16/2010</i>	<i>12/16/2010</i>	<i>12/17/2010</i>	<i>12/17/2010</i>	<i>12/17/2010</i>	<i>12/17/2010</i>	<i>12/17/2010</i>	<i>12/17/2010</i>
<i>Sample Depth:</i>			<i>6-7 ft BGS</i>	<i>12-13 ft BGS</i>	<i>1-2 ft BGS</i>	<i>6-7 ft BGS</i>	<i>9-10 ft BGS</i>	<i>7-8 ft BGS</i>	<i>7-8 ft BGS</i>	<i>12-13 ft BGS</i>
			<i>TSCA</i>	<i>Duplicate</i>						
<i>Parameters</i>	<i>Units</i>	<i>Limit</i>								
<i>PCBs</i>										
Aroclor-1016 (PCB-1016)	mg/kg		0.019 U	0.51 U	0.018 U	0.02 U	0.022 U	2.2 U	0.88 U	3.9 U
Aroclor-1221 (PCB-1221)	mg/kg		0.019 U	0.51 U	0.018 U	0.02 U	0.022 U	2.2 U	0.88 U	3.9 U
Aroclor-1232 (PCB-1232)	mg/kg		0.019 U	0.51 U	0.018 U	0.02 U	0.022 U	2.2 U	0.88 U	3.9 U
Aroclor-1242 (PCB-1242)	mg/kg		0.24	4.4	0.018 U	0.049	0.011 J	19	6.9	13
Aroclor-1248 (PCB-1248)	mg/kg		0.019 U	0.51 U	0.018 U	0.02 U	0.022 U	2.2 U	0.88 U	3.9 U
Aroclor-1254 (PCB-1254)	mg/kg		0.029 p	0.51 U	0.018 U	0.02 U	0.022 U	2.2 U	0.88 U	3.9 U
Aroclor-1260 (PCB-1260)	mg/kg		0.019 U	0.51 U	0.018 U	0.02 U	0.022 U	2.2 U	0.88 U	3.9 U
Total PCBs (calculated)	mg/kg	50	0.269	4.4	ND	0.049	0.011	19	6.9	13

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-85	SB-85	SB-85	SB-86	SB-86	SB-86	SB-86	SB-89
Sample ID:			-	-	-	-	-	-	-	-
Sample Date:			12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010
Sample Depth:			1-2 ft BGS	6-7 ft BGS	10-11 ft BGS	1-2 ft BGS	5-6 ft BGS	7-8 ft BGS	10-11 ft BGS	4-5 ft BGS
Parameters	Units	TSCA Limit								
PCBs										
Aroclor-1016 (PCB-1016)	mg/kg		0.018 U	0.3 U	0.48 U	0.019 U	0.4 U	0.21 U	0.49 U	0.04 U
Aroclor-1221 (PCB-1221)	mg/kg		0.018 U	0.3 U	0.48 U	0.019 U	0.4 U	0.21 U	0.49 U	0.04 U
Aroclor-1232 (PCB-1232)	mg/kg		0.018 U	0.3 U	0.48 U	0.019 U	0.4 U	0.21 U	0.49 U	0.04 U
Aroclor-1242 (PCB-1242)	mg/kg		0.051	1.4	3.7	0.12	2.3	1.3	4.4	0.42
Aroclor-1248 (PCB-1248)	mg/kg		0.018 U	0.3 U	0.48 U	0.019 U	0.4 U	0.21 U	0.49 U	0.04 U
Aroclor-1254 (PCB-1254)	mg/kg		0.018 U	0.22 J	0.48 U	0.048 p	0.4 U	0.21 U	0.49 U	0.12 p
Aroclor-1260 (PCB-1260)	mg/kg		0.018 U	0.3 U	0.48 U	0.031	0.4 U	0.21 U	0.49 U	0.04 U
Total PCBs (calculated)	mg/kg	50	0.051	1.62	3.7	0.199	2.3	1.3	4.4	0.54

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-89	SB-89	SB-90	SB-90	SB-91	SB-91	SB-92a
Sample ID:			-	-	-	-	-	-	S-80987-051314-BP-033
Sample Date:			12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	5/13/2014
Sample Depth:			6-7 ft BGS	10-11 ft BGS	6-7 ft BGS	10-11 ft BGS	6-7 ft BGS	13-14 ft BGS	2-3 ft BGS
Parameters	Units	TSCA Limit							
PCBs									
Aroclor-1016 (PCB-1016)	mg/kg		0.42 U	0.21 U	1.1 U	0.4 U	0.04 U	2 U	0.034 U
Aroclor-1221 (PCB-1221)	mg/kg		0.42 U	0.21 U	1.1 U	0.4 U	0.04 U	2 U	0.034 U
Aroclor-1232 (PCB-1232)	mg/kg		0.42 U	0.21 U	1.1 U	0.4 U	0.04 U	2 U	0.034 U
Aroclor-1242 (PCB-1242)	mg/kg		4.7	1.6	13	2.4	0.46	20	0.034 UJ
Aroclor-1248 (PCB-1248)	mg/kg		0.42 U	0.21 U	1.1 U	0.4 U	0.04 U	2 U	0.034 UJ
Aroclor-1254 (PCB-1254)	mg/kg		0.42 U	0.21 U	1.1 U	0.4 U	0.075	2 U	0.034 UJ
Aroclor-1260 (PCB-1260)	mg/kg		0.42 U	0.21 U	1.1 U	0.4 U	0.04 U	2 U	0.034 UJ
Total PCBs (calculated)	mg/kg	50	4.7	1.6	13	2.4	0.535	20	ND

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-92a	SB-93a	SB-93a	SB-94a
Sample ID:			S-80987-051314-BP-034	S-80987-051314-BP-039	S-80987-051314-BP-040	S-80987-051414-BP-069
Sample Date:			5/13/2014	5/13/2014	5/13/2014	5/14/2014
Sample Depth:			5-6 ft BGS	2-3 ft BGS	5-6 ft BGS	0-1 ft BGS
Parameters	Units	TSCA Limit				
PCBs						
Aroclor-1016 (PCB-1016)	mg/kg		1.9 U	0.038 U	0.037 U	0.39 U
Aroclor-1221 (PCB-1221)	mg/kg		1.9 U	0.038 U	0.037 U	0.39 U
Aroclor-1232 (PCB-1232)	mg/kg		1.9 U	0.038 U	0.037 U	0.39 U
Aroclor-1242 (PCB-1242)	mg/kg		14	0.038 UJ	0.15	3 J
Aroclor-1248 (PCB-1248)	mg/kg		1.9 U	0.038 UJ	0.037 U	0.39 U
Aroclor-1254 (PCB-1254)	mg/kg		1.9 U	0.038 UJ	0.037 U	0.39 U
Aroclor-1260 (PCB-1260)	mg/kg		1.9 U	0.038 UJ	0.037 U	0.39 U
Total PCBs (calculated)	mg/kg	50	14	ND	0.15	3

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:	SB-94a	SB-94a	SB-94a	SB-95a
Sample ID:	S-80987-051414-BP-070	S-80987-051414-BP-071	S-80987-051414-BP-072	S-80987-051414-BP-073
Sample Date:	5/14/2014	5/14/2014	5/14/2014	5/14/2014
Sample Depth:	1-6 ft BGS	6-11 ft BGS	11-16 ft BGS	0-1 ft BGS

Parameters	Units	TSCA Limit				
PCBs						
Aroclor-1016 (PCB-1016)	mg/kg		0.036 U	0.18 U	0.37 U	0.037 U
Aroclor-1221 (PCB-1221)	mg/kg		0.036 U	0.18 U	0.37 U	0.037 U
Aroclor-1232 (PCB-1232)	mg/kg		0.036 U	0.18 U	0.37 U	0.037 U
Aroclor-1242 (PCB-1242)	mg/kg		0.29 J	1.1 J	3.9	0.037 UJ
Aroclor-1248 (PCB-1248)	mg/kg		0.036 UJ	0.18 U	0.37 U	0.037 UJ
Aroclor-1254 (PCB-1254)	mg/kg		0.036 UJ	0.18 U	0.37 U	0.037 UJ
Aroclor-1260 (PCB-1260)	mg/kg		0.036 UJ	0.18 U	0.37 U	0.037 UJ
Total PCBs (calculated)	mg/kg	50	0.29	1.1	3.9	ND

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-95a	SB-95a	SB-95a	SB-96a
Sample ID:			S-80987-051414-BP-074	S-80987-051414-BP-075	S-80987-051414-BP-076	S-80987-051414-BP-077
Sample Date:			5/14/2014	5/14/2014	5/14/2014	5/14/2014
Sample Depth:			1-6 ft BGS	6-11 ft BGS	11-16 ft BGS	0-1 ft BGS
Parameters	Units	TSCA Limit				
PCBs						
Aroclor-1016 (PCB-1016)	mg/kg		4.1 U	0.75 U	0.76 U	0.73 U
Aroclor-1221 (PCB-1221)	mg/kg		4.1 U	0.75 U	0.76 U	0.73 U
Aroclor-1232 (PCB-1232)	mg/kg		4.1 U	0.75 U	0.76 U	0.73 U
Aroclor-1242 (PCB-1242)	mg/kg		34 J	8.6	6 J	3.3
Aroclor-1248 (PCB-1248)	mg/kg		4.1 U	0.75 U	0.76 U	0.73 U
Aroclor-1254 (PCB-1254)	mg/kg		4.1 U	0.75 U	0.76 U	0.73 U
Aroclor-1260 (PCB-1260)	mg/kg		4.1 U	0.75 U	0.76 U	0.73 U
Total PCBs (calculated)	mg/kg	50	34	8.6	6	3.3

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-96a	SB-96a	SB-96a	SB-96a
Sample ID:			S-80987-051414-BP-078	S-80987-051414-BP-079	S-80987-051414-BP-080	S-80987-051414-BP-081
Sample Date:			5/14/2014	5/14/2014	5/14/2014	5/14/2014
Sample Depth:			1-2 ft BGS	1-6 ft BGS	6-11 ft BGS	11-16 ft BGS
Parameters	Units	TSCA Limit				
PCBs						
Aroclor-1016 (PCB-1016)	mg/kg		0.37 U	0.38 U	0.035 U	3.7 U
Aroclor-1221 (PCB-1221)	mg/kg		0.37 U	0.38 U	0.035 U	3.7 U
Aroclor-1232 (PCB-1232)	mg/kg		0.37 U	0.38 U	0.035 U	3.7 U
Aroclor-1242 (PCB-1242)	mg/kg		1.4	2.3 J	0.035 UJ	13
Aroclor-1248 (PCB-1248)	mg/kg		0.37 U	0.38 U	0.035 UJ	3.7 U
Aroclor-1254 (PCB-1254)	mg/kg		0.37 U	0.38 U	0.035 UJ	3.7 U
Aroclor-1260 (PCB-1260)	mg/kg		0.37 U	0.38 U	0.035 UJ	3.7 U
Total PCBs (calculated)	mg/kg	50	1.4	2.3	ND	13

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-97a	SB-97a	SB-97a	SB-97a
Sample ID:			S-80987-051414-BP-089	S-80987-051414-BP-090	S-80987-051414-BP-091	S-80987-051414-BP-092
Sample Date:			5/14/2014	5/14/2014	5/14/2014	5/14/2014
Sample Depth:			0-1 ft BGS	1-2 ft BGS	1-6 ft BGS	6-11 ft BGS
Parameters	Units	TSCA Limit				
PCBs						
Aroclor-1016 (PCB-1016)	mg/kg		0.037 U	0.04 U	3.8 U	3.7 U
Aroclor-1221 (PCB-1221)	mg/kg		0.037 U	0.04 U	3.8 U	3.7 U
Aroclor-1232 (PCB-1232)	mg/kg		0.037 U	0.04 U	3.8 U	3.7 U
Aroclor-1242 (PCB-1242)	mg/kg		0.2 J	0.04 U	20	32
Aroclor-1248 (PCB-1248)	mg/kg		0.037 UJ	0.04 U	3.8 U	3.7 U
Aroclor-1254 (PCB-1254)	mg/kg		0.037 UJ	0.04 U	3.8 U	3.7 U
Aroclor-1260 (PCB-1260)	mg/kg		0.037 UJ	0.04 U	3.8 U	3.7 U
Total PCBs (calculated)	mg/kg	50	0.2	ND	20	32

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			SB-97a	SB-98a	SB-98a	SB-98a
Sample ID:			S-80987-051414-BP-093	S-80987-051414-BP-094	S-80987-051414-BP-095	S-80987-051414-BP-096
Sample Date:			5/14/2014	5/14/2014	5/14/2014	5/14/2014
Sample Depth:			11-16 ft BGS	0-1 ft BGS	1-6 ft BGS	6-11 ft BGS
Parameters	Units	TSCA Limit				
PCBs						
Aroclor-1016 (PCB-1016)	mg/kg		4 U	0.036 U	0.038 U	1.9 U
Aroclor-1221 (PCB-1221)	mg/kg		4 U	0.036 U	0.038 U	1.9 U
Aroclor-1232 (PCB-1232)	mg/kg		4 U	0.036 U	0.038 U	1.9 U
Aroclor-1242 (PCB-1242)	mg/kg		15	0.17 J	0.041 J	5.6
Aroclor-1248 (PCB-1248)	mg/kg		4 U	0.036 U	0.038 U	1.9 U
Aroclor-1254 (PCB-1254)	mg/kg		4 U	0.036 U	0.038 U	1.9 U
Aroclor-1260 (PCB-1260)	mg/kg		4 U	0.036 U	0.038 U	1.9 U
Total PCBs (calculated)	mg/kg	50	15	0.17	0.041	5.6

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

**PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:	SB-98a	SB-99a	SB-99a	SB-99a
Sample ID:	S-80987-051414-BP-097	S-80987-051414-BP-084	S-80987-051414-BP-085	S-80987-051414-BP-086
Sample Date:	5/14/2014	5/14/2014	5/14/2014	5/14/2014
Sample Depth:	11-16 ft BGS	0-1 ft BGS	1-2 ft BGS	1-6 ft BGS

Parameters	Units	TSCA Limit				
PCBs						
Aroclor-1016 (PCB-1016)	mg/kg		1.9 U	0.76 U	1.6 U	19 U
Aroclor-1221 (PCB-1221)	mg/kg		1.9 U	0.76 U	1.6 U	19 U
Aroclor-1232 (PCB-1232)	mg/kg		1.9 U	0.76 U	1.6 U	19 U
Aroclor-1242 (PCB-1242)	mg/kg		4.7	9.8	15	130
Aroclor-1248 (PCB-1248)	mg/kg		1.9 U	0.76 U	1.6 U	19 U
Aroclor-1254 (PCB-1254)	mg/kg		1.9 U	0.76 U	1.6 U	19 U
Aroclor-1260 (PCB-1260)	mg/kg		1.9 U	0.76 U	1.6 U	19 U
Total PCBs (calculated)	mg/kg	50	4.7	9.8	15	130

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SB-99a	SB-99a	SPB-8	SPB-8	SPB-8	SPB-9a
Sample ID:			S-80987-051414-BP-087	S-80987-051414-BP-088	-	-	-	S-80987-051414-BP-082
Sample Date:			5/14/2014	5/14/2014	2/9/2011	2/9/2011	2/9/2011	5/14/2014
Sample Depth:			6-11 ft BGS	11-16 ft BGS	6-8 ft BGS	12-14 ft BGS	14-16 ft BGS	0-1 ft BGS
Parameters	Units	TSCA Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		0.74 U	3.7 U	0.57 U	0.54 U	2 U	0.74 U
Aroclor-1221 (PCB-1221)	mg/kg		0.74 U	3.7 U	0.57 U	0.54 U	2 U	0.74 U
Aroclor-1232 (PCB-1232)	mg/kg		0.74 U	3.7 U	0.57 U	0.54 U	2 U	0.74 U
Aroclor-1242 (PCB-1242)	mg/kg		4.4	14	5.4	5.2	14	7.1
Aroclor-1248 (PCB-1248)	mg/kg		0.74 U	3.7 U	0.57 U	0.54 U	2 U	0.74 U
Aroclor-1254 (PCB-1254)	mg/kg		0.74 U	3.7 U	0.57 U	0.54 U	2 U	0.74 U
Aroclor-1260 (PCB-1260)	mg/kg		0.74 U	3.7 U	0.57 U	0.54 U	2 U	0.74 U
Total PCBs (calculated)	mg/kg	50	4.4	14	5.4	5.2	14	7.1

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72

 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.2

PCB SOIL ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			SPB-9a	SPB-9	SPB-9	SPB-9	SPB-10	SPB-10
Sample ID:			S-80987-051414-BP-083	-	-	-	-	-
Sample Date:			5/14/2014	2/21/2011	2/21/2011	2/21/2011	2/22/2011	2/22/2011
Sample Depth:			1-2 ft BGS	3-4 ft BGS	6-8 ft BGS	12-13 ft BGS	4-6 ft BGS	10-12 ft BGS
Parameters	Units	TSCA Limit						
PCBs								
Aroclor-1016 (PCB-1016)	mg/kg		390 U	23 U	0.63 U	2 U	0.56 U	2.1 U
Aroclor-1221 (PCB-1221)	mg/kg		390 U	23 U	0.63 U	2 U	0.56 U	2.1 U
Aroclor-1232 (PCB-1232)	mg/kg		390 U	23 U	0.63 U	2 U	0.56 U	2.1 U
Aroclor-1242 (PCB-1242)	mg/kg		1600	230	2.1	7.4	3.8	10
Aroclor-1248 (PCB-1248)	mg/kg		390 U	23 U	0.63 U	2 U	0.56 U	2.1 U
Aroclor-1254 (PCB-1254)	mg/kg		390 U	23 U	0.63 U	2 U	0.56 U	2.1 U
Aroclor-1260 (PCB-1260)	mg/kg		390 U	23 U	0.63 U	2 U	0.56 U	2.1 U
Total PCBs (calculated)	mg/kg	50	1600	230	2.1	7.4	3.8	10

Notes

ND- Not Detected

U - Not detected at associated detection limit

J - estimated value

ft BGS - Feet Below Ground Surface

72 Exceeds TSCA

TSCA - Toxic Substance Control Act

TABLE 5.3

SLUG TEST RESULTS
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

<i>Monitoring Well</i>	<i>Type of Well</i>	<i>Rising/Falling Head</i>	<i>Hydraulic Conductivity (cm/sec)</i>			
			<i>Test 1</i>	<i>Test 2</i>	<i>Test 3</i>	<i>Test 4</i>
MW-1S	bedrock	rising head	0.05028	0.05513	0.05773	0.04122
		falling head	0.02739	0.024	0.02606	0.02419
MW-6s	bedrock	rising head	0.006264	0.006325	-	-
		falling head	0.00523	0.006261	-	-
MW-8	overburden	rising head	0.0003308	-	-	-
		falling head	0.0004566	-	-	-
MW-10	overburden	rising head	0.0003308	-	-	-
		falling head	0.0008663	-	-	-
MW-15	overburden	rising head	0.002936	0.00305	0.002989	-
		falling head	0.00235	0.002501	0.002413	-

TABLE 5.4

GROUNDWATER SAMPLING RESULTS
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:			MW-09	PES-1	MW-10	MW-10	MW-10	MW-10	MW-14	MW-15
Sample ID:			FC-MW-9	WG-80987-060614-BP-114	FC-MW-10	WG-80987-060614-BP-115	WG-80987-060614-BP-116	WG-80987-060514-BP-112	WG-80987-060614-BP-113	
Sample Date:			10/8/2009	6/6/2014	10/8/2009	6/6/2014	6/6/2014	6/5/2014	6/6/2014	
Parameters			Units NYSDEC GA							
Volatile Organic Compounds										
1,1,1-Trichloroethane	µg/L	5	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
1,1,2,2-Tetrachloroethane	µg/L	5	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
1,1,2-Trichloroethane	µg/L	1	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 UJ	
1,1-Dichloroethane	µg/L	5	1 U	2.7 J	100 U	1000 U	1000 U	0.76 J	2.1 J	
1,1-Dichloroethene	µg/L	5	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
1,2,4-Trichlorobenzene	µg/L	5	1 U	5.0 U	100 U	1000 U	1000 U	2.0 J	1.8 J	
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.04	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.0006	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 UJ	
1,2-Dichlorobenzene	µg/L	3	1 U	5.0 U	100 U	1000 U	1000 U	0.89 J	16	
1,2-Dichloroethane	µg/L	0.6	1 U	3.9 J	100 U	1000 U	1000 U	5.0 U	1.9 J	
1,2-Dichloropropane	µg/L	1	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
1,3-Dichlorobenzene	µg/L	3	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	1.1 J	
1,4-Dichlorobenzene	µg/L	3	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	6.8	
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	50	5 U	5.0 U	500 U	1000 U	1000 U	5.0 U	5.0 U	
2-Hexanone	µg/L	50	5 U	5.0 U	500 U	1000 U	1000 U	5.0 U	5.0 U	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	5	5 U	18	500 U	1000 U	1000 U	5.0 U	4.2 J	
Acetone	µg/L	50	5 U	290	1800	1000 U	1000 U	60	5.0 U	
Benzene	µg/L	1	1 U	18	190	1000 U	120 J	13	15	
Bromodichloromethane	µg/L	50	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
Bromoform	µg/L	50	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
Bromomethane (Methyl bromide)	µg/L	5	1 U	5.0 U	100 U	1000 UJ	1000 U	5.0 U	5.0 U	
Carbon disulfide	µg/L	60	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
Carbon tetrachloride	µg/L	5	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
Chlorobenzene	µg/L	5	1 U	8.6	170	1000 U	140 J	2.0 J	43	
Chloroethane	µg/L	5	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
Chloroform (Trichloromethane)	µg/L	7	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
Chloromethane (Methyl chloride)	µg/L	5	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
cis-1,2-Dichloroethene	µg/L	5	1 U	19	100 U	1000 U	1000 U	14	330	
cis-1,3-Dichloropropene	µg/L	1	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
Cyclohexane	µg/L	1	1 U	0.93 J	100 U	1000 U	1000 U	2.5 J	1.9 J	
Dibromochloromethane	µg/L	50	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
Dichlorodifluoromethane (CFC-12)	µg/L	5	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
Ethylbenzene	µg/L	5	1 U	74	5400	2900	3000	640	92	
Isopropyl benzene	µg/L	5	1 U	2.7 J	73 J	1000 U	1000 U	4.7 J	2.1 J	
m&p-Xylenes	µg/L	2	U	180	16000	8100	8400	1700	250	
Methyl acetate	µg/L	1	U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
Methyl cyclohexane	µg/L	1	U	2.2 J	100 U	1000 U	1000 U	1.2 J	5.0 U	
Methyl tert butyl ether (MTBE)	µg/L	10	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	
Methylene chloride	µg/L	5	1 U	4.3 J	100 U	1000 U	1000 U	5.0 U	1.0 J	
o-Xylene	µg/L	5	1 U	69	4900	2500	2600	540	87	
Styrene	µg/L	5	1 U	5.0 U	120	1000 U	1000 U	5.0 U	5.0 U	
Tetrachloroethene	µg/L	5	1 U	0.66 J	86 J	1000 U	1000 U	1.5 J	2.0 J	
Toluene	µg/L	5	1 U	660	25000 D	21000	21000	1400	560	
trans-1,2-Dichloroethene	µg/L	5	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	9.2	
trans-1,3-Dichloropropene	µg/L	1	U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U	

TABLE 5.4

**GROUNDWATER SAMPLING RESULTS
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			MW-09	PES-1	MW-10	MW-10	MW-10	MW-14	MW-15
Sample ID:			FC-MW-9	WG-80987-060614-BP-114	FC-MW-10	WG-80987-060614-BP-115	WG-80987-060614-BP-116	WG-80987-060514-BP-112	WG-80987-060614-BP-113
Sample Date:			10/8/2009	6/6/2014	10/8/2009	6/6/2014	6/6/2014	6/5/2014	6/6/2014
			Duplicate						
Parameters	Units	NYSDEC	GA						
Trichloroethene	µg/L	5	1 U	13	240	230 J	230 J	13	5.4
Trichlorofluoromethane (CFC-11)	µg/L	5	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U
Trifluorotrichloroethane (Freon 113)	µg/L	5	1 U	5.0 U	100 U	1000 U	1000 U	5.0 U	5.0 U
Vinyl chloride	µg/L	2	1 U	3.1 J	100 U	1000 U	1000 U	1.2 J	130
Xylenes (total)	µg/L	5	-	250	-	11000	11000	2200	330
Semi-volatile Organic Compounds									
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	5	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
2,4,5-Trichlorophenol	µg/L		11 UJ	200 U	1000 U	17 J	14 J	80 U	20 U
2,4,6-Trichlorophenol	µg/L		11 UJ	100 U	100 J	31 J	23 J	40 U	10 U
2,4-Dichlorophenol	µg/L	5	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
2,4-Dimethylphenol	µg/L	50	11 UJ	1900	11000 D	12000	15000	120	78 J
2,4-Dinitrophenol	µg/L	10	11 UJ	200 U	1000 UJ	200 U	200 U	80 U	20 U
2,4-Dinitrotoluene	µg/L	5	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
2,6-Dinitrotoluene	µg/L	5	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
2-Chloronaphthalene	µg/L	10	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
2-Chlorophenol	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
2-Methylnaphthalene	µg/L		11 UJ	100 U	1000 U	100 U	11 J	40 U	10 U
2-Methylphenol	µg/L		11 UJ	540	8700 D	4400 J	5300	41	28 J
2-Nitroaniline	µg/L	5	11 UJ	200 U	1000 U	200 U	200 U	80 U	20 U
2-Nitrophenol	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
3&4-Methylphenol	µg/L		11 UJ	2800	33000 D	17000	20000	120	56 J
3,3'-Dichlorobenzidine	µg/L	5	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
3-Nitroaniline	µg/L	5	11 UJ	200 U	1000 U	200 U	200 U	80 U	20 U
4,6-Dinitro-2-methylphenol	µg/L		11 UJ	200 U	1000 UJ	200 U	200 U	80 U	20 U
4-Bromophenyl phenyl ether	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
4-Chloro-3-methylphenol	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
4-Chloroaniline	µg/L	5	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
4-Chlorophenyl phenyl ether	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
4-Nitroaniline	µg/L	5	11 UJ	200 U	1000 U	200 U	200 U	80 U	20 U
4-Nitrophenol	µg/L		11 UJ	200 U	1000 U	200 U	200 U	80 U	20 U
Acenaphthene	µg/L	20	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Acenaphthylene	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Acetophenone	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Anthracene	µg/L	50	11 UJ	25 J	1000 U	100 U	100 U	40 U	10 U
Atrazine	µg/L	7.5	11 UJ	100 UJ	1000 U	100 UJ	100 UJ	40 UJ	10 UJ
Benzaldehyde	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Benzo(a)anthracene	µg/L	0.002	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Benzo(a)pyrene	µg/L		11 U	100 U	1000 U	100 U	100 U	40 U	10 U
Benzo(b)fluoranthene	µg/L	0.002	11 U	100 U	1000 U	100 U	100 U	40 U	10 U
Benzo(g,h,i)perylene	µg/L		11 U	100 U	1000 U	100 U	100 U	40 U	10 U
Benzo(k)fluoranthene	µg/L	0.002	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Biphenyl (1,1-Biphenyl)	µg/L	5	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
bis(2-Chloroethoxy)methane	µg/L	5	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
bis(2-Chloroethyl)ether	µg/L	1	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	5	11 UJ	100 U	110 J	100 U	100 U	40 U	10 U
Butyl benzylphthalate (BBP)	µg/L	50	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U

TABLE 5.4

**GROUNDWATER SAMPLING RESULTS
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			MW-09	PES-1	MW-10	MW-10	MW-10	MW-14	MW-15
Sample ID:			FC-MW-9	WG-80987-060614-BP-114	FC-MW-10	WG-80987-060614-BP-115	WG-80987-060614-BP-116	WG-80987-060514-BP-112	WG-80987-060614-BP-113
Sample Date:			10/8/2009	6/6/2014	10/8/2009	6/6/2014	6/6/2014	6/5/2014	6/6/2014
							Duplicate		
Parameters			Units	NYSDEC	GA				
Caprolactam	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Carbazole	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Chrysene	µg/L	0.002	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Dibenz(a,h)anthracene	µg/L		11 U	100 U	1000 U	100 U	100 U	40 U	10 U
Dibenzofuran	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Diethyl phthalate	µg/L	50	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Dimethyl phthalate	µg/L	50	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Di-n-butylphthalate (DBP)	µg/L	50	11 UJ	100 U	1000 U	100 U	100 U	40 U	2.8 J
Di-n-octyl phthalate (DnOP)	µg/L	50	11 U	100 U	1000 U	100 U	100 U	40 U	10 U
Fluoranthene	µg/L	50	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Fluorene	µg/L	50	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Hexachlorobenzene	µg/L	0.04	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Hexachlorobutadiene	µg/L	0.5	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Hexachlorocyclopentadiene	µg/L	5	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Hexachloroethane	µg/L	5	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Indeno(1,2,3-cd)pyrene	µg/L	0.002	11 U	100 U	1000 U	100 U	100 U	40 U	10 U
Isophorone	µg/L	50	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Naphthalene	µg/L	10	11 UJ	100 U	1000 U	60 J	44 J	6.6 J	10 U
Nitrobenzene	µg/L	0.4	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
N-Nitrosodi-n-propylamine	µg/L		11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
N-Nitrosodiphenylamine	µg/L	50	11 UJ	100 U	1000 U	100 U	100 U	40 U	10 U
Pentachlorophenol	µg/L	1	11 UJ	200 U	1000 U	200 U	200 U	80 U	20 U
Phenanthrene	µg/L	50	11 UJ	110	1000 U	100 U	100 U	40 U	10 U
Phenol	µg/L	1	11 UJ	2500	80000 D	13000	14000	65	28 J
Pyrene	µg/L	50	11 UJ	21 J	1000 U	100 U	100 U	40 U	10 U
Metals									
Aluminum	µg/L		159	20400	2790	4390	3880	11800	11400
Antimony	µg/L	3	6 J	1.5 J	14 J	5.1 J	4.8 J	1.1 J	6.0 U
Arsenic	µg/L	25	10 U	92.7	168	64.9	63.5	18.0	25.0
Barium	µg/L	1000	1860	1920	724	471	464	177	421
Beryllium	µg/L	3	3 U	3.0 U	7.82	20 U	20 U	3.0 U	3.0 U
Cadmium	µg/L	5	3 U	3.0 U	3.13	20 U	20 U	3.0 U	3.0 U
Calcium	µg/L	18300		92700	17600	16100	15200	10700	19100
Chromium	µg/L	50	5 U	37.2	197	63.8	60.8	24.2	18.9
Cobalt	µg/L	15 U		30.0	37.7	20 U	20 U	11.0	14.7
Copper	µg/L	200	10 U	79.7 J	138	204 J	199 J	74.7 J	56.0 J
Cyanide (total)	µg/L	200	0.01 U	-	0.187	-	-	-	-
Iron	µg/L	300	296	240000 J	9920	15800 J	13900 J	19800 J	29200 J
Lead	µg/L	25	5.33 J	80.1 J	321	185 J	179 J	67.5 J	42.4 J
Magnesium	µg/L	35000	5420	26200	361 J	10000 U	10000 U	4220	8130
Manganese	µg/L	300	87.2	5120	589	973	859	1240	7590
Mercury	µg/L	0.7	0.2 U	0.20 U	1.03 J	0.58	0.58	0.15 J	0.14 J
Nickel	µg/L	100	14.2 J	64.3 J	626	225 J	218 J	38.5 J	40.0 J
Potassium	µg/L	12400		17000	26400	13200	13000	4780	9290
Selenium	µg/L	10	10 U	15 UJ	45.4	100 UJ	100 UJ	15 UJ	15 UJ
Silver	µg/L	50	5 U	3.0 U	1.5 J	20 U	20 U	3.0 U	3.0 U

TABLE 5.4

**GROUNDWATER SAMPLING RESULTS
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY**

Sample Location:			MW-09	PES-1	MW-10	MW-10	MW-10	MW-14	MW-15
Sample ID:			FC-MW-9	WG-80987-060614-BP-114	FC-MW-10	WG-80987-060614-BP-115	WG-80987-060614-BP-116	WG-80987-060514-BP-112	WG-80987-060614-BP-113
Sample Date:			10/8/2009	6/6/2014	10/8/2009	6/6/2014	6/6/2014	6/5/2014	6/6/2014
							Duplicate		
Parameters	Units	NYSDEC	GA						
Sodium	µg/L	20000	225000	401000	1000 U	2050000	2030000	549000	398000
Thallium	µg/L	0.5	20 U	3.0 U	20 U	20 U	20 U	3.0 U	3.0 U
Vanadium	µg/L		20 U	72.2	904	443	444	64.6	30.4
Zinc	µg/L	2000	25.8	224	97.7	69.9	61.9	76.2	92.0
PCBs									
Aroclor-1016 (PCB-1016)	µg/L		0.05 U	2000 U	5 U	5.0 U	20 U	20 U	1.0 U
Aroclor-1221 (PCB-1221)	µg/L		0.05 U	2000 U	5 U	5.0 U	20 U	20 U	1.0 U
Aroclor-1232 (PCB-1232)	µg/L		0.05 U	2000 U	5 U	5.0 U	20 U	20 U	1.0 U
Aroclor-1242 (PCB-1242)	µg/L		0.05 U	20000	2200	23 J	190 J	120	4.8
Aroclor-1248 (PCB-1248)	µg/L		0.05 U	2000 U	5 U	5.0 U	20 U	20 U	1.0 U
Aroclor-1254 (PCB-1254)	µg/L		0.05 U	2000 U	5 U	5.0 U	20 U	20 U	1.0 U
Aroclor-1260 (PCB-1260)	µg/L		0.05 UJ	2000 U	5 UJ	5.0 U	20 U	20 U	1.0 UJ
Total PCBs (calculated)	µg/L	0.09	0	20000	2200	23	190	120	4.8
Pesticides									
4,4'-DDD	µg/L	0.3	0.05 U	-	10 UJ	-	-	-	-
4,4'-DDE	µg/L	0.2	0.05 U	-	10 U	-	-	-	-
4,4'-DDT	µg/L	0.2	0.05 UJ	-	10 UJ	-	-	-	-
Aldrin	µg/L		0.05 U	-	10 U	-	-	-	-
alpha-BHC	µg/L	0.01	0.05 U	-	10 U	-	-	-	-
alpha-Chlordane	µg/L		0.05 U	-	10 U	-	-	-	-
beta-BHC	µg/L	0.04	0.05 UJ	-	10 U	-	20 U	-	-
delta-BHC	µg/L	0.04	0.05 U	-	10 UJ	-	-	-	-
Dieldrin	µg/L	0.004	0.05 U	-	10 U	-	-	-	-
Endosulfan I	µg/L		0.05 U	-	10 U	-	-	-	-
Endosulfan II	µg/L		0.05 U	-	10 U	-	-	-	-
Endosulfan sulfate	µg/L		0.05 U	-	10 U	-	-	-	-
Endrin	µg/L		0.05 U	-	10 UJ	-	-	-	-
Endrin aldehyde	µg/L	5	0.05 U	-	10 U	-	-	-	-
Endrin ketone	µg/L	5	0.05 U	-	10 U	-	-	-	-
gamma-BHC (lindane)	µg/L	0.05	0.05 U	-	10 U	-	-	-	-
gamma-Chlordane	µg/L		0.05 U	-	10 U	-	-	-	-
Heptachlor	µg/L	0.04	0.05 U	-	10 U	-	-	-	-
Heptachlor epoxide	µg/L	0.03	0.05 U	-	10 U	-	-	-	-
Methoxychlor	µg/L	35	0.05 U	-	10 UJ	-	-	-	-
Toxaphene	µg/L	0.06	0.054 U	-	100 U	-	-	-	-

Notes

U - Not detected at associated detection limit

J - Estimated value

NYSDEC - New York State Department Environmental Conservation

Criteria - Class GA Standard- June 1998

WASTEWATER ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:	PES-1/MW-10/14/15	MW-14/MW-15
Sample ID:	WW-80987-060514-BP-111	WW-80987-052214-BP-110
Sample Date:	6/5/2014	5/22/2014

Parameters	Units		
Volatile Organic Compounds			
1,1-Dichloroethene	µg/L	-	250 U
1,2-Dichloroethane	µg/L	-	250 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	-	250 U
Benzene	µg/L	-	76 J
Carbon tetrachloride	µg/L	-	250 U
Chlorobenzene	µg/L	-	85 J
Chloroform (Trichloromethane)	µg/L	-	250 U
Tetrachloroethene	µg/L	-	43 J
Trichloroethene	µg/L	-	110 J
Vinyl chloride	µg/L	-	250 U
Semi-volatile Organic Compounds			
1,4-Dichlorobenzene	µg/L	10 U	-
2,4,5-Trichlorophenol	µg/L	2.1 J	-
2,4,6-Trichlorophenol	µg/L	3.3 J	-
2,4-Dinitrotoluene	µg/L	10 U	-
2-Methylphenol	µg/L	100 DJ	-
3&4-Methylphenol	µg/L	340 D	-
Hexachlorobenzene	µg/L	6.0 J	-
Hexachlorobutadiene	µg/L	10 U	-
Hexachloroethane	µg/L	10 U	-
Nitrobenzene	µg/L	10 U	-
Pentachlorophenol	µg/L	13 J	-
Pyridine	µg/L	20 U	-
Metals - TCLP			
Arsenic	µg/L	21.7	-
Barium	µg/L	95.4 J	-
Cadmium	µg/L	5.0 U	-
Chromium	µg/L	17.6 J	-
Lead	µg/L	48.1	-
Mercury	µg/L	0.13 J	-
Selenium	µg/L	30.0 U	-
Silver	µg/L	30 U	-
PCBs			
Aroclor-1016 (PCB-1016)	µg/L	10 U	-
Aroclor-1221 (PCB-1221)	µg/L	10 U	-
Aroclor-1232 (PCB-1232)	µg/L	10 U	-
Aroclor-1242 (PCB-1242)	µg/L	63	-
Aroclor-1248 (PCB-1248)	µg/L	10 U	-
Aroclor-1254 (PCB-1254)	µg/L	10 U	-
Aroclor-1260 (PCB-1260)	µg/L	10 U	-

WASTEWATER ANALYTICAL RESULTS (OU-3 SOURCE AREA)
PRE-DESIGN INVESTIGATION REPORT
FRIEDRICHSON COOPERAGE SITE
153-155 SARATOGA AVENUE, WATERFORD, NY

Sample Location:	PES-1/MW-10/14/15	MW-14/MW-15
Sample ID:	WW-80987-060514-BP-111	WW-80987-052214-BP-110
Sample Date:	6/5/2014	5/22/2014

Parameters**Units****General Chemistry**

Cyanide (total)	mg/L	-	0.020 U
Ignitability	Deg F	-	150
pH, lab	s.u.	-	10
Reactive sulfide	mg/L	-	0.030 U

Appendix A

Soil Boring Logs



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: GB-01
DATE COMPLETED: May 14, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	
	NORTHING: 1442179.88 EASTING: 709633.01 GROUND SURFACE	53.95						
	OL-ORGANICS, silt, some fine sand, dry							
2	SM-SILTY SAND, trace to little gravel, fine grained, brown, very moist	51.95						
4	ML-SANDY SILT, trace gravel, wet	49.95						
6								
8								
10	BEDROCK (shale), weathered	44.75						
12	END OF BOREHOLE @ 11.2ft BGS	42.75						
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

BACKFILLED
WITH
BENTONITE
CHIPS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: GB-02
DATE COMPLETED: May 15, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' VALUE
	NORTHING: 1442195.8 EASTING: 709696.72 GROUND SURFACE	52.08					
	OL-ORGANICS, silt, some fine sand, trace clay, brown, moist						
2	SM-SILTY SAND, some FILL, trace gravel, fine grained, gray brown, moist	50.08 49.68					
4	ML-SILT, little fine sand, trace clay, trace gravel, brown-slight grayish, fairly moist	47.78					
6	ML-SILT, little fine sand, trace gravel, brown, wet - some gravel veins at 4.3ft BGS - some gravel veins at 4.4ft BGS - wet at 4.5ft BGS	45.88					
8	SP/ML-SAND/SILT, little to some gravel, trace clay, brown, wet	44.08					
10	SP-SAND, some silt and gravel, fine grained, brown and gray, wet, increase in silt content with depth	41.78					
12	ML-SANDY SILT, trace gravel, loose, wet, increase in gravel content with depth	39.28					
14	GP/SP-GRAVEL/SAND, trace to little silt, loose, gray brown, wet	38.28					
16	GP-GRAVEL, some fine sand, angular, gray, wet	36.28					
16	BEDROCK (shale), weathered	36.08					
	END OF BOREHOLE @ 16.0ft BGS						
18							
20							
22							
24							
26							
28							
30							
32							
34							

BACKFILLED WITH BENTONITE CHIPS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-31
DATE COMPLETED: May 13, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442136.07 EASTING: 709624.73 GROUND SURFACE	53.24						
	OL-ORGANICS, silt	53.04						0.0
2	ML-SILT, some fine sand, some gravel, brown, increase in clay content with depth			1DP 2-3' -045		70		2.7
4				3-4' -046				
6				4-5' -047				
	SP-SAND, little to some silt, fine grained	46.34 46.04						44
8	ML-SILT, with gravel, trace fine sand, trace to little clay, gray to brown, wet			2DP 7-8' -048		70		
10				8-9' -049				27.6
12	END OF BOREHOLE @ 12.0ft BGS	41.24		10-11' -050 3DP		100		
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-32
DATE COMPLETED: May 13, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442144.54 EASTING: 709617.6	53.42						
	GROUND SURFACE							
	CONCRETE, crushed stone	52.92						0.0
2	FILL, sand and gravel, some silt, little clay, dark brown to gray			1DP 2-3' -051		50		
4								1.1
6				5-6' -052				
8	- wet at 7.3ft BGS			2DP 7-8' -053		80		
10	CL/ML-CLAYEY SILT, some gravel and fine sand, gray stained	44.62 44.02		9-10' -054				553
12	GP-GRAVEL, some silt, some fine sand, wet			3DP 11-12' -055		100		
14				12-13' -056				412
16	BEDROCK/SHALE, loose	38.92 38.42						
18	END OF BOREHOLE @ 15.0ft BGS							
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-37
DATE COMPLETED: May 13, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442152.51 EASTING: 709627.18	53.44						
	GROUND SURFACE	53.44						
	FILL, gravel, topsoil, organics	53.19						0.0
2	ML/SP-SILT/SAND, trace gravel, well graded, gray, dry	51.04		1DP 2-3' -063		65		14.9
4	ML-SILT, some fine sand, some gravel, gray, brown, moist	48.64		5-6' -064				0.9
6	ML-SANDY SILT, trace to little gravel, trace clay, brown	46.64		2DP 7-8' -065		75		52
8	SP-SAND, trace gravel, trace silt, well graded, gray, wet	45.54		9-10' -066				14
10	GP-GRAVEL, fractured rock, trace silt and clay, with fine sand	41.64		3DP 11-12' -067		100		
12	SHALE	39.44		12-13' -068				
14	END OF BOREHOLE @ 14.0ft BGS							
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BACKFILLED WITH BENTONITE CHIPS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-38
DATE COMPLETED: May 13, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442145.09 EASTING: 709632.89 GROUND SURFACE	53.30						
2	OL-ORGANICS, crushed stone, dry FILL, sand and gravel, trace silt, trace clay	52.80		1DP 2-3' -057		40		0.3
4				5-6' -058				
6				2DP 7-8' -059		40		17
8	CL/ML-CLAYEY SILT, some gravel, fine sand GP-GRAVEL, little silt, little fine sand, wet	45.60 45.20		9-10' -060				
10				3DP 11-12' -061		100		11
12				12-13' -062				
14	GP-GRAVEL, fractured rock, some shale	39.90						
16	END OF BOREHOLE @ 15.0ft BGS	38.30						
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34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-58
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442193.71 EASTING: 709693.73 GROUND SURFACE	51.97						
2	OL-ORGANICS, silt and sand, trace gravel, some well graded silt and sand			1DP		75		
4	- little clay from 4.0 to 5.0ft BGS			4-5' -031				0.0
6				5-6' -032 2DP		100		0.4
8	END OF BOREHOLE @ 7.0ft BGS	44.97						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-66
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442194.26 EASTING: 709683.65 GROUND SURFACE	51.96						
2	OL-ORGANICS, silt and sand, some fine gravel ML-SILT, little fine sand, little clay, trace gravel, brown, moist	51.66	 BACKFILLED WITH BENTONITE CHIPS	1DP		70		0.7
4	SP-SAND, some silt, fine grained	48.26		4-5' -029				0.9
6	CL/ML-CLAYEY SILT, little sand, little gravel, brown to dark brown, moist	47.56		5-6' -030 2DP		100		
	END OF BOREHOLE @ 7.0ft BGS	44.96						23.6
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-67
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442194.22 EASTING: 709670.22 GROUND SURFACE	52.26						
2	OL-ORGANICS, silt, trace fine sand, trace gravel, brown, dry ML-SILT, little fine sand, trace to little clay, trace gravel, brown, moist	52.16	 BACKFILLED WITH BENTONITE CHIPS	1DP		60		0.0
4	CL/ML-CLAYEY SILT	48.66						0.1
6								0.3
8	END OF BOREHOLE @ 7.0ft BGS	45.26						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-71
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442191.18 EASTING: 709655.04	53.10						
	GROUND SURFACE							
	CONCRETE, dry	52.85						0.0
2	ML-SILT, some fine to medium sand and gravel, dry							0.0
	FILL, fine to medium sand, little silt and clay	50.80				60		
4								
6	END OF BOREHOLE @ 6.0ft BGS	47.10						0.0
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-72
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	P/D (ppm)
	NORTHING: 1442185.58 EASTING: 709661.83 GROUND SURFACE	52.69						
2	ASPHALT ML-SILT, trace clay, trace fine sand, brown	52.54		1DP 2.3'- -018 3.4'- -019 4.5'- -020 5.6'- -021		72		0.7
4	SP-SAND, medium to fine grained, gray, moist	48.19						108
6	CL/ML-CLAYEY SILT, little fine to medium sand - wet at 6.0ft BGS	47.19						24
8	END OF BOREHOLE @ 7.0ft BGS	45.69						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-73
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442180.58 EASTING: 709671.08 GROUND SURFACE	52.25						
	OL-ORGANICS, silt, some gravel	52.15						0.0
2	ML-SILT, little clay, little fine sand, brown					75		0.0
4		47.75						
	SP-SAND, medium to fine grained, gray, very moist	46.95						4.2
6	CL/ML-CLAYEY SILT, little fine sand - wet at 6.0ft BGS							4.9
	END OF BOREHOLE @ 7.0ft BGS	45.25						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-74
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442185.72 EASTING: 709677.29	GROUND SURFACE 51.92						
2	OL-ORGANICS, silt, some fine to medium sand, dry	51.57		1DP		65		0.0
	ML-SILT, some fine to medium sand, little gravel, dry	49.42						0.7
4	FILL, black	48.42						
	CL/ML-CLAYEY SILT, little fine sand and gravel							
6								6.3
8								
10	END OF BOREHOLE @ 10.0ft BGS	41.92						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-75
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442173.48 EASTING: 709662.75 GROUND SURFACE	52.24						
	OL-ORGANICS, sand and gravel	51.99	 BACKFILLED WITH BENTONITE CHIPS	1DP 2-3' -007 3-4' -008		80		1.2
2	SP-SAND, trace silt, fine grained, brown, moist	50.64						4.4
	ML-SILT, little fine sand, trace gravel, moist							17.6
4	SP-SAND, fine to medium grained, black - wet at 4.7ft BGS	48.44						0.0
	END OF BOREHOLE @ 5.0ft BGS	47.24						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-76
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442179.15 EASTING: 709655.99 GROUND SURFACE	52.88						
2	CONCRETE, sand FILL, sand, gravel, silt, black and brown, dry	52.58	 BACKFILLED WITH BENTONITE CHIPS	1DP 2-3' -009 3-4' -010		60		0.0
4	ML-SILT, little fine sand, trace gravel	50.18						2.6
6	ML/SP-SILT/SAND, little gravel, fine grained, wet	47.88						4.4
8	END OF BOREHOLE @ 8.0ft BGS	44.88		7-8' -011				55.6
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-77
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442183.72 EASTING: 709649.33 GROUND SURFACE	53.34						
	OL-ORGANICS, gravel	53.14						0.0
	SP-SAND, trace gravel, trace silt, fine grained							0.1
2	FILL, black stained	51.44				65		0.8
	SP/GP-SAND/GRAVEL, well graded, dry	50.14						1.4
4	ML-SILT, some clay, trace gravel, moist	49.34						1.3
	END OF BOREHOLE @ 5.0ft BGS	48.34						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-80
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442173.73 EASTING: 709640.47 GROUND SURFACE	53.58						
	CONCRETE	53.33						0.0
2	SP-SAND, trace silt, fine to medium grained, brown to dark brown							0.0
4	ML/SP-SILT/SAND, some gravel and FILL, well graded, black	51.08				60		0.0
	END OF BOREHOLE @ 5.0ft BGS	48.58						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-81
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442167.82 EASTING: 709645.34 GROUND SURFACE	53.13						
	FILL, gravel and concrete	52.63	 BACKFILLED WITH BENTONITE CHIPS	1DP 2-3' -002 3-4' -004		65		0.0
2	SP-SAND	51.13						0.0
	ML-SILT, some fine to medium sand	50.13						0.3
4	SP-SAND, some silt, medium grained, brown and black	48.13						1.1
6	END OF BOREHOLE @ 5.0ft BGS							
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-82
DATE COMPLETED: May 12, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442162 EASTING: 709651.66	52.16						
	FILL, sand and gravel							0.0
2	SP-SAND, medium grained, brown, moist	50.66						1.2
	ML-SILT, some fine sand, brown	49.66				80		0.8
4	SP-SAND, medium grained, trace fine grained, black, odor	48.66						2.7
	END OF BOREHOLE @ 5.0ft BGS	47.16						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-92
DATE COMPLETED: May 13, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442129.19 EASTING: 709619.08 GROUND SURFACE	53.85						
2	OL-ORGANICS, trace clay, little silt, trace gravel	53.60	 BACKFILLED WITH BENTONITE CHIPS	1DP 2-3' -033		25		0.0
4	ML-SILT, some fine to medium sand, some to little gravel	51.05		5-6' -034				
6	ML/SP-SILT/SAND, trace gravel, fine grained, brown	47.95		2DP 7-8' -035		50		0.0
8	ML-SILT, little clay, little fine sand, trace gravel, mois	45.95		9-10' -036				
10	SP/ML-SAND/SILT, little clay, trace gravel, fine grained, brown, moist			11-12' -037				
12				3DP 12-13' -038		100		0.9
14	END OF BOREHOLE @ 14.5ft BGS	39.35						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-93
DATE COMPLETED: May 13, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442129.92 EASTING: 709629.19 GROUND SURFACE	53.13						
	OL-ORGANICS, silt, trace fine sand	52.73						
	FILL, sand, silt and gravel, dry							0.0
2	- cobble at 2.2ft BGS	50.93		1DP 2-3' -039		55		
4	ML-SILT, little fine sand, trace clay, trace gravel, brown, moist							0.7
6				5-6' -040				
8	FILL, sand, silt and gravel, trace to little clay, gray, wet	45.83		2DP 7-8' -041		80		
10				9-10' -042				22.6
12				11-12' -043				
14	CL/ML-CLAY/SILT	40.13		3DP 12-13' -044				
14.5	END OF BOREHOLE @ 14.5ft BGS	38.63						

BACKFILLED
WITH
BENTONITE
CHIPS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-94
DATE COMPLETED: May 14, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442147.37 EASTING: 709653.32 GROUND SURFACE	50.93						
2	OL-ORGANICS, silt, trace gravel and fine sand, dark brown, moist SP-SAND, little silt, little clay, trace gravel, brown, moist	50.58	 BACKFILLED WITH BENTONITE CHIPS	0-1' -069				0.0
4	SP-SAND, little silt, trace gravel, stained black, moist - cobble at 5.2ft BGS	46.83		1DP 1-6' -070		55		0.4
6	FILL, sand and gravel, little silt, trace red brick, gra black, very moist to wet - wet, some fractured cobble throughout at 6.4ft BGS	45.53		2DP 6-11' -071		100		92
8				3DP		100		29.6
10				11-16' -072				
12	- REFUSAL, weathered bedrock (shale) at 14.0ft BGS END OF BOREHOLE @ 14.1ft BGS	36.83						
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-95
DATE COMPLETED: May 14, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442156.53 EASTING: 709663.71	52.77						
	GROUND SURFACE	52.77						
2	OL-ORGANICS, silty sand, brown, moist SP-SAND, some silt, some to little gravel, fine grained, light brown to brown, moist	52.52		0-1' -073				0.0
4				1DP		100		4.2
				1-6' -074				
6	SP-SAND, little silt, trace gravel, fine to medium grained, stained black, very moist ML-SILT, trace gravel, compact, gray, dry SM-SILTY SAND, trace clay, trace gravel, fine grained, gray, moist	48.37 47.87 47.47						122 264
8				2DP		50		
10				6-11' -075				224
12				3DP		100		
14	BEDROCK (shale), weathered	39.17		11-16' -076				17
16	END OF BOREHOLE @ 15.0ft BGS	37.77						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-96
DATE COMPLETED: May 14, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442167.96 EASTING: 709678.02	52.16						
	GROUND SURFACE	52.16						
2	OL-ORGANICS, wilt and fine sand, black, moist	51.96		0-1' -077				46
	SP-SAND, little to some silt, trace clay, trace gravel, fine grained, brown, moist	49.46		1-2' -078		100		62
4	ML-SILT, some fine sand, trace gravel, little clay, tight, moist			1DP				
				1-6' -079				89
6	- ML-SANDY SILT, little clay, fine grained, brown, very moist from 5.8 to 9.8ft BGS	46.36						
8				2DP		80		176
10	SP-SAND, medium grained, wet			6-11' -080				196
12	SP/GP-SAND AND GRAVEL, trace silt, wet	40.26				80		
				3DP				212
14	BEDROCK	38.66		11-16' -081				
16	END OF BOREHOLE @ 16.0ft BGS	36.16						
18								
20								
22								
24								
26								
28								
30								
32								
34								

BACKFILLED WITH BENTONITE CHIPS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987-WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-97
DATE COMPLETED: May 14, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442180.54 EASTING: 709702.78 GROUND SURFACE	50.15						
	OL-ORGANICS, silt, little fine sand, trace gravel, dark brown, moist	49.95		0-1'-089				0.0
2	ML-SILT, some fine sand, trace gravel, dark brown, moist	47.65		1-2'-090				0.2
	CL-CLAY, little to some silt, gray brown, moist	46.05		1DP		60		0.7
4	GC-CLAYEY GRAVEL, trace fine sand, gray, very moist, clay content decreases with depth	42.65		1-6'-091				1.7
6								
8	SP/GP-SAND AND GRAVEL, trace clay, trace fine silt, gray, wet	37.55		2DP		50		22.9
10		37.15		6-11'-092				
12				3DP				
14	BEDROCK (shale), weathered			11-16'-093				
14	END OF BOREHOLE @ 13.0ft BGS							
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987-WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-98
DATE COMPLETED: May 14, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442188.41 EASTING: 709710.17 GROUND SURFACE	51.11						
2	ML-SILT, fine sand and gravel, trace organics, brown, moist	50.41		0-1' -094				0.0
	ML/SP-SILT/SAND, trace gravel, fine grained, brown, moist	50.01						0.0
	CL-CLAY, trace gravel, brown, moist	49.31		1DP	60			0.0
4	GP/SP-GRAVEL/SAND, some clay, brown gray, increase in wetness with depth	49.01		1-6' -095				0.0
6	GP-GRAVEL, some fine sand, little clay and silt, gray, wet							
8				2DP	75			0.0
10				6-11' -096				
12								
14	ML-SILT, some fine sand, gray, wet	37.41		3DP	90			0.0
	BEDROCK (shale), weathered	37.11		11-16' -097				
16	END OF BOREHOLE @ 14.5ft BGS	36.61						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SB-99
DATE COMPLETED: May 14, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442167.31 EASTING: 709693.5 GROUND SURFACE	51.11						
2	OL-ORGANICS, silt, trace fine sand, brown, moist	50.81		0-1'-084	1DP	35		0.0
	FILL, clayey gravel, some silt and fine sand, very moist			1-2'-085				222
4	COBBLE, some fine to medium sand, trace to little gravel, brown, very moist	48.01		1-6'-085				296
6								
8	GP-GRAVEL, some fine sand, some silt, gray, wet	44.11		2DP	60			
10				6-11'-086				396
12				3DP	100			
14	- REFUSAL - BEDROCK (weathered shale) at 13.0ft BGS END OF BOREHOLE @ 13.0ft BGS	38.11		11-16'-087				
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987.WI.GPJ CRA CORP.GDT 7/23/14



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: SPB-9
DATE COMPLETED: May 14, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442174.47 EASTING: 709686.25 GROUND SURFACE	51.73						
2	OL-ORGANICS, silt and gravel, black stained SP/GP-SAND AND GRAVEL, gray, wet, increase in gravel content with depth	51.53	 BACKFILLED WITH BENTONITE CHIPS	1-2' -082 1dp		100		122 304
4	END OF BOREHOLE @ 4.0ft BGS	47.73		2-4' -083				290
6								
8								
10								
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987-WI.GPJ CRA CORP.GDT 7/23/14

Appendix B

Soil Analytical Data Reports

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-009

Lab ID: N0818-01

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 13:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		36	ug/Kg		105/16/2014 17:02	77102
Aroclor-1221	ND		36	ug/Kg		105/16/2014 17:02	77102
Aroclor-1232	ND		36	ug/Kg		105/16/2014 17:02	77102
Aroclor-1242	ND		36	ug/Kg		105/16/2014 17:02	77102
Aroclor-1248	ND		36	ug/Kg		105/16/2014 17:02	77102
Aroclor-1254	ND		36	ug/Kg		105/16/2014 17:02	77102
Aroclor-1260	ND		36	ug/Kg		105/16/2014 17:02	77102
Surrogate: Tetrachloro-m-xylene	74.8		34-147	%REC		105/16/2014 17:02	77102
Surrogate: Decachlorobiphenyl	72.4		60-125	%REC		105/16/2014 17:02	77102

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-010

Lab ID: N0818-02

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 13:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		38	ug/Kg		105/16/2014 17:20	77102
Aroclor-1221	ND		38	ug/Kg		105/16/2014 17:20	77102
Aroclor-1232	ND		38	ug/Kg		105/16/2014 17:20	77102
Aroclor-1242	ND		38	ug/Kg		105/16/2014 17:20	77102
Aroclor-1248	ND		38	ug/Kg		105/16/2014 17:20	77102
Aroclor-1254	ND		38	ug/Kg		105/16/2014 17:20	77102
Aroclor-1260	ND		38	ug/Kg		105/16/2014 17:20	77102
Surrogate: Tetrachloro-m-xylene	81.0		34-147	%REC		105/16/2014 17:20	77102
Surrogate: Decachlorobiphenyl	77.0		60-125	%REC		105/16/2014 17:20	77102

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-011

Lab ID: N0818-03

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 13:20

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		150	ug/Kg		4 05/19/2014 15:49	77102
Aroclor-1221	ND		150	ug/Kg		4 05/19/2014 15:49	77102
Aroclor-1232	ND		150	ug/Kg		4 05/19/2014 15:49	77102
Aroclor-1242	950	P	150	ug/Kg		4 05/19/2014 15:49	77102
Aroclor-1248	ND		150	ug/Kg		4 05/19/2014 15:49	77102
Aroclor-1254	ND		150	ug/Kg		4 05/19/2014 15:49	77102
Aroclor-1260	ND		150	ug/Kg		4 05/19/2014 15:49	77102
Surrogate: Tetrachloro-m-xylene	59.0		34-147	%REC		4 05/19/2014 15:49	77102
Surrogate: Decachlorobiphenyl	49.9	S	60-125	%REC		4 05/19/2014 15:49	77102

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-024

Lab ID: N0818-04

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 11:35

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		160	ug/Kg		4/05/19/2014 16:07	77102
Aroclor-1221	ND		160	ug/Kg		4/05/19/2014 16:07	77102
Aroclor-1232	ND		160	ug/Kg		4/05/19/2014 16:07	77102
Aroclor-1242	1300	P	160	ug/Kg		4/05/19/2014 16:07	77102
Aroclor-1248	ND		160	ug/Kg		4/05/19/2014 16:07	77102
Aroclor-1254	ND		160	ug/Kg		4/05/19/2014 16:07	77102
Aroclor-1260	ND		160	ug/Kg		4/05/19/2014 16:07	77102
Surrogate: Tetrachloro-m-xylene	95.0		34-147	%REC		4/05/19/2014 16:07	77102
Surrogate: Decachlorobiphenyl	62.5		60-125	%REC		4/05/19/2014 16:07	77102

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-025

Lab ID: N0818-05

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 11:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		380	ug/Kg		10/05/19/2014 16:25	77102
Aroclor-1221	ND		380	ug/Kg		10/05/19/2014 16:25	77102
Aroclor-1232	ND		380	ug/Kg		10/05/19/2014 16:25	77102
Aroclor-1242	2000	P	380	ug/Kg		10/05/19/2014 16:25	77102
Aroclor-1248	ND		380	ug/Kg		10/05/19/2014 16:25	77102
Aroclor-1254	ND		380	ug/Kg		10/05/19/2014 16:25	77102
Aroclor-1260	ND		380	ug/Kg		10/05/19/2014 16:25	77102
Surrogate: Tetrachloro-m-xylene	82.8		34-147	%REC		10/05/19/2014 16:25	77102
Surrogate: Decachlorobiphenyl	61.0		60-125	%REC		10/05/19/2014 16:25	77102

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051314-BP-045

Lab ID: N0818-06

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 10:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		38	ug/Kg		1 05/19/2014 17:54	77120
Aroclor-1221	ND		38	ug/Kg		1 05/19/2014 17:54	77120
Aroclor-1232	ND		38	ug/Kg		1 05/19/2014 17:54	77120
Aroclor-1242	ND		38	ug/Kg		1 05/19/2014 17:54	77120
Aroclor-1248	ND		38	ug/Kg		1 05/19/2014 17:54	77120
Aroclor-1254	ND		38	ug/Kg		1 05/19/2014 17:54	77120
Aroclor-1260	ND		38	ug/Kg		1 05/19/2014 17:54	77120
Surrogate: Tetrachloro-m-xylene	81.0		34-147	%REC		1 05/19/2014 17:54	77120
Surrogate: Decachlorobiphenyl	69.2		60-125	%REC		1 05/19/2014 17:54	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051314-BP-046

Lab ID: N0818-07

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 10:20

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		38	ug/Kg		1 05/19/2014 18:12	77120
Aroclor-1221	ND		38	ug/Kg		1 05/19/2014 18:12	77120
Aroclor-1232	ND		38	ug/Kg		1 05/19/2014 18:12	77120
Aroclor-1242	40	P	38	ug/Kg		1 05/19/2014 18:12	77120
Aroclor-1248	ND		38	ug/Kg		1 05/19/2014 18:12	77120
Aroclor-1254	ND		38	ug/Kg		1 05/19/2014 18:12	77120
Aroclor-1260	ND		38	ug/Kg		1 05/19/2014 18:12	77120
Surrogate: Tetrachloro-m-xylene	71.9		34-147	%REC		1 05/19/2014 18:12	77120
Surrogate: Decachlorobiphenyl	66.4		60-125	%REC		1 05/19/2014 18:12	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051314-BP-047

Lab ID: N0818-08

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 10:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		38	ug/Kg		1 05/19/2014 18:30	77120
Aroclor-1221	ND		38	ug/Kg		1 05/19/2014 18:30	77120
Aroclor-1232	ND		38	ug/Kg		1 05/19/2014 18:30	77120
Aroclor-1242	ND		38	ug/Kg		1 05/19/2014 18:30	77120
Aroclor-1248	ND		38	ug/Kg		1 05/19/2014 18:30	77120
Aroclor-1254	ND		38	ug/Kg		1 05/19/2014 18:30	77120
Aroclor-1260	ND		38	ug/Kg		1 05/19/2014 18:30	77120
Surrogate: Tetrachloro-m-xylene	75.7		34-147	%REC		1 05/19/2014 18:30	77120
Surrogate: Decachlorobiphenyl	64.9		60-125	%REC		1 05/19/2014 18:30	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051314-BP-048

Lab ID: N0818-09

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 10:35

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		730	ug/Kg		2005/21/2014 17:35	77120
Aroclor-1221	ND		730	ug/Kg		2005/21/2014 17:35	77120
Aroclor-1232	ND		730	ug/Kg		2005/21/2014 17:35	77120
Aroclor-1242	5700		730	ug/Kg		2005/21/2014 17:35	77120
Aroclor-1248	ND		730	ug/Kg		2005/21/2014 17:35	77120
Aroclor-1254	ND		730	ug/Kg		2005/21/2014 17:35	77120
Aroclor-1260	ND		730	ug/Kg		2005/21/2014 17:35	77120
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		2005/21/2014 17:35	77120
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		2005/21/2014 17:35	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-069

Lab ID: N0818-10

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 8:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		390	ug/Kg		10/05/21/2014 17:54	77120
Aroclor-1221	ND		390	ug/Kg		10/05/21/2014 17:54	77120
Aroclor-1232	ND		390	ug/Kg		10/05/21/2014 17:54	77120
Aroclor-1242	3000	P	390	ug/Kg		10/05/21/2014 17:54	77120
Aroclor-1248	ND		390	ug/Kg		10/05/21/2014 17:54	77120
Aroclor-1254	ND		390	ug/Kg		10/05/21/2014 17:54	77120
Aroclor-1260	ND		390	ug/Kg		10/05/21/2014 17:54	77120
Surrogate: Tetrachloro-m-xylene	78.0		34-147	%REC		10/05/21/2014 17:54	77120
Surrogate: Decachlorobiphenyl	69.6		60-125	%REC		10/05/21/2014 17:54	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-070

Lab ID: N0818-11

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 8:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		36	ug/Kg		1 05/19/2014 19:24	77120
Aroclor-1221	ND		36	ug/Kg		1 05/19/2014 19:24	77120
Aroclor-1232	ND		36	ug/Kg		1 05/19/2014 19:24	77120
Aroclor-1242	290	P	36	ug/Kg		1 05/19/2014 19:24	77120
Aroclor-1248	ND		36	ug/Kg		1 05/19/2014 19:24	77120
Aroclor-1254	ND		36	ug/Kg		1 05/19/2014 19:24	77120
Aroclor-1260	ND		36	ug/Kg		1 05/19/2014 19:24	77120
Surrogate: Tetrachloro-m-xylene	47.4		34-147	%REC		1 05/19/2014 19:24	77120
Surrogate: Decachlorobiphenyl	24.5	S	60-125	%REC		1 05/19/2014 19:24	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-071

Lab ID: N0818-12

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 8:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		180	ug/Kg		5/05/21/2014 18:11	77120
Aroclor-1221	ND		180	ug/Kg		5/05/21/2014 18:11	77120
Aroclor-1232	ND		180	ug/Kg		5/05/21/2014 18:11	77120
Aroclor-1242	1100		180	ug/Kg		5/05/21/2014 18:11	77120
Aroclor-1248	ND		180	ug/Kg		5/05/21/2014 18:11	77120
Aroclor-1254	ND		180	ug/Kg		5/05/21/2014 18:11	77120
Aroclor-1260	ND		180	ug/Kg		5/05/21/2014 18:11	77120
Surrogate: Tetrachloro-m-xylene	71.6		34-147	%REC		5/05/21/2014 18:11	77120
Surrogate: Decachlorobiphenyl	48.7	S	60-125	%REC		5/05/21/2014 18:11	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-072

Lab ID: N0818-13

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 9:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		370	ug/Kg		10/05/21/2014 18:29	77120
Aroclor-1221	ND		370	ug/Kg		10/05/21/2014 18:29	77120
Aroclor-1232	ND		370	ug/Kg		10/05/21/2014 18:29	77120
Aroclor-1242	3900		370	ug/Kg		10/05/21/2014 18:29	77120
Aroclor-1248	ND		370	ug/Kg		10/05/21/2014 18:29	77120
Aroclor-1254	ND		370	ug/Kg		10/05/21/2014 18:29	77120
Aroclor-1260	ND		370	ug/Kg		10/05/21/2014 18:29	77120
Surrogate: Tetrachloro-m-xylene	107		34-147	%REC		10/05/21/2014 18:29	77120
Surrogate: Decachlorobiphenyl	90.8		60-125	%REC		10/05/21/2014 18:29	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-073

Lab ID: N0818-14

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 9:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		37	ug/Kg		1 05/19/2014 20:18	77120
Aroclor-1221	ND		37	ug/Kg		1 05/19/2014 20:18	77120
Aroclor-1232	ND		37	ug/Kg		1 05/19/2014 20:18	77120
Aroclor-1242	ND		37	ug/Kg		1 05/19/2014 20:18	77120
Aroclor-1248	ND		37	ug/Kg		1 05/19/2014 20:18	77120
Aroclor-1254	ND		37	ug/Kg		1 05/19/2014 20:18	77120
Aroclor-1260	ND		37	ug/Kg		1 05/19/2014 20:18	77120
Surrogate: Tetrachloro-m-xylene	63.3		34-147	%REC		1 05/19/2014 20:18	77120
Surrogate: Decachlorobiphenyl	45.5	S	60-125	%REC		1 05/19/2014 20:18	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-074

Lab ID: N0818-15

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 9:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		4100	ug/Kg	100	05/21/2014 18:47	77120
Aroclor-1221	ND		4100	ug/Kg	100	05/21/2014 18:47	77120
Aroclor-1232	ND		4100	ug/Kg	100	05/21/2014 18:47	77120
Aroclor-1242	34000		4100	ug/Kg	100	05/21/2014 18:47	77120
Aroclor-1248	ND		4100	ug/Kg	100	05/21/2014 18:47	77120
Aroclor-1254	ND		4100	ug/Kg	100	05/21/2014 18:47	77120
Aroclor-1260	ND		4100	ug/Kg	100	05/21/2014 18:47	77120
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC	100	05/21/2014 18:47	77120
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC	100	05/21/2014 18:47	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-075

Lab ID: N0818-16

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 9:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		750	ug/Kg		2005/21/2014 19:06	77120
Aroclor-1221	ND		750	ug/Kg		2005/21/2014 19:06	77120
Aroclor-1232	ND		750	ug/Kg		2005/21/2014 19:06	77120
Aroclor-1242	8600		750	ug/Kg		2005/21/2014 19:06	77120
Aroclor-1248	ND		750	ug/Kg		2005/21/2014 19:06	77120
Aroclor-1254	ND		750	ug/Kg		2005/21/2014 19:06	77120
Aroclor-1260	ND		750	ug/Kg		2005/21/2014 19:06	77120
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		2005/21/2014 19:06	77120
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		2005/21/2014 19:06	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-076

Lab ID: N0818-17

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 10:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		760	ug/Kg		2005/21/2014 19:23	77120
Aroclor-1221	ND		760	ug/Kg		2005/21/2014 19:23	77120
Aroclor-1232	ND		760	ug/Kg		2005/21/2014 19:23	77120
Aroclor-1242	6000		760	ug/Kg		2005/21/2014 19:23	77120
Aroclor-1248	ND		760	ug/Kg		2005/21/2014 19:23	77120
Aroclor-1254	ND		760	ug/Kg		2005/21/2014 19:23	77120
Aroclor-1260	ND		760	ug/Kg		2005/21/2014 19:23	77120
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		2005/21/2014 19:23	77120
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		2005/21/2014 19:23	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-079

Lab ID: N0818-18

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 10:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		380	ug/Kg		10/05/21/2014 19:41	77120
Aroclor-1221	ND		380	ug/Kg		10/05/21/2014 19:41	77120
Aroclor-1232	ND		380	ug/Kg		10/05/21/2014 19:41	77120
Aroclor-1242	2300		380	ug/Kg		10/05/21/2014 19:41	77120
Aroclor-1248	ND		380	ug/Kg		10/05/21/2014 19:41	77120
Aroclor-1254	ND		380	ug/Kg		10/05/21/2014 19:41	77120
Aroclor-1260	ND		380	ug/Kg		10/05/21/2014 19:41	77120
Surrogate: Tetrachloro-m-xylene	72.1		34-147	%REC		10/05/21/2014 19:41	77120
Surrogate: Decachlorobiphenyl	55.7	S	60-125	%REC		10/05/21/2014 19:41	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-080

Lab ID: N0818-19

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 10:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		35	ug/Kg		1 05/19/2014 21:47	77120
Aroclor-1221	ND		35	ug/Kg		1 05/19/2014 21:47	77120
Aroclor-1232	ND		35	ug/Kg		1 05/19/2014 21:47	77120
Aroclor-1242	ND		35	ug/Kg		1 05/19/2014 21:47	77120
Aroclor-1248	ND		35	ug/Kg		1 05/19/2014 21:47	77120
Aroclor-1254	ND		35	ug/Kg		1 05/19/2014 21:47	77120
Aroclor-1260	ND		35	ug/Kg		1 05/19/2014 21:47	77120
Surrogate: Tetrachloro-m-xylene	61.1		34-147	%REC		1 05/19/2014 21:47	77120
Surrogate: Decachlorobiphenyl	28.8	S	60-125	%REC		1 05/19/2014 21:47	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-081

Lab ID: N0818-20

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 11:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		3700	ug/Kg	100	05/21/2014 19:59	77120
Aroclor-1221	ND		3700	ug/Kg	100	05/21/2014 19:59	77120
Aroclor-1232	ND		3700	ug/Kg	100	05/21/2014 19:59	77120
Aroclor-1242	13000		3700	ug/Kg	100	05/21/2014 19:59	77120
Aroclor-1248	ND		3700	ug/Kg	100	05/21/2014 19:59	77120
Aroclor-1254	ND		3700	ug/Kg	100	05/21/2014 19:59	77120
Aroclor-1260	ND		3700	ug/Kg	100	05/21/2014 19:59	77120
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC	100	05/21/2014 19:59	77120
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC	100	05/21/2014 19:59	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-082

Lab ID: N0818-21

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 11:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		740	ug/Kg		2005/21/2014 20:17	77120
Aroclor-1221	ND		740	ug/Kg		2005/21/2014 20:17	77120
Aroclor-1232	ND		740	ug/Kg		2005/21/2014 20:17	77120
Aroclor-1242	7100		740	ug/Kg		2005/21/2014 20:17	77120
Aroclor-1248	ND		740	ug/Kg		2005/21/2014 20:17	77120
Aroclor-1254	ND		740	ug/Kg		2005/21/2014 20:17	77120
Aroclor-1260	ND		740	ug/Kg		2005/21/2014 20:17	77120
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		2005/21/2014 20:17	77120
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		2005/21/2014 20:17	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-083

Lab ID: N0818-22

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 11:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		390000	ug/Kg	10000	05/22/2014 11:59	77120
Aroclor-1221	ND		390000	ug/Kg	10000	05/22/2014 11:59	77120
Aroclor-1232	ND		390000	ug/Kg	10000	05/22/2014 11:59	77120
Aroclor-1242	1600000		390000	ug/Kg	10000	05/22/2014 11:59	77120
Aroclor-1248	ND		390000	ug/Kg	10000	05/22/2014 11:59	77120
Aroclor-1254	ND		390000	ug/Kg	10000	05/22/2014 11:59	77120
Aroclor-1260	ND		390000	ug/Kg	10000	05/22/2014 11:59	77120
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC	10000	05/22/2014 11:59	77120
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC	10000	05/22/2014 11:59	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-086

Lab ID: N0818-23

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 12:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		19000	ug/Kg	500	05/21/2014 20:53	77120
Aroclor-1221	ND		19000	ug/Kg	500	05/21/2014 20:53	77120
Aroclor-1232	ND		19000	ug/Kg	500	05/21/2014 20:53	77120
Aroclor-1242	130000		19000	ug/Kg	500	05/21/2014 20:53	77120
Aroclor-1248	ND		19000	ug/Kg	500	05/21/2014 20:53	77120
Aroclor-1254	ND		19000	ug/Kg	500	05/21/2014 20:53	77120
Aroclor-1260	ND		19000	ug/Kg	500	05/21/2014 20:53	77120
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC	500	05/21/2014 20:53	77120
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC	500	05/21/2014 20:53	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-087

Lab ID: N0818-24

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 12:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		740	ug/Kg		2005/21/2014 21:11	77120
Aroclor-1221	ND		740	ug/Kg		2005/21/2014 21:11	77120
Aroclor-1232	ND		740	ug/Kg		2005/21/2014 21:11	77120
Aroclor-1242	4400		740	ug/Kg		2005/21/2014 21:11	77120
Aroclor-1248	ND		740	ug/Kg		2005/21/2014 21:11	77120
Aroclor-1254	ND		740	ug/Kg		2005/21/2014 21:11	77120
Aroclor-1260	ND		740	ug/Kg		2005/21/2014 21:11	77120
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		2005/21/2014 21:11	77120
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		2005/21/2014 21:11	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-088

Lab ID: N0818-25

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 12:55

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		3700	ug/Kg	100	05/21/2014 21:29	77120
Aroclor-1221	ND		3700	ug/Kg	100	05/21/2014 21:29	77120
Aroclor-1232	ND		3700	ug/Kg	100	05/21/2014 21:29	77120
Aroclor-1242	14000		3700	ug/Kg	100	05/21/2014 21:29	77120
Aroclor-1248	ND		3700	ug/Kg	100	05/21/2014 21:29	77120
Aroclor-1254	ND		3700	ug/Kg	100	05/21/2014 21:29	77120
Aroclor-1260	ND		3700	ug/Kg	100	05/21/2014 21:29	77120
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC	100	05/21/2014 21:29	77120
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC	100	05/21/2014 21:29	77120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-091

Lab ID: N0818-26

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 13:20

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		3800	ug/Kg	100	05/21/2014 21:47	77147
Aroclor-1221	ND		3800	ug/Kg	100	05/21/2014 21:47	77147
Aroclor-1232	ND		3800	ug/Kg	100	05/21/2014 21:47	77147
Aroclor-1242	20000		3800	ug/Kg	100	05/21/2014 21:47	77147
Aroclor-1248	ND		3800	ug/Kg	100	05/21/2014 21:47	77147
Aroclor-1254	ND		3800	ug/Kg	100	05/21/2014 21:47	77147
Aroclor-1260	ND		3800	ug/Kg	100	05/21/2014 21:47	77147
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC	100	05/21/2014 21:47	77147
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC	100	05/21/2014 21:47	77147

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-092

Lab ID: N0818-27

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 13:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		3700	ug/Kg	100	05/21/2014 22:05	77147
Aroclor-1221	ND		3700	ug/Kg	100	05/21/2014 22:05	77147
Aroclor-1232	ND		3700	ug/Kg	100	05/21/2014 22:05	77147
Aroclor-1242	32000		3700	ug/Kg	100	05/21/2014 22:05	77147
Aroclor-1248	ND		3700	ug/Kg	100	05/21/2014 22:05	77147
Aroclor-1254	ND		3700	ug/Kg	100	05/21/2014 22:05	77147
Aroclor-1260	ND		3700	ug/Kg	100	05/21/2014 22:05	77147
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC	100	05/21/2014 22:05	77147
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC	100	05/21/2014 22:05	77147

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-093

Lab ID: N0818-28

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 13:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		4000	ug/Kg	100	05/21/2014 22:23	77147
Aroclor-1221	ND		4000	ug/Kg	100	05/21/2014 22:23	77147
Aroclor-1232	ND		4000	ug/Kg	100	05/21/2014 22:23	77147
Aroclor-1242	15000		4000	ug/Kg	100	05/21/2014 22:23	77147
Aroclor-1248	ND		4000	ug/Kg	100	05/21/2014 22:23	77147
Aroclor-1254	ND		4000	ug/Kg	100	05/21/2014 22:23	77147
Aroclor-1260	ND		4000	ug/Kg	100	05/21/2014 22:23	77147
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC	100	05/21/2014 22:23	77147
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC	100	05/21/2014 22:23	77147

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-094

Lab ID: N0818-29

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 14:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		36	ug/Kg		105/20/2014 16:10	77147
Aroclor-1221	ND		36	ug/Kg		105/20/2014 16:10	77147
Aroclor-1232	ND		36	ug/Kg		105/20/2014 16:10	77147
Aroclor-1242	170		36	ug/Kg		105/20/2014 16:10	77147
Aroclor-1248	ND		36	ug/Kg		105/20/2014 16:10	77147
Aroclor-1254	ND		36	ug/Kg		105/20/2014 16:10	77147
Aroclor-1260	ND		36	ug/Kg		105/20/2014 16:10	77147
Surrogate: Tetrachloro-m-xylene	83.0		34-147	%REC		105/20/2014 16:10	77147
Surrogate: Decachlorobiphenyl	56.0	S	60-125	%REC		105/20/2014 16:10	77147

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-095

Lab ID: N0818-30

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 14:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		38	ug/Kg		1 05/20/2014 16:28	77147
Aroclor-1221	ND		38	ug/Kg		1 05/20/2014 16:28	77147
Aroclor-1232	ND		38	ug/Kg		1 05/20/2014 16:28	77147
Aroclor-1242	41		38	ug/Kg		1 05/20/2014 16:28	77147
Aroclor-1248	ND		38	ug/Kg		1 05/20/2014 16:28	77147
Aroclor-1254	ND		38	ug/Kg		1 05/20/2014 16:28	77147
Aroclor-1260	ND		38	ug/Kg		1 05/20/2014 16:28	77147
Surrogate: Tetrachloro-m-xylene	86.9		34-147	%REC		1 05/20/2014 16:28	77147
Surrogate: Decachlorobiphenyl	68.9		60-125	%REC		1 05/20/2014 16:28	77147

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-096

Lab ID: N0818-31

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 14:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		1900	ug/Kg		50 05/21/2014 22:41	77147
Aroclor-1221	ND		1900	ug/Kg		50 05/21/2014 22:41	77147
Aroclor-1232	ND		1900	ug/Kg		50 05/21/2014 22:41	77147
Aroclor-1242	5600		1900	ug/Kg		50 05/21/2014 22:41	77147
Aroclor-1248	ND		1900	ug/Kg		50 05/21/2014 22:41	77147
Aroclor-1254	ND		1900	ug/Kg		50 05/21/2014 22:41	77147
Aroclor-1260	ND		1900	ug/Kg		50 05/21/2014 22:41	77147
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		50 05/21/2014 22:41	77147
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		50 05/21/2014 22:41	77147

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

05/22/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-097

Lab ID: N0818-32

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 14:35

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		1900	ug/Kg		50 05/21/2014 22:59	77147
Aroclor-1221	ND		1900	ug/Kg		50 05/21/2014 22:59	77147
Aroclor-1232	ND		1900	ug/Kg		50 05/21/2014 22:59	77147
Aroclor-1242	4700		1900	ug/Kg		50 05/21/2014 22:59	77147
Aroclor-1248	ND		1900	ug/Kg		50 05/21/2014 22:59	77147
Aroclor-1254	ND		1900	ug/Kg		50 05/21/2014 22:59	77147
Aroclor-1260	ND		1900	ug/Kg		50 05/21/2014 22:59	77147
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		50 05/21/2014 22:59	77147
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		50 05/21/2014 22:59	77147

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-001

Lab ID: N0819-01

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 10:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		37	ug/Kg		1 06/09/2014 5:59	77162
Aroclor-1221	ND		37	ug/Kg		1 06/09/2014 5:59	77162
Aroclor-1232	ND		37	ug/Kg		1 06/09/2014 5:59	77162
Aroclor-1242	ND		37	ug/Kg		1 06/09/2014 5:59	77162
Aroclor-1248	ND		37	ug/Kg		1 06/09/2014 5:59	77162
Aroclor-1254	ND		37	ug/Kg		1 06/09/2014 5:59	77162
Aroclor-1260	ND		37	ug/Kg		1 06/09/2014 5:59	77162
Surrogate: Tetrachloro-m-xylene	79.2		34-147	%REC		1 06/09/2014 5:59	77162
Surrogate: Decachlorobiphenyl	62.7		60-125	%REC		1 06/09/2014 5:59	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-002

Lab ID: N0819-02

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 10:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		38	ug/Kg		1 06/09/2014 6:14	77162
Aroclor-1221	ND		38	ug/Kg		1 06/09/2014 6:14	77162
Aroclor-1232	ND		38	ug/Kg		1 06/09/2014 6:14	77162
Aroclor-1242	ND		38	ug/Kg		1 06/09/2014 6:14	77162
Aroclor-1248	ND		38	ug/Kg		1 06/09/2014 6:14	77162
Aroclor-1254	ND		38	ug/Kg		1 06/09/2014 6:14	77162
Aroclor-1260	ND		38	ug/Kg		1 06/09/2014 6:14	77162
Surrogate: Tetrachloro-m-xylene	78.8		34-147	%REC		1 06/09/2014 6:14	77162
Surrogate: Decachlorobiphenyl	60.5		60-125	%REC		1 06/09/2014 6:14	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-003

Lab ID: N0819-03

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 10:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		38	ug/Kg		1 06/09/2014 6:29	77162
Aroclor-1221	ND		38	ug/Kg		1 06/09/2014 6:29	77162
Aroclor-1232	ND		38	ug/Kg		1 06/09/2014 6:29	77162
Aroclor-1242	280		38	ug/Kg		1 06/09/2014 6:29	77162
Aroclor-1248	ND		38	ug/Kg		1 06/09/2014 6:29	77162
Aroclor-1254	ND		38	ug/Kg		1 06/09/2014 6:29	77162
Aroclor-1260	ND		38	ug/Kg		1 06/09/2014 6:29	77162
Surrogate: Tetrachloro-m-xylene	83.3		34-147	%REC		1 06/09/2014 6:29	77162
Surrogate: Decachlorobiphenyl	58.3	S	60-125	%REC		1 06/09/2014 6:29	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-004

Lab ID: N0819-04

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 10:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		37	ug/Kg		1 06/09/2014 6:44	77162
Aroclor-1221	ND		37	ug/Kg		1 06/09/2014 6:44	77162
Aroclor-1232	ND		37	ug/Kg		1 06/09/2014 6:44	77162
Aroclor-1242	ND		37	ug/Kg		1 06/09/2014 6:44	77162
Aroclor-1248	ND		37	ug/Kg		1 06/09/2014 6:44	77162
Aroclor-1254	ND		37	ug/Kg		1 06/09/2014 6:44	77162
Aroclor-1260	ND		37	ug/Kg		1 06/09/2014 6:44	77162
Surrogate: Tetrachloro-m-xylene	79.7		34-147	%REC		1 06/09/2014 6:44	77162
Surrogate: Decachlorobiphenyl	62.4		60-125	%REC		1 06/09/2014 6:44	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-005

Lab ID: N0819-05

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 11:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		370	ug/Kg		10/06/11/2014 13:53	77162
Aroclor-1221	ND		370	ug/Kg		10/06/11/2014 13:53	77162
Aroclor-1232	ND		370	ug/Kg		10/06/11/2014 13:53	77162
Aroclor-1242	1800		370	ug/Kg		10/06/11/2014 13:53	77162
Aroclor-1248	ND		370	ug/Kg		10/06/11/2014 13:53	77162
Aroclor-1254	ND		370	ug/Kg		10/06/11/2014 13:53	77162
Aroclor-1260	ND		370	ug/Kg		10/06/11/2014 13:53	77162
Surrogate: Tetrachloro-m-xylene	93.2		34-147	%REC		10/06/11/2014 13:53	77162
Surrogate: Decachlorobiphenyl	105		60-125	%REC		10/06/11/2014 13:53	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-006

Lab ID: N0819-06

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 11:20

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		42	ug/Kg		1 06/09/2014 7:13	77162
Aroclor-1221	ND		42	ug/Kg		1 06/09/2014 7:13	77162
Aroclor-1232	ND		42	ug/Kg		1 06/09/2014 7:13	77162
Aroclor-1242	ND		42	ug/Kg		1 06/09/2014 7:13	77162
Aroclor-1248	ND		42	ug/Kg		1 06/09/2014 7:13	77162
Aroclor-1254	ND		42	ug/Kg		1 06/09/2014 7:13	77162
Aroclor-1260	410		42	ug/Kg		1 06/09/2014 7:13	77162
Surrogate: Tetrachloro-m-xylene	66.6		34-147	%REC		1 06/09/2014 7:13	77162
Surrogate: Decachlorobiphenyl	79.0		60-125	%REC		1 06/09/2014 7:13	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-007

Lab ID: N0819-07

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 12:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		38	ug/Kg		1 06/09/2014 7:28	77162
Aroclor-1221	ND		38	ug/Kg		1 06/09/2014 7:28	77162
Aroclor-1232	ND		38	ug/Kg		1 06/09/2014 7:28	77162
Aroclor-1242	ND		38	ug/Kg		1 06/09/2014 7:28	77162
Aroclor-1248	ND		38	ug/Kg		1 06/09/2014 7:28	77162
Aroclor-1254	ND		38	ug/Kg		1 06/09/2014 7:28	77162
Aroclor-1260	ND		38	ug/Kg		1 06/09/2014 7:28	77162
Surrogate: Tetrachloro-m-xylene	72.3		34-147	%REC		1 06/09/2014 7:28	77162
Surrogate: Decachlorobiphenyl	62.3		60-125	%REC		1 06/09/2014 7:28	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-008

Lab ID: N0819-08

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 12:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		39	ug/Kg		1 06/09/2014 7:42	77162
Aroclor-1221	ND		39	ug/Kg		1 06/09/2014 7:42	77162
Aroclor-1232	ND		39	ug/Kg		1 06/09/2014 7:42	77162
Aroclor-1242	ND		39	ug/Kg		1 06/09/2014 7:42	77162
Aroclor-1248	ND		39	ug/Kg		1 06/09/2014 7:42	77162
Aroclor-1254	ND		39	ug/Kg		1 06/09/2014 7:42	77162
Aroclor-1260	ND		39	ug/Kg		1 06/09/2014 7:42	77162
Surrogate: Tetrachloro-m-xylene	77.6		34-147	%REC		1 06/09/2014 7:42	77162
Surrogate: Decachlorobiphenyl	62.6		60-125	%REC		1 06/09/2014 7:42	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-012

Lab ID: N0819-09

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 13:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		47	ug/Kg		1 06/09/2014 7:57	77162
Aroclor-1221	ND		47	ug/Kg		1 06/09/2014 7:57	77162
Aroclor-1232	ND		47	ug/Kg		1 06/09/2014 7:57	77162
Aroclor-1242	ND		47	ug/Kg		1 06/09/2014 7:57	77162
Aroclor-1248	ND		47	ug/Kg		1 06/09/2014 7:57	77162
Aroclor-1254	ND		47	ug/Kg		1 06/09/2014 7:57	77162
Aroclor-1260	ND		47	ug/Kg		1 06/09/2014 7:57	77162
Surrogate: Tetrachloro-m-xylene	82.5		34-147	%REC		1 06/09/2014 7:57	77162
Surrogate: Decachlorobiphenyl	62.8		60-125	%REC		1 06/09/2014 7:57	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-013

Lab ID: N0819-10

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 13:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		39	ug/Kg		1 06/09/2014 8:12	77162
Aroclor-1221	ND		39	ug/Kg		1 06/09/2014 8:12	77162
Aroclor-1232	ND		39	ug/Kg		1 06/09/2014 8:12	77162
Aroclor-1242	ND		39	ug/Kg		1 06/09/2014 8:12	77162
Aroclor-1248	ND		39	ug/Kg		1 06/09/2014 8:12	77162
Aroclor-1254	ND		39	ug/Kg		1 06/09/2014 8:12	77162
Aroclor-1260	ND		39	ug/Kg		1 06/09/2014 8:12	77162
Surrogate: Tetrachloro-m-xylene	77.7		34-147	%REC		1 06/09/2014 8:12	77162
Surrogate: Decachlorobiphenyl	62.6		60-125	%REC		1 06/09/2014 8:12	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-014

Lab ID: N0819-11

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 14:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		38	ug/Kg		1 06/09/2014 8:26	77162
Aroclor-1221	ND		38	ug/Kg		1 06/09/2014 8:26	77162
Aroclor-1232	ND		38	ug/Kg		1 06/09/2014 8:26	77162
Aroclor-1242	ND		38	ug/Kg		1 06/09/2014 8:26	77162
Aroclor-1248	ND		38	ug/Kg		1 06/09/2014 8:26	77162
Aroclor-1254	ND		38	ug/Kg		1 06/09/2014 8:26	77162
Aroclor-1260	ND		38	ug/Kg		1 06/09/2014 8:26	77162
Surrogate: Tetrachloro-m-xylene	69.8		34-147	%REC		1 06/09/2014 8:26	77162
Surrogate: Decachlorobiphenyl	57.3	S	60-125	%REC		1 06/09/2014 8:26	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-015

Lab ID: N0819-12

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 14:20

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		39	ug/Kg		1 06/09/2014 8:41	77162
Aroclor-1221	ND		39	ug/Kg		1 06/09/2014 8:41	77162
Aroclor-1232	ND		39	ug/Kg		1 06/09/2014 8:41	77162
Aroclor-1242	ND		39	ug/Kg		1 06/09/2014 8:41	77162
Aroclor-1248	ND		39	ug/Kg		1 06/09/2014 8:41	77162
Aroclor-1254	ND		39	ug/Kg		1 06/09/2014 8:41	77162
Aroclor-1260	ND		39	ug/Kg		1 06/09/2014 8:41	77162
Surrogate: Tetrachloro-m-xylene	69.0		34-147	%REC		1 06/09/2014 8:41	77162
Surrogate: Decachlorobiphenyl	57.2	S	60-125	%REC		1 06/09/2014 8:41	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-018

Lab ID: N0819-15

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 14:55

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		37	ug/Kg		1 06/09/2014 8:56	77162
Aroclor-1221	ND		37	ug/Kg		1 06/09/2014 8:56	77162
Aroclor-1232	ND		37	ug/Kg		1 06/09/2014 8:56	77162
Aroclor-1242	ND		37	ug/Kg		1 06/09/2014 8:56	77162
Aroclor-1248	ND		37	ug/Kg		1 06/09/2014 8:56	77162
Aroclor-1254	ND		37	ug/Kg		1 06/09/2014 8:56	77162
Aroclor-1260	ND		37	ug/Kg		1 06/09/2014 8:56	77162
Surrogate: Tetrachloro-m-xylene	65.8		34-147	%REC		1 06/09/2014 8:56	77162
Surrogate: Decachlorobiphenyl	52.4	S	60-125	%REC		1 06/09/2014 8:56	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-019

Lab ID: N0819-16

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 15:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		37	ug/Kg		106/09/2014 9:10	77162
Aroclor-1221	ND		37	ug/Kg		106/09/2014 9:10	77162
Aroclor-1232	ND		37	ug/Kg		106/09/2014 9:10	77162
Aroclor-1242	47		37	ug/Kg		106/09/2014 9:10	77162
Aroclor-1248	ND		37	ug/Kg		106/09/2014 9:10	77162
Aroclor-1254	ND		37	ug/Kg		106/09/2014 9:10	77162
Aroclor-1260	ND		37	ug/Kg		106/09/2014 9:10	77162
Surrogate: Tetrachloro-m-xylene	64.9		34-147	%REC		106/09/2014 9:10	77162
Surrogate: Decachlorobiphenyl	55.3	S	60-125	%REC		106/09/2014 9:10	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-020

Lab ID: N0819-17

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 15:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		37	ug/Kg		1 06/09/2014 9:25	77162
Aroclor-1221	ND		37	ug/Kg		1 06/09/2014 9:25	77162
Aroclor-1232	ND		37	ug/Kg		1 06/09/2014 9:25	77162
Aroclor-1242	100		37	ug/Kg		1 06/09/2014 9:25	77162
Aroclor-1248	ND		37	ug/Kg		1 06/09/2014 9:25	77162
Aroclor-1254	ND		37	ug/Kg		1 06/09/2014 9:25	77162
Aroclor-1260	ND		37	ug/Kg		1 06/09/2014 9:25	77162
Surrogate: Tetrachloro-m-xylene	73.2		34-147	%REC		1 06/09/2014 9:25	77162
Surrogate: Decachlorobiphenyl	60.3		60-125	%REC		1 06/09/2014 9:25	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-022

Lab ID: N0819-19

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 10:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		2000	ug/Kg		50 06/10/2014 18:48	77162
Aroclor-1221	ND		2000	ug/Kg		50 06/10/2014 18:48	77162
Aroclor-1232	ND		2000	ug/Kg		50 06/10/2014 18:48	77162
Aroclor-1242	14000		2000	ug/Kg		50 06/10/2014 18:48	77162
Aroclor-1248	ND		2000	ug/Kg		50 06/10/2014 18:48	77162
Aroclor-1254	ND		2000	ug/Kg		50 06/10/2014 18:48	77162
Aroclor-1260	ND		2000	ug/Kg		50 06/10/2014 18:48	77162
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		50 06/10/2014 18:48	77162
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		50 06/10/2014 18:48	77162

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-026

Lab ID: N0819-21

Project: Friedrichsohn Cooperage Site

Collection Date: 05/12/14 11:55

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		360	ug/Kg		10/06/10/2014 19:02	77164
Aroclor-1221	ND		360	ug/Kg		10/06/10/2014 19:02	77164
Aroclor-1232	ND		360	ug/Kg		10/06/10/2014 19:02	77164
Aroclor-1242	1300		360	ug/Kg		10/06/10/2014 19:02	77164
Aroclor-1248	ND		360	ug/Kg		10/06/10/2014 19:02	77164
Aroclor-1254	ND		360	ug/Kg		10/06/10/2014 19:02	77164
Aroclor-1260	ND		360	ug/Kg		10/06/10/2014 19:02	77164
Surrogate: Tetrachloro-m-xylene	81.5		34-147	%REC		10/06/10/2014 19:02	77164
Surrogate: Decachlorobiphenyl	68.3		60-125	%REC		10/06/10/2014 19:02	77164

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-033

Lab ID: N0819-28

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 8:20

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		34	ug/Kg		106/09/2014 10:54	77164
Aroclor-1221	ND		34	ug/Kg		106/09/2014 10:54	77164
Aroclor-1232	ND		34	ug/Kg		106/09/2014 10:54	77164
Aroclor-1242	ND		34	ug/Kg		106/09/2014 10:54	77164
Aroclor-1248	ND		34	ug/Kg		106/09/2014 10:54	77164
Aroclor-1254	ND		34	ug/Kg		106/09/2014 10:54	77164
Aroclor-1260	ND		34	ug/Kg		106/09/2014 10:54	77164
Surrogate: Tetrachloro-m-xylene	63.6		34-147	%REC		106/09/2014 10:54	77164
Surrogate: Decachlorobiphenyl	53.8	S	60-125	%REC		106/09/2014 10:54	77164

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-034

Lab ID: N0819-29

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 8:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		1900	ug/Kg		5006/10/2014 19:17	77164
Aroclor-1221	ND		1900	ug/Kg		5006/10/2014 19:17	77164
Aroclor-1232	ND		1900	ug/Kg		5006/10/2014 19:17	77164
Aroclor-1242	14000		1900	ug/Kg		5006/10/2014 19:17	77164
Aroclor-1248	ND		1900	ug/Kg		5006/10/2014 19:17	77164
Aroclor-1254	ND		1900	ug/Kg		5006/10/2014 19:17	77164
Aroclor-1260	ND		1900	ug/Kg		5006/10/2014 19:17	77164
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		5006/10/2014 19:17	77164
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		5006/10/2014 19:17	77164

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-039

Lab ID: N0819-34

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 9:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		38	ug/Kg		1 06/09/2014 11:23	77164
Aroclor-1221	ND		38	ug/Kg		1 06/09/2014 11:23	77164
Aroclor-1232	ND		38	ug/Kg		1 06/09/2014 11:23	77164
Aroclor-1242	ND		38	ug/Kg		1 06/09/2014 11:23	77164
Aroclor-1248	ND		38	ug/Kg		1 06/09/2014 11:23	77164
Aroclor-1254	ND		38	ug/Kg		1 06/09/2014 11:23	77164
Aroclor-1260	ND		38	ug/Kg		1 06/09/2014 11:23	77164
Surrogate: Tetrachloro-m-xylene	67.4		34-147	%REC		1 06/09/2014 11:23	77164
Surrogate: Decachlorobiphenyl	55.0	S	60-125	%REC		1 06/09/2014 11:23	77164

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051214-BP-040

Lab ID: N0819-35

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 9:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		37	ug/Kg		106/09/2014 11:38	77164
Aroclor-1221	ND		37	ug/Kg		106/09/2014 11:38	77164
Aroclor-1232	ND		37	ug/Kg		106/09/2014 11:38	77164
Aroclor-1242	150		37	ug/Kg		106/09/2014 11:38	77164
Aroclor-1248	ND		37	ug/Kg		106/09/2014 11:38	77164
Aroclor-1254	ND		37	ug/Kg		106/09/2014 11:38	77164
Aroclor-1260	ND		37	ug/Kg		106/09/2014 11:38	77164
Surrogate: Tetrachloro-m-xylene	70.2		34-147	%REC		106/09/2014 11:38	77164
Surrogate: Decachlorobiphenyl	53.5	S	60-125	%REC		106/09/2014 11:38	77164

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051314-BP-052

Lab ID: N0819-43

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 12:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		38	ug/Kg		106/09/2014 18:31	77179
Aroclor-1221	ND		38	ug/Kg		106/09/2014 18:31	77179
Aroclor-1232	ND		38	ug/Kg		106/09/2014 18:31	77179
Aroclor-1242	ND		38	ug/Kg		106/09/2014 18:31	77179
Aroclor-1248	ND		38	ug/Kg		106/09/2014 18:31	77179
Aroclor-1254	ND		38	ug/Kg		106/09/2014 18:31	77179
Aroclor-1260	ND		38	ug/Kg		106/09/2014 18:31	77179
Surrogate: Tetrachloro-m-xylene	70.5		34-147	%REC		106/09/2014 18:31	77179
Surrogate: Decachlorobiphenyl	57.2	S	60-125	%REC		106/09/2014 18:31	77179

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051314-BP-057

Lab ID: N0819-48

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 13:35

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		34	ug/Kg		1 06/09/2014 18:46	77179
Aroclor-1221	ND		34	ug/Kg		1 06/09/2014 18:46	77179
Aroclor-1232	ND		34	ug/Kg		1 06/09/2014 18:46	77179
Aroclor-1242	ND		34	ug/Kg		1 06/09/2014 18:46	77179
Aroclor-1248	ND		34	ug/Kg		1 06/09/2014 18:46	77179
Aroclor-1254	ND		34	ug/Kg		1 06/09/2014 18:46	77179
Aroclor-1260	ND		34	ug/Kg		1 06/09/2014 18:46	77179
Surrogate: Tetrachloro-m-xylene	68.8		34-147	%REC		1 06/09/2014 18:46	77179
Surrogate: Decachlorobiphenyl	47.5	S	60-125	%REC		1 06/09/2014 18:46	77179

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051314-BP-058

Lab ID: N0819-49

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 13:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		35	ug/Kg		1 06/09/2014 19:01	77179
Aroclor-1221	ND		35	ug/Kg		1 06/09/2014 19:01	77179
Aroclor-1232	ND		35	ug/Kg		1 06/09/2014 19:01	77179
Aroclor-1242	ND		35	ug/Kg		1 06/09/2014 19:01	77179
Aroclor-1248	ND		35	ug/Kg		1 06/09/2014 19:01	77179
Aroclor-1254	ND		35	ug/Kg		1 06/09/2014 19:01	77179
Aroclor-1260	ND		35	ug/Kg		1 06/09/2014 19:01	77179
Surrogate: Tetrachloro-m-xylene	72.3		34-147	%REC		1 06/09/2014 19:01	77179
Surrogate: Decachlorobiphenyl	55.0	S	60-125	%REC		1 06/09/2014 19:01	77179

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051314-BP-063

Lab ID: N0819-54

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 14:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		35	ug/Kg		106/09/2014 19:16	77179
Aroclor-1221	ND		35	ug/Kg		106/09/2014 19:16	77179
Aroclor-1232	ND		35	ug/Kg		106/09/2014 19:16	77179
Aroclor-1242	56		35	ug/Kg		106/09/2014 19:16	77179
Aroclor-1248	ND		35	ug/Kg		106/09/2014 19:16	77179
Aroclor-1254	ND		35	ug/Kg		106/09/2014 19:16	77179
Aroclor-1260	ND		35	ug/Kg		106/09/2014 19:16	77179
Surrogate: Tetrachloro-m-xylene	68.9		34-147	%REC		106/09/2014 19:16	77179
Surrogate: Decachlorobiphenyl	54.9	S	60-125	%REC		106/09/2014 19:16	77179

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051314-BP-064

Lab ID: N0819-55

Project: Friedrichsohn Cooperage Site

Collection Date: 05/13/14 14:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		180	ug/Kg		5/06/10/2014 20:01	77179
Aroclor-1221	ND		180	ug/Kg		5/06/10/2014 20:01	77179
Aroclor-1232	ND		180	ug/Kg		5/06/10/2014 20:01	77179
Aroclor-1242	830		180	ug/Kg		5/06/10/2014 20:01	77179
Aroclor-1248	ND		180	ug/Kg		5/06/10/2014 20:01	77179
Aroclor-1254	ND		180	ug/Kg		5/06/10/2014 20:01	77179
Aroclor-1260	ND		180	ug/Kg		5/06/10/2014 20:01	77179
Surrogate: Tetrachloro-m-xylene	66.9		34-147	%REC		5/06/10/2014 20:01	77179
Surrogate: Decachlorobiphenyl	66.3		60-125	%REC		5/06/10/2014 20:01	77179

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-077

Lab ID: N0819-60

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 10:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		730	ug/Kg		2006/10/2014 20:16	77179
Aroclor-1221	ND		730	ug/Kg		2006/10/2014 20:16	77179
Aroclor-1232	ND		730	ug/Kg		2006/10/2014 20:16	77179
Aroclor-1242	3300		730	ug/Kg		2006/10/2014 20:16	77179
Aroclor-1248	ND		730	ug/Kg		2006/10/2014 20:16	77179
Aroclor-1254	ND		730	ug/Kg		2006/10/2014 20:16	77179
Aroclor-1260	ND		730	ug/Kg		2006/10/2014 20:16	77179
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		2006/10/2014 20:16	77179
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		2006/10/2014 20:16	77179

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-078

Lab ID: N0819-61

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 10:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		370	ug/Kg		10/06/11/2014 14:07	77180
Aroclor-1221	ND		370	ug/Kg		10/06/11/2014 14:07	77180
Aroclor-1232	ND		370	ug/Kg		10/06/11/2014 14:07	77180
Aroclor-1242	1400		370	ug/Kg		10/06/11/2014 14:07	77180
Aroclor-1248	ND		370	ug/Kg		10/06/11/2014 14:07	77180
Aroclor-1254	ND		370	ug/Kg		10/06/11/2014 14:07	77180
Aroclor-1260	ND		370	ug/Kg		10/06/11/2014 14:07	77180
Surrogate: Tetrachloro-m-xylene	73.9		34-147	%REC		10/06/11/2014 14:07	77180
Surrogate: Decachlorobiphenyl	85.7		60-125	%REC		10/06/11/2014 14:07	77180

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-084

Lab ID: N0819-62

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 12:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		760	ug/Kg		2006/11/2014 13:23	77180
Aroclor-1221	ND		760	ug/Kg		2006/11/2014 13:23	77180
Aroclor-1232	ND		760	ug/Kg		2006/11/2014 13:23	77180
Aroclor-1242	9800		760	ug/Kg		2006/11/2014 13:23	77180
Aroclor-1248	ND		760	ug/Kg		2006/11/2014 13:23	77180
Aroclor-1254	ND		760	ug/Kg		2006/11/2014 13:23	77180
Aroclor-1260	ND		760	ug/Kg		2006/11/2014 13:23	77180
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		2006/11/2014 13:23	77180
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		2006/11/2014 13:23	77180

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-085

Lab ID: N0819-63

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 12:35

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		1600	ug/Kg		4006/11/2014 13:38	77180
Aroclor-1221	ND		1600	ug/Kg		4006/11/2014 13:38	77180
Aroclor-1232	ND		1600	ug/Kg		4006/11/2014 13:38	77180
Aroclor-1242	15000		1600	ug/Kg		4006/11/2014 13:38	77180
Aroclor-1248	ND		1600	ug/Kg		4006/11/2014 13:38	77180
Aroclor-1254	ND		1600	ug/Kg		4006/11/2014 13:38	77180
Aroclor-1260	ND		1600	ug/Kg		4006/11/2014 13:38	77180
Surrogate: Tetrachloro-m-xylene	0	S	34-147	%REC		4006/11/2014 13:38	77180
Surrogate: Decachlorobiphenyl	0	S	60-125	%REC		4006/11/2014 13:38	77180

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-089

Lab ID: N0819-64

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 13:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		37	ug/Kg		1 06/09/2014 17:17	77180
Aroclor-1221	ND		37	ug/Kg		1 06/09/2014 17:17	77180
Aroclor-1232	ND		37	ug/Kg		1 06/09/2014 17:17	77180
Aroclor-1242	200		37	ug/Kg		1 06/09/2014 17:17	77180
Aroclor-1248	ND		37	ug/Kg		1 06/09/2014 17:17	77180
Aroclor-1254	ND		37	ug/Kg		1 06/09/2014 17:17	77180
Aroclor-1260	ND		37	ug/Kg		1 06/09/2014 17:17	77180
Surrogate: Tetrachloro-m-xylene	71.6		34-147	%REC		1 06/09/2014 17:17	77180
Surrogate: Decachlorobiphenyl	56.4	S	60-125	%REC		1 06/09/2014 17:17	77180

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/13/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: S-80987-051414-BP-090

Lab ID: N0819-65

Project: Friedrichsohn Cooperage Site

Collection Date: 05/14/14 13:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							SW8082_S
Aroclor-1016	ND		40	ug/Kg		1 06/09/2014 17:32	77180
Aroclor-1221	ND		40	ug/Kg		1 06/09/2014 17:32	77180
Aroclor-1232	ND		40	ug/Kg		1 06/09/2014 17:32	77180
Aroclor-1242	ND		40	ug/Kg		1 06/09/2014 17:32	77180
Aroclor-1248	ND		40	ug/Kg		1 06/09/2014 17:32	77180
Aroclor-1254	ND		40	ug/Kg		1 06/09/2014 17:32	77180
Aroclor-1260	ND		40	ug/Kg		1 06/09/2014 17:32	77180
Surrogate: Tetrachloro-m-xylene	76.3		34-147	%REC		1 06/09/2014 17:32	77180
Surrogate: Decachlorobiphenyl	59.7	S	60-125	%REC		1 06/09/2014 17:32	77180

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Appendix C

2014 Soil and Groundwater Data Validation Memorandum



MEMORANDUM

To: Jamie Puskas REF. No.: 080987

FROM: Kathy Shaw/eew/1-NF *KSW* DATE: July 9, 2014

RE: **Analytical Results and Full Validation
Upland RD - PCB Delineation Study
Friedrichsohn Cooperage/General Electric Company & SI Group
Waterford, New York
May and June 2014**

1.0 Introduction

The following document details a validation of analytical results for soil and groundwater samples collected in support of the Upland RD - PCB Delineation study at the Friedrichsohn Cooperage Site during May and June of 2014. Samples were submitted to Spectrum Analytical located in Kingstown, Rhode Island. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Tables 2a and 2b. A summary of the analytical methodology is presented in Table 3.

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, recovery data from surrogate spikes, laboratory control samples (LCS), matrix spike (MS) samples, and field quality assurance/quality control (QA/QC) samples. The assessment of analytical and in-house data included checks for: data consistency by observing comparability of duplicate analyses, adherence to accuracy and precision criteria, and transmittal errors.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

- i) Remedial Design/Remedial Action Work Plan/QAPP February 2014
- ii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review", USEPA 540-R-10-011, January 2010
- iii) "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review", USEPA 540-R-08-01, June 2008

Items i), ii), and iii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2.0 Sample Holding Time and Preservation

The sample holding time criteria and sample preservation requirements for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3.0 Gas Chromatography/Mass Spectrometer (GC/MS) – Tuning and Mass Calibration (Instrument Performance Check) and Inductively Coupled Plasma/Mass Spectrometer (ICP/MS)

Organic Analyses

Prior to volatile organic compound (VOC) and semi-volatile organic compound (SVOC) analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, methods require the analysis of specific tuning compounds bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The resulting spectra must meet the criteria cited in the methods before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Tuning compounds were analyzed at the required frequency throughout VOC and SVOC analysis periods. All tuning criteria were met indicating that proper optimization of the instrumentation was achieved.

Inorganic Analyses

To ensure adequate mass resolution, identification, and to some degree, sensitivity, the performance of each ICP/MS instrument used for metals analyses is checked prior to calibration and initiating an analysis sequence through the analysis of a tuning solution.

Instrument performance check data were reviewed. The tuning solution was analyzed at the required frequency throughout the analyses. The results of all instrument performance checks were within the method acceptance criteria, indicating that proper optimization of the instrumentation was achieved.

4.0 Initial Calibration - Organic Analyses

GC/MS

To quantify VOC and SVOC compounds of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration

range. Linearity of the calibration curve and instrument sensitivity are evaluated against the following criteria:

- i) All relative response factors (RRFs) must be greater than or equal to 0.05; (0.010 for compounds exhibiting poor response)
- ii) The percent relative standard deviation (RSD) values must not exceed 30.0 percent (40.0 for compounds exhibiting poor response) or a minimum correlation coefficient (R) of 0.995 and minimum coefficient of determination (R^2) of 0.99 if linear and quadratic equation calibration curves, respectively, are used

The initial calibration data for VOCs and SVOCs were reviewed. All compounds met the above criteria for sensitivity and linearity.

GC

In order to quantify organic compounds of interest by GC, calibration of the gas chromatograph over a specific concentration range must be performed. Initially, a calibration curve consisting of a minimum of three concentration levels is analyzed for all single component compounds of interest and for polychlorinated biphenyls (PCBs). Linearity of the calibration curve is acceptable if all RSD values are less than or equal to 20.0 percent or if the correlation coefficient (R) is 0.995 or greater for linear regression curves.

Retention time windows are also calculated from the initial calibration analyses. These windows are then used to identify all compounds of interest in subsequent analyses.

All initial calibration standards were analyzed at the required frequencies. All retention time, peak resolution, and linearity criteria were satisfied as specified in the methods.

5.0 Initial Calibration – Inorganic Analyses

Initial calibration of the instruments ensures that they are capable of producing satisfactory quantitative data at the beginning of a series of analyses. For ICP/MS analysis, a calibration blank and at least one standard must be analyzed at each wavelength to establish the analytical curve. For mercury atomic absorption (AA) analyses, a calibration blank and a minimum of five standards must be analyzed to establish the analytical curve, and resulting correlation coefficients (R) must be 0.995 or greater.

After the analyses of the calibration curves, an initial calibration verification (ICV) standard must be analyzed to verify the analytical accuracy of the calibration curves. All analyte recoveries from the analyses of the ICVs must be within the following control limits:

<i>Analytical Method</i>	<i>Parameter</i>	<i>Control Limits</i>
ICP/MS	Metals	90 - 110%

<i>Analytical Method</i>	<i>Parameter</i>	<i>Control Limits</i>
Cold Vapor AA	Mercury	80 - 120%

Upon review of the data, it was determined that the calibration curves and ICVs were analyzed at the proper frequencies and that all of the above-specified criteria were met. The laboratory effectively demonstrated that the instrumentation used for metals and general chemistry analyses were properly calibrated prior to sample analysis.

6.0 Continuing Calibration - Organic Analyses

GC/MS

To ensure that instrument calibration for VOC and SVOC analyses is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

- i) All RRF values must be greater than or equal to 0.05 (0.010 for compounds exhibiting poor response)
- ii) Percent difference (%D) values must not exceed 25 percent (40.0 for compounds exhibiting poor response)

Calibration standards were analyzed at the required frequency, and the results met the above criteria for instrument sensitivity and stability. One continuing calibration standard result indicated variability in the instrument response for bromomethane that yielded a high %D. The associated result affected by the change in instrument response is qualified in Table 4.

GC

To ensure that the calibration of the instrument for organic analyses by GC is valid throughout the sample analysis period, continuing calibration standards are analyzed and evaluated on a regular basis. To evaluate the continued linearity of the calibration, %D values are calculated for each compound. As specified in the methods, all %D values should not exceed 15 percent. To ensure that compound retention times do not vary over the analysis period, all retention times for continuing calibration compounds must fall within the established retention time windows.

All continuing calibration standards were analyzed at the required frequency. All %D values and compound retention times met the above criteria indicating acceptable instrument calibration throughout the analysis period.

7.0 Continuing Calibration - Inorganic Analyses

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration verification (CCV) standards are analyzed on a regular basis. Each CCV is deemed acceptable if all analyte recoveries are within the control limits specified above for the ICVs. If some of the CCV analyte recoveries are outside the control limits, samples analyzed before and after the CCV, up until the previous and proceeding CCV analyses, are affected.

For this study, CCVs were analyzed at the proper frequency. All analyte recoveries reported for the CCVs were within the specified limits.

8.0 Contract Required Detection Limit (CRDL) Standard Analyses

To verify the linearity of the ICP/MS calibration near the detection limit, a standard is analyzed which contains the ICP/MS analytes at specified concentrations. This standard must be analyzed at the beginning and end of each sample analysis run or a minimum of twice per 8-hour period.

CRDL recoveries were evaluated using the criteria specified in the October 2004 "Guidelines". The CRDL recoveries were acceptable.

9.0 Laboratory Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures. Additionally, initial and continuing calibration blanks (ICBs/CCBs) are routinely analyzed after each ICV/CCV for the inorganic parameters.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Organic Analyses

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

Inorganic Analyses

Upon review of the ICBs, CCBs, and method blanks, it was noted that metal concentrations were observed above the method detection limit (MDL). Most investigative samples associated with the low level detections reported either non-detect concentrations or concentrations significantly greater than the associated laboratory blank concentrations for the analytes of interest. These sample results were not

impacted by the contamination detected. Associated positive sample results with similar concentrations to the levels reported in the blanks were qualified as non-detect (see Table 5).

10.0 Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for SVOC, VOC and PCB determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits with the exception of SVOC analyses. According to the "Guidelines" for SVOC analyses, up to one outlying surrogate in the base/neutral or acid fractions is acceptable as long as the recovery is at least 10 percent.

Due to necessary sample dilutions, surrogate recoveries could not be reported for some samples.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries met the above criteria with the exception of some high and low PCB surrogate recoveries reported. The associated detected sample results were affected by the potential high or low bias and are qualified as estimated in Table 6.

11.0 Internal Standards (IS) Analyses

IS data were evaluated for all VOC, SVOC and ICP/MS metals sample analyses.

Organics Analyses

To ensure that changes in the GC/MS sensitivity and response do not affect sample analysis results, IS compounds are added to each sample prior to analysis. All results are then calculated as a ratio of the IS responses.

The sample IS results were evaluated against the following criteria:

- i) The retention time of the IS must not vary more than ± 30 seconds from the associated calibration standard
- ii) IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard

All organic IS recoveries and retention times met the above criteria.

Inorganic Analyses

IS elements were added to all samples prior to metals analysis by ICP/MS. Overall instrument stability and performance for metals analyses were monitored using the IS intensity data. IS recoveries were assessed using control limits of 60-125 percent.

All inorganic IS recoveries were acceptable, demonstrating adequate analytical performance.

12.0 Laboratory Control Sample Analyses

LCSs are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, the LCSs were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Organic Analyses

The LCS contained all compounds of interest. LCS percent recovery values were outside of control limits for several analytes. Samples associated with outlying recoveries were qualified in Table 7 as follows:

- i) Non-detect results associated with low LCS recoveries greater than ten percent were qualified as estimated

Inorganic Analyses

The LCS contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS were within the control limits, demonstrating acceptable analytical accuracy.

13.0 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses - Organic Analyses

To evaluate the effects of sample matrices on the extraction or digestion process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.

MS/MSD analyses were performed as specified in Table 1. The laboratory performed additional site-specific MS/MSD analyses internally.

Organic Analyses

The MS/MSD samples were spiked with all compounds of interest. MS and MSD percent recovery values were outside of control limits for some SVOC and PCB analytes. Samples associated with outlying recoveries were qualified in Table 8 as follows:

- i) Non-detect results associated with low MS/MSD recoveries greater than ten percent were qualified as estimated
- ii) Detected results associated with high MS/MSD recoveries greater were qualified as estimated

14.0 Matrix Spike Analyses – Inorganic Analyses

To evaluate the effects of sample matrices on the preparation, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS samples. For this study, MS samples were prepared and analyzed by the laboratory as specified in Table 1. The laboratory performed additional site-specific MS analyses internally.

The MS results were evaluated per the "Guidelines". In accordance with the "Guidelines", MS recoveries for samples with analyte concentrations significantly greater than the spike concentrations could not be assessed.

MS percent recovery values were outside of control limits for some metals. Samples associated with outlying recoveries were qualified in Table 9 as follows:

- i) Non-detect results associated with low MS/MSD recoveries greater than ten percent were qualified as estimated
- ii) Detected results associated with low MS/MSD recoveries greater were qualified as estimated

15.0 ICP/MS Serial Dilution

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. A minimum of 1 per 20 investigative samples or at least 1 per analytical batch must be analyzed at a five-fold dilution. For samples with sufficient analyte concentrations (>50 times the method detection limit), the serial dilution results must agree within 10 percent of the original results.

All results met the criteria above with the exception of the results qualified as estimated in Table 10.

16.0 Field QA/QC Samples

The field QA/QC consisted of one trip blank sample, and one field duplicate sample set.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, the trip blank was submitted to the laboratory for VOC analysis. All results were non-detect for the compounds of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, the field duplicate sample was collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than one time the practical quantitation limit (PQL), the evaluation criterion is one times the PQL value for water samples.

The results for the sample and its field duplicate did show some variability for PCBs. The samples and the associated field duplicate were qualified as estimated to reflect the implied variability in Table 11.

17.0 Analyte Reporting

The laboratory reported detected results down to the laboratory's MDL for each analyte. Positive analyte detections less than the PQL but greater than the MDL were qualified as estimated (J) in Tables 2a and 2b unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the PQL in Tables 2a and 2b.

PCB analyses were performed using dual column analyses. In general, the results showed good correlation between the two columns. Variability was observed between some of the results (see Table 12). The associated data were qualified as estimated to reflect the indicated variability.

All soil results were reported on a dry weight basis.

18.0 Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra were evaluated according to the identification criteria established by the methods. The organic compounds reported adhered to the specified identification criteria.

19.0 Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Tables 1 – 12 are acceptable with the specific qualifications noted herein.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	<u>Analysis/Parameters</u>				Comments
					TAL Metals	PCB	TCL VOC	TCL SVOC	
S-80987-051214-BP-001	SB-82	Soil	05/12/2014	10:00		X			
S-80987-051214-BP-002	SB-82	Soil	05/12/2014	10:10		X			
S-80987-051214-BP-022	SB-71	Soil	05/12/2014	10:25		X			
S-80987-051214-BP-003	SB-81	Soil	05/12/2014	10:40		X			
S-80987-051214-BP-004	SB-81	Soil	05/12/2014	10:50		X			
S-80987-051214-BP-005	SB-80	Soil	05/12/2014	11:10		X			
S-80987-051214-BP-006	SB-80	Soil	05/12/2014	11:20		X			
S-80987-051214-BP-024	SB-74	Soil	05/12/2014	11:35		X			
S-80987-051214-BP-025	SB-74	Soil	05/12/2014	11:45		X			
S-80987-051214-BP-026	SB-74	Soil	05/12/2014	11:55		X			
S-80987-051214-BP-007	SB-75	Soil	05/12/2014	12:00		X			
S-80987-051214-BP-008	SB-75	Soil	05/12/2014	12:10		X			
S-80987-051214-BP-009	SB-76	Soil	05/12/2014	13:00		X			
S-80987-051214-BP-010	SB-76	Soil	05/12/2014	13:10		X			
S-80987-051214-BP-011	SB-76	Soil	05/12/2014	13:20		X			
S-80987-051214-BP-012	SB-77	Soil	05/12/2014	13:40		X			
S-80987-051214-BP-013	SB-77	Soil	05/12/2014	13:50		X			
S-80987-051214-BP-014	SB-73	Soil	05/12/2014	14:10		X			
S-80987-051214-BP-015	SB-73	Soil	05/12/2014	14:20		X			
S-80987-051214-BP-018	SB-72	Soil	05/12/2014	14:55		X			
S-80987-051214-BP-019	SB-72	Soil	05/12/2014	15:00		X			
S-80987-051214-BP-020	SB-72	Soil	05/12/2014	15:10		X			
S-80987-051314-BP-033	SB-92	Soil	05/13/2014	08:20		X			
S-80987-051314-BP-034	SB-92	Soil	05/13/2014	08:25		X			
S-80987-051314-BP-039	SB-93	Soil	05/13/2014	09:15		X			
S-80987-051314-BP-040	SB-93	Soil	05/13/2014	09:25		X			
S-80987-051314-BP-045	SB-31	Soil	05/13/2014	10:10		X			
S-80987-051314-BP-046	SB-31	Soil	05/13/2014	10:20		X			
S-80987-051314-BP-047	SB-31	Soil	05/13/2014	10:30		X			
S-80987-051314-BP-048	SB-31	Soil	05/13/2014	10:35		X			
S-80987-051314-BP-052	SB-32	Soil	05/13/2014	12:45		X			
S-80987-051314-BP-057	SB-38	Soil	05/13/2014	13:35		X			
S-80987-051314-BP-058	SB-38	Soil	05/13/2014	13:40		X			
S-80987-051314-BP-063	SB-37	Soil	05/13/2014	14:25		X			
S-80987-051314-BP-064	SB-37	Soil	05/13/2014	14:30		X			
S-80987-051414-BP-069	SB-94	Soil	05/14/2014	08:40		X			
S-80987-051414-BP-070	SB-94	Soil	05/14/2014	08:45		X			
S-80987-051414-BP-071	SB-94	Soil	05/14/2014	08:50		X			
S-80987-051414-BP-072	SB-94	Soil	05/14/2014	09:00		X			
S-80987-051414-BP-073	SB-95	Soil	05/14/2014	09:30		X			
S-80987-051414-BP-074	SB-95	Soil	05/14/2014	09:40		X			

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	<u>Analysis/Parameters</u>				Comments
					TAL Metals	PCB	TCL VOC	TCL SVOC	
S-80987-051414-BP-075	SB-95	Soil	05/14/2014	09:50		X			
S-80987-051414-BP-076	SB-95	Soil	05/14/2014	10:00		X			
S-80987-051414-BP-077	SB-96	Soil	05/14/2014	10:30		X			
S-80987-051414-BP-078	SB-96	Soil	05/14/2014	10:40		X			
S-80987-051414-BP-079	SB-96	Soil	05/14/2014	10:45		X			
S-80987-051414-BP-080	SB-96	Soil	05/14/2014	10:50		X			
S-80987-051414-BP-081	SB-96	Soil	05/14/2014	11:00		X			
S-80987-051414-BP-082	SPB-9	Soil	05/14/2014	11:10		X			
S-80987-051414-BP-083	SPB-9	Soil	05/14/2014	11:15		X			
S-80987-051414-BP-084	SB-99	Soil	05/14/2014	12:30		X			
S-80987-051414-BP-085	SB-99	Soil	05/14/2014	12:35		X			
S-80987-051414-BP-086	SB-99	Soil	05/14/2014	12:40		X			
S-80987-051414-BP-087	SB-99	Soil	05/14/2014	12:50		X			
S-80987-051414-BP-088	SB-99	Soil	05/14/2014	12:55		X			
S-80987-051414-BP-089	SB-97	Soil	05/14/2014	13:10		X			
S-80987-051414-BP-090	SB-97	Soil	05/14/2014	13:15		X			
S-80987-051414-BP-091	SB-97	Soil	05/14/2014	13:20		X			
S-80987-051414-BP-092	SB-97	Soil	05/14/2014	13:30		X			
S-80987-051414-BP-093	SB-97	Soil	05/14/2014	13:40		X			
S-80987-051414-BP-094	SB-98	Soil	05/14/2014	14:10		X			
S-80987-051414-BP-095	SB-98	Soil	05/14/2014	14:15		X			
S-80987-051414-BP-096	SB-98	Soil	05/14/2014	14:25		X			
S-80987-051414-BP-097	SB-98	Soil	05/14/2014	14:35		X			
WG-80987-060514-BP-112	MW-14	Water	06/05/2014	19:00	X	X	X	X	
WG-80987-060614-BP-113	MW-15	Water	06/06/2014	09:00	X	X	X	X	MS/MSD
WG-80987-060614-BP-114	MW-09	Water	06/06/2014	10:00	X	X	X	X	
WG-80987-060614-BP-115	MW-10	Water	06/06/2014	11:30	X	X	X	X	
WG-80987-060614-BP-116	MW-10	Water	06/06/2014	11:31	X	X	X	X	Field Duplicate (MW-10)
TB-80987-060614-BP	--	Water	06/06/2014	6/6/2014			X		Trip Blank

Notes:

MS/MSD - Matrix Spike/Matrix Spike Duplicate

PCB - Polychlorinated Biphenyls

SVOC - Semi-volatile Organic Compounds

TAL - Target Analyte List

TCL - Target Compound List

VOC - Volatile Organic Compounds

TABLE 2A

**ANALYTICAL RESULTS SUMMARY - SOIL
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014**

Sample Location:		SB-31	SB-31	SB-31	SB-31	SB-32	SB-37	SB-37	SB-38
Sample ID:		S-80987-051314-BP-045	S-80987-051314-BP-046	S-80987-051314-BP-047	S-80987-051314-BP-048	S-80987-051314-BP-052	S-80987-051314-BP-063	S-80987-051314-BP-064	S-80987-051314-BP-057
Sample Date:		5/13/2014	5/13/2014	5/13/2014	5/13/2014	5/13/2014	5/13/2014	5/13/2014	5/13/2014
Parameter	Units								
PCBs									
Aroclor-1016 (PCB-1016)	µg/kg	38 U	38 U	38 U	730 U	38 U	35 U	180 U	34 U
Aroclor-1221 (PCB-1221)	µg/kg	38 U	38 U	38 U	730 U	38 U	35 U	180 U	34 U
Aroclor-1232 (PCB-1232)	µg/kg	38 U	38 U	38 U	730 U	38 U	35 U	180 U	34 U
Aroclor-1242 (PCB-1242)	µg/kg	38 U	40 J	38 U	5700 J	38 UJ	56 J	830	34 UJ
Aroclor-1248 (PCB-1248)	µg/kg	38 U	38 U	38 U	730 U	38 UJ	35 UJ	180 U	34 UJ
Aroclor-1254 (PCB-1254)	µg/kg	38 U	38 U	38 U	730 U	38 UJ	35 UJ	180 U	34 UJ
Aroclor-1260 (PCB-1260)	µg/kg	38 U	38 U	38 U	730 U	38 UJ	35 UJ	180 U	34 UJ
General Chemistry									
Percent moisture	%	13	14	15	11	14	6.0	10	4.0

TABLE 2A

**ANALYTICAL RESULTS SUMMARY - SOIL
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014**

Sample Location:		SB-38	SB-71	SB-72	SB-72	SB-72	SB-73	SB-73	SB-74
Sample ID:		S-80987-051314-BP-058	S-80987-051214-BP-022	S-80987-051214-BP-018	S-80987-051214-BP-019	S-80987-051214-BP-020	S-80987-051214-BP-014	S-80987-051214-BP-015	S-80987-051214-BP-024
Sample Date:		5/13/2014	5/12/2014	5/12/2014	5/12/2014	5/12/2014	5/12/2014	5/12/2014	5/12/2014
Parameter	Units								
PCBs									
Aroclor-1016 (PCB-1016)	µg/kg	35 U	2000 U	37 U	37 U	37 U	38 U	39 U	160 U
Aroclor-1221 (PCB-1221)	µg/kg	35 U	2000 U	37 U	37 U	37 U	38 U	39 U	160 U
Aroclor-1232 (PCB-1232)	µg/kg	35 U	2000 U	37 U	37 U	37 U	38 U	39 U	160 U
Aroclor-1242 (PCB-1242)	µg/kg	35 UJ	14000	37 U	47	100	38 U	39 U	1300 J
Aroclor-1248 (PCB-1248)	µg/kg	35 UJ	2000 U	37 U	37 U	37 U	38 U	39 U	160 U
Aroclor-1254 (PCB-1254)	µg/kg	35 UJ	2000 U	37 U	37 U	37 U	38 U	39 U	160 U
Aroclor-1260 (PCB-1260)	µg/kg	35 UJ	2000 U	37 U	37 U	37 U	38 U	39 U	160 U
General Chemistry									
Percent moisture	%	7.0	19	12	12	12	14	16	17

TABLE 2A

**ANALYTICAL RESULTS SUMMARY - SOIL
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014**

Sample Location:		SB-74	SB-74	SB-75	SB-75	SB-76	SB-76	SB-76	SB-77
Sample ID:		S-80987-051214-BP-025	S-80987-051214-BP-026	S-80987-051214-BP-007	S-80987-051214-BP-008	S-80987-051214-BP-009	S-80987-051214-BP-010	S-80987-051214-BP-011	S-80987-051214-BP-012
Sample Date:		5/12/2014	5/12/2014	5/12/2014	5/12/2014	5/12/2014	5/12/2014	5/12/2014	5/12/2014
Parameter	Units								
PCBs									
Aroclor-1016 (PCB-1016)	µg/kg	380 U	360 U	38 U	39 U	36 U	38 U	150 U	47 U
Aroclor-1221 (PCB-1221)	µg/kg	380 U	360 U	38 U	39 U	36 U	38 U	150 U	47 U
Aroclor-1232 (PCB-1232)	µg/kg	380 U	360 U	38 U	39 U	36 U	38 U	150 U	47 U
Aroclor-1242 (PCB-1242)	µg/kg	2000 J	1300	38 U	39 U	36 U	38 U	950 J	47 U
Aroclor-1248 (PCB-1248)	µg/kg	380 U	360 U	38 U	39 U	36 U	38 U	150 UJ	47 U
Aroclor-1254 (PCB-1254)	µg/kg	380 U	360 U	38 U	39 U	36 U	38 U	150 UJ	47 U
Aroclor-1260 (PCB-1260)	µg/kg	380 U	360 U	38 U	39 U	36 U	38 U	150 UJ	47 U
General Chemistry									
Percent moisture	%	14	9.0	14	15	8.0	14	13	30

TABLE 2A

**ANALYTICAL RESULTS SUMMARY - SOIL
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014**

Sample Location:		SB-77	SB-80	SB-80	SB-81	SB-81	SB-82	SB-82	SB-92
Sample ID:		S-80987-051214-BP-013	S-80987-051214-BP-005	S-80987-051214-BP-006	S-80987-051214-BP-003	S-80987-051214-BP-004	S-80987-051214-BP-001	S-80987-051214-BP-002	S-80987-051314-BP-033
Sample Date:		5/12/2014	5/12/2014	5/12/2014	5/12/2014	5/12/2014	5/12/2014	5/12/2014	5/13/2014
Parameter	Units								
PCBs									
Aroclor-1016 (PCB-1016)	µg/kg	39 U	370 U	42 U	38 U	37 U	37 U	38 U	34 U
Aroclor-1221 (PCB-1221)	µg/kg	39 U	370 U	42 U	38 U	37 U	37 U	38 U	34 U
Aroclor-1232 (PCB-1232)	µg/kg	39 U	370 U	42 U	38 U	37 U	37 U	38 U	34 U
Aroclor-1242 (PCB-1242)	µg/kg	39 U	1800	42 U	280 J	37 U	37 U	38 U	34 UJ
Aroclor-1248 (PCB-1248)	µg/kg	39 U	370 U	42 U	38 UJ	37 U	37 U	38 U	34 UJ
Aroclor-1254 (PCB-1254)	µg/kg	39 U	370 U	42 U	38 UJ	37 U	37 U	38 U	34 UJ
Aroclor-1260 (PCB-1260)	µg/kg	39 U	370 U	410 J	38 UJ	37 U	37 U	38 U	34 UJ
General Chemistry									
Percent moisture	%	17	12	22	13	12	12	13	5.0

TABLE 2A

**ANALYTICAL RESULTS SUMMARY - SOIL
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014**

Sample Location:		SB-92	SB-93	SB-93	SB-94	SB-94	SB-94	SB-94	SB-95
Sample ID:		S-80987-051314-BP-034	S-80987-051314-BP-039	S-80987-051314-BP-040	S-80987-051414-BP-069	S-80987-051414-BP-070	S-80987-051414-BP-071	S-80987-051414-BP-072	S-80987-051414-BP-073
Sample Date:		5/13/2014	5/13/2014	5/13/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014
Parameter	Units								
PCBs									
Aroclor-1016 (PCB-1016)	µg/kg	1900 U	38 U	37 U	390 U	36 U	180 U	370 U	37 U
Aroclor-1221 (PCB-1221)	µg/kg	1900 U	38 U	37 U	390 U	36 U	180 U	370 U	37 U
Aroclor-1232 (PCB-1232)	µg/kg	1900 U	38 U	37 U	390 U	36 U	180 U	370 U	37 U
Aroclor-1242 (PCB-1242)	µg/kg	14000	38 UJ	150	3000 J	290 J	1100 J	3900	37 UJ
Aroclor-1248 (PCB-1248)	µg/kg	1900 U	38 UJ	37 U	390 U	36 UJ	180 U	370 U	37 UJ
Aroclor-1254 (PCB-1254)	µg/kg	1900 U	38 UJ	37 U	390 U	36 UJ	180 U	370 U	37 UJ
Aroclor-1260 (PCB-1260)	µg/kg	1900 U	38 UJ	37 U	390 U	36 UJ	180 U	370 U	37 UJ
General Chemistry									
Percent moisture	%	14	14	13	17	10	11	12	10

TABLE 2A

**ANALYTICAL RESULTS SUMMARY - SOIL
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014**

Sample Location:		SB-95	SB-95	SB-95	SB-96	SB-96	SB-96	SB-96	SB-96
Sample ID:		S-80987-051414-BP-074	S-80987-051414-BP-075	S-80987-051414-BP-076	S-80987-051414-BP-077	S-80987-051414-BP-078	S-80987-051414-BP-079	S-80987-051414-BP-080	S-80987-051414-BP-081
Sample Date:		5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014
Parameter	Units								
PCBs									
Aroclor-1016 (PCB-1016)	µg/kg	4100 U	750 U	760 U	730 U	370 U	380 U	35 U	3700 U
Aroclor-1221 (PCB-1221)	µg/kg	4100 U	750 U	760 U	730 U	370 U	380 U	35 U	3700 U
Aroclor-1232 (PCB-1232)	µg/kg	4100 U	750 U	760 U	730 U	370 U	380 U	35 U	3700 U
Aroclor-1242 (PCB-1242)	µg/kg	34000 J	8600	6000 J	3300	1400	2300 J	35 UJ	13000
Aroclor-1248 (PCB-1248)	µg/kg	4100 U	750 U	760 U	730 U	370 U	380 U	35 UJ	3700 U
Aroclor-1254 (PCB-1254)	µg/kg	4100 U	750 U	760 U	730 U	370 U	380 U	35 UJ	3700 U
Aroclor-1260 (PCB-1260)	µg/kg	4100 U	750 U	760 U	730 U	370 U	380 U	35 UJ	3700 U
General Chemistry									
Percent moisture	%	20	14	14	11	11	12	6.0	10

TABLE 2A

**ANALYTICAL RESULTS SUMMARY - SOIL
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014**

Sample Location:		SB-97	SB-97	SB-97	SB-97	SB-97	SB-98	SB-98	SB-98
Sample ID:		S-80987-051414-BP-089	S-80987-051414-BP-090	S-80987-051414-BP-091	S-80987-051414-BP-092	S-80987-051414-BP-093	S-80987-051414-BP-094	S-80987-051414-BP-095	S-80987-051414-BP-096
Sample Date:		5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014
Parameter	Units								
PCBs									
Aroclor-1016 (PCB-1016)	µg/kg	37 U	40 U	3800 U	3700 U	4000 U	36 U	38 U	1900 U
Aroclor-1221 (PCB-1221)	µg/kg	37 U	40 U	3800 U	3700 U	4000 U	36 U	38 U	1900 U
Aroclor-1232 (PCB-1232)	µg/kg	37 U	40 U	3800 U	3700 U	4000 U	36 U	38 U	1900 U
Aroclor-1242 (PCB-1242)	µg/kg	200 J	40 U	20000	32000	15000	170 J	41 J	5600
Aroclor-1248 (PCB-1248)	µg/kg	37 UJ	40 U	3800 U	3700 U	4000 U	36 U	38 U	1900 U
Aroclor-1254 (PCB-1254)	µg/kg	37 UJ	40 U	3800 U	3700 U	4000 U	36 U	38 U	1900 U
Aroclor-1260 (PCB-1260)	µg/kg	37 UJ	40 U	3800 U	3700 U	4000 U	36 U	38 U	1900 U
General Chemistry									
Percent moisture	%	13	19	14	12	20	11	12	12

TABLE 2A

**ANALYTICAL RESULTS SUMMARY - SOIL
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014**

Sample Location:		SB-98	SB-99	SB-99	SB-99	SB-99	SB-99	SPB-9	SPB-9
Sample ID:		S-80987-051414-BP-097	S-80987-051414-BP-084	S-80987-051414-BP-085	S-80987-051414-BP-086	S-80987-051414-BP-087	S-80987-051414-BP-088	S-80987-051414-BP-082	S-80987-051414-BP-083
Sample Date:		5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014	5/14/2014
Parameter	Units								
PCBs									
Aroclor-1016 (PCB-1016)	µg/kg	1900 U	760 U	1600 U	19000 U	740 U	3700 U	740 U	390000 U
Aroclor-1221 (PCB-1221)	µg/kg	1900 U	760 U	1600 U	19000 U	740 U	3700 U	740 U	390000 U
Aroclor-1232 (PCB-1232)	µg/kg	1900 U	760 U	1600 U	19000 U	740 U	3700 U	740 U	390000 U
Aroclor-1242 (PCB-1242)	µg/kg	4700	9800	15000	130000	4400	14000	7100	1600000
Aroclor-1248 (PCB-1248)	µg/kg	1900 U	760 U	1600 U	19000 U	740 U	3700 U	740 U	390000 U
Aroclor-1254 (PCB-1254)	µg/kg	1900 U	760 U	1600 U	19000 U	740 U	3700 U	740 U	390000 U
Aroclor-1260 (PCB-1260)	µg/kg	1900 U	760 U	1600 U	19000 U	740 U	3700 U	740 U	390000 U
General Chemistry									
Percent moisture	%	15	14	17	16	11	10	12	16

Notes:

J - Estimated concentration

U - Not detected at the associated reporting limit

TABLE 2B

ANALYTICAL RESULTS SUMMARY - WATER
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014

Sample Location:		MW-09	MW-10	MW-10	MW-14	MW-15
Sample ID:		WG-80987-060614-BP-114	WG-80987-060614-BP-115	WG-80987-060614-BP-116	WG-80987-060514-BP-112	WG-80987-060614-BP-113
Sample Date:		6/6/2014	6/6/2014	6/6/2014 Duplicate	6/5/2014	6/6/2014
Parameter	Units					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
1,1,2-Trichloroethane	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 UJ
1,1-Dichloroethane	µg/L	2.7 J	1000 U	1000 U	0.76 J	2.1 J
1,1-Dichloroethene	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
1,2,4-Trichlorobenzene	µg/L	5.0 U	1000 U	1000 U	2.0 J	1.8 J
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 UJ
1,2-Dichlorobenzene	µg/L	5.0 U	1000 U	1000 U	0.89 J	16
1,2-Dichloroethane	µg/L	3.9 J	1000 U	1000 U	5.0 U	1.9 J
1,2-Dichloropropane	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
1,3-Dichlorobenzene	µg/L	5.0 U	1000 U	1000 U	5.0 U	1.1 J
1,4-Dichlorobenzene	µg/L	5.0 U	1000 U	1000 U	5.0 U	6.8
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
2-Hexanone	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	18	1000 U	1000 U	5.0 U	4.2 J
Acetone	µg/L	290	1000 U	1000 U	60	5.0 U
Benzene	µg/L	18	1000 U	120 J	13	15
Bromodichloromethane	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Bromoform	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Bromomethane (Methyl bromide)	µg/L	5.0 U	1000 UJ	1000 U	5.0 U	5.0 U
Carbon disulfide	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Carbon tetrachloride	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Chlorobenzene	µg/L	8.6	1000 U	140 J	2.0 J	43
Chloroethane	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Chloroform (Trichloromethane)	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Chloromethane (Methyl chloride)	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	µg/L	19	1000 U	1000 U	14	330
cis-1,3-Dichloropropene	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Cyclohexane	µg/L	0.93 J	1000 U	1000 U	2.5 J	1.9 J
Dibromochloromethane	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Ethylbenzene	µg/L	74	2900	3000	640	92
Isopropyl benzene	µg/L	2.7 J	1000 U	1000 U	4.7 J	2.1 J
m&p-Xylenes	µg/L	180	8100	8400	1700	250
Methyl acetate	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Methyl cyclohexane	µg/L	2.2 J	1000 U	1000 U	1.2 J	5.0 U
Methyl tert butyl ether (MTBE)	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Methylene chloride	µg/L	4.3 J	1000 U	1000 U	5.0 U	1.0 J
o-Xylene	µg/L	69	2500	2600	540	87
Styrene	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Tetrachloroethene	µg/L	0.66 J	1000 U	1000 U	1.5 J	2.0 J
Toluene	µg/L	660	21000	21000	1400	560
trans-1,2-Dichloroethene	µg/L	5.0 U	1000 U	1000 U	5.0 U	9.2
trans-1,3-Dichloropropene	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Trichloroethene	µg/L	13	230 J	230 J	13	5.4
Trichlorofluoromethane (CFC-11)	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Trifluorotrchloroethane (Freon 113)	µg/L	5.0 U	1000 U	1000 U	5.0 U	5.0 U
Vinyl chloride	µg/L	3.1 J	1000 U	1000 U	1.2 J	130
Xylenes (total)	µg/L	250	11000	11000	2200	330
Semi-Volatiles Organic Compounds						
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	100 U	100 U	100 U	40 U	10 U
2,4,5-Trichlorophenol	µg/L	200 U	17 J	14 J	80 U	20 U
2,4,6-Trichlorophenol	µg/L	100 U	31 J	23 J	40 U	10 U
2,4-Dichlorophenol	µg/L	100 U	100 U	100 U	40 U	10 U
2,4-Dimethylphenol	µg/L	1900	12000	15000	120	78 J
2,4-Dinitrophenol	µg/L	200 U	200 U	200 U	80 U	20 U
2,4-Dinitrotoluene	µg/L	100 U	100 U	100 U	40 U	10 U
2,6-Dinitrotoluene	µg/L	100 U	100 U	100 U	40 U	10 U
2-Chloronaphthalene	µg/L	100 U	100 U	100 U	40 U	10 U

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Sample ID:	WG-80987-060614-BP-114	WG-80987-060614-BP-115	WG-80987-060614-BP-116	WG-80987-060514-BP-112	WG-80987-060614-BP-113
Sample Date:	6/6/2014	6/6/2014	6/6/2014	6/5/2014	6/6/2014

Parameter	Units					
Semi-Volatiles Organic Compounds (Continued)						
2-Chlorophenol	µg/L	100 U	100 U	100 U	40 U	10 U
2-Methylnaphthalene	µg/L	100 U	100 U	11 J	40 U	10 U
2-Methylphenol	µg/L	540	4400 J	5300	41	28 J
2-Nitroaniline	µg/L	200 U	200 U	200 U	80 U	20 U
2-Nitrophenol	µg/L	100 U	100 U	100 U	40 U	10 U
3,3'-Dichlorobenzidine	µg/L	100 U	100 U	100 U	40 U	10 U
3-Nitroaniline	µg/L	200 U	200 U	200 U	80 U	20 U
4,6-Dinitro-2-methylphenol	µg/L	200 U	200 U	200 U	80 U	20 U
4-Bromophenyl phenyl ether	µg/L	100 U	100 U	100 U	40 U	10 U
4-Chloro-3-methylphenol	µg/L	100 U	100 U	100 U	40 U	10 U
4-Chloroaniline	µg/L	100 U	100 U	100 U	40 U	10 U
4-Chlorophenyl phenyl ether	µg/L	100 U	100 U	100 U	40 U	10 U
4-Methylphenol	µg/L	2800	17000	20000	120	56 J
4-Nitroaniline	µg/L	200 U	200 U	200 U	80 U	20 U
4-Nitrophenol	µg/L	200 U	200 U	200 U	80 U	20 U
Acenaphthene	µg/L	100 U	100 U	100 U	40 U	10 U
Acenaphthylene	µg/L	100 U	100 U	100 U	40 U	10 U
Acetophenone	µg/L	100 U	100 U	100 U	40 U	10 U
Anthracene	µg/L	25 J	100 U	100 U	40 U	10 U
Atrazine	µg/L	100 UJ	100 UJ	100 UJ	40 UJ	10 UJ
Benzaldehyde	µg/L	100 U	100 U	100 U	40 U	10 U
Benzo(a)anthracene	µg/L	100 U	100 U	100 U	40 U	10 U
Benzo(a)pyrene	µg/L	100 U	100 U	100 U	40 U	10 U
Benzo(b)fluoranthene	µg/L	100 U	100 U	100 U	40 U	10 U
Benzo(g,h,i)perylene	µg/L	100 U	100 U	100 U	40 U	10 U
Benzo(k)fluoranthene	µg/L	100 U	100 U	100 U	40 U	10 U
Biphenyl (1,1-Biphenyl)	µg/L	100 U	100 U	100 U	40 U	10 U
bis(2-Chloroethoxy)methane	µg/L	100 U	100 U	100 U	40 U	10 U
bis(2-Chloroethyl)ether	µg/L	100 U	100 U	100 U	40 U	10 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	100 U	100 U	100 U	40 U	10 U
Butyl benzylphthalate (BBP)	µg/L	100 U	100 U	100 U	40 U	10 U
Caprolactam	µg/L	100 U	100 U	100 U	40 U	10 U
Carbazole	µg/L	100 U	100 U	100 U	40 U	10 U
Chrysene	µg/L	100 U	100 U	100 U	40 U	10 U
Dibenz(a,h)anthracene	µg/L	100 U	100 U	100 U	40 U	10 U
Dibenzofuran	µg/L	100 U	100 U	100 U	40 U	10 U
Diethyl phthalate	µg/L	100 U	100 U	100 U	40 U	10 U
Dimethyl phthalate	µg/L	100 U	100 U	100 U	40 U	10 U
Di-n-butylphthalate (DBP)	µg/L	100 U	100 U	100 U	40 U	2.8 J
Di-n-octyl phthalate (DnOP)	µg/L	100 U	100 U	100 U	40 U	10 U
Fluoranthene	µg/L	100 U	100 U	100 U	40 U	10 U
Fluorene	µg/L	100 U	100 U	100 U	40 U	10 U
Hexachlorobenzene	µg/L	100 U	100 U	100 U	40 U	10 U
Hexachlorobutadiene	µg/L	100 U	100 U	100 U	40 U	10 U
Hexachlorocyclopentadiene	µg/L	100 U	100 U	100 U	40 U	10 U
Hexachloroethane	µg/L	100 U	100 U	100 U	40 U	10 U
Indeno(1,2,3-cd)pyrene	µg/L	100 U	100 U	100 U	40 U	10 U
Isophorone	µg/L	100 U	100 U	100 U	40 U	10 U
Naphthalene	µg/L	100 U	60 J	44 J	6.6 J	10 U
Nitrobenzene	µg/L	100 U	100 U	100 U	40 U	10 U
N-Nitrosodi-n-propylamine	µg/L	100 U	100 U	100 U	40 U	10 U
N-Nitrosodiphenylamine	µg/L	100 U	100 U	100 U	40 U	10 U
Pentachlorophenol	µg/L	200 U	200 U	200 U	80 U	20 U
Phenanthrene	µg/L	110	100 U	100 U	40 U	10 U
Phenol	µg/L	2500	13000	14000	65	28 J
Pyrene	µg/L	21 J	100 U	100 U	40 U	10 U
Metals						
Aluminum	µg/L	20400	4390	3880	11800	11400
Antimony	µg/L	1.5 J	5.1 J	4.8 J	1.1 J	6.0 U
Arsenic	µg/L	92.7	64.9	63.5	18.0	25.0

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MAY AND JUNE 2014

Sample Location:		MW-09	MW-10	MW-10	MW-14	MW-15
Sample ID:		WG-80987-060614-BP-114	WG-80987-060614-BP-115	WG-80987-060614-BP-116	WG-80987-060514-BP-112	WG-80987-060614-BP-113
Sample Date:		6/6/2014	6/6/2014	6/6/2014	6/5/2014	6/6/2014
				Duplicate		
Parameter	Units					
Metals (Continued)						
Barium	µg/L	1920	471	464	177	421
Beryllium	µg/L	3.0 U	20 U	20 U	3.0 U	3.0 U
Cadmium	µg/L	3.0 U	20 U	20 U	3.0 U	3.0 U
Calcium	µg/L	92700	16100	15200	10700	19100
Chromium	µg/L	37.2	63.8	60.8	24.2	18.9
Cobalt	µg/L	30.0	20 U	20 U	11.0	14.7
Copper	µg/L	79.7 J	204 J	199 J	74.7 J	56.0 J
Iron	µg/L	240000 J	15800 J	13900 J	19800 J	29200 J
Lead	µg/L	80.1 J	185 J	179 J	67.5 J	42.4 J
Magnesium	µg/L	26200	10000 U	10000 U	4220	8130
Manganese	µg/L	5120	973	859	1240	7590
Mercury	µg/L	0.20 U	0.58	0.58	0.15 J	0.14 J
Nickel	µg/L	64.3 J	225 J	218 J	38.5 J	40.0 J
Potassium	µg/L	17000	13200	13000	4780	9290
Selenium	µg/L	15 UJ	100 UJ	100 UJ	15 UJ	15 UJ
Silver	µg/L	3.0 U	20 U	20 U	3.0 U	3.0 U
Sodium	µg/L	401000	2050000	2030000	549000	398000
Thallium	µg/L	3.0 U	20 U	20 U	3.0 U	3.0 U
Vanadium	µg/L	72.2	443	444	64.6	30.4
Zinc	µg/L	224	69.9	61.9	76.2	92.0
PCBs						
Aroclor-1016 (PCB-1016)	µg/L	2000 U	5.0 U	20 U	20 U	1.0 U
Aroclor-1221 (PCB-1221)	µg/L	2000 U	5.0 U	20 U	20 U	1.0 U
Aroclor-1232 (PCB-1232)	µg/L	2000 U	5.0 U	20 U	20 U	1.0 U
Aroclor-1242 (PCB-1242)	µg/L	20000	23 J	190 J	120	4.8
Aroclor-1248 (PCB-1248)	µg/L	2000 U	5.0 U	20 U	20 U	1.0 U
Aroclor-1254 (PCB-1254)	µg/L	2000 U	5.0 U	20 U	20 U	1.0 U
Aroclor-1260 (PCB-1260)	µg/L	2000 U	5.0 U	20 U	20 U	1.0 UJ

Notes:

J - Estimated concentration

U - Not detected at the associated reporting limit

PCBs - Polychlorinated Biphenyls

TABLE 3

ANALYTICAL METHODS AND HOLDING TIME CRITERIA
 UPLAND RD - PCB DELINEATION STUDY
 FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
 WATERFORD, NEW YORK
 MAY AND JUNE 2014

<i>Parameter</i>	<i>Method</i>	<i>Matrix</i>	<i>Holding Time</i>	
			<i>Collection to Extraction (Days)</i>	<i>Collection or Extraction to Analysis (Days)</i>
TCL VOC	SW-846 8260	Water	-	14
TCL SVOC	SW-846 8270C	Water	7	40
PCB	SW-846 8082	Water	7	40
	SW-846 8082	Soil	14	40
TAL Metals	SW-846 6020	Water	-	180
Mercury	SW-846 7470A	Water	-	28

Notes:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

TABLE 4

**QUALIFIED SAMPLE RESULTS DUE TO OUTLYING CONTINUING CALIBRATION RESULTS
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSOHN COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014**

<i>Parameter</i>	<i>Analyte</i>	<i>Calibration Date</i>	<i>%D</i>	<i>Associated Sample ID</i>	<i>Qualified Result</i>	<i>Units</i>
TCL VOC	Bromomethane	06/13/2014	49.6	WG-80987-060614-BP-115	1000 UJ	µg/L

Notes:

TCL - Target Compound List

VOC - Volatile Organic Compounds

UJ - Not detected; associated reporting limit is estimated.

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE INSTRUMENT BLANKS
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014

<i>Parameter</i>	<i>Analyte</i>	<i>Blank ID</i>	<i>Analysis Date</i>	<i>Blank Result</i>	<i>Sample ID</i>	<i>Original Result</i>	<i>Qualified Result</i>	<i>Units</i>
TAL Metals	Beryllium	CCB	6/13/2014	0.073 J	WG-80987-060514-BP-112	1.1 J	3.0 U	µg/L
					WG-80987-060614-BP-113	0.75 J	3.0 U	µg/L
					WG-80987-060614-BP-114	2.0 J	3.0 U	µg/L
					WG-80987-060614-BP-115	3.5 J	20 U	µg/L
					WG-80987-060614-BP-116	3.5 J	20 U	µg/L
TAL Metals	Cadmium	CCB	6/13/2014	0.100 J	WG-80987-060514-BP-112	0.92 J	3.0 U	µg/L
					WG-80987-060614-BP-113	0.59 J	3.0 U	µg/L
					WG-80987-060614-BP-114	0.89 J	3.0 U	µg/L
					WG-80987-060614-BP-115	2.6 J	20 U	µg/L
					WG-80987-060614-BP-116	2.7 J	20 U	µg/L
TAL Metals	Cobalt	ICB	6/13/2014	0.056 J	WG-80987-060614-BP-115	16.3 J	20 U	µg/L
					WG-80987-060614-BP-116	15.0 J	20 U	µg/L
TAL Metals	Magnesium	CCB	6/13/2014	14.191 J	WG-80987-060614-BP-115	912 J	10000 U	µg/L
					WG-80987-060614-BP-116	653 J	10000 U	µg/L
TAL Metals	Selenium	ICB	6/13/2014	0.328 J	WG-80987-060514-BP-112	1.6 J	15 U	µg/L
					WG-80987-060614-BP-114	1.3 J	15 U	µg/L
					WG-80987-060614-BP-115	4.1 J	100 U	µg/L
					WG-80987-060614-BP-116	5.0 J	100 U	µg/L
TAL Metals	Silver	ICB	6/13/2014	0.101 J	WG-80987-060514-BP-112	0.38 J	3.0 U	µg/L
					WG-80987-060614-BP-113	0.15 J	3.0 U	µg/L
					WG-80987-060614-BP-114	0.21 J	3.0 U	µg/L
					WG-80987-060614-BP-115	0.99 J	20 U	µg/L
					WG-80987-060614-BP-116	0.86 J	20 U	µg/L
TAL Metals	Thallium	ICB	6/13/2014	0.404 J	WG-80987-060514-BP-112	0.49 J	3.0 U	µg/L
					WG-80987-060614-BP-113	0.24 J	3.0 U	µg/L
					WG-80987-060614-BP-114	0.15 J	3.0 U	µg/L

Notes:

CCB - Continuing Calibration Blank

ICB - Initial Calibration Blank

U - Not detected at the associated reporting limit

J - Estimated concentration

TAL - Target Analyte List

TABLE 6

**QUALIFIED SAMPLE DATA DUE TO OUTLYING OF SURROGATE RECOVERIES
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014**

<i>Parameter</i>	<i>Sample ID</i>	<i>Surrogate</i>	<i>Surrogate % Recovery</i>	<i>Control Limits % Recovery</i>	<i>Analyte</i>	<i>Qualified Result</i>	<i>Units</i>
PCB	S-80987-051214-BP-011	Decachlorobiphenyl	50	60-125	PCB-1242	950 J	µg/kg
					PCB-1248	150 UJ	µg/kg
					PCB-1254	150 UJ	µg/kg
					PCB-1260	150 UJ	µg/kg
PCB	S-80987-051414-BP-070	Decachlorobiphenyl	25	60-125	PCB-1242	290 J	µg/kg
					PCB-1248	36 UJ	µg/kg
					PCB-1254	36 UJ	µg/kg
					PCB-1260	36 UJ	µg/kg
PCB	S-80987-051414-BP-073	Decachlorobiphenyl	59	60-125	PCB-1242	37 UJ	µg/kg
					PCB-1248	37 UJ	µg/kg
					PCB-1254	37 UJ	µg/kg
					PCB-1260	37 UJ	µg/kg
PCB	S-80987-051414-BP-080	Decachlorobiphenyl	38	60-125	PCB-1242	35 UJ	µg/kg
					PCB-1248	35 UJ	µg/kg
					PCB-1254	35 UJ	µg/kg
					PCB-1260	35 UJ	µg/kg
PCB	S-80987-051214-BP-003	Decachlorobiphenyl	58	60-125	PCB-1242	280 J	µg/kg
					PCB-1248	38 UJ	µg/kg
					PCB-1254	38 UJ	µg/kg
					PCB-1260	38 UJ	µg/kg
PCB	S-80987-051314-BP-033	Decachlorobiphenyl	58	60-125	PCB-1242	34 UJ	µg/kg
					PCB-1248	34 UJ	µg/kg
					PCB-1254	34 UJ	µg/kg
					PCB-1260	34 UJ	µg/kg
PCB	S-80987-051314-BP-039	Decachlorobiphenyl	56	60-125	PCB-1242	38 UJ	µg/kg
					PCB-1248	38 UJ	µg/kg
					PCB-1254	38 UJ	µg/kg
					PCB-1260	38 UJ	µg/kg
PCB	S-80987-051314-BP-052	Decachlorobiphenyl	59	60-125	PCB-1242	38 UJ	µg/kg
					PCB-1248	38 UJ	µg/kg
					PCB-1254	38 UJ	µg/kg
					PCB-1260	38 UJ	µg/kg
PCB	S-80987-051314-BP-057	Decachlorobiphenyl	48	60-125	PCB-1242	34 UJ	µg/kg
					PCB-1248	34 UJ	µg/kg
					PCB-1254	34 UJ	µg/kg
					PCB-1260	34 UJ	µg/kg

TABLE 6

**QUALIFIED SAMPLE DATA DUE TO OUTLYING OF SURROGATE RECOVERIES
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014**

<i>Parameter</i>	<i>Sample ID</i>	<i>Surrogate</i>	<i>Surrogate % Recovery</i>	<i>Control Limits % Recovery</i>	<i>Analyte</i>	<i>Qualified Result</i>	<i>Units</i>
PCB	S-80987-051214-BP-011	Decachlorobiphenyl	50	60-125	PCB-1242	950 J	µg/kg
PCB	S-80987-051314-BP-058	Decachlorobiphenyl	55	60-125	PCB-1242	35 UJ	µg/kg
					PCB-1248	35 UJ	µg/kg
					PCB-1254	35 UJ	µg/kg
					PCB-1260	35 UJ	µg/kg
PCB	S-80987-051314-BP-063	Decachlorobiphenyl	55	60-125	PCB-1242	56 J	µg/kg
					PCB-1248	35 UJ	µg/kg
					PCB-1254	35 UJ	µg/kg
					PCB-1260	35 UJ	µg/kg
PCB	S-80987-051414-BP-089	Decachlorobiphenyl	58	60-125	PCB-1242	200 J	µg/kg
					PCB-1248	37 UJ	µg/kg
					PCB-1254	37 UJ	µg/kg
					PCB-1260	37 UJ	µg/kg

J - Estimated concentration

UJ - Not detected; associated reporting limit is estimated

PCB - Polychlorinated Biphenyls

TABLE 7

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE RESULTS
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014

<i>Parameter</i>	<i>Analyte</i>	<i>LCS Date</i>	<i>LCS % Recovery</i>	<i>Control Limits % Recovery</i>	<i>Associated Sample ID</i>	<i>Qualified Results</i>	<i>Units</i>
TCL VOC	1,1,2-Trichloroethane	6/11/2014	74	75 - 125	WG-80987-060614-BP-113	5.0 UJ	µg/L
	1,2-Dibromoethane		74	80 - 120		5.0 UJ	µg/L
TCL SVOC	Atrazine	6/17/2014	22	52 - 175	WG-80987-060514-BP-112	40 UJ	µg/L
					WG-80987-060614-BP-113	10 UJ	µg/L
					WG-80987-060614-BP-114	100 UJ	µg/L
					WG-80987-060614-BP-115	100 UJ	µg/L
					WG-80987-060614-BP-116	100 UJ	µg/L

Notes:

LCS - Laboratory control sample

UJ - Not detected; associated reporting limit is estimated

TCL - Target Compound List

VOC - Volatile Organic Compounds

SVOC - Semi-volatile Organic Compounds

TABLE 8

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014

<i>Parameter</i>	<i>Sample ID</i>	<i>Analyte</i>	<i>MS</i>	<i>MSD</i>	<i>RPD</i>	<i>Control Limits</i>		<i>Qualified Result</i>	<i>Units</i>
			<i>% Recovery</i>	<i>% Recovery</i>	<i>(percent)</i>	<i>% Recovery</i>	<i>RPD</i>		
TCL SVOC	WG-80987-060614-BP-113	2,4-Dimethylphenol	196	372	62	30-110	40	78 J	µg/L
		2-Methylphenol	119	195	49	40-110	40	28 J	µg/L
		4-Methylphenol	191	427	76	30-110	40	56 J	µg/L
		Phenol	121	311	88	0-115	40	28 J	µg/L
PCB	WG-80987-060614-BP-113	PCB-1260	22	26	16	30-145	30	1.0 UJ	µg/L

Notes:

MS - Matrix Spike

MSD - Matrix Spike Duplicate

RPD - Relative Percent Difference

J - Estimated concentration

UJ - Not detected; associated reporting limit is estimated

PCB - Polychlorinated Biphenyls

TCL - Target Compound List

SVOC - Semi-volatile Organic Compounds

TABLE 9

QUALIFIED SAMPLE DATA DUE TO OUTLYING MATRIX SPIKE RECOVERIES
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014

<i>Parameter</i>	<i>Spiked Sample ID</i>	<i>Analyte</i>	<i>MS % Recovery</i>	<i>Control Limits % Recovery</i>	<i>Associated Sample IDs</i>	<i>Qualified Result</i>	<i>Units</i>
TAL Metals	WG-80987-060614-BP-113	Lead	14	75-125	WG-80987-060514-BP-112	67.5 J	µg/L
					WG-80987-060614-BP-113	42.4 J	µg/L
					WG-80987-060614-BP-114	80.1 J	µg/L
					WG-80987-060614-BP-115	185 J	µg/L
					WG-80987-060614-BP-116	179 J	µg/L
TAL Metals	WG-80987-060614-BP-113	Selenium	63	75-125	WG-80987-060614-BP-113	15 UJ	µg/L
					WG-80987-060514-BP-112	15 UJ	µg/L
					WG-80987-060614-BP-114	15 UJ	µg/L
					WG-80987-060614-BP-115	100 UJ	µg/L
					WG-80987-060614-BP-116	100 UJ	µg/L

Notes:

MS - Matrix Spike

J - Estimated concentration

UJ - Not detected; associated reporting limit is estimated

TAL - Target Analyte List

TABLE 10

QUALIFIED SAMPLE DATA DUE TO OUTLYING ICP SERIAL DILUTION RESULTS
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014

<i>Parameter</i>	<i>Serial Dilution Sample ID</i>	<i>Analyte</i>	<i>%D</i>	<i>Associated Sample ID</i>	<i>Qualified Result</i>	<i>Units</i>
TAL Metals	WG-80987-060614-BP-113	Copper	11	WG-80987-060514-BP-112	74.7 J	µg/L
				WG-80987-060614-BP-113	56.0 J	µg/L
				WG-80987-060614-BP-114	79.7 J	µg/L
				WG-80987-060614-BP-115	204 J	µg/L
				WG-80987-060614-BP-116	199 J	µg/L
TAL Metals	WG-80987-060614-BP-113	Iron	10	WG-80987-060514-BP-112	19800 J	µg/L
				WG-80987-060614-BP-113	29200 J	µg/L
				WG-80987-060614-BP-114	240000 J	µg/L
				WG-80987-060614-BP-115	15800 J	µg/L
				WG-80987-060614-BP-116	13900 J	µg/L
TAL Metals	WG-80987-060614-BP-113	Nickel	15	WG-80987-060514-BP-112	38.5 J	µg/L
				WG-80987-060614-BP-113	40.0 J	µg/L
				WG-80987-060614-BP-114	64.3 J	µg/L
				WG-80987-060614-BP-115	225 J	µg/L
				WG-80987-060614-BP-116	218 J	µg/L

Notes:

%D - Percent difference

ICP - Inductively Coupled Plasma

J - Estimated concentration

TAL - Target Analyte List

TABLE 11

QUALIFIED SAMPLE DATA DUE TO VARIABILITY IN FIELD DUPLICATE RESULTS
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014

<i>Parameter</i>	<i>Analyte</i>	<i>RPD</i>	<i>Sample ID</i>	<i>Qualified Result</i>	<i>Field Duplicate Sample ID</i>	<i>Qualified Result</i>	<i>Units</i>
PCB	PCB-1242	160	WG-80987-060614-BP-115	23 J	WG-80987-060614-BP-116	190 J	µg/L

Notes:

RPD - Relative Percent Difference

J - Estimated concentration

PCB - Polychlorinated Biphenyls

TABLE 12

QUALIFIED SAMPLE DATA DUE TO DIFFERENCES IN DUAL COLUMN RESULTS
UPLAND RD - PCB DELINEATION STUDY
FRIEDRICHSON COOPERAGE/GENERAL ELECTRIC COMPANY & SI GROUP
WATERFORD, NEW YORK
MAY AND JUNE 2014

<i>Parameter</i>	<i>Analyte</i>	<i>RPD (percent)</i>	<i>Criteria (percent)</i>	<i>Associated Sample ID</i>	<i>Qualified Result</i>	<i>Units</i>
PCB	PCB-1242	136	<40	S-80987-051214-BP-011	950 J	µg/kg
		104	<40	S-80987-051214-BP-024	1300 J	µg/kg
		72	<40	S-80987-051214-BP-025	2000 J	µg/kg
		74	<40	S-80987-051314-BP-046	40 J	µg/kg
		51	<40	S-80987-051314-BP-048	5700 J	µg/kg
		151	<40	S-80987-051414-BP-069	3000 J	µg/kg
		58	<40	S-80987-051414-BP-070	290 J	µg/kg
		150	<40	S-80987-051414-BP-071	1100 J	µg/kg
		43	<40	S-80987-051414-BP-074	34000 J	µg/kg
		63	<40	S-80987-051414-BP-076	6000 J	µg/kg
		131	<40	S-80987-051414-BP-079	2300 J	µg/kg
		147	<40	S-80987-051414-BP-094	170 J	µg/kg
		136	<40	S-80987-051414-BP-095	41 J	µg/kg
PCB	PCB-1260	49.2	<40	S-80987-051214-BP-006	410 J	µg/kg

Notes:

RPD - Relative Percent Difference

J - Estimated concentration

PCB - Polychlorinated Biphenyls

Appendix D

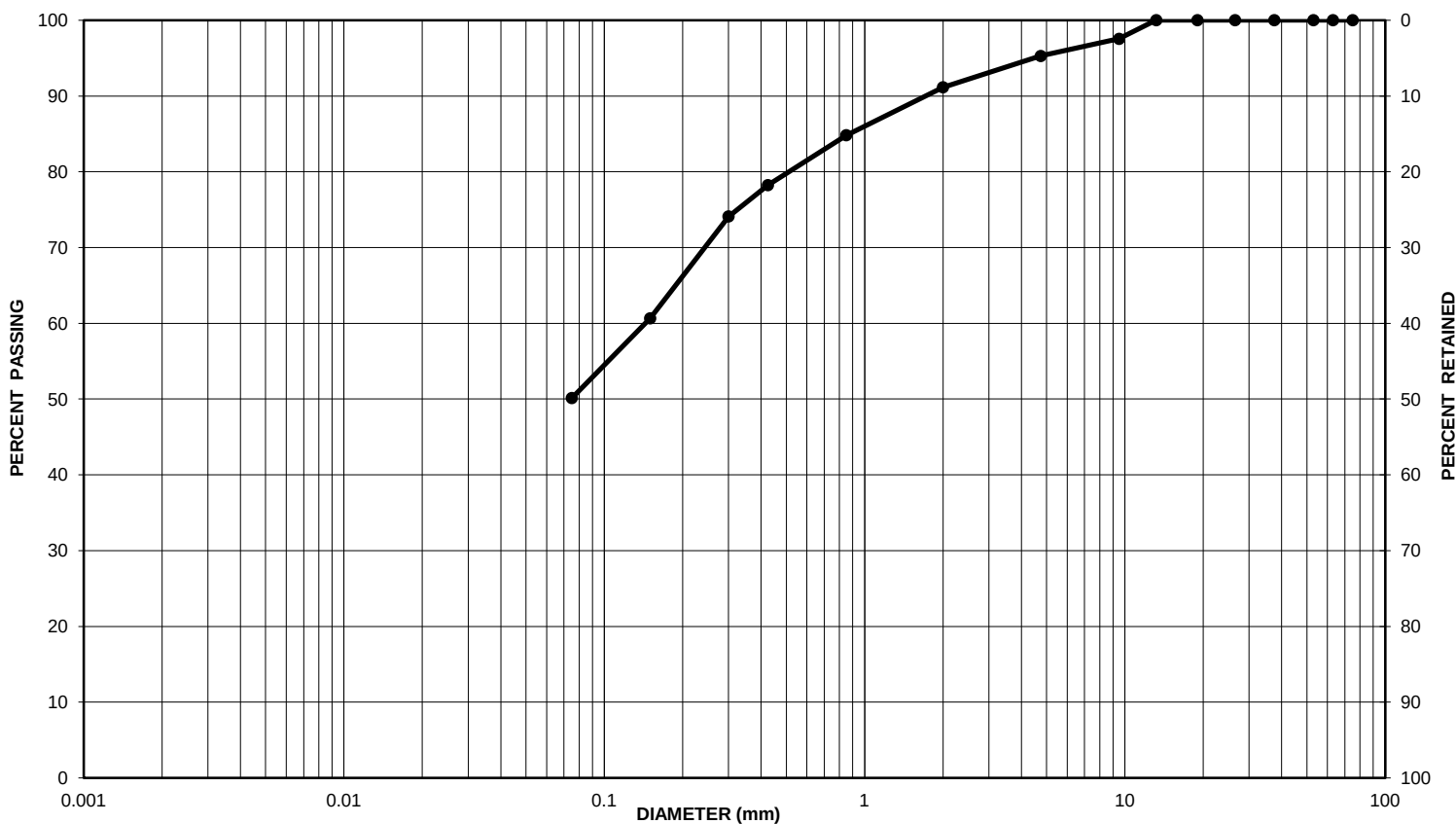
Geotechnical Analysis Results

CLIENT: Conestoga Rovers & Associates LAB No.: WLA 381-1

PROJECT/ SITE: Friedrichsohn Cooperage PROJECT No.: 080987

Borehole No.: GB-01 Sample No.: 100

Depth: 0.5' - 2.0' Enclosure:



CLAY & SILT	SAND			GRAVEL	
	FINE	MEDIUM	COARSE	FINE	COARSE
UNIFIED SOIL CLASSIFICATION SYSTEM					

Soil Description	Gravel	Sand	Clay & Silt
SILT-CLAY and SAND, trace gravel	5	45	50

REMARKS:

PERFORMED BY: T. Singh DATE: 01/06/2014

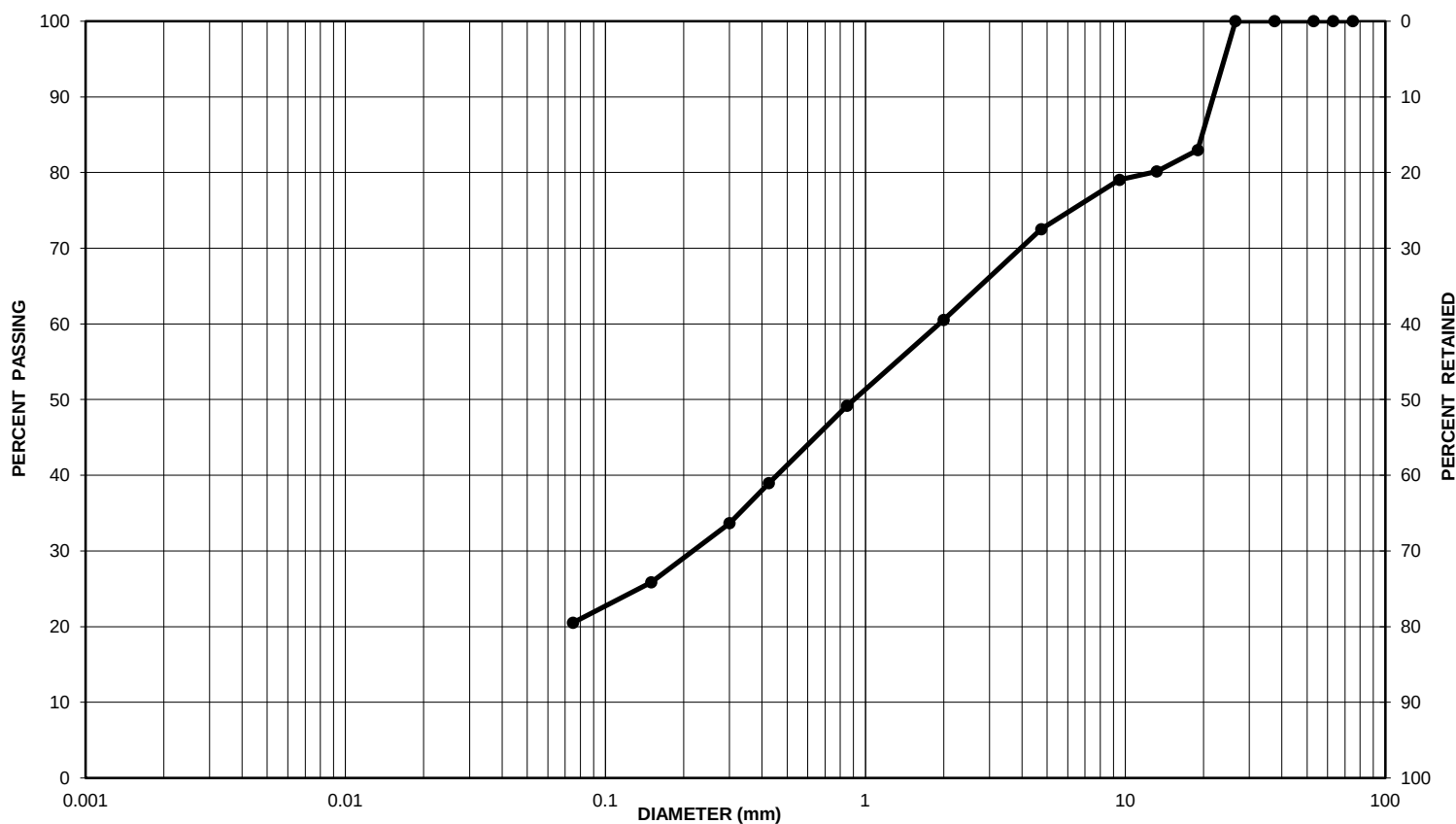
VERIFIED BY: Abdul Hafeez Khan, P.Eng., Laboratory Manager DATE: 13/06/2014

CLIENT: Conestoga Rovers & Associates **LAB No.:** WLA 381-2

PROJECT/ SITE: Friedrichsohn Cooperage **PROJECT No.:** 080987

Borehole No.: GB-01 Sample No.: 101

Depth: 2' - 4' Enclosure:



CLAY & SILT	SAND			GRAVEL	
	FINE	MEDIUM	COARSE	FINE	COARSE
UNIFIED SOIL CLASSIFICATION SYSTEM					

Soil Description	Gravel	Sand	Clay & Silt
gravelly SAND, some silt, trace clay	27	52	21

REMARKS:

PERFORMED BY: T. Singh **DATE:** 01/06/2014

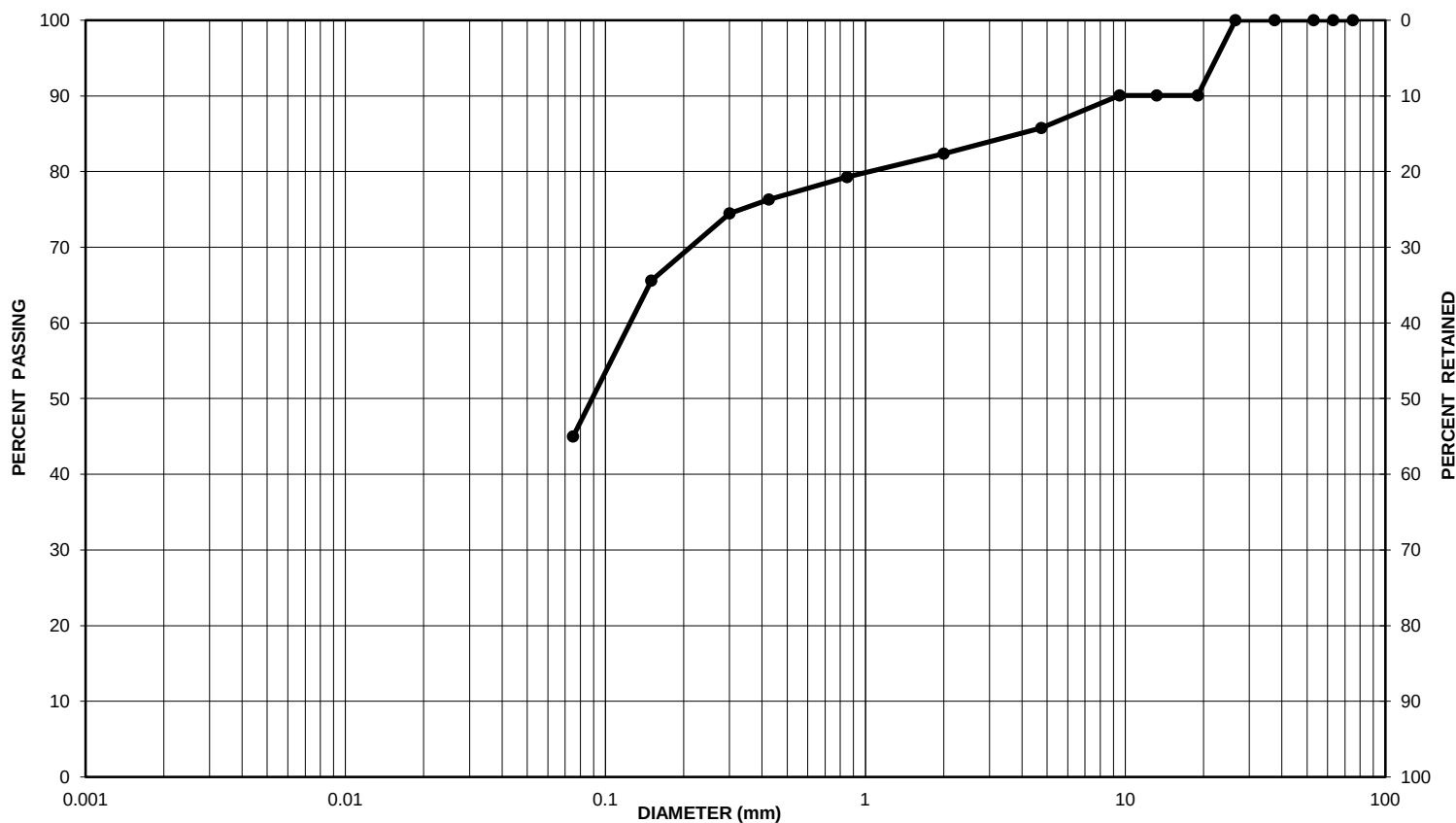
VERIFIED BY: Abdul Hafeez Khan, P.Eng., Laboratory Manager **DATE:** 13/06/2014

CLIENT: Conestoga Rovers & Associates LAB No.: WLA 381-3

PROJECT/ SITE: Friedrichsohn Cooperage PROJECT No.: 080987

Borehole No.: GB-01 Sample No.: 102

Depth: 4' - 6' Enclosure:



CLAY & SILT	SAND			GRAVEL	
	FINE	MEDIUM	COARSE	FINE	COARSE
UNIFIED SOIL CLASSIFICATION SYSTEM					

Soil Description	Gravel	Sand	Clay & Silt
CLAY-SILT and SAND, some gravel	14	41	45

REMARKS:

PERFORMED BY: T. Singh DATE: 01/06/2014

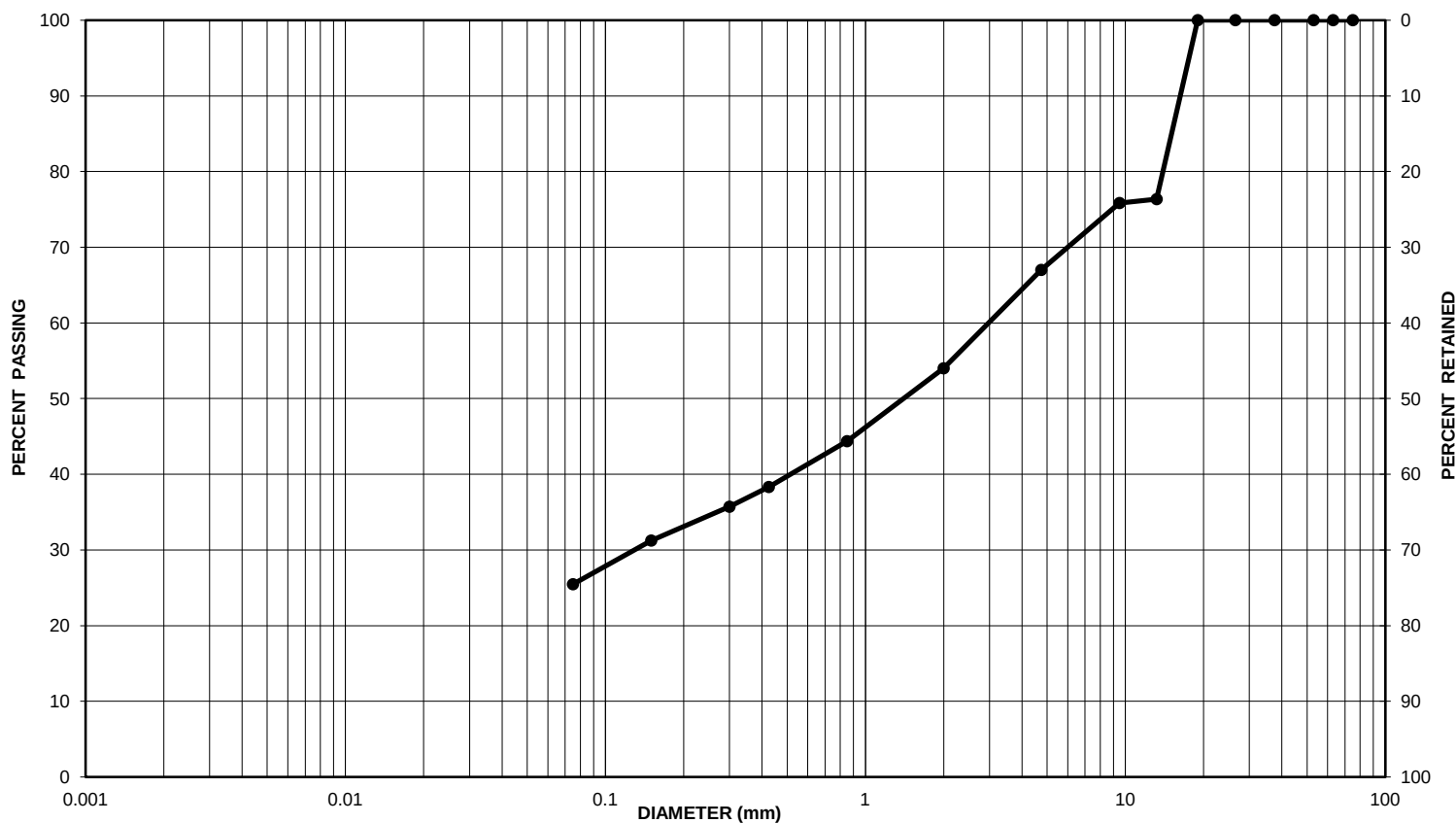
VERIFIED BY: Abdul Hafeez Khan, P.Eng., Laboratory Manager DATE: 13/06/2014

CLIENT: Conestoga Rovers & Associates LAB No.: WLA 381-4

PROJECT/ SITE: Friedrichsohn Cooperage PROJECT No.: 080987

Borehole No.: GB-02 Sample No.: 103

Depth: 2.5' - 4' Enclosure:



CLAY & SILT	SAND			GRAVEL	
	FINE	MEDIUM	COARSE	FINE	COARSE
UNIFIED SOIL CLASSIFICATION SYSTEM					

Soil Description	Gravel	Sand	Clay & Silt
gravelly SAND, some silt, trace clay	33	42	25

REMARKS:

PERFORMED BY: T. Singh DATE: 01/06/2014

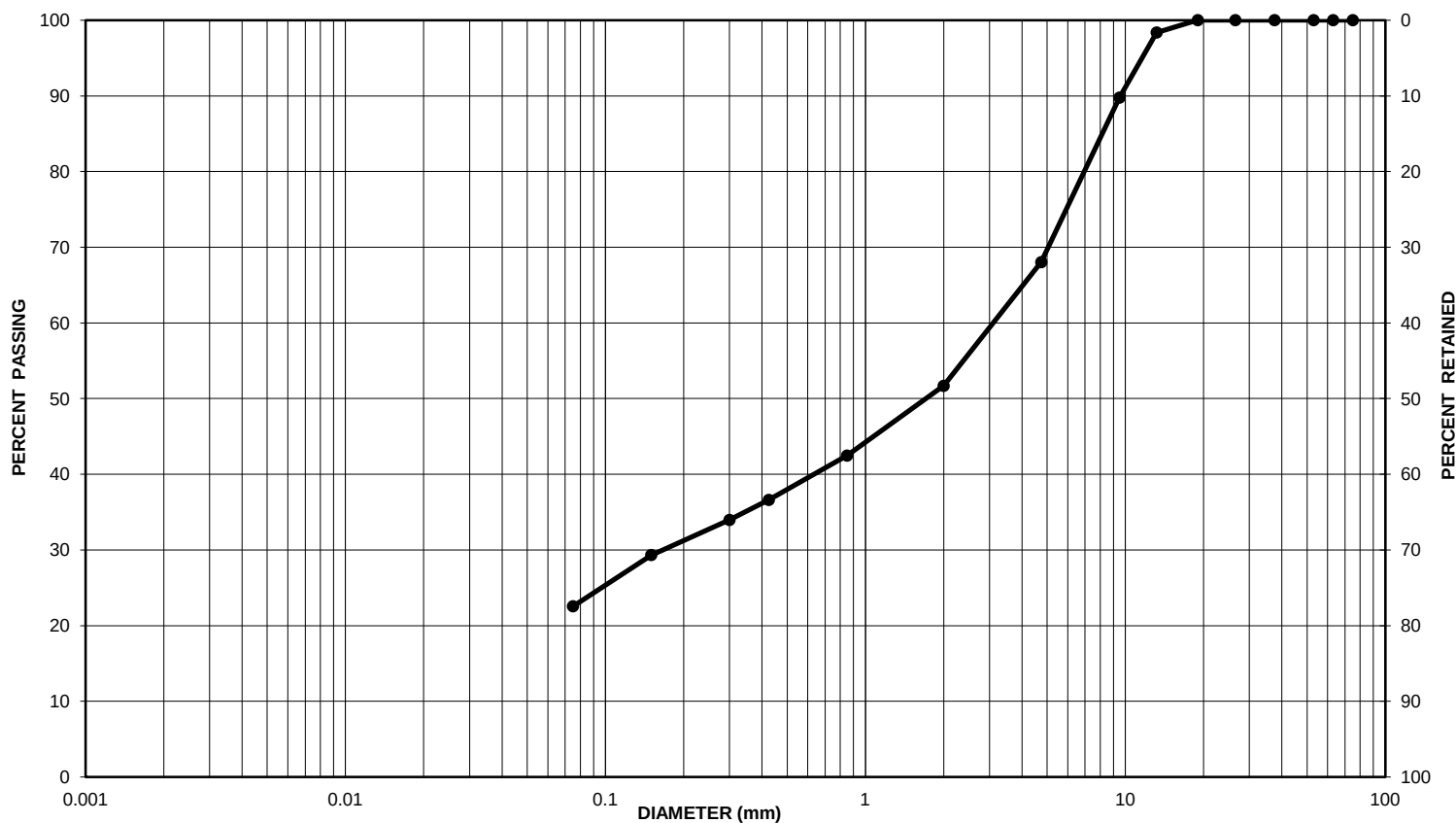
VERIFIED BY: Abdul Hafeez Khan, P.Eng., Laboratory Manager DATE: 13/06/2014

CLIENT: Conestoga Rovers & Associates LAB No.: WLA 381-5

PROJECT/ SITE: Friedrichsohn Cooperage PROJECT No.: 080987

Borehole No.: GB-02 Sample No.: 104

Depth: 4.5' - 6' Enclosure:



CLAY & SILT	SAND			GRAVEL	
	FINE	MEDIUM	COARSE	FINE	COARSE
UNIFIED SOIL CLASSIFICATION SYSTEM					

Soil Description	Gravel	Sand	Clay & Silt
gravelly SAND, some silt, trace clay	32	45	23

REMARKS:

PERFORMED BY: T. Singh DATE: 01/06/2014

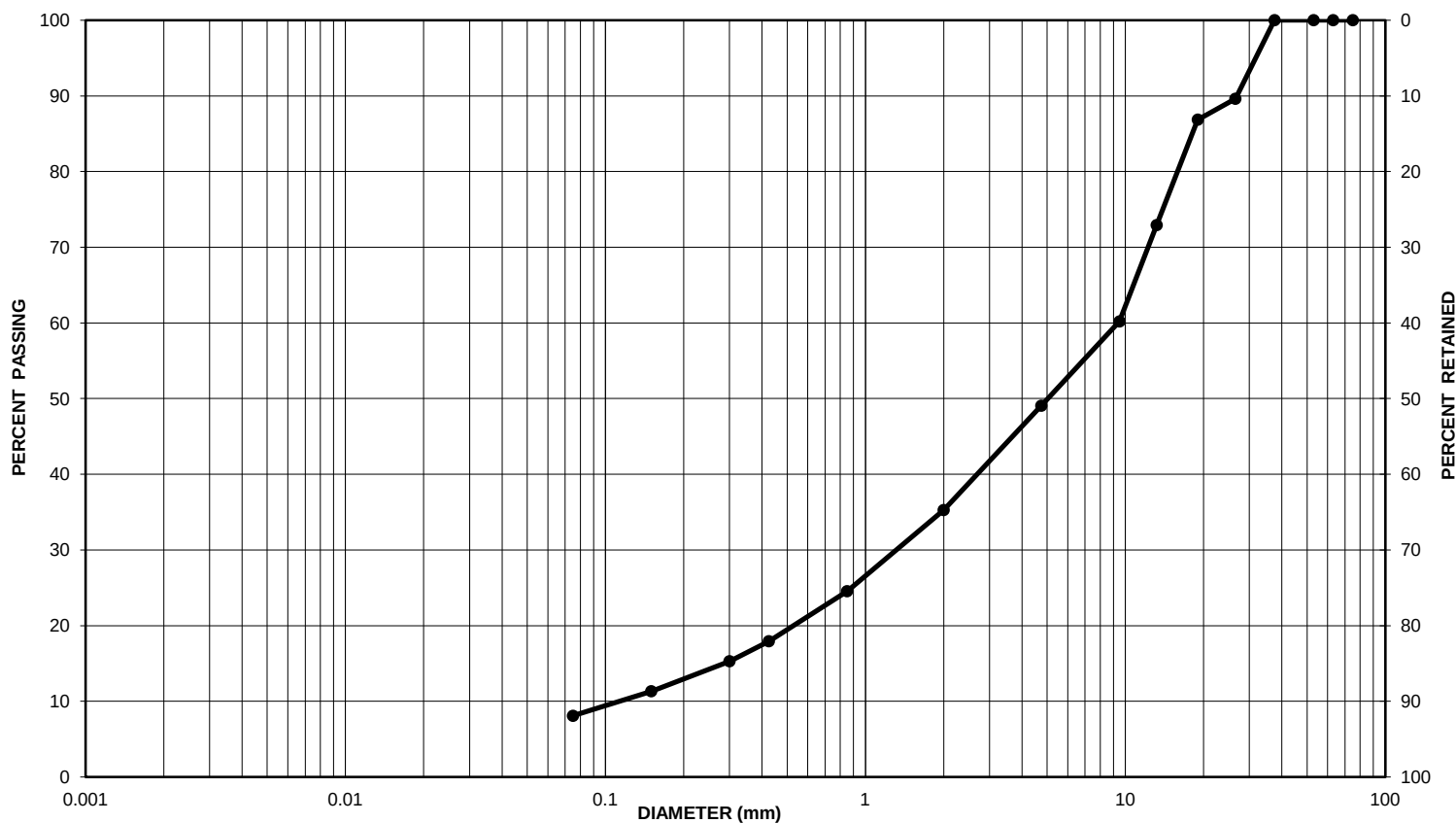
VERIFIED BY: Abdul Hafeez Khan, P.Eng., Laboratory Manager DATE: 13/06/2014

CLIENT: Conestoga Rovers & Associates **LAB No.:** WLA 381-6

PROJECT/ SITE: Friedrichsohn Cooperage **PROJECT No.:** 080987

Borehole No.: GB-02 Sample No.: 105

Depth: 6.6' - 8.0' Enclosure: _____



CLAY & SILT	SAND			GRAVEL	
	FINE	MEDIUM	COARSE	FINE	COARSE
UNIFIED SOIL CLASSIFICATION SYSTEM					

Soil Description	Gravel	Sand	Clay & Silt
SAND and GRAVEL, trace silt and clay	51	41	8

REMARKS: _____

PERFORMED BY: J. Horvath **DATE:** 30/05/2014

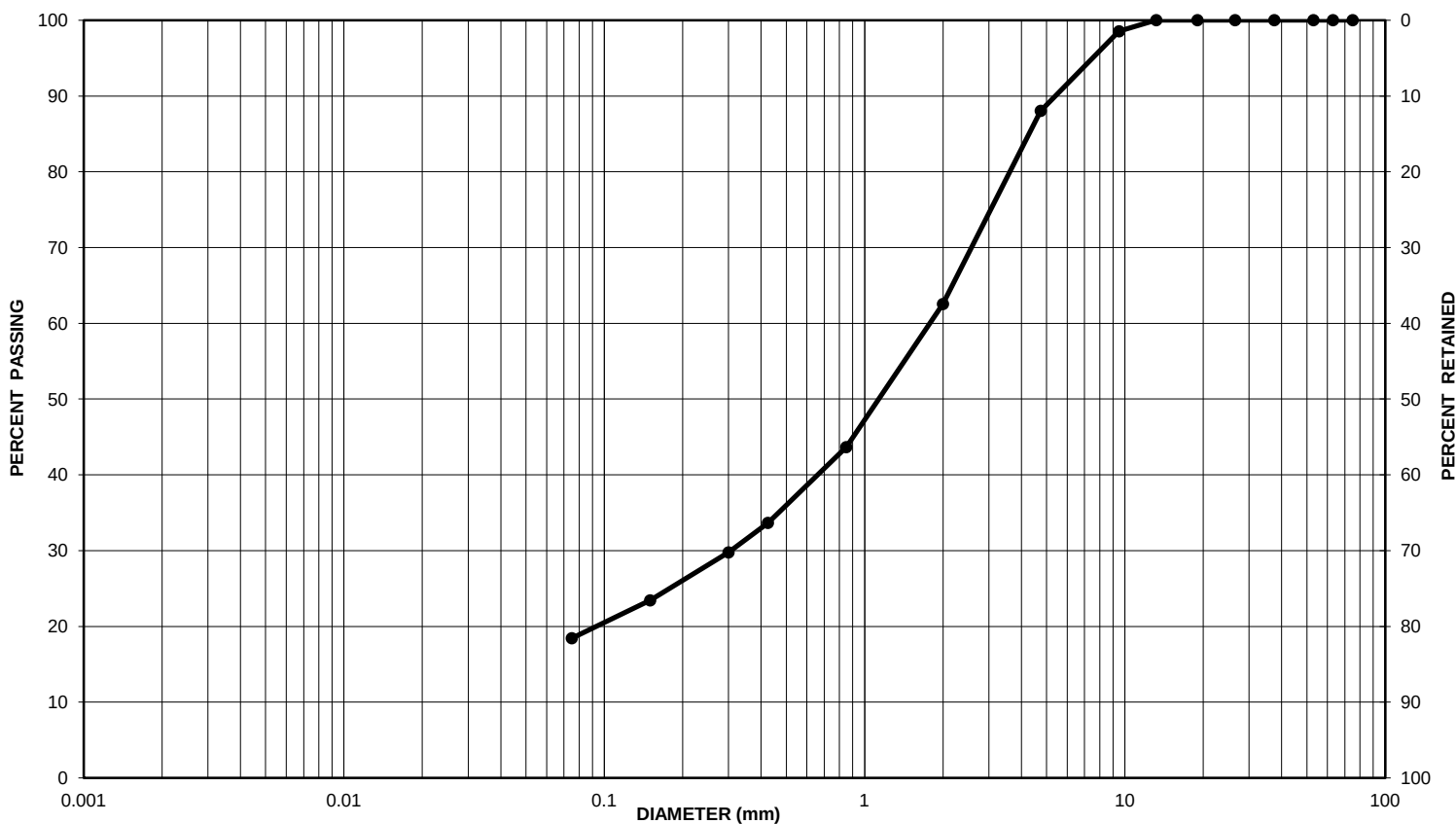
VERIFIED BY: Abdul Hafeez Khan, P.Eng., Laboratory Manager **DATE:** 02/06/2014

CLIENT: Conestoga Rovers & Associates LAB No.: WLA 381-7

PROJECT/ SITE: Friedrichsohn Cooperage PROJECT No.: 080987

Borehole No.: GB-01 Sample No.: 106

Depth: 9.85' - 11.2' Enclosure:



CLAY & SILT	SAND			GRAVEL	
	FINE	MEDIUM	COARSE	FINE	COARSE
UNIFIED SOIL CLASSIFICATION SYSTEM					

Soil Description	Gravel	Sand	Clay & Silt
SAND, some silt and clay, some gravel	12	70	18

REMARKS:

PERFORMED BY: J. Horvath DATE: 30/05/2014

VERIFIED BY: Abdul Hafeez Khan, P.Eng., Laboratory Manager DATE: 02/06/2014

CLIENT: _____		Conestoga Rovers & Associates		LAB No.: _____		WLA 381	
PROJECT / SITE: _____		Friedrichson Cooperage		PROJECT No.: _____		080987	
APPARATUS USED FOR TESTING:							
Oven No.: _____				Scale No.: _____			
Time Samples Placed in Oven: _____				Time Removed from Oven: _____			
11:00 AM				9:00 AM			
SAMPLE LOCATION:	GB-01	GB-01	GB-01	GB-02	GB-02	GB-02	GB-01
SAMPLE No.:	100	101	102	103	104	105	106
DEPTH:	0.5'-2'	2'-4'	4'-6'	2.5'-4'	4.5'-6'	6.6'-8'	9.85'-11.2'
CONTAINER No.:	H4	35	33	Z03	T3	Z14	Z01
MASS OF CONTAINER + WET SOIL (g):	388.1	388.9	430.9	398.1	448.1	487.0	627.7
MASS OF CONTAINER + DRY SOIL (g):	359.3	357.8	371.0	342.8	388.9	438.6	566.9
MASS OF CONTAINER (g):	106.6	101.6	91.3	91.1	98.8	104.4	94.0
MASS OF DRY SOIL (g):	252.7	256.2	279.7	251.7	290.1	334.2	472.9
MASS OF WATER (g):	28.8	31.1	59.9	55.3	59.2	48.4	60.8
MOISTURE CONTENT (%):	11.4	12.1	21.4	22.0	20.4	14.5	12.9
REMARKS: _____							
SAMPLE LOCATION:							
SAMPLE No.:							
DEPTH:							
CONTAINER No.:							
MASS OF CONTAINER + WET SOIL (g):							
MASS OF CONTAINER + DRY SOIL (g):							
MASS OF CONTAINER (g):							
MASS OF DRY SOIL (g):							
MASS OF WATER (g):							
MOISTURE CONTENT (%):							
REMARKS: _____							
PERFORMED BY: _____							
B. Brown				DATE: _____			
				May 28, 2014			
REVIEWED BY : _____							
Abdul Hafeez Khan, P.Eng.				DATE: _____			
				June 2, 2014			



CLIENT: <u>Conestoga Rovers & Associates</u>		LAB No.: <u>WLA 381-1</u>	
PROJECT / SITE: <u>Friedrichsohn Cooperage</u>		PROJECT No.: <u>080987</u>	
BOREHOLE No.: <u>GB-01</u>		SAMPLING DATE: <u>5/14/2014</u>	
SAMPLE No.: <u>100</u>		SAMPLED BY: <u>B. Pichert</u>	
DEPTH (ft): <u>0.5'-1.0'</u>		DATE TESTED: <u>6/4/2014</u>	
Flask #	1	2	3
Mass of flask, g	105.01	114.70	112.67
Mass of flask with sample, g	140.68	150.82	142.33
Mass of flask with sample+water, g	376.70	386.66	380.55
Temperature °C	23.7	23.7	23.7
Mass of flask and water @ test temperature	354.07	363.74	361.75
Specific Gravity at 20 °C	2.73	2.73	2.73
Average Specific Gravity at 20 °C	2.73		
REMARKS: <u>Removal of Entrapped Air by Vacuuming</u>			
PERFORMED BY: <u>C. Adachi</u> DATE: <u>June 4, 2014</u>			
REVIEWD BY: <u>Michael Braverman</u> DATE: <u>June 4, 2014</u>			



CLIENT: <u>Conestoga Rovers & Associates</u>		LAB No.: <u>WLA 381-2</u>	
PROJECT / SITE: <u>Friedrichsohn Cooperage</u>		PROJECT No.: <u>080987</u>	
BOREHOLE No.: <u>GB-01</u>		SAMPLING DATE: <u>5/14/2014</u>	
SAMPLE No.: <u>101</u>		SAMPLED BY: <u>B. Pichert</u>	
DEPTH (ft): <u>2.0'-4.0'</u>		DATE TESTED: <u>6/4/2014</u>	
Flask #	4	5	
Mass of flask, g	116.23	106.29	
Mass of flask with sample, g	146.51	136.47	
Mass of flask with sample+water, g	384.49	374.36	
Temperature °C	23.6	23.6	
Mass of flask and water @ test temperature	365.33	355.34	
Specific Gravity at 20 °C	2.72	2.70	
Average Specific Gravity at 20 °C	2.71		
REMARKS: <u>Removal of Entrapped Air by Vacuuming</u>			
PERFORMED BY: <u>C. Adachi</u> DATE: <u>June 4, 2014</u>			
REVIEWD BY: <u>Michael Braverman</u> DATE: <u>June 4, 2014</u>			



CLIENT: <u>Conestoga Rovers & Associates</u>		LAB No.: <u>WLA 381-3</u>	
PROJECT / SITE: <u>Friedrichsohn Cooperage</u>		PROJECT No.: <u>080987</u>	
BOREHOLE No.: <u>GB-01</u>		SAMPLING DATE: <u>5/14/2014</u>	
SAMPLE No.: <u>102</u>		SAMPLED BY: <u>B. Pichert</u>	
DEPTH (ft): <u>4.0'-6.0'</u>		DATE TESTED: <u>6/5/2014</u>	
Flask #	1	2	3
Mass of flask, g	105.01	114.70	112.67
Mass of flask with sample, g	140.40	150.09	147.97
Mass of flask with sample+water, g	376.51	386.09	384.07
Temperature °C	23.5	23.4	23.4
Mass of flask and water @ test temperature	354.08	363.76	361.77
Specific Gravity at 20 °C	2.73	2.71	2.71
Average Specific Gravity at 20 °C	2.72		
REMARKS: <u>Removal of Entrapped Air by Vacuuming</u>			
PERFORMED BY: <u>C. Adachi</u> DATE: <u>June 5, 2014</u>			
REVIEWD BY: <u>Michael Braverman</u> DATE: <u>June 4, 2014</u>			



CLIENT: <u>Conestoga Rovers & Associates</u>		LAB No.: <u>WLA 381-4</u>	
PROJECT / SITE: <u>Friedrichsohn Cooperage</u>		PROJECT No.: <u>080987</u>	
BOREHOLE No.: <u>GB-02</u>		SAMPLING DATE: <u>5/15/2014</u>	
SAMPLE No.: <u>103</u>		SAMPLED BY: <u>B. Pichert</u>	
DEPTH (ft): <u>2.5'-4.0'</u>		DATE TESTED: <u>6/5/2014</u>	
Flask #	4		
Mass of flask, g	116.23		
Mass of flask with sample, g	151.10		
Mass of flask with sample+water, g	386.83		
Temperature °C	23.4		
Mass of flask and water @ test temperature	365.34		
Specific Gravity at 20 °C	2.60		
Average Specific Gravity at 20 °C	2.60		
REMARKS: <u>Removal of Entrapped Air by Vacuuming</u>			
<u>No replicate tests performed due to insufficient amount of sample</u>			
PERFORMED BY: <u>C. Adachi</u>		DATE: <u>June 5, 2014</u>	
REVIEWD BY: <u>Michael Braverman</u>		DATE: <u>June 4, 2014</u>	



CLIENT: <u>Conestoga Rovers & Associates</u>		LAB No.: <u>WLA 381-5</u>	
PROJECT / SITE: <u>Friedrichsohn Cooperage</u>		PROJECT No.: <u>080987</u>	
BOREHOLE No.: <u>GB-02</u>		SAMPLING DATE: <u>5/14/2014</u>	
SAMPLE No.: <u>104</u>		SAMPLED BY: <u>B. Pichert</u>	
DEPTH (ft): <u>4.5'-6.0'</u>		DATE TESTED: <u>6/6/2014</u>	
Flask #	1	2	3
Mass of flask, g	105.02	114.71	112.68
Mass of flask with sample, g	135.75	145.16	145.36
Mass of flask with sample+water, g	373.62	383.07	382.45
Temperature °C	23.6	23.4	23.6
Mass of flask and water @ test temperature	354.08	363.76	361.76
Specific Gravity at 20 °C	2.74	2.73	2.72
Average Specific Gravity at 20 °C	2.73		
REMARKS: <u>Removal of Entrapped Air by Vacuuming</u>			
PERFORMED BY: <u>C. Adachi</u> DATE: <u>June 6, 2014</u>			
REVIEWD BY: <u>Michael Braverman</u> DATE: <u>June 4, 2014</u>			



CLIENT: <u>Conestoga Rovers & Associates</u>		LAB No.: <u>WLA 381-6</u>	
PROJECT / SITE: <u>Friedrichsohn Cooperage</u>		PROJECT No.: <u>080987</u>	
BOREHOLE No.: <u>GB-01</u>		SAMPLING DATE: <u>5/15/2014</u>	
SAMPLE No.: <u>105</u>		SAMPLED BY: <u>B. Pichert</u>	
DEPTH (ft): <u>6.6'-8.0'</u>		DATE TESTED: <u>6/6/2014</u>	
Flask #	4	5	
Mass of flask, g	116.23	106.30	
Mass of flask with sample, g	146.43	136.03	
Mass of flask with sample+water, g	384.48	374.23	
Temperature °C	23.6	23.6	
Mass of flask and water @ test temperature	365.33	355.34	
Specific Gravity at 20 °C	2.73	2.74	
Average Specific Gravity at 20 °C	2.74		
REMARKS: <u>Removal of Entrapped Air by Vacuuming</u>			
PERFORMED BY: <u>C. Adachi</u> DATE: <u>June 6, 2014</u>			
REVIEWD BY: <u>Michael Braverman</u> DATE: <u>June 4, 2014</u>			



CLIENT: <u>Conestoga Rovers & Associates</u>		LAB No.: <u>WLA 381-7</u>	
PROJECT / SITE: <u>Friedrichsohn Cooperage</u>		PROJECT No.: <u>080987</u>	
BOREHOLE No.: <u>GB-01</u>		SAMPLING DATE: <u>5/14/2014</u>	
SAMPLE No.: <u>106</u>		SAMPLED BY: <u>B. Pichert</u>	
DEPTH (ft): <u>9.85'-11.2'</u>		DATE TESTED: <u>6/9/2014</u>	
Flask #	1	2	3
Mass of flask, g	105.01	114.70	112.68
Mass of flask with sample, g	162.23	171.11	167.65
Mass of flask with sample+water, g	390.76	399.93	397.06
Temperature °C	23.0	23.0	23.0
Mass of flask and water @ test temperature	354.11	363.78	361.80
Specific Gravity at 20 °C	2.78	2.78	2.79
Average Specific Gravity at 20 °C	2.78		
REMARKS: <u>Removal of Entrapped Air by Vacuuming</u>			
PERFORMED BY: <u>C. Adachi</u> DATE: <u>June 9, 2014</u>			
REVIEWD BY: <u>Michael Braverman</u> DATE: <u>June 4, 2014</u>			

CLIENT: <u>Conestoga Rovers & Associates</u>	LAB No.: <u>WLB 381</u>
PROJECT/SITE: <u>Friederichson Cooperage</u>	PROJECT No.: <u>080987</u>

Lab No.	Sample I.D.	Sample Depth	Sample Description	Moisture Content %	Bulk Density(wet) (kg/m ³)	Unit Weight (wet) (kN/m ³)	Bulk Density (dry) (kg/m ³)	Unit Weight (dry) (kN/m ³)
WLB 381-1	GB-01, Sample 100	0.5' - 2'	SILT-CLAY and SAND, trace gravel	11.4	2189.3	21.5	2019.6	19.8
WLB 381-2	GB-01, Sample101	2' - 4'	gravelly SAND, some silt, trace clay	12.1	2105.3	20.7	1877.4	18.4
WLB 381-3	GB-01, Sample 102	4' - 6'	CLAY-SILT and SAND, some gravel	21.4	2176.9	21.4	1792.9	17.6
WLB 381-4	GB-02, Sample 103	2.5' - 4'	gravelly SAND, some silt, trace clay	22.0	2085.1	20.5	1709.5	16.8
WLB 381-5	GB-02, Sample 104	4.5' - 6'	gravelly SAND, some silt, trace clay	20.4	2168.7	21.3	1801.2	17.7
WLB 381-6	GB-02, Sample 105	6.6' - 8'	SAND and GRAVEL, trace silt and clay	14.5	2115.8	20.8	1848.2	18.1
WLB 381-7	GB-01, Sample 106	9.85' - 11.2'	SAND, some silt and clay, some gravel	12.9	2139.6	21.0	1895.9	18.6

TESTED BY: <u>Hugh Arthur</u>	TEST DATE: <u>28-May-14</u>
APPROVED BY: <u>Abdul Hafeez Khan, P.Eng.</u>	APPROVED DATE: <u>2-Jun-14</u>

**DETERMINATION OF THE POINT LOAD STRENGTH INDEX OF ROCK
ASTM D5731**

CLIENT : <u>Conestoga Rovers and Associates</u>				PROJECT NO.: <u>080987</u>							
PROJECT : <u>Friedrichson Cooperage</u>				BOREHOLE NO. : <u>GB-01</u>							
				DEPTH: <u>25.8' - 27'</u>							
EQUIPMENT USED : <u>Point Load Device : Roctest PIL-7</u> <u>Vernier : Digital Caliper #1</u>											

Sample No.	Depth	Diameter (D), mm	Height (H), mm	Failure Load (L), MPa	Load (P), N	A = DH	D_e^2 , mm ²	Equivalent Diameter (D _e), mm	I _s , MPa	F	I _{s(50)} , MPa
GB-01	25.8' - 27'	63.64	28.38	2.6	320.56	2.24	28.18	5.3	11.38	0.3645	4.15
GB-01	25.8' - 27'	64.64	41.62	2.9	357.55	1.55	19.52	4.4	18.32	0.33559	6.15
GB-01	25.8' - 27'	63.58	34.03	4.74	584.40	1.87	23.48	4.8	24.89	0.34984	8.71
Average										6.33	

Type of Test : Axial ☒ Brazilian ☐

Remarks :

Formulas for calculations : $I_s \text{ (MPa)} = P/D_e^2$ $\text{Load (P)} = (L \times A_e) \times 1\,000\,000$ where $A_e = 9.49 \text{ E-4 m}^2$
 $D_e^2 = 4A/\pi$, for axial test Correction Factor (F)=(D_e/50)^{0.45}

Tested by: Hugh Arthur

Verified by:

Date : May 28, 2014

Date :

**DETERMINATION OF THE POINT LOAD STRENGTH INDEX OF ROCK
ASTM D5731**

CLIENT : <u>Conestoga Rovers and Associates</u>						PROJECT NO.: <u>080987</u>					
PROJECT : <u>Friedrichson Cooperage</u>						BOREHOLE NO. : <u>GB-02</u>					
						DEPTH: <u>29.7' - 31'</u>					
EQUIPMENT USED : <u>Point Load Device : Roctest PIL-7</u> <u>Vernier : Digital Caliper #1</u>											

Sample No.	Depth	Diameter (D), mm	Height (H), mm	Failure Load (L), MPa	Load (P), N	A = DH	D_e^2 , mm ²	Equivalent Diameter (D _e), mm	I _s , MPa	F	I _{s(50)} , MPa
GB-02	16.5' - 17.7'	68.41	56.41	4.12	507.96	1.21	15.24	3.9	33.33	0.31742	10.58
GB-02	16.5' - 17.7'	63.77	29.93	1.28	157.81	2.13	26.77	5.2	5.89	0.36033	2.12
GB-02	16.5' - 17.7'	69.84	27.4	1.36	167.68	2.55	32.03	5.7	5.23	0.37516	1.96
GB-02	16.5' - 17.7'	64.86	59.83	6.48	798.93	1.08	13.62	3.7	58.65	0.30951	18.15
									Average		8.20

Type of Test : Axial ☒ Brazilian ☐

Remarks : _____

Formulas for calculations : $I_s \text{ (MPa)} = P/D_e^2$ Load (P) = (L x A_e) x 1 000 000 where A_e = 9.49 E-4 m²
 $D_e^2 = 4A/\pi$, for axial test Correction Factor (F)=(D_e/50)^{0.45}

Tested by: Hugh Arthur

Verified by: _____

Date : May 28, 2014

Date : _____

**DETERMINATION OF THE POINT LOAD STRENGTH INDEX OF ROCK
ASTM D5731**

CLIENT : <u>Conestoga Rovers and Associates</u>					PROJECT NO.: <u>080987</u>						
PROJECT : <u>Friedrichson Cooperage</u>					BOREHOLE NO. : <u>GB-02</u>						
					DEPTH: <u>29.7' - 31.0'</u>						
EQUIPMENT USED : <u>Point Load Device :</u>					<u>Vernier :</u>						

Sample No.	Depth	Diameter (D), mm	Height (H), mm	Failure Load (L), MPa	Load (P), N	A = DH	D_e^2 , mm ²	Equivalent Diameter (D _e), mm	I _s , MPa	F	I _{s(50)} , MPa
GB-02	29.7' - 31.0'	66.9	44.96	7.2	887.70	1.49	18.70	4.3	47.47	0.33237	15.78
GB-02	29.7' - 31.0'	63.81	76.56	7.94	978.94	0.83	10.47	3.2	93.47	0.29173	27.27
GB-02	29.7' - 31.0'	63.6	35.55	4.06	500.57	1.79	22.48	4.7	22.27	0.34644	7.71
GB-02	29.7' - 31.0'	66.71	23.67	2.42	298.37	2.82	35.42	6.0	8.42	0.38374	3.23
GB-02	29.7' - 31.0'	58.88	61.56	4.18	515.36	0.96	12.02	3.5	42.88	0.30091	12.90
									Average		13.38

Type of Test : Axial ☒ Brazilian ☐

Remarks : _____

Formulas for calculations : $I_s \text{ (MPa)} = P/D_e^2$ Load (P) = (L x A_e) x 1 000 000 where A_e = 9.49 E-4 m²
 $D_e^2 = 4A/\pi$, for axial test Correction Factor (F)=(D_e/50)^{0.45}

Tested by: Hugh Arthur

Verified by: _____

Date : May 28, 2014

Date : _____

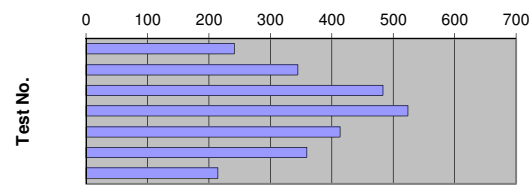
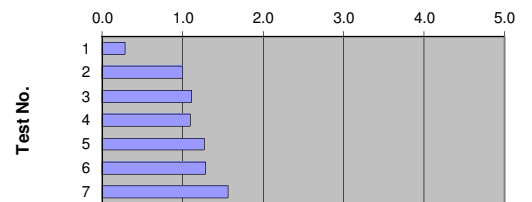
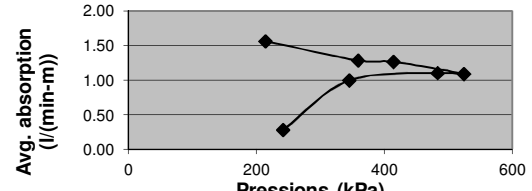
Appendix E

Pressure Injection Test Results

PERMEABILITY TESTING IN ROCK

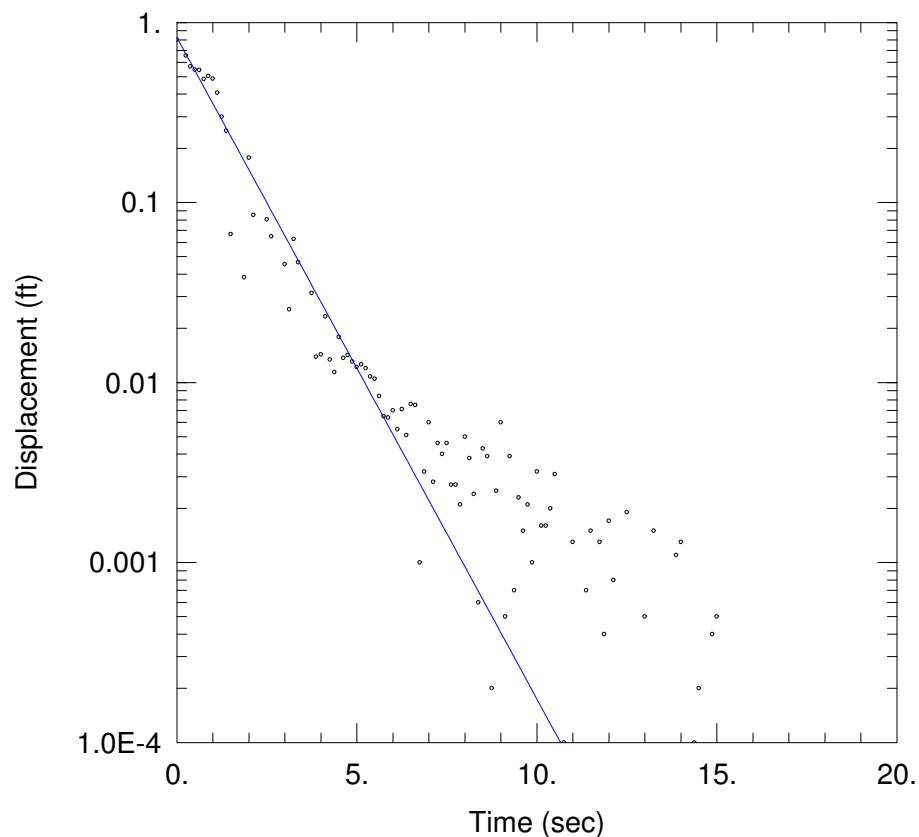
Testing depth		Depth to rock = 9.2 ft		Plate no: 1			
Z top (H) = 12 ft		Groundwater table:		Project no: 80987			
Z bottom = 27 ft		depth (hw) = 7.6 ft		Test no: GB-01			
Water Pressure Test				Graphics			
Drill hole size: HQ							
Borehole diameter: D= 2.54 inches							
Packer type: SINGLE							
Drill rod diameter: d= 3.0/3.5 inches							
Test length: L= 15.0 ft							
Height of gauge above ground: 1.0 ft							
Gravity head: H0 = h1 + hw = 8.6 ft							
Test no	Pressure P (kPa)	Time t (min)	Reading B (gallons)	Flow Q (gal/min)	Absorption A (gal/min-ft)	Pressure at 2 min (kPa)	Lugeon Value (Lu)
1	241 (35 psi)	0	180.0	0.0	0.00		0.8
		30	188.0	0.3	0.02		
		60	195.0	0.2	0.02		
		90	202.0	0.2	0.02		
		120	208.5	0.2	0.01		
2	345 (50 psi)	0	220.0	0.0	0.00		1.1
		30	235.0	0.5	0.03		
		60	249.0	0.5	0.03		
		90	262.0	0.4	0.03		
		120	276.0	0.5	0.03		
3	476 (69 psi)	0	340.0	0.0	0.00		1.2
		30	360.0	0.7	0.04		
		60	380.0	0.7	0.04		
		90	400.0	0.7	0.04		
		120	421.0	0.7	0.05		
4	614 (89 psi)	0	440.0	0.0	0.00		1.0
		30	469.0	1.0	0.06		
		60	488.0	0.6	0.04		
		90	512.0	0.8	0.05		
		120	535.0	0.8	0.05		
5	483 (70 psi)	0	555.0	0.0	0.00		1.2
		30	576.0	0.7	0.05		
		60	597.0	0.7	0.05		
		90	618.0	0.7	0.05		
		120	640.0	0.7	0.05		
6	345 (50 psi)	0	645.0	0.0	0.00		1.4
		30	662.0	0.6	0.04		
		60	680.0	0.6	0.04		
		90	697.0	0.6	0.04		
		120	714.0	0.6	0.04		
7	241 (35 psi)	0	720.0	0.0	0.00		1.5
		30	735.0	0.5	0.03		
		60	748.0	0.4	0.03		
		90	761.0	0.4	0.03		
		120	774.0	0.4	0.03		
Tests and calculations carried out by : Jeff Leader, C.Tech				Verified by :			
				Calculations Maximum testing pressure: Pmax = 25H (kPa) kPa in psi, multiplied by 0.14 psi in kPa, multiplied by 6.9 Q = del B / del t A = Q / Zbottom - Ztop Lu = (avg. A x 1000) / P Lugeon Value used for calc Lu = 1 Corresponding pressure P = 614 Equivalent permeability coefficient k: Equation: $k = q / (2 \times \pi \times L \times h) \times \log_e (L / r)$ K = 1.218E-05 CM/S			

PERMEABILITY TESTING IN ROCK

Testing depth		Depth to rock = 9.2 ft		Plate no: 2				
Z top (H) = 16 ft		Groundwater table: depth (hw) = 7.6 ft		Project no: 80987				
Z bottom = 31 ft				Test no: GB-02				
Water Pressure Test								
Drill hole size: HQ								
Borehole diameter: D= 2.54 inches								
Packer type: SINGLE								
Drill rod diameter: d= 3.0/3.5 inches								
Test length: L= 15.0 ft								
Height of gauge above ground: 1.0 ft								
Gravity head: H0 = h1 + hw = 8.6 ft								
Test no	Pressure P (kPa)	Time t (min)	Reading B (gallons)	Flow Q (gal/min)	Absorption A (gal/min-ft)	Pressure at 2 min (kPa)	Lugeon Value (Lu)	Calculations Maximum testing pressure: Pmax = 25H (kPa) kPa in psi, multiplied by 0.14 psi in kPa, multiplied by 6.9 Q = del B / del t A = Q / Zbottom - Ztop Lu = (avg. A x 1000) / P Lugeon Value used for calc Lu = 1 Corresponding pressure P = 524 Equivalent permeability coefficient k: Equation: k = q / (2 x Pi x L x h) x Loge (L / r) K = 1.336E-05 cm/s
1	241 (35 psi)	0	770.0	0.0	0.00		0.3	
		30	773.0	0.1	0.01			
		60	776.0	0.1	0.01			
		90	777.5	0.1	0.00			
		120	780.0	0.1	0.01			
		150	783.0	0.1	0.01			
2	345 (50 psi)	0	788.0	0.0	0.00		1.0	
		30	812.0	0.8	0.05			
		60	825.0	0.4	0.03			
		90	836.0	0.4	0.02			
		120	849.0	0.4	0.03			
		150	862.0	0.4	0.03			
3	483 (70 psi)	0	880.0	0.0	0.00		1.1	
		30	898.0	0.6	0.04			
		60	917.0	0.6	0.04			
		90	936.0	0.6	0.04			
		120	955.0	0.6	0.04			
		150	975.5	0.7	0.05			
4	524 (76 psi)	0	1070.0	0.0	0.00		1.1	
		30	1091.0	0.7	0.05			
		60	1111.0	0.7	0.04			
		90	1132.0	0.7	0.05			
		120	1152.0	0.7	0.04			
		150	1174.0	0.7	0.05			
5	414 (60 psi)	0	1210.0	0.0	0.00		1.3	
		30	1229.0	0.6	0.04			
		60	1247.0	0.6	0.04			
		90	1265.0	0.6	0.04			
		120	1285.0	0.7	0.04			
		150	1305.0	0.7	0.04			
6	359 (52 psi)	0	1340.0	0.0	0.00		1.3	
		30	1367.0	0.9	0.06			
		60	1386.0	0.6	0.04			
		90	1402.0	0.5	0.04			
		120	1417.0	0.5	0.03			
		150	1434.0	0.6	0.04			
7	214 (31 psi)	0	1450.0	0.0	0.00		1.6	
		30	1463.0	0.4	0.03			
		60	1475.0	0.4	0.03			
		90	1486.0	0.4	0.02			
		120	1498.0	0.4	0.03			
		150	1511.5	0.5	0.03			
Tests and calculations carr Jeff Leader, C.Tech						Verified by :		

Appendix F

Slug Test Results



MW-01S FALLING HEAD TEST 1

Data Set: I:\...\MW1S FH1.aqt

Date: 07/18/14

Time: 10:32:54

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-01S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.02739 cm/sec

y0 = 0.8257 ft

AQUIFER DATA

Saturated Thickness: 15.44 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-01S)

Initial Displacement: 0.8 ft

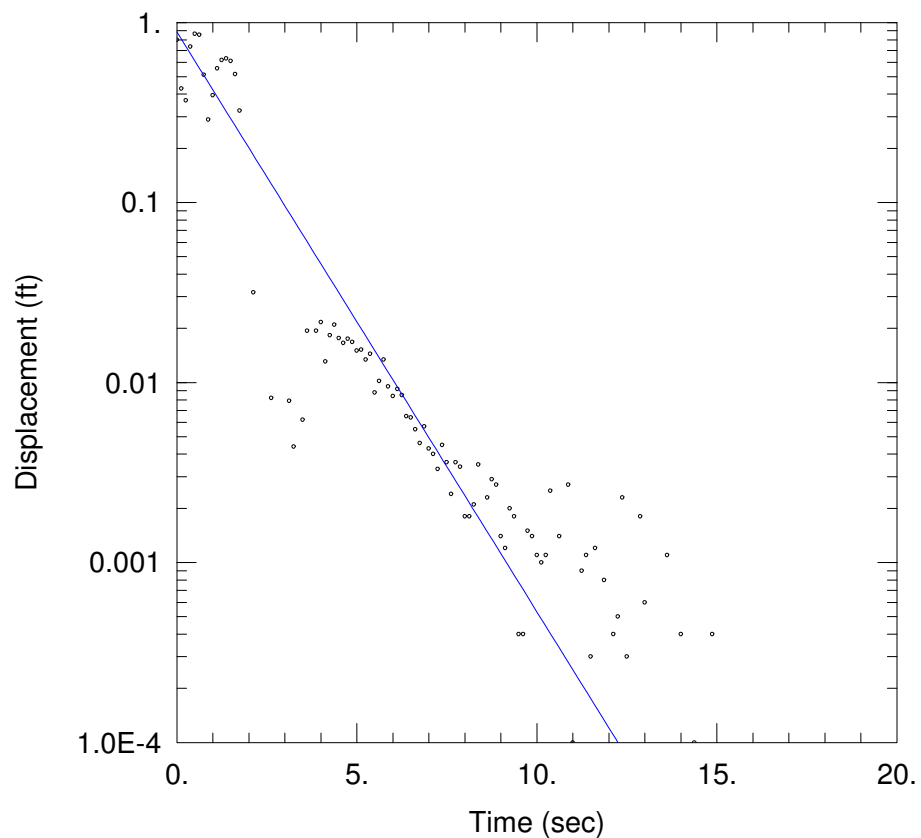
Total Well Penetration Depth: 15.44 ft

Casing Radius: 0.083 ft

Static Water Column Height: 15.44 ft

Screen Length: 10. ft

Well Radius: 0.354 ft



MW-01S FALLING HEAD TEST 2

Data Set: I:\...\MW1S FH2.aqt

Date: 07/18/14

Time: 10:32:37

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-01S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.024 cm/sec

y0 = 0.8856 ft

AQUIFER DATA

Saturated Thickness: 15.44 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-01S)

Initial Displacement: 0.8 ft

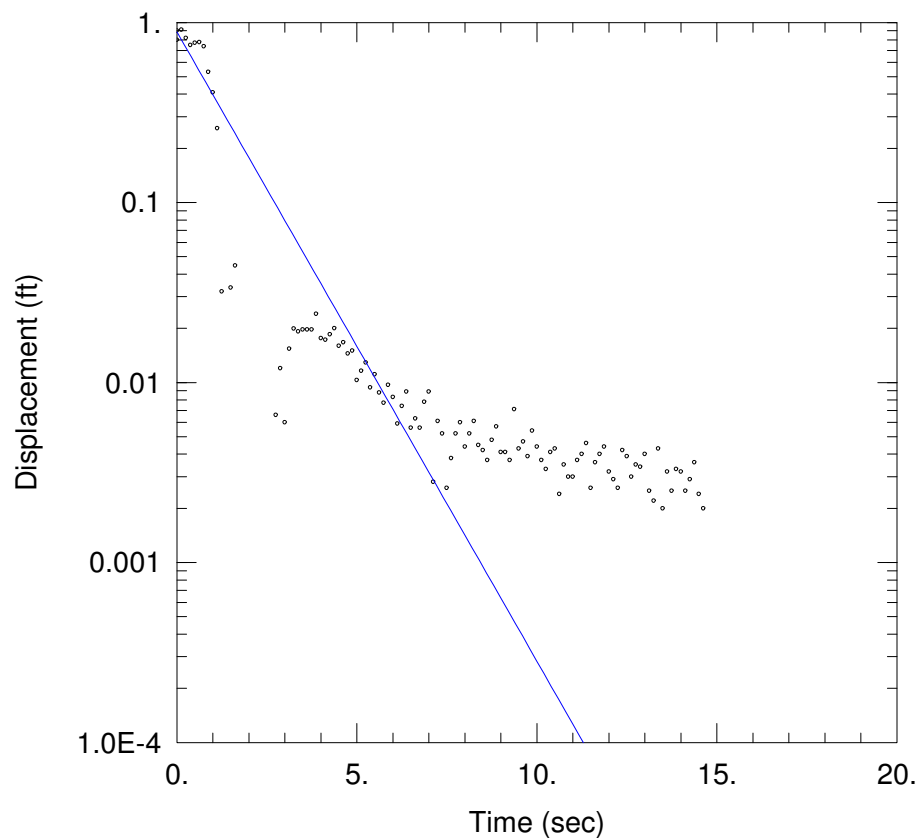
Total Well Penetration Depth: 15.44 ft

Casing Radius: 0.083 ft

Static Water Column Height: 15.44 ft

Screen Length: 10. ft

Well Radius: 0.354 ft



MW-01S FALLING HEAD TEST 3

Data Set: I:\...\MW1S FH3.aqt

Date: 07/18/14

Time: 10:32:17

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-01S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.02606 cm/sec

y0 = 0.8873 ft

AQUIFER DATA

Saturated Thickness: 15.44 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-01S)

Initial Displacement: 0.8 ft

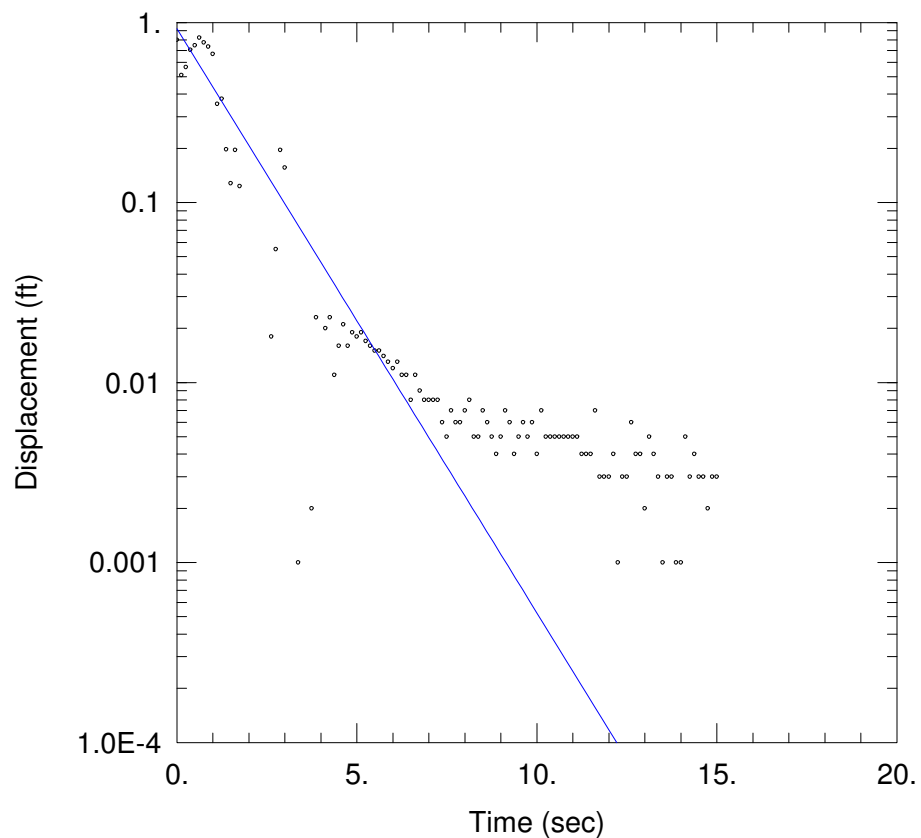
Total Well Penetration Depth: 15.44 ft

Casing Radius: 0.083 ft

Static Water Column Height: 15.44 ft

Screen Length: 10. ft

Well Radius: 0.354 ft



MW-01S FALLING HEAD TEST 4

Data Set: I:\...\MW1S FH4.aqt

Date: 07/18/14

Time: 10:31:56

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-01S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.02419 cm/sec

y0 = 0.9238 ft

AQUIFER DATA

Saturated Thickness: 15.44 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-01S)

Initial Displacement: 0.8 ft

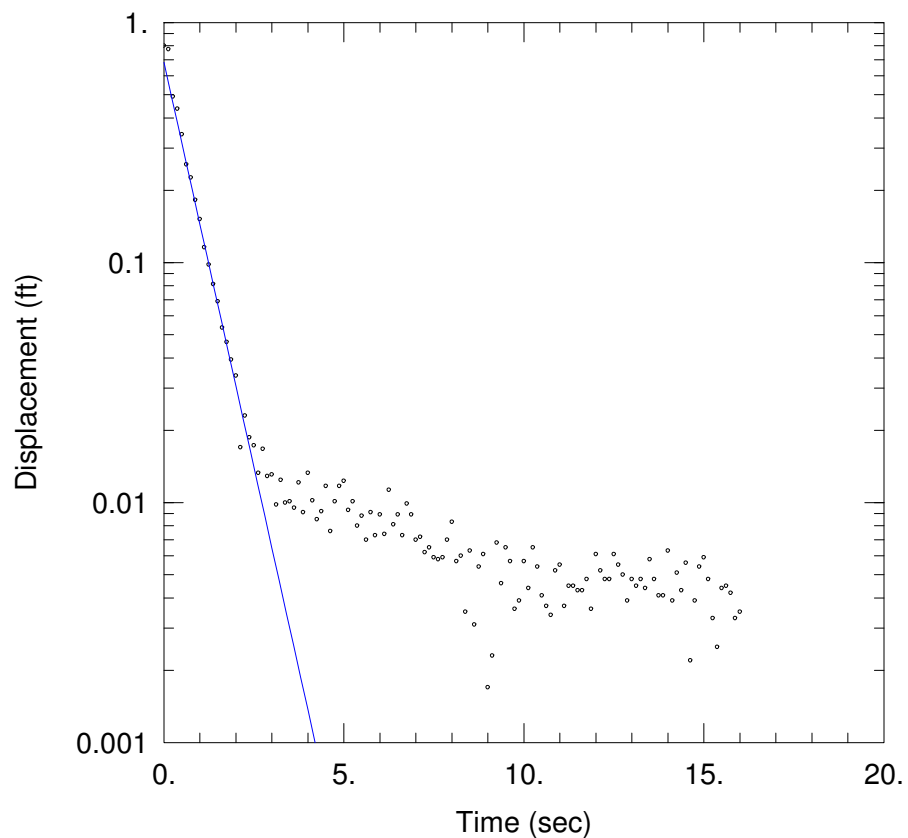
Total Well Penetration Depth: 15.44 ft

Casing Radius: 0.083 ft

Static Water Column Height: 15.44 ft

Screen Length: 10. ft

Well Radius: 0.354 ft



MW-01S RISING HEAD TEST 1

Data Set: I:\...\MW1S RH1.aqt

Date: 07/18/14

Time: 10:31:37

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-01S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.05028 cm/sec

y0 = 0.6825 ft

AQUIFER DATA

Saturated Thickness: 15.44 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-01S)

Initial Displacement: 0.8 ft

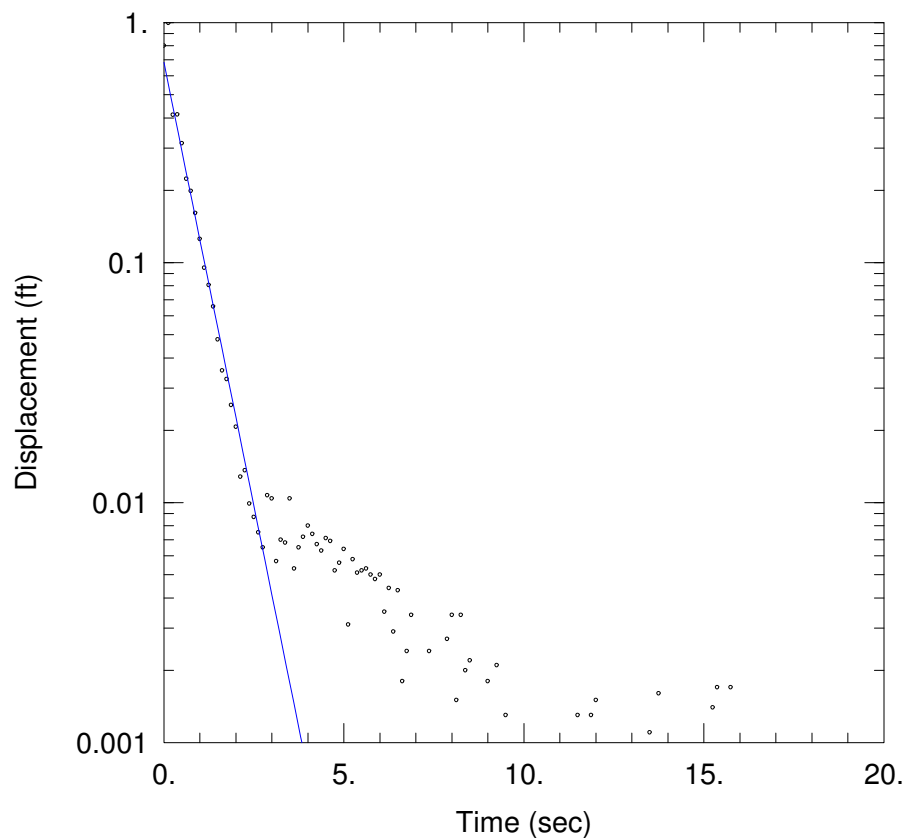
Total Well Penetration Depth: 15.44 ft

Casing Radius: 0.083 ft

Static Water Column Height: 15.44 ft

Screen Length: 10. ft

Well Radius: 0.354 ft



MW-01S RISING HEAD TEST 2

Data Set: I:\...\MW1S RH2.aqt

Date: 07/18/14

Time: 10:31:12

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-01S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

$K = 0.05513$ cm/sec

$y_0 = 0.6825$ ft

AQUIFER DATA

Saturated Thickness: 15.44 ft

Anisotropy Ratio (K_z/K_r): 0.5

WELL DATA (MW-01S)

Initial Displacement: 0.8 ft

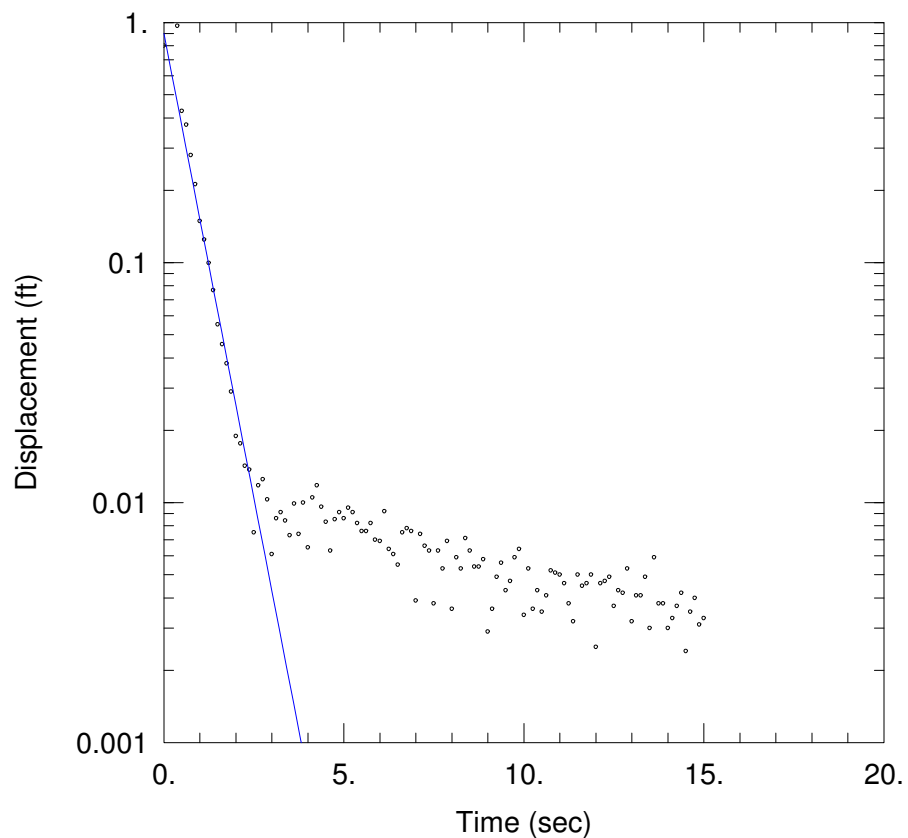
Total Well Penetration Depth: 15.44 ft

Casing Radius: 0.083 ft

Static Water Column Height: 15.44 ft

Screen Length: 10. ft

Well Radius: 0.354 ft



MW-01S RISING HEAD TEST 3

Data Set: I:\...\MW1S RH3.aqt

Date: 07/18/14

Time: 10:39:00

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-01S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.05773 cm/sec

y0 = 0.8997 ft

AQUIFER DATA

Saturated Thickness: 15.44 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-01S)

Initial Displacement: 0.8 ft

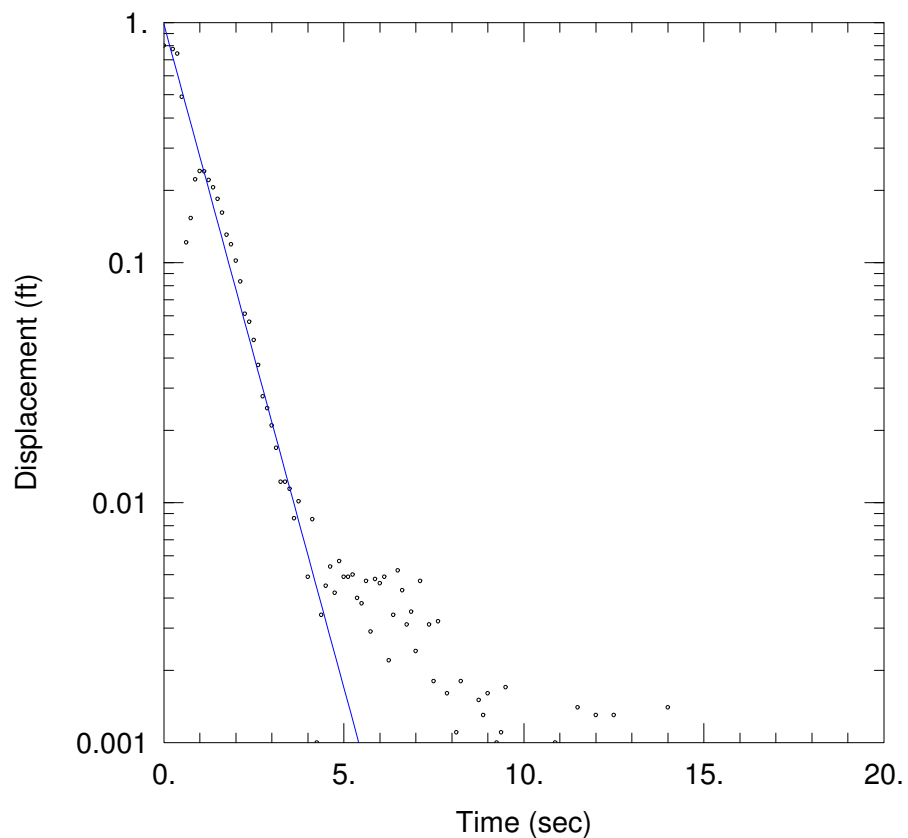
Total Well Penetration Depth: 15.44 ft

Casing Radius: 0.083 ft

Static Water Column Height: 15.44 ft

Screen Length: 10. ft

Well Radius: 0.354 ft



MW-01S RISING HEAD TEST 4

Data Set: I:\...\MW1S RH4.aqt

Date: 07/18/14

Time: 10:33:14

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-01S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.04122 cm/sec

y0 = 0.9841 ft

AQUIFER DATA

Saturated Thickness: 15.44 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-01S)

Initial Displacement: 0.8 ft

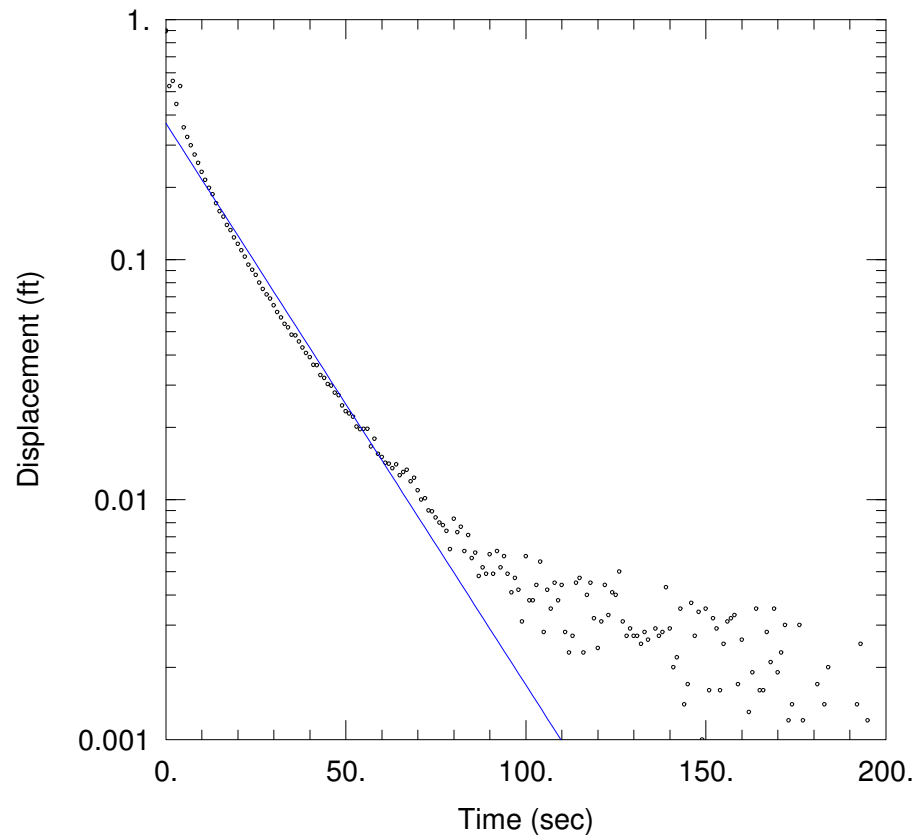
Total Well Penetration Depth: 15.44 ft

Casing Radius: 0.083 ft

Static Water Column Height: 15.44 ft

Screen Length: 10. ft

Well Radius: 0.354 ft



MW-06S FALLING HEAD TEST 1

Data Set: I:\...\MW6S FH1.aqt

Date: 07/18/14

Time: 10:36:26

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-06S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

$K = 0.00523$ cm/sec

$y_0 = 0.3691$ ft

AQUIFER DATA

Saturated Thickness: 16.37 ft

Anisotropy Ratio (K_z/K_r): 0.5

WELL DATA (MW-06S)

Initial Displacement: 0.9 ft

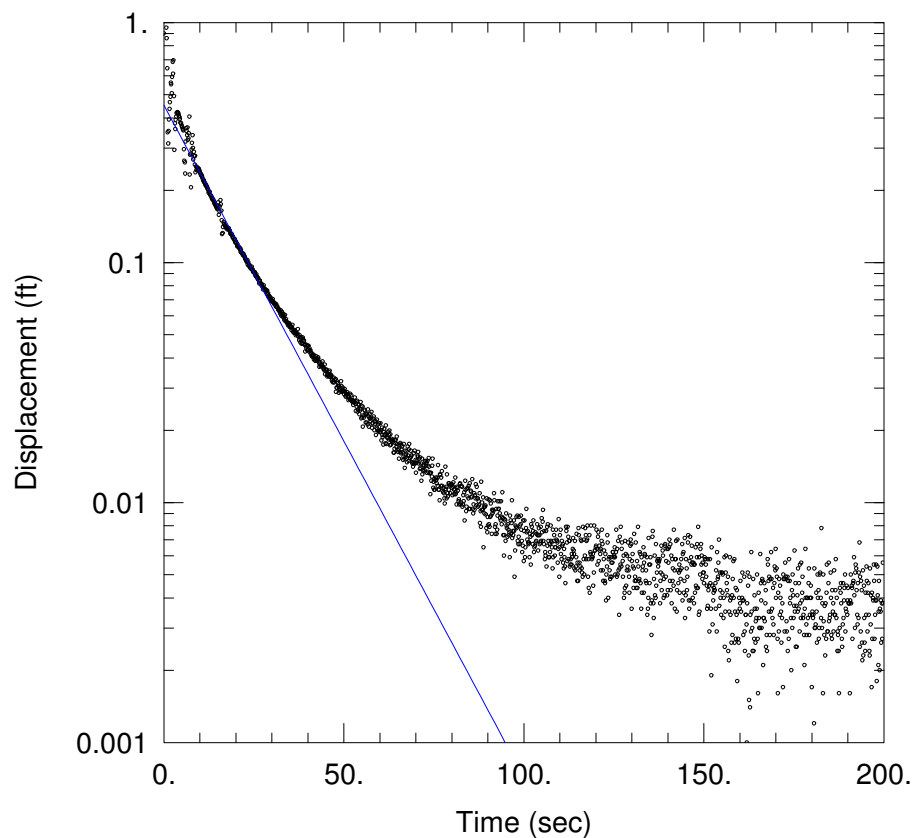
Total Well Penetration Depth: 16.37 ft

Casing Radius: 0.083 ft

Static Water Column Height: 16.37 ft

Screen Length: 2.5 ft

Well Radius: 0.354 ft



MW-06S FALLING HEAD TEST 2

Data Set: I:\...\MW6S FH2.aqt

Date: 07/18/14

Time: 10:36:02

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-06S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 0.006261 cm/sec

y0 = 0.4528 ft

AQUIFER DATA

Saturated Thickness: 16.37 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-06S)

Initial Displacement: 0.9 ft

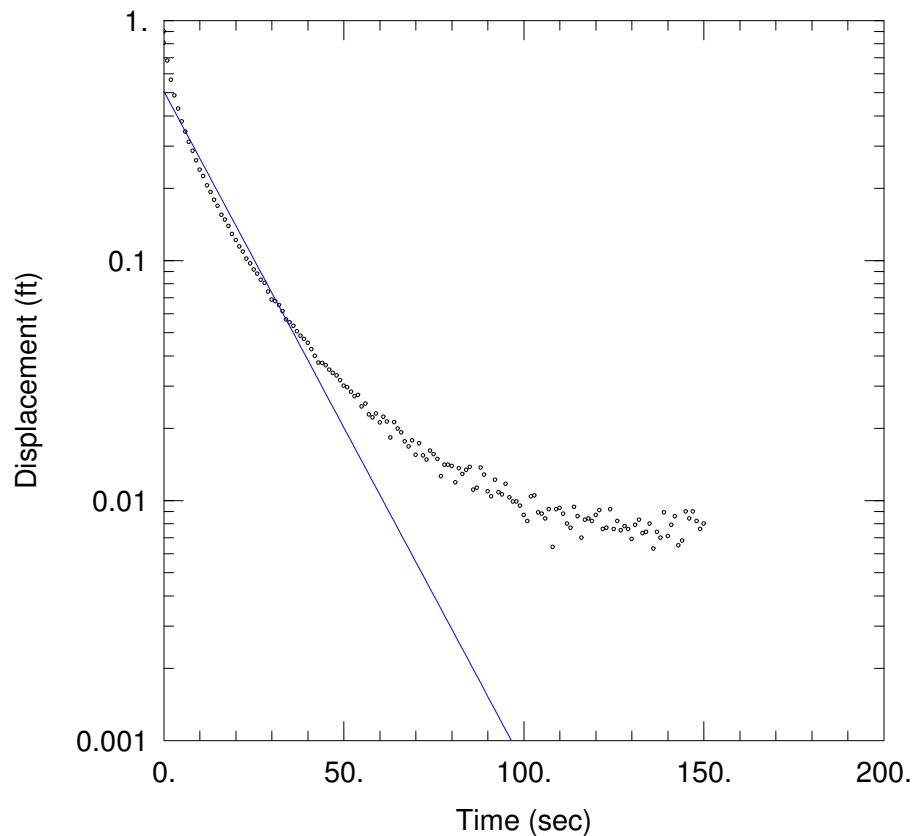
Total Well Penetration Depth: 16.37 ft

Casing Radius: 0.083 ft

Static Water Column Height: 16.37 ft

Screen Length: 2.5 ft

Well Radius: 0.354 ft



MW-06S RISING HEAD TEST 1

Data Set: I:\...\MW6S RH1.aqt

Date: 07/18/14

Time: 10:35:44

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-06S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 0.006264 cm/sec

y0 = 0.5073 ft

AQUIFER DATA

Saturated Thickness: 16.37 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-06S)

Initial Displacement: 0.9 ft

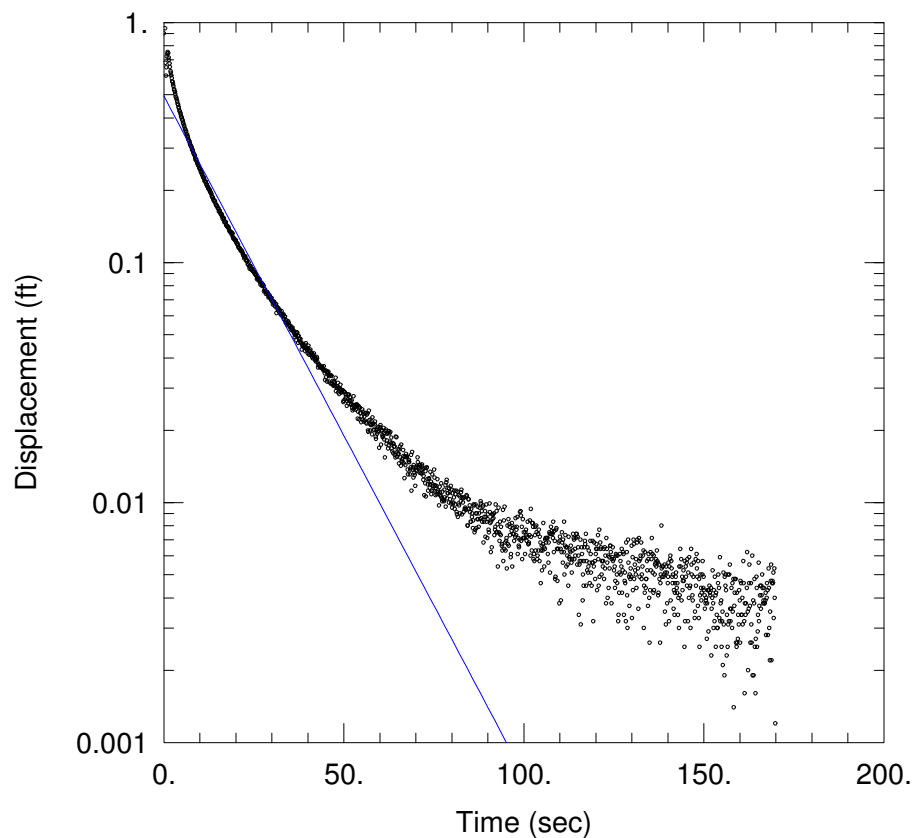
Total Well Penetration Depth: 16.37 ft

Casing Radius: 0.083 ft

Static Water Column Height: 16.37 ft

Screen Length: 2.5 ft

Well Radius: 0.354 ft



MW-06S RISING HEAD TEST 1

Data Set: I:\...\MW6S RH2.aqt

Date: 07/18/14

Time: 10:40:08

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-06S

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 0.006325 cm/sec

y0 = 0.494 ft

AQUIFER DATA

Saturated Thickness: 16.37 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-06S)

Initial Displacement: 0.9 ft

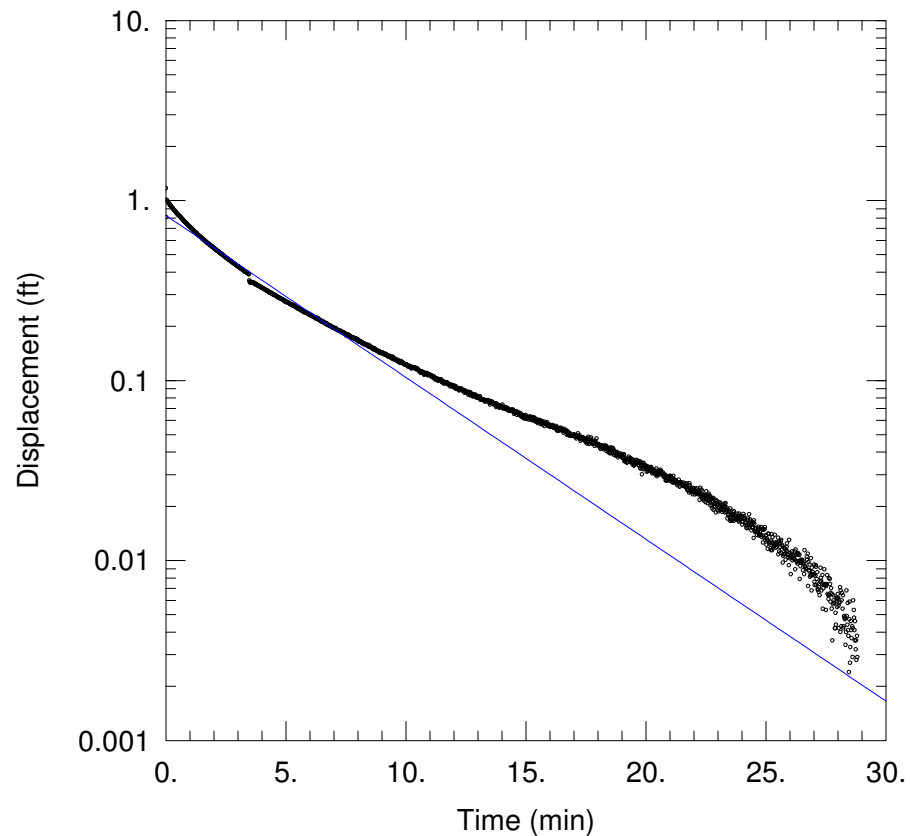
Total Well Penetration Depth: 16.37 ft

Casing Radius: 0.083 ft

Static Water Column Height: 16.37 ft

Screen Length: 2.5 ft

Well Radius: 0.354 ft



MW-08 FALLING HEAD TEST 1

Data Set: I:\...\MW8 FH1.aqt

Date: 07/18/14

Time: 10:35:03

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-08

Test Date: May 8, 2014

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 0.0004566$ cm/sec

$y_0 = 0.8257$ ft

AQUIFER DATA

Saturated Thickness: 4. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (MW-08)

Initial Displacement: 1.17 ft

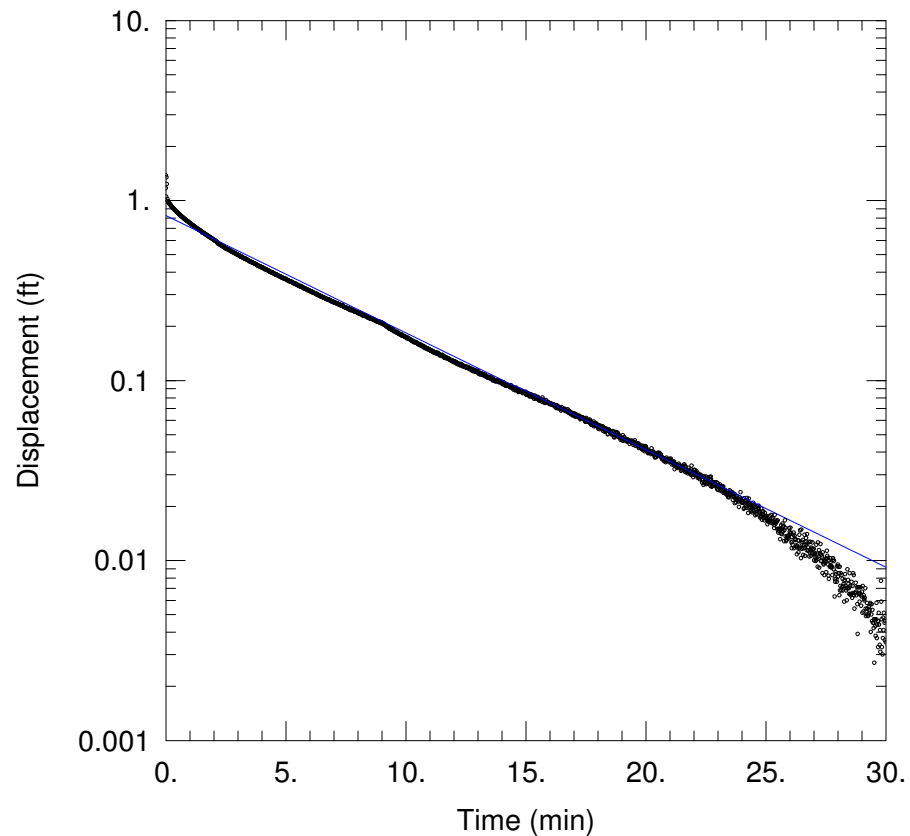
Total Well Penetration Depth: 4. ft

Casing Radius: 0.083 ft

Static Water Column Height: 7.38 ft

Screen Length: 2. ft

Well Radius: 0.354 ft



MW-08 RISING HEAD TEST 1

Data Set: I:\...\MW8 RH1.aqt

Date: 07/18/14

Time: 10:34:46

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-08

Test Date: May 8, 2014

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.0003308 cm/sec

y0 = 0.8257 ft

AQUIFER DATA

Saturated Thickness: 4. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW-08)

Initial Displacement: 1.17 ft

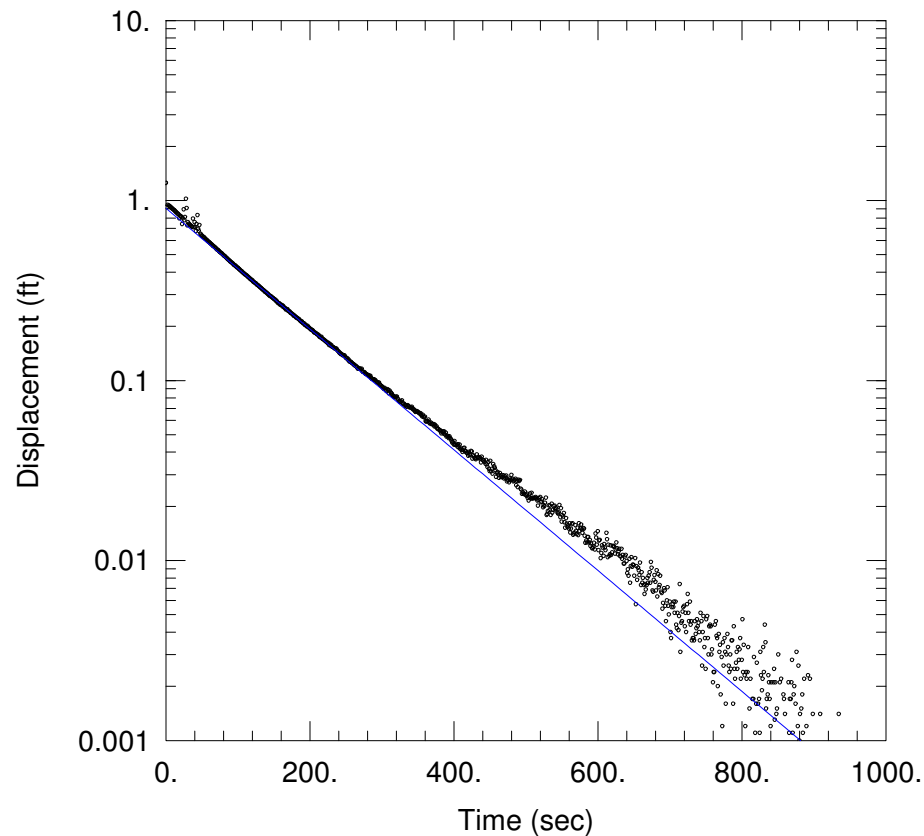
Total Well Penetration Depth: 4. ft

Casing Radius: 0.083 ft

Static Water Column Height: 7.38 ft

Screen Length: 2. ft

Well Radius: 0.354 ft



MW-10 FALLING HEAD TEST 1

Data Set: I:\...\MW10 FH1.aqt

Date: 07/18/14

Time: 10:33:50

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-10

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.0008663 cm/sec

y0 = 0.9054 ft

AQUIFER DATA

Saturated Thickness: 7.5 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-10)

Initial Displacement: 1.25 ft

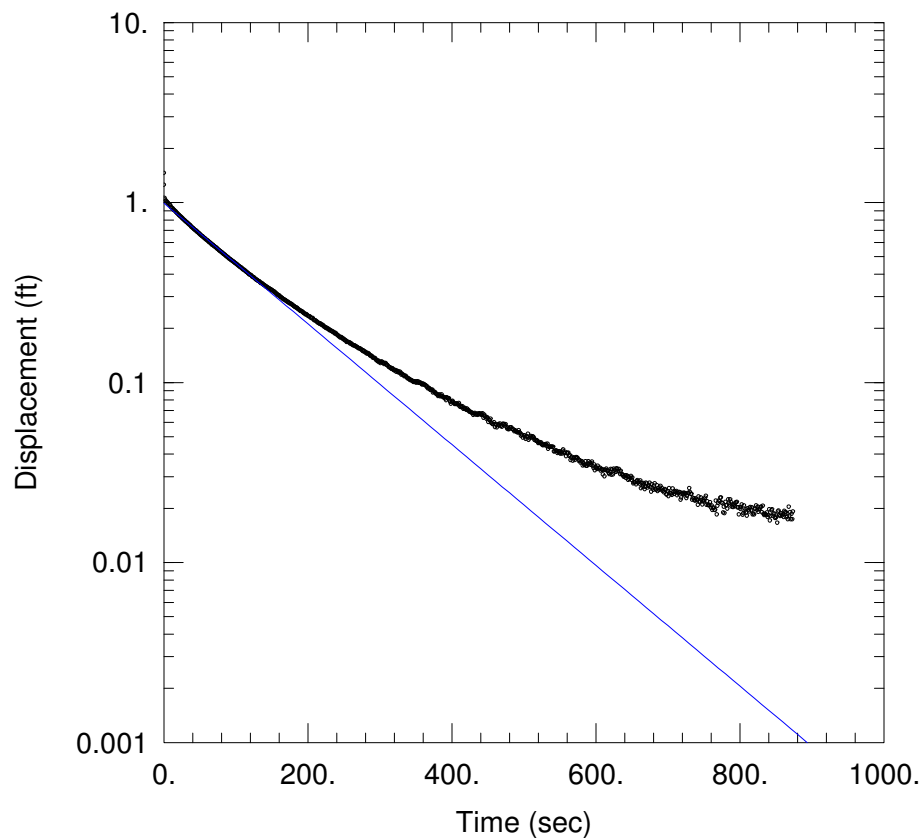
Total Well Penetration Depth: 7.5 ft

Casing Radius: 0.083 ft

Static Water Column Height: 9.18 ft

Screen Length: 2 ft

Well Radius: 0.354 ft



MW-10 RISING HEAD TEST 1

Data Set: I:\...\MW10 RH1.aqt

Date: 07/18/14

Time: 10:37:23

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-10

Test Date: May 9, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

$K = 0.0008663$ cm/sec

$y_0 = 0.9928$ ft

AQUIFER DATA

Saturated Thickness: 7.5 ft

Anisotropy Ratio (K_z/K_r): 0.5

WELL DATA (MW-10)

Initial Displacement: 1.25 ft

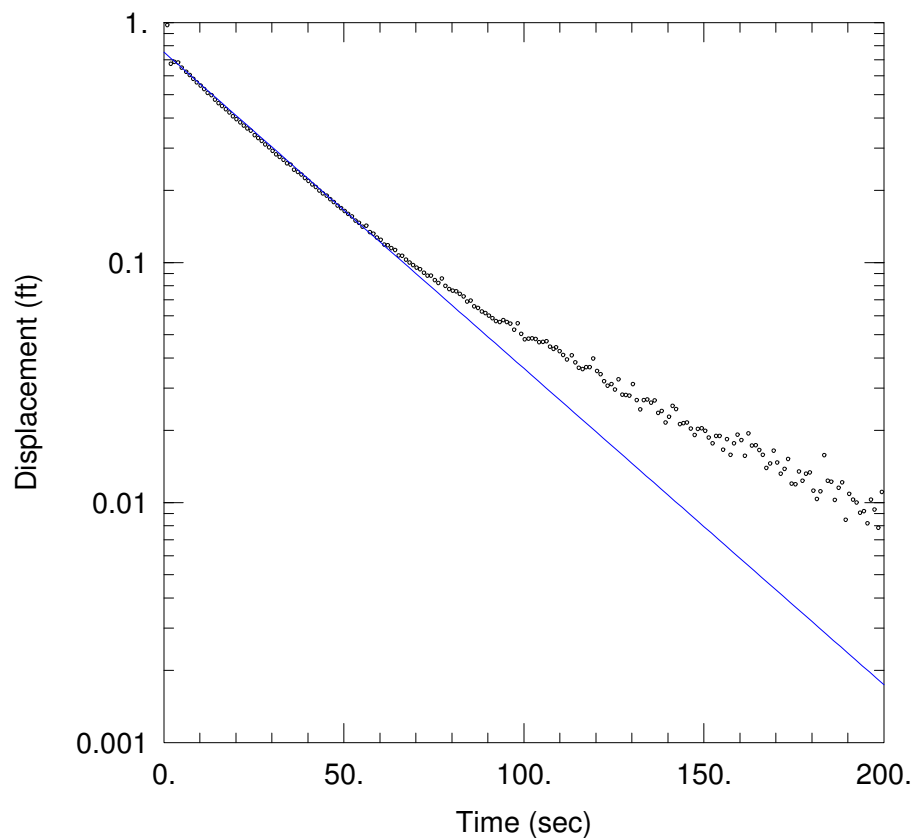
Total Well Penetration Depth: 7.5 ft

Casing Radius: 0.083 ft

Static Water Column Height: 9.18 ft

Screen Length: 2 ft

Well Radius: 0.354 ft



MW-15 FALLING HEAD TEST 1

Data Set: I:\...\MW15 FH1.aqt

Date: 07/18/14

Time: 14:05:09

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-15

Test Date: June 16, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 0.00235 cm/sec

y0 = 0.7529 ft

AQUIFER DATA

Saturated Thickness: 7.43 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-06S)

Initial Displacement: 1.75 ft

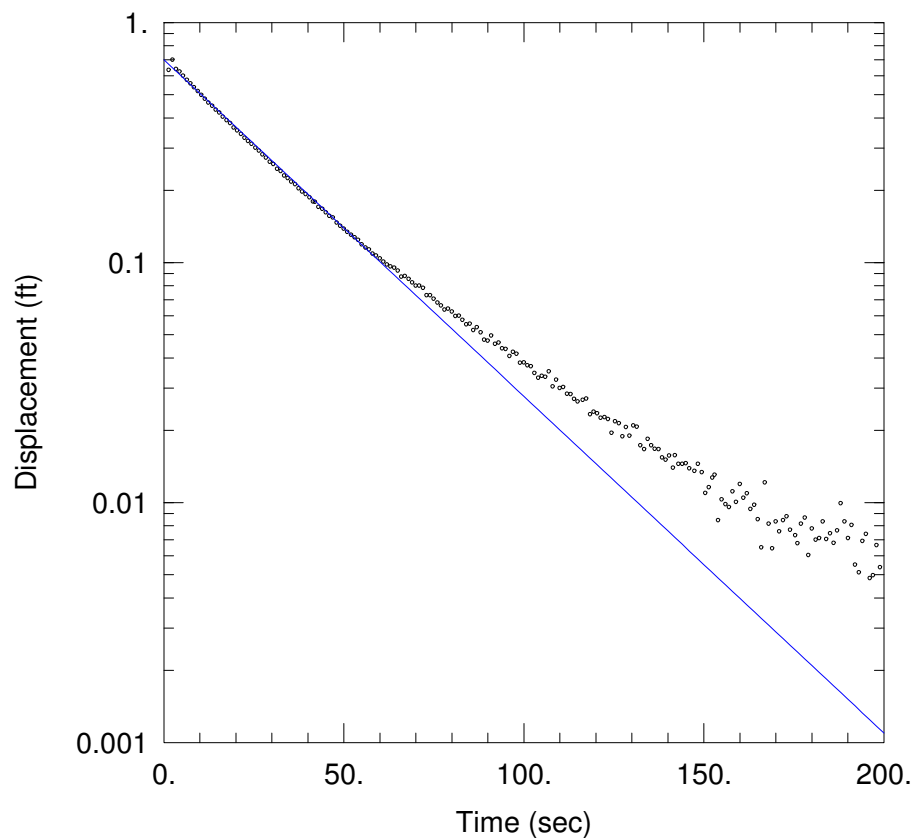
Total Well Penetration Depth: 8.2 ft

Casing Radius: 0.083 ft

Static Water Column Height: 7.43 ft

Screen Length: 5 ft

Well Radius: 0.354 ft



MW-15 FALLING HEAD TEST 2

Data Set: I:\...\MW15 FH2.aqt

Date: 07/18/14

Time: 14:04:58

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-15

Test Date: June 16, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 0.002501 cm/sec

y0 = 0.7003 ft

AQUIFER DATA

Saturated Thickness: 7.43 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-06S)

Initial Displacement: 1.75 ft

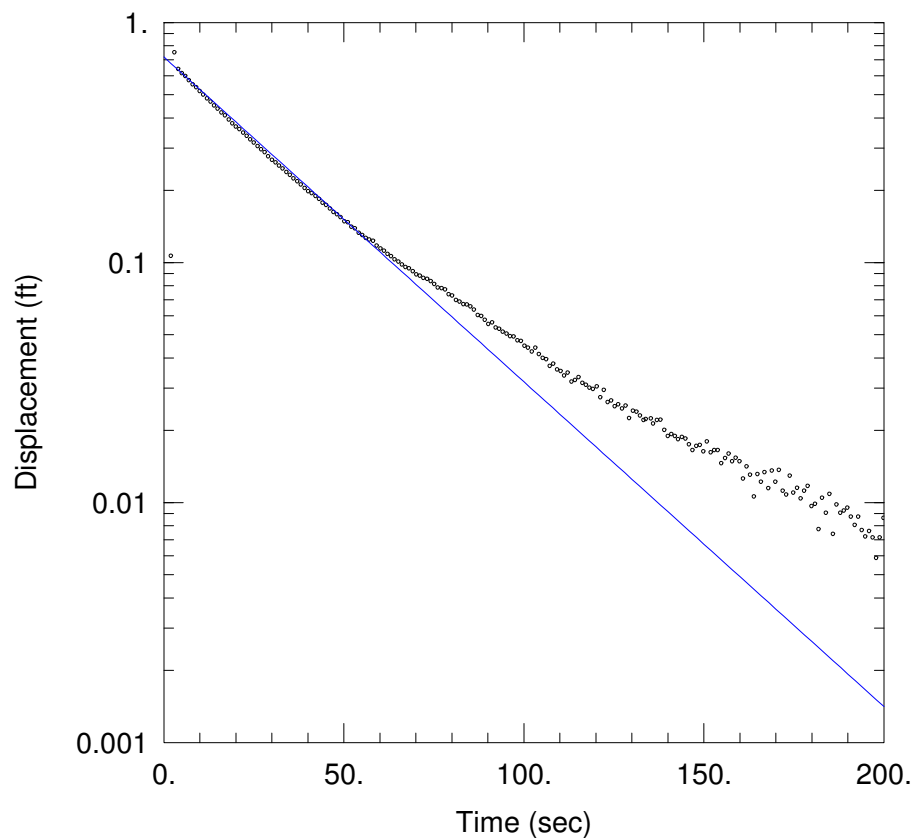
Total Well Penetration Depth: 8.2 ft

Casing Radius: 0.083 ft

Static Water Column Height: 7.43 ft

Screen Length: 5 ft

Well Radius: 0.354 ft



MW-15 FALLING HEAD TEST 3

Data Set: I:\...\MW15 FH3.aqt

Date: 07/18/14

Time: 14:04:45

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-15

Test Date: June 16, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 0.002413 cm/sec

y0 = 0.7181 ft

AQUIFER DATA

Saturated Thickness: 7.43 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-06S)

Initial Displacement: 1.75 ft

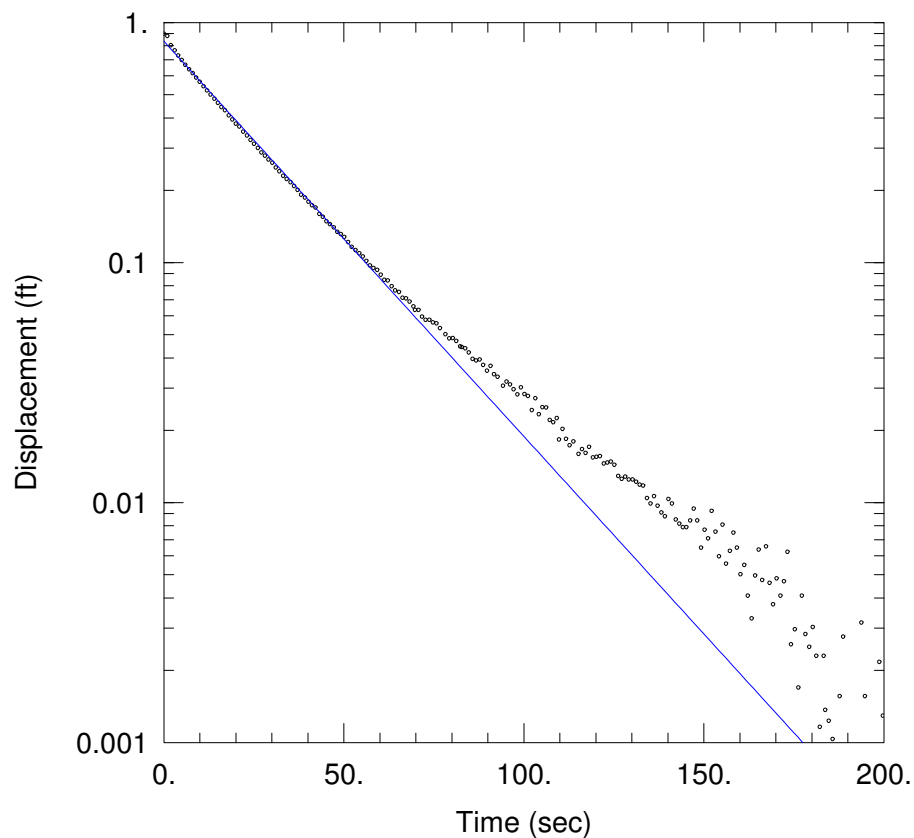
Total Well Penetration Depth: 8.2 ft

Casing Radius: 0.083 ft

Static Water Column Height: 7.43 ft

Screen Length: 5 ft

Well Radius: 0.354 ft



MW-15 RISING HEAD TEST 1

Data Set: I:\...\MW15 RH1.aqt

Date: 07/18/14

Time: 14:04:31

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-15

Test Date: June 16, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

$K = 0.002936$ cm/sec

$y_0 = 0.8347$ ft

AQUIFER DATA

Saturated Thickness: 7.43 ft

Anisotropy Ratio (K_z/K_r): 0.5

WELL DATA (MW-06S)

Initial Displacement: 1.75 ft

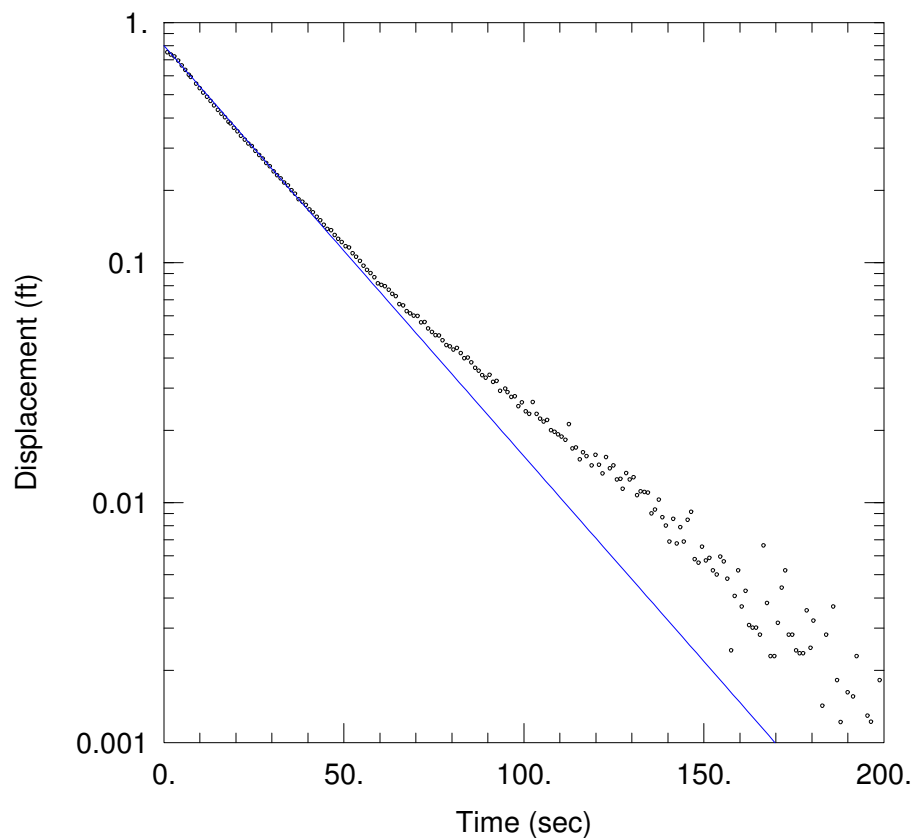
Total Well Penetration Depth: 8.2 ft

Casing Radius: 0.083 ft

Static Water Column Height: 7.43 ft

Screen Length: 5 ft

Well Radius: 0.354 ft



MW-15 RISING HEAD TEST 2

Data Set: I:\...\MW15 RH2.aqt

Date: 07/18/14

Time: 14:05:19

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-15

Test Date: June 16, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

$K = 0.00305$ cm/sec

$y_0 = 0.8013$ ft

AQUIFER DATA

Saturated Thickness: 7.43 ft

Anisotropy Ratio (K_z/K_r): 0.5

WELL DATA (MW-06S)

Initial Displacement: 1.75 ft

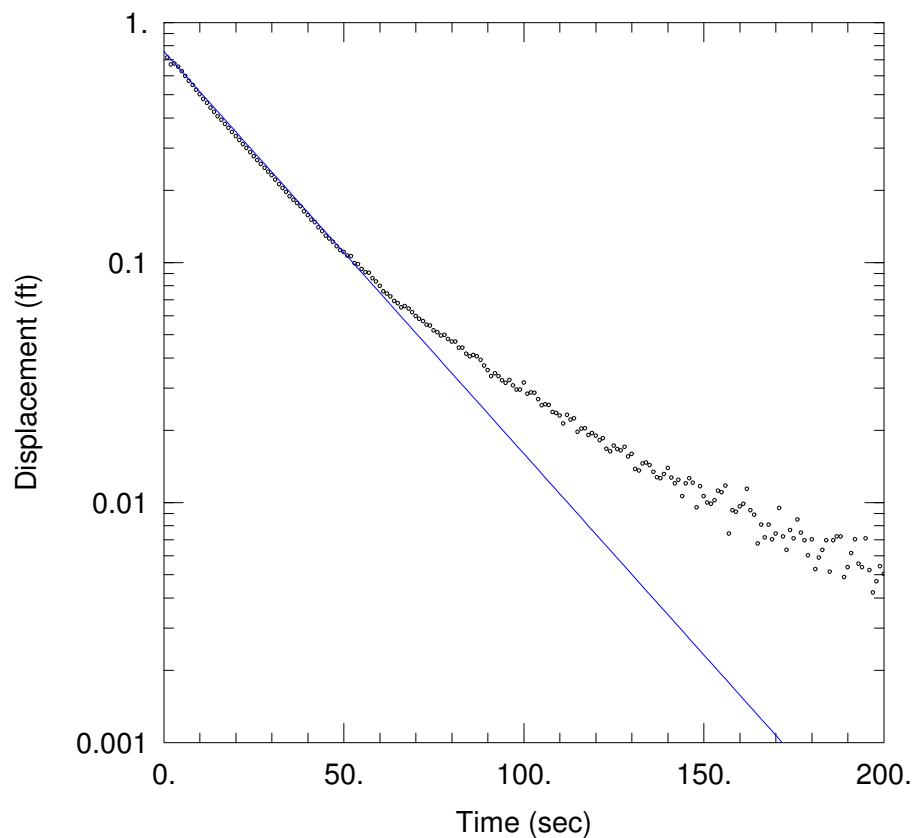
Total Well Penetration Depth: 8.2 ft

Casing Radius: 0.083 ft

Static Water Column Height: 7.43 ft

Screen Length: 5 ft

Well Radius: 0.354 ft



MW-15 RISING HEAD TEST 3

Data Set: I:\...\MW15 RH3.aqt

Date: 07/18/14

Time: 14:05:29

PROJECT INFORMATION

Company: CRA

Client: GE Co. and SI Group Inc.

Project: 80987

Location: Waterford, NY

Test Well: MW-15

Test Date: June 16, 2014

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 0.002989 cm/sec

y0 = 0.7575 ft

AQUIFER DATA

Saturated Thickness: 7.43 ft

Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA (MW-06S)

Initial Displacement: 1.75 ft

Total Well Penetration Depth: 8.2 ft

Casing Radius: 0.083 ft

Static Water Column Height: 7.43 ft

Screen Length: 5 ft

Well Radius: 0.354 ft

Appendix G

Well Construction Logs

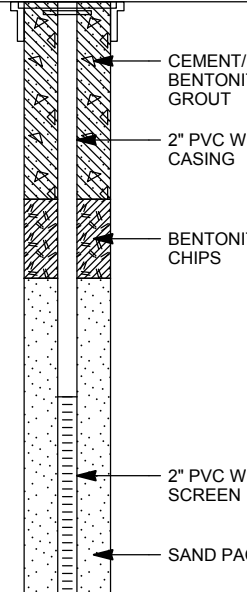


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: MW-14
DATE COMPLETED: May 19, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 1442140.08 EASTING: 709642.33 TOP OF CASING GROUND SURFACE TOP OF RISER	53.17 53.17 52.70						
2	ML-SILT, organics, little fine sand, brown, dry	52.92	 CEMENT/ BENTONITE GROUT 2" PVC WELL CASING BENTONITE CHIPS 2" PVC WELL SCREEN SAND PACK	0-1' -084 1SS 1-2' -085		50		0.0
4	SM-SILTY SAND, little gravel, trace clay, fine grained, gray brown, slightly moist	49.97		2SS 1-6' -085		63		0.0
6	ML-SANDY SILT, trace gravel, trace clay, fine grained, brown ray, moist	48.27		3SS		100		177
8	GP-GRAVEL, cobble, some fine sand	47.97		4SS		100		162
10	SP/GP-SAND AND GRAVEL, little silt, fine grained, black, stained	46.47		6-11' -086 5SS		17		24
12	GP-SANDY GRAVEL, some to little silt, loose, gray, wet	43.17		6SS		100		14
14	SM-SILTY SAND, some gravel, loose, fine grained, gray brown, wet			7SS 11-16' -087		100		12
16	GP-SILTY GRAVEL, little fine sand, angular, gray brown, wet							
18	- decrease in sand content with depth at 14.0ft BGS	37.87						
20	- REFUSAL at 15.5ft BGS	37.17						
22	BEDROCK (shale), weathered, fractured		<u>WELL DETAILS</u> Screened interval: 43.17 to 38.17ft 10.00 to 15.00ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 48.17 to 46.17ft 5.00 to 7.00ft BGS Material: BENTONITE CHIPS Sand Pack: 46.17 to 38.17ft 7.00 to 15.00ft BGS Material: SAND					
24	END OF BOREHOLE @ 15.5ft BGS							
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 080987-WI.GPJ CRA CORP.GDT 7/23/14

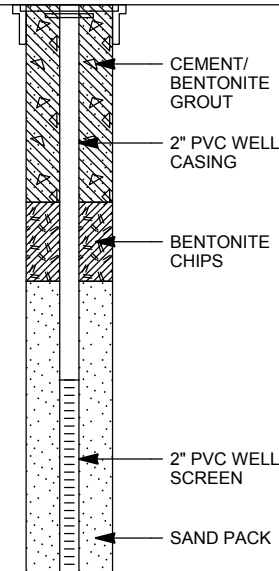


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FRIEDRICHSON COOPERAGE SITE
PROJECT NUMBER: 080987
CLIENT: GENERAL ELECTRIC COMPANY & SI GROUP
LOCATION: WATERFORD, NEW YORK

HOLE DESIGNATION: MW-15
DATE COMPLETED: May 19, 2014
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: B. PICKERT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	
	NORTHING: 1442192.31 EASTING: 709691.93	TOP OF CASING 51.97 GROUND SURFACE 51.97 TOP OF RISER 51.55						
2	OL-ORGANICS, silt, some fine sand, trace clay, brown, moist		 CEMENT/ BENTONITE GROUT 2" PVC WELL CASING BENTONITE CHIPS 2" PVC WELL SCREEN SAND PACK					
	SM-SILTY SAND, some FILL, trace gravel, fine grained, gray brown, moist	49.97 49.57						
4	ML-SILT, little fine sand, trace clay, trace gravel, brown-slight grayish, fairly moist	47.67						
6	ML-SILT, little fine sand, trace gravel, brown, wet - some gravel veins at 4.3ft BGS - some gravel veins at 4.4ft BGS - wet at 4.5ft BGS	45.77						
8	SP/ML-SAND/SILT, little to some gravel, trace clay, brown, wet	43.97						
10	SP-SAND, some silt and gravel, fine grained, brown and gray, wet, increase in silt content with depth	41.67						
12	ML-SANDY SILT, trace gravel, loose, wet, increase in gravel content with depth	39.17						
14	GP/SP-GRAVEL/SAND, trace to little silt, loose, gray brown, wet	38.17						
	GP-GRAVEL, some fine sand, angular, gray, wet	37.47						
16	END OF BOREHOLE @ 14.5ft BGS							
18			<u>WELL DETAILS</u> Screened interval: 42.47 to 37.47ft 9.50 to 14.50ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 46.97 to 44.97ft 5.00 to 7.00ft BGS Material: BENTONITE CHIPS Sand Pack: 44.97 to 37.47ft 7.00 to 14.50ft BGS Material: SAND					
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 080987-WI.GPJ CRA CORP.GDT 7/23/14

Appendix H

Well Development Logs and Purging Records

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT No.: 080987-10-02

DEVELOPMENT CREW MEMBERS: Brian Pickert

SAMPLE NO.: NA

SAMPLE TIME: NA

WELL INFORMATION

WELL TYPE (diameter/material) 2 inch well

STATIC WATER DEPTH: 6.37 ft BTOR

ELEVATION: NA

ELEVATION: NA

SCREENED INTERVAL: 13-15 ft BGS

WELL VOLUME: 1.285 gallons

For 4-inch diameter well: 1 foot = 0.70 US gallons

1 foot = 0.04 US gallons
1 meter = 0.5 liters
1 foot = 0.16 US gallons
1 meter = 2 liters
1 foot = 0.70 US gallons
1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):		1	2	3	4	5	
FIELD pH:		10.49	10.47	10.43	10.43	10.45	
FIELD TEMPERATURE:	°C	13.4	12.3	12.1	11.9	11.9	
FIELD CONDUCTIVITY:	mg/cm	7.02	7.05	7.07	7.01	7.00	
CLARITY/TURBIDITY VALUES:		>999	>999	>999	391	508	
COLOR:							
ODOR:							
COMMENTS:							

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT No.: 080987-10-02

DEVELOPMENT CREW MEMBERS: Brian Pickert

SAMPLE NO.: NA

SAMPLE TIME: NA

WELL INFORMATION

WELL TYPE (diameter/material) 2 inch well

STATIC WATER DEPTH: 6.37 ft BTOR

ELEVATION: NA

ELEVATION: NA

SCREENED INTERVAL: 13-15 ft BGS

WELL VOLUME: 1.285 gallons

For 4-inch diameter well: 1 foot = 0.70 US gallons

1 foot = 0.04 US gallons
1 meter = 0.5 liters
1 foot = 0.16 US gallons
1 meter = 2 liters
1 foot = 0.70 US gallons
1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):		6	7	8	9	10	15 gallons
FIELD pH:		10.46	10.48	10.46	10.44	10.43	
FIELD TEMPERATURE:	°C	12.1	12.1	12.0	12.2	12.2	
FIELD CONDUCTIVITY:	mg/cm	7.01	7.04	7.01	7.02	7.01	
CLARITY/TURBIDITY VALUES:		311	300	314	339	329	
COLOR:							
ODOR:							
COMMENTS:							

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT No.: 080987-10-02

DEVELOPMENT CREW MEMBERS: Brian Pickert

SAMPLE NO.: NA

SAMPLE TIME: NA

WELL INFORMATION

WELL TYPE (diameter/material) 2 inch well

STATIC WATER DEPTH: 6.28 ft BTOR

ELEVATION: 45.27 ft

ELEVATION: 37.88 ft

SCREENED INTERVAL: 9.5-14.5 ft BGS

WELL VOLUME: 1.18 gallons

For 4-inch diameter well: 1 foot = 0.70 US gallons

1 foot = 0.04 US gallons
1 meter = 0.5 liters
1 foot = 0.16 US gallons
1 meter = 2 liters
1 foot = 0.70 US gallons
1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):		1	2	3	4	5	
FIELD pH:		9.01	9.04	8.78	8.79	8.91	
FIELD TEMPERATURE:	°C	11.9	11.7	11.2	11.1	11.0	
FIELD CONDUCTIVITY:	mg/cm	1.87	1.80	1.74	1.60	1.71	
CLARITY/TURBIDITY VALUES:		>999	>999	>999	>999	>999	
COLOR:							
ODOR:							
COMMENTS:				Dry			

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT No.: 080987-10-02

DEVELOPMENT CREW MEMBERS: Brian Pickert

SAMPLE NO.: NA

SAMPLE TIME: NA

WELL INFORMATION

WELL TYPE (diameter/material) 2 inch well

STATIC WATER DEPTH: 6.28 ft BTOR

ELEVATION: 45.27 ft

ELEVATION: 37.88 ft

SCREENED INTERVAL: 9.5-14.5 ft BGS

WELL VOLUME: 1.18 gallons

For 4-inch diameter well: 1 foot = 0.70 US gallons

1 foot = 0.04 US gallons
1 meter = 0.5 liters
1 foot = 0.16 US gallons
1 meter = 2 liters
1 foot = 0.70 US gallons
1 meter = 8.2 liters

COMMENTS:

UNITS	1	2	5	4	5	TOTAL/ AVERAGE
	6	7	8	9	10	12 gallons
	8.98	9.19	9.22	9.24	9.26	
°C	11.0	11.0	11.1	11.1	11.1	
mg/cm	1.80	1.89	1.96	1.99	1.97	
	>999	>999	>999	>999	>999	
	Dry		Dry		Dry	

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT No.: 080987-10-02

DEVELOPMENT CREW MEMBERS: Brian Pickert

SAMPLE NO.: NA

SAMPLE TIME: NA

WELL INFORMATION

WELL TYPE (diameter/material) 2 inch well

STATIC WATER DEPTH: 6.44 ft BTOR

ELEVATION: 46.26 ft

ELEVATION: 38.33 ft

SCREENED INTERVAL: 10.00-15.00 ft BGS

WELL VOLUME: 1.27 gallons

For 4-inch diameter well: 1 foot = 0.70 US gallons

1 foot = 0.04 US gallons
1 meter = 0.5 liters
1 foot = 0.16 US gallons
1 meter = 2 liters
1 foot = 0.70 US gallons
1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):		1	2	3	4	5	
FIELD pH:		9.65	9.64	9.62	9.63	9.63	
FIELD TEMPERATURE:	°C	11.1	10.9	10.6	10.6	10.9	
FIELD CONDUCTIVITY:	mg/cm	2.59	2.49	2.49	2.96	3.37	
CLARITY/TURBIDITY VALUES:		>999	>999	>999	>999	>999	
COLOR:							
ODOR:							
COMMENTS:				Dry			

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT No.: 080987-10-02

DEVELOPMENT CREW MEMBERS: Brian Pickert

SAMPLE NO.: NA

SAMPLE TIME: NA

WELL INFORMATION

WELL TYPE (diameter/material) 2 inch well

STATIC WATER DEPTH: 6.44 ft BTOR

ELEVATION: 46.26 ft

ELEVATION: 38.33 ft

SCREENED INTERVAL: 10.00-15.00 ft BGS

WELL VOLUME: 1.27 gallons

For 4-inch diameter well: 1 foot = 0.70 US gallons

1 foot = 0.04 US gallons
1 meter = 0.5 liters
1 foot = 0.16 US gallons
1 meter = 2 liters
1 foot = 0.70 US gallons
1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):		6	7	8	9	10	
FIELD pH:		9.64	9.65	9.66	9.64	9.65	
FIELD TEMPERATURE:	°C	10.8	10.9	10.6	10.6	10.7	
FIELD CONDUCTIVITY:	mg/cm	3.39	3.41	3.39	3.38	3.41	
CLARITY/TURBIDITY VALUES:		>999	>999	>999	>999	>999	
COLOR:							
ODOR:							
COMMENTS:			Dry			Dry	

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT NAME:	Friedrichsohn Cooperage Site	PROJECT NO.:	080987-10-02
DATE OF WELL DEVELOPMENT:	May 20, 2014		
DEVELOPMENT CREW MEMBERS:	Brian Pickert		
PURGING METHOD:	Whale Pump		
SAMPLE NO.:	NA		
SAMPLE TIME:	NA		

WELL INFORMATION

WELL NUMBER:	MW-14	
WELL TYPE (diameter/material)	2 inch well	
MEASURING POINT ELEVATION:	52.70 ft (AMSL)	
STATIC WATER DEPTH:	6.44 ft BTOR	ELEVATION: 46.26 ft
BOTTOM DEPTH:	14.37 ft BTOR	ELEVATION: 38.33 ft
WATER COLUMN LENGTH:	7.93 ft	
SCREENED INTERVAL:	10.00-15.00 ft BGS	
WELL VOLUME:	1.27 gallons	

Note:	For 1-inch diameter well:	1 foot = 0.04 US gallons
		1 meter = 0.5 liters
	For 2-inch diameter well:	1 foot = 0.16 US gallons
		1 meter = 2 liters
	For 4-inch diameter well:	1 foot = 0.70 US gallons
		1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):		11	12				14.9 gallons
FIELD pH:		9.66	9.66				
FIELD TEMPERATURE:	°C	10.6	10.8				
FIELD CONDUCTIVITY:	mg/cm	3.40	3.39				
CLARITY/TURBIDITY VALUES:		>999	>999				
COLOR:							
ODOR:							
COMMENTS:							

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT No.: 080987-10-02

DEVELOPMENT CREW MEMBERS: Brian Pickert

SAMPLE NO.: WG-80987-060514-BP-112

SAMPLE TIME: 19:00

WELL INFORMATION

WELL TYPE (diameter/material) 2 inch well

STATIC WATER DEPTH: 6.60 ft BTOR

ELEVATION: 46.1 ft

ELEVATION: 38.33 ft

SCREENED INTERVAL: 10.00-15.00 ft BGS

WELL VOLUME: 1.24 gallons

For 4-inch diameter well: 1 foot = 0.70 US gallons

1 foot = 0.04 US gallons
1 meter = 0.5 liters
1 foot = 0.16 US gallons
1 meter = 2 liters
1 foot = 0.70 US gallons
1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):	Gal	0	5	10	15	20	
FIELD pH:		9.79	9.70	9.63	9.60	9.61	
FIELD TEMPERATURE:	°C	10.9	11.2	11.1	11.0	11.1	
FIELD CONDUCTIVITY:	mg/cm	2.89	3.01	3.03	3.06	3.07	
CLARITY/TURBIDITY VALUES:		>999	>999	>999	>999	>999	
COLOR:							
ODOR:							
COMMENTS:							

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT No.: 080987-10-02

DEVELOPMENT CREW MEMBERS: Brian Pickert

SAMPLE NO.: WG-80987-060514-BP-112

SAMPLE TIME: 19:00

WELL INFORMATION

WELL TYPE (diameter/material) 2 inch well

STATIC WATER DEPTH: 6.60 ft BTOR

ELEVATION: 46.1 ft

ELEVATION: 38.33 ft

SCREENED INTERVAL: 10.00-15.00 ft BGS

WELL VOLUME: 1.24 gallons

For 4-inch diameter well: 1 foot = 0.70 US gallons

1 foot = 0.04 US gallons
1 meter = 0.5 liters
1 foot = 0.16 US gallons
1 meter = 2 liters
1 foot = 0.70 US gallons
1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):	Gal	25	30	35	40	45	
FIELD pH:		9.60	9.58	9.58	9.55	9.56	
FIELD TEMPERATURE:	°C	11.1	11.0	11.1	11.0	11.0	
FIELD CONDUCTIVITY:	mg/cm	3.08	3.09	3.11	3.11	3.09	
CLARITY/TURBIDITY VALUES:		>999	>999	>999	>999	>999	
COLOR:							
ODOR:							
COMMENTS:							

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT No.: 080987-10-02

DEVELOPMENT CREW MEMBERS: Brian Pickert

SAMPLE NO.: WG-80987-060614-BP-113

SAMPLE TIME: 09:00

WELL INFORMATION

WELL TYPE (diameter/material) 2 inch well

STATIC WATER DEPTH: 6.38 ft BTOR

BOTTOM DEPTH: 13.67 ft BTOR

ELEVATION: 37.88 ft

SCREENED INTERVAL: 9.5-14.5 ft BGS

WELL VOLUME: 1.17 gallons

For 4-inch diameter well: 1 foot = 0.70 US gallons

1 foot = 0.04 US gallons
1 meter = 0.5 liters
1 foot = 0.16 US gallons
1 meter = 2 liters
1 foot = 0.70 US gallons
1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):	Gal	0	5	10	15	20	
FIELD pH:		9.11	9.09	8.99	8.99	9.02	
FIELD TEMPERATURE:	°C	11.0	10.9	10.8	10.9	10.9	
FIELD CONDUCTIVITY:	mg/cm	1.99	2.01	2.03	2.01	2.00	
CLARITY/TURBIDITY VALUES:		>999	>999	916	>999	944	
COLOR:							
ODOR:							
COMMENTS:							

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT No.: 080987-10-02

WELL INFORMATION

ELEVATION: 45.17 ft

ELEVATION: 37.88 ft

Note:	For 1-inch diameter well:	1 foot = 0.04 US gallons
		1 meter = 0.5 liters
	For 2-inch diameter well:	1 foot = 0.16 US gallons
		1 meter = 2 liters
	For 4-inch diameter well:	1 foot = 0.70 US gallons
		1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):	Gal	25	30	35	40	45	
FIELD pH:		9.01	9.00	9.00	9.00	9.01	
FIELD TEMPERATURE:	°C	11.0	11.0	10.9	11.0	11.0	
FIELD CONDUCTIVITY:	mg/cm	2.00	2.00	2.01	2.01	2.01	
CLARITY/TURBIDITY VALUES:		>999	>999	>999	>999	>999	
COLOR:							
ODOR:							
COMMENTS:							

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT NAME:	<u>Friedrichsohn Cooperage Site</u>	PROJECT NO.:	<u>080987-10-02</u>
DATE OF WELL DEVELOPMENT:	<u>June 6, 2014</u>		
DEVELOPMENT CREW MEMBERS:	<u>Brian Pickert</u>		
PURGING METHOD:	<u>Whale Pump</u>		
SAMPLE NO.:	<u>WG-80987-060614-BP-115/116(Dup.)</u>		
SAMPLE TIME:	<u>11:30/11:31</u>		

WELL INFORMATION

WELL NUMBER:	MW-10	
WELL TYPE (diameter/material)	2 inch well	
MEASURING POINT ELEVATION:	NA (measured at TOR)	
STATIC WATER DEPTH:	6.79 ft BTOR	ELEVATION: 44.79 ft
BOTTOM DEPTH:	14.40 ft BTOR	ELEVATION: 37.18 ft
WATER COLUMN LENGTH:	7.61 ft	
SCREENED INTERVAL:	13-15 ft BGS	
WELL VOLUME:	1.22 gallons	

Note:	For 1-inch diameter well:	1 foot = 0.04 US gallons
		1 meter = 0.5 liters
	For 2-inch diameter well:	1 foot = 0.16 US gallons
		1 meter = 2 liters
	For 4-inch diameter well:	1 foot = 0.70 US gallons
		1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):	Gal	0	5	10	15	20	
FIELD pH:		10.44	10.61	10.66	10.61	10.63	
FIELD TEMPERATURE:	°C	11.8	12.0	11.9	12.0	12.1	
FIELD CONDUCTIVITY:	mg/cm	7.01	7.03	6.99	6.98	7.00	
CLARITY/TURBIDITY VALUES:		490	496	511	322	319	
COLOR:							
ODOR:							
COMMENTS:							

COPIES TO:

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT No.: 080987-10-02

DEVELOPMENT CREW MEMBERS: Brian Pickert

SAMPLE NO.: WG-80987-060614-BP-115/116(Dup.)

SAMPLE TIME: 11:30/11:31

WELL INFORMATION

WELL TYPE (diameter/material) 2 inch well

STATIC WATER DEPTH: 6.79 ft BTOR

ELEVATION: 44.79 ft

ELEVATION: 37.18 ft

WATER COLUMN LENGTH: 7.61 ft

SCREENED INTERVAL: 13-15 ft BGS

WELL VOLUME: 1.22 gallons

For 4-inch diameter well: 1 foot = 0.70 US gallons

1 foot = 0.04 US gallons
1 meter = 0.5 liters
1 foot = 0.16 US gallons
1 meter = 2 liters
1 foot = 0.70 US gallons
1 meter = 8.2 liters

	UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):	Gal	25	30	35	40	45	
FIELD pH:		10.62	10.60	10.59	10.59	10.60	
FIELD TEMPERATURE:	°C	12.1	12.1	12.0	12.0	12.0	
FIELD CONDUCTIVITY:	mg/cm	6.96	7.00	6.99	6.96	6.98	
CLARITY/TURBIDITY VALUES:		361	308	309	310	390	
COLOR:							
ODOR:							
COMMENTS:							

COPIES TO:

Appendix I

Groundwater Analytical Data Reports

Report Date:
20-Jun-14 16:13



☒ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Conestoga-Rovers & Associates
2055 Niagara Falls Boulevard, Suite 3
Niagara Falls, NY 14304

Work Order: N0980
Project : Friedrichsohn Cooperage Site
Project #: 080987-001

Attn: Kathy Shaw

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
N0980-01	WG-80987-060514-BP-112	Aqueous	05-Jun-14 19:00	07-Jun-14 09:41
N0980-02	WG-80987-060614-BP-113	Aqueous	06-Jun-14 09:00	07-Jun-14 09:41
N0980-03	WG-80987-060614-BP-114	Aqueous	06-Jun-14 10:00	07-Jun-14 09:41
N0980-04	WG-80987-060614-BP-115	Aqueous	06-Jun-14 11:30	07-Jun-14 09:41
N0980-05	WG-80987-060614-BP-116	Aqueous	06-Jun-14 11:31	07-Jun-14 09:41
N0980-06	TB-80987-060614-BP	Aqueous	06-Jun-14 00:00	07-Jun-14 09:41

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the sample(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirements have been met.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033



Authorized by:

Yihai Ding
Laboratory Director



SPECTRUM ANALYTICAL, INC.

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HANIBAL TECHNOLOGY

*** Data Summary Pack ***

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

WorkOrder: N0980

Client ID: CRA

Project: Friedrichsohn Cooperage Site

WO Name: Friedrichsohn Cooperage Site

Location: CRA_FRIEDRICHSOHN, 080987-001

Comments: Report "J".

Case:

SDG:

PO: 4068085

HC Due: 06/19/14

Fax Due:

Fax Report: ☐

Report Level: LEVEL 4

Special Program:

EDD: EQUIIS_4_CRA

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
N0980-01A	WG-80987-060514-BP-112	06/05/2014 19:00	06/07/2014	Aqueous	SW8260_W	/				Y	VOA
N0980-01B	WG-80987-060514-BP-112	06/05/2014 19:00	06/07/2014	Aqueous	SW8082_W	/					L3
N0980-01B	WG-80987-060514-BP-112	06/05/2014 19:00	06/07/2014	Aqueous	SW8270_W	/				Y	L3
N0980-01C	WG-80987-060514-BP-112	06/05/2014 19:00	06/07/2014	Aqueous	SW6020_W	/ Login Hg					M5
N0980-01C	WG-80987-060514-BP-112	06/05/2014 19:00	06/07/2014	Aqueous	SW7470	/					M5
N0980-02A	WG-80987-060614-BP-113	06/06/2014 09:00	06/07/2014	Aqueous	SW8260_W	/			Y	Y	VOA
N0980-02B	WG-80987-060614-BP-113	06/06/2014 09:00	06/07/2014	Aqueous	SW8082_W	/			Y		L3
N0980-02B	WG-80987-060614-BP-113	06/06/2014 09:00	06/07/2014	Aqueous	SW8270_W	/			Y	Y	L3
N0980-02C	WG-80987-060614-BP-113	06/06/2014 09:00	06/07/2014	Aqueous	SW6020_W	/ Login Hg			Y		M5
N0980-02C	WG-80987-060614-BP-113	06/06/2014 09:00	06/07/2014	Aqueous	SW7470	/			Y		M5
N0980-03A	WG-80987-060614-BP-114	06/06/2014 10:00	06/07/2014	Aqueous	SW8260_W	/				Y	VOA
N0980-03B	WG-80987-060614-BP-114	06/06/2014 10:00	06/07/2014	Aqueous	SW8082_W	/					L3
N0980-03B	WG-80987-060614-BP-114	06/06/2014 10:00	06/07/2014	Aqueous	SW8270_W	/				Y	L3
N0980-03C	WG-80987-060614-BP-114	06/06/2014 10:00	06/07/2014	Aqueous	SW6020_W	/ Login Hg					M5
N0980-03C	WG-80987-060614-BP-114	06/06/2014 10:00	06/07/2014	Aqueous	SW7470	/					M5
N0980-04A	WG-80987-060614-BP-115	06/06/2014 11:30	06/07/2014	Aqueous	SW8260_W	/				Y	VOA
N0980-04B	WG-80987-060614-BP-115	06/06/2014 11:30	06/07/2014	Aqueous	SW8082_W	/					L3
N0980-04B	WG-80987-060614-BP-115	06/06/2014 11:30	06/07/2014	Aqueous	SW8270_W	/				Y	L3
N0980-04C	WG-80987-060614-BP-115	06/06/2014 11:30	06/07/2014	Aqueous	SW6020_W	/ Login Hg					M5
N0980-04C	WG-80987-060614-BP-115	06/06/2014 11:30	06/07/2014	Aqueous	SW7470	/					M5

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

WorkOrder: N0980

Client ID: CRA

Project: Friedrichsohn Cooperage Site

WO Name: Friedrichsohn Cooperage Site

Location: CRA_FRIEDRICHSOHN, 080987-001

Comments: Report "J".

Case:

SDG:

PO: 4068085

HC Due: 06/19/14

Fax Due:

Fax Report: ☐

Report Level: LEVEL 4

Special Program:

EDD: EQUIIS_4_CRA

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
N0980-05A	WG-80987-060614-BP-116	06/06/2014 11:31	06/07/2014	Aqueous	SW8260_W	/				Y	VOA
N0980-05B	WG-80987-060614-BP-116	06/06/2014 11:31	06/07/2014	Aqueous	SW8082_W	/					L3
N0980-05B	WG-80987-060614-BP-116	06/06/2014 11:31	06/07/2014	Aqueous	SW8270_W	/				Y	L3
N0980-05C	WG-80987-060614-BP-116	06/06/2014 11:31	06/07/2014	Aqueous	SW6020_W	/ Login Hg					M5
N0980-05C	WG-80987-060614-BP-116	06/06/2014 11:31	06/07/2014	Aqueous	SW7470	/					M5
N0980-06A	TB-80987-060614-BP	06/06/2014 00:00	06/07/2014	Aqueous	SW8260_W	/				Y	VOA

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold



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HANIBAL TECHNOLOGY

*** Volatiles ***

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Conestoga-Rovers & Associates

Project: Friedrichsohn Cooperage Site

Laboratory Workorder / SDG #: N0980

SW846 8260C, VOC by GC-MS

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code:
SW846 8260C

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: V10
Instrument Type: GCMS-VOA

Description: HP7890A
Manufacturer: Agilent
Model: 7890A / 5975C
GC Column used: 30 m X 0.25 mm ID [1.40 um thickness] DB-624
capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits with the following exceptions. Please note that most test procedures allow for several compounds outside of the QC limits for the LCS, although this may indicate a bias for this specific compound.

LCS-77504 in batch 77504, recovery is below criteria for 1,1,2-Trichloroethane at 74% with criteria of (75-125) and 1,2-Dibromoethane at 74% with criteria of (80-120).

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: WG-80987-060614-BP-113 (N0980-02AMS) and WG-80987-060614-BP-113 (N0980-02AMSD).

Percent recoveries were within the QC limits with the following exceptions:

WG-80987-060614-BP-113 (N0980-02AMS), recovery is above criteria for Acetone at 154% with criteria of (40-140), recovery is below criteria for Toluene at 68% with criteria of (75-120).

WG-80987-060614-BP-113 (N0980-02AMSD), recovery is above criteria for 2-Butanone at 171% with criteria of (30-150), Acetone at 175% with criteria of (40-140), recovery is below criteria for m,p-Xylene at 69% with criteria of (75-130), Toluene at 49% with criteria of (75-120) and Xylene (Total) at 74% with criteria of (81-121).

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

The following samples were analyzed at dilution:

WG-80987-060514-BP-112 (N0980-01ADL) : Dilution Factor: 20
WG-80987-060614-BP-113 (N0980-02ADL) : Dilution Factor: 10
WG-80987-060614-BP-114 (N0980-03ADL) : Dilution Factor: 10
WG-80987-060614-BP-115 (N0980-04A) : Dilution Factor: 200
WG-80987-060614-BP-116 (N0980-05A) : Dilution Factor: 200

G. Samples:

No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

Manual integration was performed on the following:

VSTD00110I Chloroethane , Chloromethane due to M3

VSTD00510I Chloroethane due to M3

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

A handwritten signature in black ink, appearing to be 'J. H. P.', written over a horizontal line.

Signed: _____

Date: _____ 6/20/2014 _____



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HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

- U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).
- J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
 - estimated concentration for Tentatively Identified Compound
- B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a “trace” concentration below the reporting limit and equal to or above the detection limit.
- D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis
- E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.
- P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.
- A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 2 of 2):

- N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.
- * For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.
- L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Sample ID Suffixes

- DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution
- RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.
- RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.
- RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.
- MS Matrix Spike.
- MSD Matrix Spike Duplicate
- DUP Duplicate analysis
- SD Serial Dilution
- PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060514-
BP-112

Lab Name: SPECTRUM ANALYTICAL, INC.	Contract:
Lab Code: MITKEM Case No.: N0980	Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER	Lab Sample ID: N0980-01A
Sample wt/vol: 5.00 (g/mL) ML	Lab File ID: V8D5284.D
Level: (TRACE/LOW/MED) LOW	Date Received: 06/07/2014
% Moisture: not dec.	Date Analyzed: 06/11/2014
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume: (uL)
Purge Volume: 5.0 (mL)	

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	1.2	J
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	60	
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	0.76	J
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	14	
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	13	
79-01-6	Trichloroethene	13	
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1300	E
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	1.5	J
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	2.0	J
100-41-4	Ethylbenzene	700	E
179601-23-1	m,p-Xylene	1900	E

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060514-
BP-112

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5284.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014

% Moisture: not dec. Date Analyzed: 06/11/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
95-47-6	o-Xylene	570	E
1330-20-7	Xylene (Total)	2400	E
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	4.7	J
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	0.89	J
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	2.0	J
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
110-82-7	Cyclohexane	2.5	J
79-20-9	Methyl acetate	5.0	U
108-87-2	Methylcyclohexane	1.2	J

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060514-
BP-112DL

Lab Name: SPECTRUM ANALYTICAL, INC.	Contract:
Lab Code: MITKEM Case No.: N0980	Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER	Lab Sample ID: N0980-01ADL
Sample wt/vol: 5.00 (g/mL) ML	Lab File ID: V8D5311.D
Level: (TRACE/LOW/MED) LOW	Date Received: 06/07/2014
% Moisture: not dec.	Date Analyzed: 06/12/2014
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 20.0
Soil Extract Volume: (uL)	Soil Aliquot Volume: (uL)
Purge Volume: 5.0 (mL)	

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	100	U
74-87-3	Chloromethane	100	U
75-01-4	Vinyl chloride	100	U
74-83-9	Bromomethane	100	U
75-00-3	Chloroethane	100	U
75-69-4	Trichlorofluoromethane	100	U
75-35-4	1,1-Dichloroethene	100	U
67-64-1	Acetone	71	DJ
75-15-0	Carbon disulfide	100	U
75-09-2	Methylene chloride	100	U
156-60-5	trans-1,2-Dichloroethene	100	U
1634-04-4	Methyl tert-butyl ether	100	U
75-34-3	1,1-Dichloroethane	100	U
78-93-3	2-Butanone	100	U
156-59-2	cis-1,2-Dichloroethene	17	DJ
67-66-3	Chloroform	100	U
71-55-6	1,1,1-Trichloroethane	100	U
56-23-5	Carbon tetrachloride	100	U
107-06-2	1,2-Dichloroethane	100	U
71-43-2	Benzene	13	DJ
79-01-6	Trichloroethene	13	DJ
78-87-5	1,2-Dichloropropane	100	U
75-27-4	Bromodichloromethane	100	U
10061-01-5	cis-1,3-Dichloropropene	100	U
108-10-1	4-Methyl-2-pentanone	100	U
108-88-3	Toluene	1400	D
10061-02-6	trans-1,3-Dichloropropene	100	U
79-00-5	1,1,2-Trichloroethane	100	U
127-18-4	Tetrachloroethene	100	U
591-78-6	2-Hexanone	100	U
124-48-1	Dibromochloromethane	100	U
106-93-4	1,2-Dibromoethane	100	U
108-90-7	Chlorobenzene	100	U
100-41-4	Ethylbenzene	640	D
179601-23-1	m,p-Xylene	1700	D

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060514-
BP-112DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-01ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5311.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014

% Moisture: not dec. Date Analyzed: 06/12/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 20.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
95-47-6	o-Xylene	540	D
1330-20-7	Xylene (Total)	2200	D
100-42-5	Styrene	100	U
75-25-2	Bromoform	100	U
98-82-8	Isopropylbenzene	100	U
79-34-5	1,1,2,2-Tetrachloroethane	100	U
541-73-1	1,3-Dichlorobenzene	100	U
106-46-7	1,4-Dichlorobenzene	100	U
95-50-1	1,2-Dichlorobenzene	100	U
96-12-8	1,2-Dibromo-3-chloropropane	100	U
120-82-1	1,2,4-Trichlorobenzene	100	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	100	U
110-82-7	Cyclohexane	100	U
79-20-9	Methyl acetate	100	U
108-87-2	Methylcyclohexane	100	U

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02A
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5285.D
Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014
% Moisture: not dec. Date Analyzed: 06/11/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	130	
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	1.0	J
156-60-5	trans-1,2-Dichloroethene	9.2	
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	2.1	J
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	350	E
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	1.9	J
71-43-2	Benzene	15	
79-01-6	Trichloroethene	5.4	
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	4.2	J
108-88-3	Toluene	630	E
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	2.0	J
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	43	
100-41-4	Ethylbenzene	92	
179601-23-1	m,p-Xylene	250	

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02A
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5285.D
Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014
% Moisture: not dec. Date Analyzed: 06/11/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
95-47-6	o-Xylene	87	
1330-20-7	Xylene (Total)	330	
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	2.1	J
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	1.1	J
106-46-7	1,4-Dichlorobenzene	6.8	
95-50-1	1,2-Dichlorobenzene	16	
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	1.8	J
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
110-82-7	Cyclohexane	1.9	J
79-20-9	Methyl acetate	5.0	U
108-87-2	Methylcyclohexane	5.0	U

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5312.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014

% Moisture: not dec. Date Analyzed: 06/12/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	50	U
74-87-3	Chloromethane	50	U
75-01-4	Vinyl chloride	110	D
74-83-9	Bromomethane	50	U
75-00-3	Chloroethane	50	U
75-69-4	Trichlorofluoromethane	50	U
75-35-4	1,1-Dichloroethene	50	U
67-64-1	Acetone	42	DJ
75-15-0	Carbon disulfide	50	U
75-09-2	Methylene chloride	50	U
156-60-5	trans-1,2-Dichloroethene	10	DJ
1634-04-4	Methyl tert-butyl ether	50	U
75-34-3	1,1-Dichloroethane	50	U
78-93-3	2-Butanone	50	U
156-59-2	cis-1,2-Dichloroethene	330	D
67-66-3	Chloroform	50	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon tetrachloride	50	U
107-06-2	1,2-Dichloroethane	50	U
71-43-2	Benzene	14	DJ
79-01-6	Trichloroethene	50	U
78-87-5	1,2-Dichloropropane	50	U
75-27-4	Bromodichloromethane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
108-10-1	4-Methyl-2-pentanone	50	U
108-88-3	Toluene	560	D
10061-02-6	trans-1,3-Dichloropropene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
127-18-4	Tetrachloroethene	50	U
591-78-6	2-Hexanone	50	U
124-48-1	Dibromochloromethane	50	U
106-93-4	1,2-Dibromoethane	50	U
108-90-7	Chlorobenzene	38	DJ
100-41-4	Ethylbenzene	79	D
179601-23-1	m,p-Xylene	210	D

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02ADL
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5312.D
Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014
% Moisture: not dec. Date Analyzed: 06/12/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	74	D
1330-20-7	Xylene (Total)	290	D
100-42-5	Styrene	50	U
75-25-2	Bromoform	50	U
98-82-8	Isopropylbenzene	50	U
79-34-5	1,1,2,2-Tetrachloroethane	50	U
541-73-1	1,3-Dichlorobenzene	50	U
106-46-7	1,4-Dichlorobenzene	6.7	DJ
95-50-1	1,2-Dichlorobenzene	13	DJ
96-12-8	1,2-Dibromo-3-chloropropane	50	U
120-82-1	1,2,4-Trichlorobenzene	50	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	50	U
110-82-7	Cyclohexane	50	U
79-20-9	Methyl acetate	50	U
108-87-2	Methylcyclohexane	50	U

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5286.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014

% Moisture: not dec. Date Analyzed: 06/11/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	3.1	J
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	290	E
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	4.3	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	2.7	J
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	19	
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	3.9	J
71-43-2	Benzene	18	
79-01-6	Trichloroethene	13	
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	18	
108-88-3	Toluene	970	E
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	0.66	J
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	8.6	
100-41-4	Ethylbenzene	74	
179601-23-1	m,p-Xylene	180	

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-03A
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5286.D
Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014
% Moisture: not dec. Date Analyzed: 06/11/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	69	
1330-20-7	Xylene (Total)	250	
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	2.7	J
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
110-82-7	Cyclohexane	0.93	J
79-20-9	Methyl acetate	5.0	U
108-87-2	Methylcyclohexane	2.2	J

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-114DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-03ADL
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5313.D
Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014
% Moisture: not dec. Date Analyzed: 06/12/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	50	U
74-87-3	Chloromethane	50	U
75-01-4	Vinyl chloride	50	U
74-83-9	Bromomethane	50	U
75-00-3	Chloroethane	50	U
75-69-4	Trichlorofluoromethane	50	U
75-35-4	1,1-Dichloroethene	50	U
67-64-1	Acetone	290	D
75-15-0	Carbon disulfide	50	U
75-09-2	Methylene chloride	50	U
156-60-5	trans-1,2-Dichloroethene	50	U
1634-04-4	Methyl tert-butyl ether	50	U
75-34-3	1,1-Dichloroethane	50	U
78-93-3	2-Butanone	50	U
156-59-2	cis-1,2-Dichloroethene	17	DJ
67-66-3	Chloroform	50	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon tetrachloride	50	U
107-06-2	1,2-Dichloroethane	50	U
71-43-2	Benzene	15	DJ
79-01-6	Trichloroethene	8.7	DJ
78-87-5	1,2-Dichloropropane	50	U
75-27-4	Bromodichloromethane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
108-10-1	4-Methyl-2-pentanone	50	U
108-88-3	Toluene	660	D
10061-02-6	trans-1,3-Dichloropropene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
127-18-4	Tetrachloroethene	50	U
591-78-6	2-Hexanone	50	U
124-48-1	Dibromochloromethane	50	U
106-93-4	1,2-Dibromoethane	50	U
108-90-7	Chlorobenzene	6.9	DJ
100-41-4	Ethylbenzene	47	DJ
179601-23-1	m,p-Xylene	120	D

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-114DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-03ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5313.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014

% Moisture: not dec. Date Analyzed: 06/12/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
95-47-6	o-Xylene	43	DJ
1330-20-7	Xylene (Total)	160	D
100-42-5	Styrene	50	U
75-25-2	Bromoform	50	U
98-82-8	Isopropylbenzene	50	U
79-34-5	1,1,2,2-Tetrachloroethane	50	U
541-73-1	1,3-Dichlorobenzene	50	U
106-46-7	1,4-Dichlorobenzene	50	U
95-50-1	1,2-Dichlorobenzene	50	U
96-12-8	1,2-Dibromo-3-chloropropane	50	U
120-82-1	1,2,4-Trichlorobenzene	50	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	50	U
110-82-7	Cyclohexane	50	U
79-20-9	Methyl acetate	50	U
108-87-2	Methylcyclohexane	50	U

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-115

Lab Name: SPECTRUM ANALYTICAL, INC.	Contract:
Lab Code: MITKEM Case No.: N0980	Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER	Lab Sample ID: N0980-04A
Sample wt/vol: 5.00 (g/mL) ML	Lab File ID: V8D5348.D
Level: (TRACE/LOW/MED) LOW	Date Received: 06/07/2014
% Moisture: not dec.	Date Analyzed: 06/13/2014
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 200.0
Soil Extract Volume: (uL)	Soil Aliquot Volume: (uL)
Purge Volume: 5.0 (mL)	

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	1000	U
75-01-4	Vinyl chloride	1000	U
74-83-9	Bromomethane	1000	U
75-00-3	Chloroethane	1000	U
75-69-4	Trichlorofluoromethane	1000	U
75-35-4	1,1-Dichloroethene	1000	U
67-64-1	Acetone	1000	U
75-15-0	Carbon disulfide	1000	U
75-09-2	Methylene chloride	1000	U
156-60-5	trans-1,2-Dichloroethene	1000	U
1634-04-4	Methyl tert-butyl ether	1000	U
75-34-3	1,1-Dichloroethane	1000	U
78-93-3	2-Butanone	1000	U
156-59-2	cis-1,2-Dichloroethene	1000	U
67-66-3	Chloroform	1000	U
71-55-6	1,1,1-Trichloroethane	1000	U
56-23-5	Carbon tetrachloride	1000	U
107-06-2	1,2-Dichloroethane	1000	U
71-43-2	Benzene	1000	U
79-01-6	Trichloroethene	230	J
78-87-5	1,2-Dichloropropane	1000	U
75-27-4	Bromodichloromethane	1000	U
10061-01-5	cis-1,3-Dichloropropene	1000	U
108-10-1	4-Methyl-2-pentanone	1000	U
108-88-3	Toluene	21000	
10061-02-6	trans-1,3-Dichloropropene	1000	U
79-00-5	1,1,2-Trichloroethane	1000	U
127-18-4	Tetrachloroethene	1000	U
591-78-6	2-Hexanone	1000	U
124-48-1	Dibromochloromethane	1000	U
106-93-4	1,2-Dibromoethane	1000	U
108-90-7	Chlorobenzene	1000	U
100-41-4	Ethylbenzene	2900	
179601-23-1	m,p-Xylene	8100	

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-115

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-04A
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5348.D
Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014
% Moisture: not dec. Date Analyzed: 06/13/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 200.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	2500	
1330-20-7	Xylene (Total)	11000	
100-42-5	Styrene	1000	U
75-25-2	Bromoform	1000	U
98-82-8	Isopropylbenzene	1000	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
96-12-8	1,2-Dibromo-3-chloropropane	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1000	U
110-82-7	Cyclohexane	1000	U
79-20-9	Methyl acetate	1000	U
108-87-2	Methylcyclohexane	1000	U

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-116

Lab Name: SPECTRUM ANALYTICAL, INC.	Contract:
Lab Code: MITKEM Case No.: N0980	Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER	Lab Sample ID: N0980-05A
Sample wt/vol: 5.00 (g/mL) ML	Lab File ID: V8D5316.D
Level: (TRACE/LOW/MED) LOW	Date Received: 06/07/2014
% Moisture: not dec.	Date Analyzed: 06/12/2014
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 200.0
Soil Extract Volume: (uL)	Soil Aliquot Volume: (uL)
Purge Volume: 5.0 (mL)	

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	1000	U
75-01-4	Vinyl chloride	1000	U
74-83-9	Bromomethane	1000	U
75-00-3	Chloroethane	1000	U
75-69-4	Trichlorofluoromethane	1000	U
75-35-4	1,1-Dichloroethene	1000	U
67-64-1	Acetone	1000	U
75-15-0	Carbon disulfide	1000	U
75-09-2	Methylene chloride	1000	U
156-60-5	trans-1,2-Dichloroethene	1000	U
1634-04-4	Methyl tert-butyl ether	1000	U
75-34-3	1,1-Dichloroethane	1000	U
78-93-3	2-Butanone	1000	U
156-59-2	cis-1,2-Dichloroethene	1000	U
67-66-3	Chloroform	1000	U
71-55-6	1,1,1-Trichloroethane	1000	U
56-23-5	Carbon tetrachloride	1000	U
107-06-2	1,2-Dichloroethane	1000	U
71-43-2	Benzene	120	J
79-01-6	Trichloroethene	230	J
78-87-5	1,2-Dichloropropane	1000	U
75-27-4	Bromodichloromethane	1000	U
10061-01-5	cis-1,3-Dichloropropene	1000	U
108-10-1	4-Methyl-2-pentanone	1000	U
108-88-3	Toluene	21000	
10061-02-6	trans-1,3-Dichloropropene	1000	U
79-00-5	1,1,2-Trichloroethane	1000	U
127-18-4	Tetrachloroethene	1000	U
591-78-6	2-Hexanone	1000	U
124-48-1	Dibromochloromethane	1000	U
106-93-4	1,2-Dibromoethane	1000	U
108-90-7	Chlorobenzene	140	J
100-41-4	Ethylbenzene	3000	
179601-23-1	m,p-Xylene	8400	

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-116

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-05A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5316.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014

% Moisture: not dec. Date Analyzed: 06/12/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 200.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
95-47-6	o-Xylene	2600	
1330-20-7	Xylene (Total)	11000	
100-42-5	Styrene	1000	U
75-25-2	Bromoform	1000	U
98-82-8	Isopropylbenzene	1000	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
96-12-8	1,2-Dibromo-3-chloropropane	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1000	U
110-82-7	Cyclohexane	1000	U
79-20-9	Methyl acetate	1000	U
108-87-2	Methylcyclohexane	1000	U

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-80987-060614-
BP

Lab Name: SPECTRUM ANALYTICAL, INC.	Contract:
Lab Code: MITKEM Case No.: N0980	Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER	Lab Sample ID: N0980-06A
Sample wt/vol: 5.00 (g/mL) ML	Lab File ID: V8D5308.D
Level: (TRACE/LOW/MED) LOW	Date Received: 06/07/2014
% Moisture: not dec.	Date Analyzed: 06/12/2014
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume: (uL)
Purge Volume: 5.0 (mL)	

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-80987-060614-
BP

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-06A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5308.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014

% Moisture: not dec. Date Analyzed: 06/12/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
79-20-9	Methyl acetate	5.0	U
108-87-2	Methylcyclohexane	5.0	U

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-77504

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-77504
 Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5271.D
 Level: (TRACE/LOW/MED) LOW Date Received: _____
 % Moisture: not dec. Date Analyzed: 06/11/2014
 GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
 Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon disulfide	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl tert-butyl ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
71-43-2	Benzene	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
179601-23-1	m,p-Xylene	1.0	U

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-77504

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-77504
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5271.D
Level: (TRACE/LOW/MED) LOW Date Received: _____
% Moisture: not dec. Date Analyzed: 06/11/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
95-47-6	o-Xylene	1.0	U
1330-20-7	Xylene (Total)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U
110-82-7	Cyclohexane	1.0	U
79-20-9	Methyl acetate	1.0	U
108-87-2	Methylcyclohexane	1.0	U

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-77526

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-77526
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5306.D
Level: (TRACE/LOW/MED) LOW Date Received: _____
% Moisture: not dec. Date Analyzed: 06/12/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon disulfide	1.0	U
75-09-2	Methylene chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl tert-butyl ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon tetrachloride	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
71-43-2	Benzene	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
179601-23-1	m,p-Xylene	1.0	U

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-77526

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-77526
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5306.D
Level: (TRACE/LOW/MED) LOW Date Received: _____
% Moisture: not dec. Date Analyzed: 06/12/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
95-47-6	o-Xylene	1.0	U
1330-20-7	Xylene (Total)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U
110-82-7	Cyclohexane	1.0	U
79-20-9	Methyl acetate	1.0	U
108-87-2	Methylcyclohexane	1.0	U

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-77548

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-77548
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5345.D
Level: (TRACE/LOW/MED) LOW Date Received: _____
% Moisture: not dec. Date Analyzed: 06/13/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
179601-23-1	m,p-Xylene	5.0	U

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-77548

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-77548
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5345.D
Level: (TRACE/LOW/MED) LOW Date Received: _____
% Moisture: not dec. Date Analyzed: 06/13/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
79-20-9	Methyl acetate	5.0	U
108-87-2	Methylcyclohexane	5.0	U

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS-77504

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-77504

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5269.D

Level: (TRACE/LOW/MED) LOW Date Received: _____

% Moisture: not dec. Date Analyzed: 06/11/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	48	
74-87-3	Chloromethane	42	
75-01-4	Vinyl chloride	43	
74-83-9	Bromomethane	62	
75-00-3	Chloroethane	39	
75-69-4	Trichlorofluoromethane	51	
75-35-4	1,1-Dichloroethene	43	
67-64-1	Acetone	45	
75-15-0	Carbon disulfide	42	
75-09-2	Methylene chloride	38	
156-60-5	trans-1,2-Dichloroethene	41	
1634-04-4	Methyl tert-butyl ether	39	
75-34-3	1,1-Dichloroethane	44	
78-93-3	2-Butanone	39	
156-59-2	cis-1,2-Dichloroethene	41	
67-66-3	Chloroform	44	
71-55-6	1,1,1-Trichloroethane	47	
56-23-5	Carbon tetrachloride	49	
107-06-2	1,2-Dichloroethane	43	
71-43-2	Benzene	41	
79-01-6	Trichloroethene	41	
78-87-5	1,2-Dichloropropane	40	
75-27-4	Bromodichloromethane	43	
10061-01-5	cis-1,3-Dichloropropene	40	
108-10-1	4-Methyl-2-pentanone	38	
108-88-3	Toluene	41	
10061-02-6	trans-1,3-Dichloropropene	39	
79-00-5	1,1,2-Trichloroethane	37	
127-18-4	Tetrachloroethene	43	
591-78-6	2-Hexanone	39	
124-48-1	Dibromochloromethane	40	
106-93-4	1,2-Dibromoethane	37	
108-90-7	Chlorobenzene	42	
100-41-4	Ethylbenzene	43	
179601-23-1	m,p-Xylene	88	

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
LCS-77504

Lab Name: <u>SPECTRUM ANALYTICAL, INC.</u>	Contract: _____
Lab Code: <u>MITKEM</u> Case No.: <u>N0980</u>	Mod. Ref No.: <u>080987/1</u> SDG No.: <u>SN0980</u>
Matrix: (SOIL/SED/WATER) <u>WATER</u>	Lab Sample ID: <u>LCS-77504</u>
Sample wt/vol: <u>5.00</u> (g/mL) <u>ML</u>	Lab File ID: <u>V8D5269.D</u>
Level: (TRACE/LOW/MED) <u>LOW</u>	Date Received: _____
% Moisture: not dec. _____	Date Analyzed: <u>06/11/2014</u>
GC Column: <u>DB-624</u> ID: <u>0.25</u> (mm)	Dilution Factor: <u>1.0</u>
Soil Extract Volume: _____ (uL)	Soil Aliquot Volume: _____ (uL)
Purge Volume: <u>5.0</u> (mL)	

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
95-47-6	o-Xylene	43	
1330-20-7	Xylene (Total)	130	
100-42-5	Styrene	41	
75-25-2	Bromoform	36	
98-82-8	Isopropylbenzene	45	
79-34-5	1,1,2,2-Tetrachloroethane	37	
541-73-1	1,3-Dichlorobenzene	42	
106-46-7	1,4-Dichlorobenzene	40	
95-50-1	1,2-Dichlorobenzene	41	
96-12-8	1,2-Dibromo-3-chloropropane	40	
120-82-1	1,2,4-Trichlorobenzene	39	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	49	
110-82-7	Cyclohexane	46	
79-20-9	Methyl acetate	41	
108-87-2	Methylcyclohexane	45	

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
LCS-77526

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-77526
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5302.D
Level: (TRACE/LOW/MED) LOW Date Received: _____
% Moisture: not dec. Date Analyzed: 06/12/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	47	
74-87-3	Chloromethane	43	
75-01-4	Vinyl chloride	48	
74-83-9	Bromomethane	69	
75-00-3	Chloroethane	44	
75-69-4	Trichlorofluoromethane	46	
75-35-4	1,1-Dichloroethene	46	
67-64-1	Acetone	51	
75-15-0	Carbon disulfide	48	
75-09-2	Methylene chloride	49	
156-60-5	trans-1,2-Dichloroethene	49	
1634-04-4	Methyl tert-butyl ether	51	
75-34-3	1,1-Dichloroethane	49	
78-93-3	2-Butanone	45	
156-59-2	cis-1,2-Dichloroethene	51	
67-66-3	Chloroform	49	
71-55-6	1,1,1-Trichloroethane	47	
56-23-5	Carbon tetrachloride	47	
107-06-2	1,2-Dichloroethane	48	
71-43-2	Benzene	50	
79-01-6	Trichloroethene	48	
78-87-5	1,2-Dichloropropane	50	
75-27-4	Bromodichloromethane	51	
10061-01-5	cis-1,3-Dichloropropene	54	
108-10-1	4-Methyl-2-pentanone	43	
108-88-3	Toluene	50	
10061-02-6	trans-1,3-Dichloropropene	53	
79-00-5	1,1,2-Trichloroethane	49	
127-18-4	Tetrachloroethene	43	
591-78-6	2-Hexanone	40	
124-48-1	Dibromochloromethane	49	
106-93-4	1,2-Dibromoethane	46	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	46	
179601-23-1	m,p-Xylene	93	

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
LCS-77526

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-77526
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5302.D
Level: (TRACE/LOW/MED) LOW Date Received: _____
% Moisture: not dec. Date Analyzed: 06/12/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	48	
1330-20-7	Xylene (Total)	140	
100-42-5	Styrene	47	
75-25-2	Bromoform	46	
98-82-8	Isopropylbenzene	45	
79-34-5	1,1,2,2-Tetrachloroethane	44	
541-73-1	1,3-Dichlorobenzene	44	
106-46-7	1,4-Dichlorobenzene	43	
95-50-1	1,2-Dichlorobenzene	44	
96-12-8	1,2-Dibromo-3-chloropropane	38	
120-82-1	1,2,4-Trichlorobenzene	45	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	46	
110-82-7	Cyclohexane	48	
79-20-9	Methyl acetate	45	
108-87-2	Methylcyclohexane	49	

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS-77548

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-77548
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5343.D
Level: (TRACE/LOW/MED) LOW Date Received: _____
% Moisture: not dec. Date Analyzed: 06/13/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	51	
74-87-3	Chloromethane	48	
75-01-4	Vinyl chloride	50	
74-83-9	Bromomethane	72	
75-00-3	Chloroethane	47	
75-69-4	Trichlorofluoromethane	53	
75-35-4	1,1-Dichloroethene	48	
67-64-1	Acetone	58	
75-15-0	Carbon disulfide	50	
75-09-2	Methylene chloride	50	
156-60-5	trans-1,2-Dichloroethene	50	
1634-04-4	Methyl tert-butyl ether	54	
75-34-3	1,1-Dichloroethane	53	
78-93-3	2-Butanone	52	
156-59-2	cis-1,2-Dichloroethene	52	
67-66-3	Chloroform	54	
71-55-6	1,1,1-Trichloroethane	52	
56-23-5	Carbon tetrachloride	53	
107-06-2	1,2-Dichloroethane	57	
71-43-2	Benzene	51	
79-01-6	Trichloroethene	50	
78-87-5	1,2-Dichloropropane	52	
75-27-4	Bromodichloromethane	56	
10061-01-5	cis-1,3-Dichloropropene	55	
108-10-1	4-Methyl-2-pentanone	51	
108-88-3	Toluene	49	
10061-02-6	trans-1,3-Dichloropropene	57	
79-00-5	1,1,2-Trichloroethane	52	
127-18-4	Tetrachloroethene	42	
591-78-6	2-Hexanone	45	
124-48-1	Dibromochloromethane	51	
106-93-4	1,2-Dibromoethane	49	
108-90-7	Chlorobenzene	46	
100-41-4	Ethylbenzene	45	
179601-23-1	m,p-Xylene	90	

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
LCS-77548

Lab Name: <u>SPECTRUM ANALYTICAL, INC.</u>	Contract: _____
Lab Code: <u>MITKEM</u> Case No.: <u>N0980</u>	Mod. Ref No.: <u>080987/1</u> SDG No.: <u>SN0980</u>
Matrix: (SOIL/SED/WATER) <u>WATER</u>	Lab Sample ID: <u>LCS-77548</u>
Sample wt/vol: <u>5.00</u> (g/mL) <u>ML</u>	Lab File ID: <u>V8D5343.D</u>
Level: (TRACE/LOW/MED) <u>LOW</u>	Date Received: _____
% Moisture: not dec. _____	Date Analyzed: <u>06/13/2014</u>
GC Column: <u>DB-624</u> ID: <u>0.25</u> (mm)	Dilution Factor: <u>1.0</u>
Soil Extract Volume: _____ (uL)	Soil Aliquot Volume: _____ (uL)
Purge Volume: <u>5.0</u> (mL)	

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
95-47-6	o-Xylene	46	
1330-20-7	Xylene (Total)	140	
100-42-5	Styrene	46	
75-25-2	Bromoform	47	
98-82-8	Isopropylbenzene	44	
79-34-5	1,1,2,2-Tetrachloroethane	46	
541-73-1	1,3-Dichlorobenzene	43	
106-46-7	1,4-Dichlorobenzene	42	
95-50-1	1,2-Dichlorobenzene	44	
96-12-8	1,2-Dibromo-3-chloropropane	42	
120-82-1	1,2,4-Trichlorobenzene	43	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	49	
110-82-7	Cyclohexane	47	
79-20-9	Methyl acetate	53	
108-87-2	Methylcyclohexane	45	

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113MS

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02AMS
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5290.D
Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014
% Moisture: not dec. Date Analyzed: 06/11/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	45	
74-87-3	Chloromethane	35	
75-01-4	Vinyl chloride	170	
74-83-9	Bromomethane	22	
75-00-3	Chloroethane	46	
75-69-4	Trichlorofluoromethane	45	
75-35-4	1,1-Dichloroethene	47	
67-64-1	Acetone	77	
75-15-0	Carbon disulfide	46	
75-09-2	Methylene chloride	47	
156-60-5	trans-1,2-Dichloroethene	58	
1634-04-4	Methyl tert-butyl ether	47	
75-34-3	1,1-Dichloroethane	51	
78-93-3	2-Butanone	71	
156-59-2	cis-1,2-Dichloroethene	400	E
67-66-3	Chloroform	48	
71-55-6	1,1,1-Trichloroethane	48	
56-23-5	Carbon tetrachloride	50	
107-06-2	1,2-Dichloroethane	46	
71-43-2	Benzene	63	
79-01-6	Trichloroethene	54	
78-87-5	1,2-Dichloropropane	47	
75-27-4	Bromodichloromethane	47	
10061-01-5	cis-1,3-Dichloropropene	47	
108-10-1	4-Methyl-2-pentanone	49	
108-88-3	Toluene	660	E
10061-02-6	trans-1,3-Dichloropropene	45	
79-00-5	1,1,2-Trichloroethane	45	
127-18-4	Tetrachloroethene	45	
591-78-6	2-Hexanone	43	
124-48-1	Dibromochloromethane	45	
106-93-4	1,2-Dibromoethane	43	
108-90-7	Chlorobenzene	89	
100-41-4	Ethylbenzene	140	
179601-23-1	m,p-Xylene	340	

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113MS

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02AMS
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5290.D
Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014
% Moisture: not dec. Date Analyzed: 06/11/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	o-Xylene	130	
1330-20-7	Xylene (Total)	470	
100-42-5	Styrene	61	
75-25-2	Bromoform	41	
98-82-8	Isopropylbenzene	48	
79-34-5	1,1,2,2-Tetrachloroethane	44	
541-73-1	1,3-Dichlorobenzene	44	
106-46-7	1,4-Dichlorobenzene	48	
95-50-1	1,2-Dichlorobenzene	57	
96-12-8	1,2-Dibromo-3-chloropropane	42	
120-82-1	1,2,4-Trichlorobenzene	44	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	45	
110-82-7	Cyclohexane	51	
79-20-9	Methyl acetate	47	
108-87-2	Methylcyclohexane	45	

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113MSD

Lab Name: SPECTRUM ANALYTICAL, INC.	Contract:
Lab Code: MITKEM Case No.: N0980	Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER	Lab Sample ID: N0980-02AMSD
Sample wt/vol: 5.00 (g/mL) ML	Lab File ID: V8D5325.D
Level: (TRACE/LOW/MED) LOW	Date Received: 06/07/2014
% Moisture: not dec.	Date Analyzed: 06/12/2014
GC Column: DB-624 ID: 0.25 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume: (uL)
Purge Volume: 5.0 (mL)	

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	48	
74-87-3	Chloromethane	38	
75-01-4	Vinyl chloride	160	
74-83-9	Bromomethane	29	
75-00-3	Chloroethane	45	
75-69-4	Trichlorofluoromethane	51	
75-35-4	1,1-Dichloroethene	49	
67-64-1	Acetone	88	
75-15-0	Carbon disulfide	46	
75-09-2	Methylene chloride	49	
156-60-5	trans-1,2-Dichloroethene	58	
1634-04-4	Methyl tert-butyl ether	53	
75-34-3	1,1-Dichloroethane	54	
78-93-3	2-Butanone	85	
156-59-2	cis-1,2-Dichloroethene	390	E
67-66-3	Chloroform	52	
71-55-6	1,1,1-Trichloroethane	52	
56-23-5	Carbon tetrachloride	54	
107-06-2	1,2-Dichloroethane	56	
71-43-2	Benzene	64	
79-01-6	Trichloroethene	55	
78-87-5	1,2-Dichloropropane	50	
75-27-4	Bromodichloromethane	53	
10061-01-5	cis-1,3-Dichloropropene	49	
108-10-1	4-Methyl-2-pentanone	57	
108-88-3	Toluene	650	E
10061-02-6	trans-1,3-Dichloropropene	51	
79-00-5	1,1,2-Trichloroethane	51	
127-18-4	Tetrachloroethene	47	
591-78-6	2-Hexanone	46	
124-48-1	Dibromochloromethane	49	
106-93-4	1,2-Dibromoethane	47	
108-90-7	Chlorobenzene	86	
100-41-4	Ethylbenzene	130	
179601-23-1	m,p-Xylene	320	

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113MSD

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02AMSD

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5325.D

Level: (TRACE/LOW/MED) LOW Date Received: 06/07/2014

% Moisture: not dec. Date Analyzed: 06/12/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
95-47-6	o-Xylene	130	
1330-20-7	Xylene (Total)	450	
100-42-5	Styrene	60	
75-25-2	Bromoform	45	
98-82-8	Isopropylbenzene	47	
79-34-5	1,1,2,2-Tetrachloroethane	45	
541-73-1	1,3-Dichlorobenzene	42	
106-46-7	1,4-Dichlorobenzene	47	
95-50-1	1,2-Dichlorobenzene	56	
96-12-8	1,2-Dibromo-3-chloropropane	45	
120-82-1	1,2,4-Trichlorobenzene	42	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	48	
110-82-7	Cyclohexane	50	
79-20-9	Methyl acetate	52	
108-87-2	Methylcyclohexane	44	

2B - FORM II VOA-2
WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
 Level: (TRACE or LOW) LOW

	EPA SAMPLE NO.	VDMC1 (DBFM) #	VDMC2 (DCE) #	VDMC3 (TOL) #	VDMC4 (BFB) #				TOT OUT
01	LCS-77504	103	94	102	103				0
02	MB-77504	104	97	100	97				0
03	WG-80987-060 514-BP-112	106	104	96	102				0
04	WG-80987-060 614-BP-113	103	102	97	101				0
05	WG-80987-060 614-BP-114	98	95	100	110				0
06	WG-80987-060 614-BP-113MS	97	92	99	99				0
07	LCS-77526	103	108	97	101				0
08	MB-77526	101	104	98	96				0
09	TB-80987-060 614-BP	101	104	98	94				0
10	WG-80987-060 514-BP-112DL	104	100	98	100				0
11	WG-80987-060 614-BP-113DL	105	105	96	96				0
12	WG-80987-060 614-BP-114DL	103	108	96	100				0
13	WG-80987-060 614-BP-116	104	105	95	99				0
14	WG-80987-060 614-BP-113MS D	108	105	94	103				0
15	LCS-77548	108	103	95	104				0
16	MB-77548	109	106	96	96				0
17	WG-80987-060 614-BP-115	108	101	93	98				0

QC LIMITS
 (85-115)
 (70-120)
 (85-120)
 (75-120)

VDMC1 (DBFM) Dibromofluoromethane
 VDMC2 (DCE) = 1,2-Dichloroethane-d4
 VDMC3 (TOL) = Toluene-d8
 VDMC4 (BFB) = Bromofluorobenzene
 # Column to be used to flag recovery values
 * Values outside of contract required QC limits

som14.05.28.1137

3A - FORM III VOA-1
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
 Matrix Spike - EPA Sample No.: WG-80987-060614-BP-113 Level: (TRACE or LOW) LOW

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	45.2431	90		30-155
Chloromethane	50.0000	0.0000	35.4755	71		40-125
Vinyl chloride	50.0000	127.6560	165.4280	76		50-145
Bromomethane	50.0000	0.0000	21.5076	43		30-145
Chloroethane	50.0000	0.0000	45.8040	92		60-135
Trichlorofluoromethane	50.0000	0.0000	44.9169	90		60-145
1,1-Dichloroethene	50.0000	0.0000	47.2605	95		70-130
Acetone	50.0000	0.0000	76.8397	154	*	40-140
Carbon disulfide	50.0000	0.0000	45.8140	92		35-160
Methylene chloride	50.0000	1.0500	47.1541	92		55-140
trans-1,2-Dichloroethen	50.0000	9.2380	58.2248	98		60-140
Methyl tert-butyl ether	50.0000	0.0000	47.4539	95		65-125
1,1-Dichloroethane	50.0000	2.1299	50.8383	97		70-135
2-Butanone	50.0000	0.0000	71.1533	142		30-150
cis-1,2-Dichloroethene	50.0000	353.6217	395.3394	83		70-125
Chloroform	50.0000	0.0000	48.0816	96		65-135
1,1,1-Trichloroethane	50.0000	0.0000	47.9794	96		65-130
Carbon tetrachloride	50.0000	0.0000	49.5737	99		65-140
1,2-Dichloroethane	50.0000	1.9379	46.3701	89		70-130
Benzene	50.0000	14.6759	62.8584	96		80-120
Trichloroethene	50.0000	5.4367	54.2184	98		70-125
1,2-Dichloropropane	50.0000	0.0000	47.2881	95		75-125
Bromodichloromethane	50.0000	0.0000	46.8143	94		75-120
cis-1,3-Dichloropropene	50.0000	0.0000	46.8458	94		70-130
4-Methyl-2-pentanone	50.0000	4.1567	48.5772	89		60-135
Toluene	50.0000	629.1315	662.9399	68	*	75-120
trans-1,3-Dichloroprope	50.0000	0.0000	45.0789	90		55-140
1,1,2-Trichloroethane	50.0000	0.0000	45.0125	90		75-125
Tetrachloroethene	50.0000	2.0016	44.8600	86		45-150
2-Hexanone	50.0000	0.0000	43.1321	86		55-130
Dibromochloromethane	50.0000	0.0000	45.0494	90		60-135
1,2-Dibromoethane	50.0000	0.0000	43.4475	87		80-120
Chlorobenzene	50.0000	42.6272	88.7669	92		80-120
Ethylbenzene	50.0000	91.7161	139.6565	96		75-125
m,p-Xylene	100.0000	248.0247	340.9786	93		75-130
o-Xylene	50.0000	86.5668	133.8987	95		80-120
Xylene (Total)	150.0000	334.5915	474.8773	94		81-121
Styrene	50.0000	0.0000	60.9290	122		65-135
Bromoform	50.0000	0.0000	41.2128	82		70-130
Isopropylbenzene	50.0000	2.1104	47.8416	91		75-125
1,1,2,2-Tetrachloroetha	50.0000	0.0000	43.7771	88		65-130
1,3-Dichlorobenzene	50.0000	1.0958	43.6872	85		75-125
1,4-Dichlorobenzene	50.0000	6.7554	47.8708	82		75-125
1,2-Dichlorobenzene	50.0000	15.5924	56.9726	83		70-120

3A - FORM III VOA-1
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
 Matrix Spike - EPA Sample No.: WG-80987-060614-BP-113 Level: (TRACE or LOW) LOW

1,2-Dibromo-3-chloropro	50.0000	0.0000	41.6127	83		50-130
1,2,4-Trichlorobenzene	50.0000	1.8145	43.7012	84		65-135
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0000	0.0000	45.4935	91		70-130
Cyclohexane	50.0000	1.9380	50.7007	98		70-130
Methyl acetate	50.0000	0.0000	47.3259	95		70-130
Methylcyclohexane	50.0000	0.0000	44.8006	90		70-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS	
							RPD	REC.
Dichlorodifluoromethane	50.0000	47.7508	96		5		0-40	30-155
Chloromethane	50.0000	38.0495	76		7		0-40	40-125
Vinyl chloride	50.0000	164.7659	74		2		0-40	50-145
Bromomethane	50.0000	28.7963	58		29		0-40	30-145
Chloroethane	50.0000	44.5845	89		3		0-40	60-135
Trichlorofluoromethane	50.0000	51.0392	102		13		0-40	60-145
1,1-Dichloroethene	50.0000	48.7556	98		3		0-40	70-130
Acetone	50.0000	87.5573	175	*	13		0-40	40-140
Carbon disulfide	50.0000	45.9059	92		0		0-40	35-160
Methylene chloride	50.0000	49.4731	97		5		0-40	55-140
trans-1,2-Dichloroethen	50.0000	58.0536	98		0		0-40	60-140
Methyl tert-butyl ether	50.0000	52.6277	105		10		0-40	65-125
1,1-Dichloroethane	50.0000	53.5957	103		6		0-40	70-135
2-Butanone	50.0000	85.3043	171	*	18		0-40	30-150
cis-1,2-Dichloroethene	50.0000	392.0292	77		8		0-40	70-125
Chloroform	50.0000	52.1502	104		8		0-40	65-135
1,1,1-Trichloroethane	50.0000	51.5697	103		7		0-40	65-130
Carbon tetrachloride	50.0000	54.3165	109		9		0-40	65-140
1,2-Dichloroethane	50.0000	56.2339	109		20		0-40	70-130
Benzene	50.0000	63.5798	98		1		0-40	80-120
Trichloroethene	50.0000	54.9309	99		1		0-40	70-125
1,2-Dichloropropane	50.0000	50.0836	100		6		0-40	75-125
Bromodichloromethane	50.0000	53.0689	106		13		0-40	75-120
cis-1,3-Dichloropropene	50.0000	49.0478	98		5		0-40	70-130
4-Methyl-2-pentanone	50.0000	56.8009	105		17		0-40	60-135
Toluene	50.0000	653.4201	49	*	33		0-40	75-120
trans-1,3-Dichloroprope	50.0000	50.6220	101		12		0-40	55-140
1,1,2-Trichloroethane	50.0000	51.0331	102		13		0-40	75-125
Tetrachloroethene	50.0000	46.9689	90		5		0-40	45-150
2-Hexanone	50.0000	46.4633	93		7		0-40	55-130
Dibromochloromethane	50.0000	49.1921	98		9		0-40	60-135
1,2-Dibromoethane	50.0000	46.5307	93		7		0-40	80-120
Chlorobenzene	50.0000	85.5954	86		7		0-40	80-120
Ethylbenzene	50.0000	130.1995	77		22		0-40	75-125
m,p-Xylene	100.0000	317.3967	69	*	29		0-40	75-130
o-Xylene	50.0000	128.1231	83		13		0-40	80-120
Xylene (Total)	150.0000	445.5198	74	*	23		0-40	81-121

3A - FORM III VOA-1
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix Spike - EPA Sample No.: WG-80987-060614-BP-113 Level: (TRACE or LOW) LOW

Styrene	50.0000	59.5289	119		2		0-40	65-135
Bromoform	50.0000	45.1067	90		9		0-40	70-130
Isopropylbenzene	50.0000	46.5937	89		3		0-40	75-125
1,1,2,2-Tetrachloroetha	50.0000	45.1246	90		3		0-40	65-130
1,3-Dichlorobenzene	50.0000	41.6815	81		5		0-40	75-125
1,4-Dichlorobenzene	50.0000	47.0464	81		2		0-40	75-125
1,2-Dichlorobenzene	50.0000	55.8959	81		3		0-40	70-120
1,2-Dibromo-3-chloropro	50.0000	45.4563	91		9		0-40	50-130
1,2,4-Trichlorobenzene	50.0000	42.4490	81		3		0-40	65-135
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0000	48.3779	97		6		0-40	70-130
Cyclohexane	50.0000	49.7634	96		2		0-40	70-130
Methyl acetate	50.0000	52.2931	105		10		0-40	70-130
Methylcyclohexane	50.0000	43.6594	87		3		0-40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits

Spike Recovery: 7 out of 100 outside limits

COMMENTS: _____

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-77504

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Lab Sample ID: LCS-77504 LCS Lot No.: _____
Date Extracted: 06/11/2014 Date Analyzed (1): 06/11/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	48.1369	96		30 - 155
Chloromethane	50.0000	0.0000	41.6233	83		40 - 125
Vinyl chloride	50.0000	0.0000	43.1324	86		50 - 145
Bromomethane	50.0000	0.0000	61.5022	123		30 - 145
Chloroethane	50.0000	0.0000	38.5240	77		60 - 135
Trichlorofluoromethane	50.0000	0.0000	51.4159	103		60 - 145
1,1-Dichloroethene	50.0000	0.0000	42.5969	85		70 - 130
Acetone	50.0000	0.0000	44.9133	90		40 - 140
Carbon disulfide	50.0000	0.0000	42.0148	84		35 - 160
Methylene chloride	50.0000	0.0000	38.3037	77		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	40.8874	82		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	38.8737	78		65 - 125
1,1-Dichloroethane	50.0000	0.0000	43.9370	88		70 - 135
2-Butanone	50.0000	0.0000	38.8722	78		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	40.8653	82		70 - 125
Chloroform	50.0000	0.0000	44.1928	88		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	47.1096	94		65 - 130
Carbon tetrachloride	50.0000	0.0000	49.1938	98		65 - 140
1,2-Dichloroethane	50.0000	0.0000	43.2027	86		70 - 130
Benzene	50.0000	0.0000	41.0350	82		80 - 120
Trichloroethene	50.0000	0.0000	41.3286	83		70 - 125
1,2-Dichloropropane	50.0000	0.0000	40.1876	80		75 - 125
Bromodichloromethane	50.0000	0.0000	43.3128	87		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	40.3234	81		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	38.0377	76		60 - 135
Toluene	50.0000	0.0000	41.4186	83		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	38.7829	78		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	37.1212	74	*	75 - 125
Tetrachloroethene	50.0000	0.0000	43.4753	87		45 - 150
2-Hexanone	50.0000	0.0000	38.6978	77		55 - 130
Dibromochloromethane	50.0000	0.0000	40.1059	80		60 - 135
1,2-Dibromoethane	50.0000	0.0000	37.1218	74	*	80 - 120
Chlorobenzene	50.0000	0.0000	41.9524	84		80 - 120
Ethylbenzene	50.0000	0.0000	43.1986	86		75 - 125
m,p-Xylene	100.0000	0.0000	87.6374	88		75 - 130
o-Xylene	50.0000	0.0000	43.1620	86		80 - 120
Xylene (Total)	150.0000	0.0000	130.7993	87		81 - 121
Styrene	50.0000	0.0000	40.6766	81		65 - 135
Bromoform	50.0000	0.0000	36.2067	72		70 - 130
Isopropylbenzene	50.0000	0.0000	44.6439	89		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	37.4150	75		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	41.8406	84		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	40.0694	80		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	40.8340	82		70 - 120

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-77504

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Lab Sample ID: LCS-77504 LCS Lot No.: _____
Date Extracted: 06/11/2014 Date Analyzed (1): 06/11/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2-Dibromo-3-chloropropan	50.0000	0.0000	39.7905	80		50 - 130
1,2,4-Trichlorobenzene	50.0000	0.0000	38.6745	77		65 - 135
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	49.2214	98		70 - 130
Cyclohexane	50.0000	0.0000	45.9336	92		70 - 130
Methyl acetate	50.0000	0.0000	41.4261	83		70 - 130
Methylcyclohexane	50.0000	0.0000	44.6635	89		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 2 out of 50 outside limits

COMMENTS: _____

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-77526

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Lab Sample ID: LCS-77526 LCS Lot No.: _____
Date Extracted: 06/12/2014 Date Analyzed (1): 06/12/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	46.5647	93		30 - 155
Chloromethane	50.0000	0.0000	42.8268	86		40 - 125
Vinyl chloride	50.0000	0.0000	47.8996	96		50 - 145
Bromomethane	50.0000	0.0000	68.9633	138		30 - 145
Chloroethane	50.0000	0.0000	44.0017	88		60 - 135
Trichlorofluoromethane	50.0000	0.0000	45.7761	92		60 - 145
1,1-Dichloroethene	50.0000	0.0000	46.4183	93		70 - 130
Acetone	50.0000	0.0000	50.5106	101		40 - 140
Carbon disulfide	50.0000	0.0000	47.6456	95		35 - 160
Methylene chloride	50.0000	0.0000	49.4142	99		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	49.3485	99		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	50.8166	102		65 - 125
1,1-Dichloroethane	50.0000	0.0000	49.1400	98		70 - 135
2-Butanone	50.0000	0.0000	44.9168	90		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	50.6920	101		70 - 125
Chloroform	50.0000	0.0000	49.0365	98		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	46.6370	93		65 - 130
Carbon tetrachloride	50.0000	0.0000	47.4896	95		65 - 140
1,2-Dichloroethane	50.0000	0.0000	48.4367	97		70 - 130
Benzene	50.0000	0.0000	49.7402	99		80 - 120
Trichloroethene	50.0000	0.0000	48.3469	97		70 - 125
1,2-Dichloropropane	50.0000	0.0000	50.1873	100		75 - 125
Bromodichloromethane	50.0000	0.0000	51.0073	102		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	53.5495	107		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	42.6484	85		60 - 135
Toluene	50.0000	0.0000	50.0012	100		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	52.5933	105		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	49.2147	98		75 - 125
Tetrachloroethene	50.0000	0.0000	43.1701	86		45 - 150
2-Hexanone	50.0000	0.0000	39.9423	80		55 - 130
Dibromochloromethane	50.0000	0.0000	48.6852	97		60 - 135
1,2-Dibromoethane	50.0000	0.0000	46.1013	92		80 - 120
Chlorobenzene	50.0000	0.0000	47.3490	95		80 - 120
Ethylbenzene	50.0000	0.0000	46.2668	93		75 - 125
m,p-Xylene	100.0000	0.0000	92.9622	93		75 - 130
o-Xylene	50.0000	0.0000	48.0214	96		80 - 120
Xylene (Total)	150.0000	0.0000	140.9837	94		81 - 121
Styrene	50.0000	0.0000	47.4788	95		65 - 135
Bromoform	50.0000	0.0000	45.7925	92		70 - 130
Isopropylbenzene	50.0000	0.0000	44.9794	90		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	43.6260	87		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	43.7814	88		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	42.6093	85		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	43.9640	88		70 - 120

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-77526

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Lab Sample ID: LCS-77526 LCS Lot No.: _____
Date Extracted: 06/12/2014 Date Analyzed (1): 06/12/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2-Dibromo-3-chloropropan	50.0000	0.0000	38.1200	76		50 - 130
1,2,4-Trichlorobenzene	50.0000	0.0000	44.6879	89		65 - 135
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	46.3592	93		70 - 130
Cyclohexane	50.0000	0.0000	48.0442	96		70 - 130
Methyl acetate	50.0000	0.0000	45.1295	90		70 - 130
Methylcyclohexane	50.0000	0.0000	48.5735	97		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-77548

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Lab Sample ID: LCS-77548 LCS Lot No.: _____
Date Extracted: 06/13/2014 Date Analyzed (1): 06/13/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	50.7525	102		30 - 155
Chloromethane	50.0000	0.0000	48.4827	97		40 - 125
Vinyl chloride	50.0000	0.0000	49.7472	99		50 - 145
Bromomethane	50.0000	0.0000	72.3270	145		30 - 145
Chloroethane	50.0000	0.0000	47.2882	95		60 - 135
Trichlorofluoromethane	50.0000	0.0000	53.4745	107		60 - 145
1,1-Dichloroethene	50.0000	0.0000	48.3201	97		70 - 130
Acetone	50.0000	0.0000	57.8761	116		40 - 140
Carbon disulfide	50.0000	0.0000	50.0195	100		35 - 160
Methylene chloride	50.0000	0.0000	50.4175	101		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	49.6847	99		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	54.1481	108		65 - 125
1,1-Dichloroethane	50.0000	0.0000	52.8107	106		70 - 135
2-Butanone	50.0000	0.0000	51.9284	104		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	52.1734	104		70 - 125
Chloroform	50.0000	0.0000	53.9551	108		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	51.6812	103		65 - 130
Carbon tetrachloride	50.0000	0.0000	52.9030	106		65 - 140
1,2-Dichloroethane	50.0000	0.0000	56.8136	114		70 - 130
Benzene	50.0000	0.0000	50.5663	101		80 - 120
Trichloroethene	50.0000	0.0000	49.8329	100		70 - 125
1,2-Dichloropropane	50.0000	0.0000	52.0018	104		75 - 125
Bromodichloromethane	50.0000	0.0000	56.2083	112		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	54.6466	109		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	50.8095	102		60 - 135
Toluene	50.0000	0.0000	49.2808	99		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	56.8345	114		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	51.7817	104		75 - 125
Tetrachloroethene	50.0000	0.0000	41.6794	83		45 - 150
2-Hexanone	50.0000	0.0000	45.0264	90		55 - 130
Dibromochloromethane	50.0000	0.0000	50.7159	101		60 - 135
1,2-Dibromoethane	50.0000	0.0000	48.7513	98		80 - 120
Chlorobenzene	50.0000	0.0000	46.0059	92		80 - 120
Ethylbenzene	50.0000	0.0000	44.6639	89		75 - 125
m,p-Xylene	100.0000	0.0000	89.9974	90		75 - 130
o-Xylene	50.0000	0.0000	45.6206	91		80 - 120
Xylene (Total)	150.0000	0.0000	135.6181	90		81 - 121
Styrene	50.0000	0.0000	46.4882	93		65 - 135
Bromoform	50.0000	0.0000	47.3772	95		70 - 130
Isopropylbenzene	50.0000	0.0000	43.9934	88		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	46.4544	93		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	42.6636	85		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	41.5398	83		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	44.0595	88		70 - 120

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-77548

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Lab Sample ID: LCS-77548 LCS Lot No.: _____
Date Extracted: 06/13/2014 Date Analyzed (1): 06/13/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2-Dibromo-3-chloropropan	50.0000	0.0000	42.0769	84		50 - 130
1,2,4-Trichlorobenzene	50.0000	0.0000	42.8641	86		65 - 135
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	48.5558	97		70 - 130
Cyclohexane	50.0000	0.0000	47.1214	94		70 - 130
Methyl acetate	50.0000	0.0000	53.1084	106		70 - 130
Methylcyclohexane	50.0000	0.0000	45.0687	90		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

4A - FORM IV VOA
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-77504

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Lab File ID: V8D5271.D Lab Sample ID: MB-77504
Instrument ID: V10
Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 06/11/2014
Level: (TRACE or LOW/MED) LOW Time Analyzed: 15:09
GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-77504	LCS-77504	V8D5269.D	14:03
02	WG-80987-060 514-BP-112	N0980-01A	V8D5284.D	21:07
03	WG-80987-060 614-BP-113	N0980-02A	V8D5285.D	21:35
04	WG-80987-060 614-BP-114	N0980-03A	V8D5286.D	22:02
05	WG-80987-060 614-BP-113MS	N0980-02AMS	V8D5290.D	23:51

COMMENTS:

4A - FORM IV VOA
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-77526

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Lab File ID: V8D5306.D Lab Sample ID: MB-77526
Instrument ID: V10
Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 06/12/2014
Level: (TRACE or LOW/MED) LOW Time Analyzed: 10:59
GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-77526	LCS-77526	V8D5302.D	9:10
02	TB-80987-060 614-BP	N0980-06A	V8D5308.D	11:54
03	WG-80987-060 514-BP-112DL	N0980-01ADL	V8D5311.D	13:17
04	WG-80987-060 614-BP-113DL	N0980-02ADL	V8D5312.D	13:45
05	WG-80987-060 614-BP-114DL	N0980-03ADL	V8D5313.D	14:13
06	WG-80987-060 614-BP-116	N0980-05A	V8D5316.D	15:36
07	WG-80987-060 614-BP-113MS D	N0980-02AMSD	V8D5325.D	19:47

COMMENTS: _____

4A - FORM IV VOA
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-77548

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Lab File ID: V8D5345.D Lab Sample ID: MB-77548
Instrument ID: V10
Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 06/13/2014
Level: (TRACE or LOW/MED) LOW Time Analyzed: 10:39
GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-77548	LCS-77548	V8D5343.D	9:44
02	WG-80987-060 614-BP-115	N0980-04A	V8D5348.D	12:01

COMMENTS:

8A - FORM VIII VOA
VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
 GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 06/10/2014 06/10/2014
 EPA Sample No.(VSTD#####): VSTD05010J Date Analyzed: 06/11/2014
 Lab File ID (Standard): V8D5266.D Time Analyzed: 12:31
 Instrument ID: V10 Heated Purge: (Y/N) N

	IS1 (S1)		IS2 (S2)		IS3 (S3)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	377758	5.236	344622	8.223	182266	10.725
UPPER LIMIT	755516	5.736	689244	8.723	364532	11.225
LOWER LIMIT	188879	4.736	172311	7.723	91133	10.225
EPA SAMPLE NO.						
01 LCS-77504	374567	5.236	333675	8.223	173722	10.725
02 MB-77504	401613	5.236	359162	8.223	161261	10.728
03 WG-80987-060 514-BP-112	464437	5.236	444578	8.223	232394	10.725
04 WG-80987-060 614-BP-113	471041	5.236	440116	8.223	228235	10.725
05 WG-80987-060 614-BP-114	437176	5.236	402684	8.223	220532	10.725
06 WG-80987-060 614-BP-113MS	555867	5.236	513751	8.220	272604	10.725

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8A - FORM VIII VOA
VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
 GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 06/10/2014 06/10/2014
 EPA Sample No.(VSTD#####): VSTD05010K Date Analyzed: 06/12/2014
 Lab File ID (Standard): V8D5301.D Time Analyzed: 8:15
 Instrument ID: V10 Heated Purge: (Y/N) N

	IS1 (S1)		IS2 (S2)		IS3 (S3)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	507252	5.236	486779	8.223	256330	10.725
UPPER LIMIT	1014504	5.736	973558	8.723	512660	11.225
LOWER LIMIT	253626	4.736	243390	7.723	128165	10.225
EPA SAMPLE NO.						
01 LCS-77526	587511	5.236	559469	8.223	298463	10.725
02 MB-77526	551479	5.236	521360	8.223	251282	10.728
03 TB-80987-060 614-BP	551494	5.236	511455	8.223	239086	10.728
04 WG-80987-060 514-BP-112DL	516434	5.239	487742	8.223	241881	10.725
05 WG-80987-060 614-BP-113DL	517570	5.236	485868	8.223	232880	10.728
06 WG-80987-060 614-BP-114DL	502071	5.236	476261	8.223	239841	10.725
07 WG-80987-060 614-BP-116	501855	5.236	474409	8.223	233035	10.728
08 WG-80987-060 614-BP-113MS D	459173	5.236	451356	8.223	248048	10.725

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8A - FORM VIII VOA
VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
 GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 06/10/2014 06/10/2014
 EPA Sample No.(VSTD#####): VSTD05010L Date Analyzed: 06/13/2014
 Lab File ID (Standard): V8D5342.D Time Analyzed: 9:01
 Instrument ID: V10 Heated Purge: (Y/N) N

	IS1 (S1)		IS2 (S2)		IS3 (S3)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	477480	5.236	465858	8.223	251608	10.728
UPPER LIMIT	954960	5.736	931716	8.723	503216	11.228
LOWER LIMIT	238740	4.736	232929	7.723	125804	10.228
EPA SAMPLE NO.						
01 LCS-77548	465273	5.236	458796	8.223	242774	10.725
02 MB-77548	449693	5.239	432966	8.226	199827	10.728
03 WG-80987-060 614-BP-115	436231	5.236	430447	8.223	195853	10.725

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of
internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of
internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles)
minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles)
minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

*** Semivolatile Organics ***

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Conestoga-Rovers & Associates

Project: Friedrichsohn Cooperage Site

Laboratory Workorder / SDG #: N0980

SW846 8270D, SVOA by GC-MS

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code:
SW846 8270D

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: S6

Instrument Type: GCMS-Semi

Description: HP7890A
Manufacturer: Agilent
Model: 7890A/5973

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits with the following exceptions. Please note that the acceptance criteria allow one surrogate recovery outside of the QC limits per fraction.

WG-80987-060514-BP-112 (N0980-01B) Surrogate outside of QC limit due to dilution, recovery is below criteria for 2,4,6-Tribromophenol at 31% with criteria of (40-125), 2-Fluorophenol at 15% with criteria of (20-110) and Terphenyl-d14 at 20% with criteria of (50-135).

WG-80987-060614-BP-113 (N0980-02B), recovery is below criteria for Terphenyl-d14 at 49% with criteria of (50-135).

WG-80987-060614-BP-113 (N0980-02BMS), recovery is below criteria for Terphenyl-d14 at 47% with criteria of (50-135).

WG-80987-060614-BP-113 (N0980-02BMSD), recovery is below criteria for Terphenyl-d14 at 40% with criteria of (50-135).

WG-80987-060614-BP-114 (N0980-03B) Surrogate outside of QC limit due to dilution, recovery is below criteria for 2-Fluorophenol at 13% with criteria of (20-110) and Terphenyl-d14 at 23% with criteria of (50-135).

WG-80987-060614-BP-114 (N0980-03BDL) Surrogate outside of QC limit due to dilution, recovery is below criteria for 2,4,6-Tribromophenol at 0% with criteria of (40-125), 2-Fluorobiphenyl at 0% with criteria of (50-110), 2-Fluorophenol at 0% with criteria of (20-110), Nitrobenzene-d5 at 0% with criteria of (40-110), Phenol-d5 at 0% with criteria of (10-115) and Terphenyl-d14 at 0% with criteria of (50-135).

WG-80987-060614-BP-115 (N0980-04B) Surrogate outside of QC limit due to dilution, recovery is below criteria for 2-Fluorobiphenyl at 30% with criteria of (50-110), 2-Fluorophenol at 13% with criteria of (20-110) and Terphenyl-d14 at 5% with criteria of (50-135).

WG-80987-060614-BP-115 (N0980-04BDL) Surrogate outside of QC limit due to dilution, recovery is below criteria for 2,4,6-Tribromophenol at 0% with criteria of (40-125), 2-Fluorobiphenyl at 0% with criteria of (50-110), 2-Fluorophenol at 0% with criteria of (20-110), Nitrobenzene-d5 at 0% with criteria of (40-110), Phenol-d5 at 0% with criteria of (10-115) and Terphenyl-d14 at 0% with criteria of (50-135).

WG-80987-060614-BP-116 (N0980-05B) Surrogate outside of QC limit due to dilution, recovery is below criteria for 2-Fluorobiphenyl at 37% with criteria of (50-110), 2-Fluorophenol at 11% with criteria of (20-110) and Terphenyl-d14 at 5% with criteria of (50-135).

WG-80987-060614-BP-116 (N0980-05BDL) Surrogate outside of QC limit due to dilution, recovery is below criteria for 2,4,6-Tribromophenol at 0% with criteria of (40-125), 2-Fluorobiphenyl at 0% with criteria of (50-110), 2-Fluorophenol at 0% with criteria of (20-110), Nitrobenzene-d5 at 0% with criteria of (40-110), Phenol-d5 at 0% with criteria of (10-115) and Terphenyl-d14 at 0% with criteria of (50-135).

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits with the following exceptions. Please note that most test procedures allow for several compounds outside of the QC limits for the LCS, although this may indicate a bias for this specific compound.

LCS-77498 in batch 77498, recovery is below criteria for 1,1'-Biphenyl at 55% with criteria of (55-108) and Atrazine at 22% with criteria of (52-175).

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: WG-80987-060614-BP-113 (N0980-02BMS) and WG-80987-060614-BP-113 (N0980-02BMSD).

Percent recoveries were within the QC limits with the following exceptions:

WG-80987-060614-BP-113 (N0980-02BMS), recovery is above criteria for 2,4-Dimethylphenol at 196% with criteria of (30-110), 2-Methylphenol at 119% with criteria of (40-110), 4-Chloro-3-methylphenol at 133% with criteria of (45-110), 4-Methylphenol at 191% with criteria of (30-110), Bis(2-chloroethyl)ether at 113% with criteria of (35-110) and Phenol at 121% with criteria of (0-115).

WG-80987-060614-BP-113 (N0980-02BMSD), recovery is above criteria for 2,4-Dimethylphenol at 372% with criteria of (30-110), 2-Methylphenol at 195% with criteria of (40-110), 4-Chloro-3-methylphenol at 162% with criteria of (45-110), 4-Methylphenol at 427% with criteria of (30-110), Bis(2-chloroethyl)ether at 144% with criteria of (35-110) and Phenol at 311% with criteria of (0-115).

Replicate RPDs were within the advisory QC limits with the exception of the following:

WG-80987-060614-BP-113 (N0980-02BMSD), Relative Percent Difference is greater than RPD limit for 4-Methylphenol, Phenol, 3,3'-Dichlorobenzidine, 4-Chloroaniline.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

The following samples were analyzed at dilution:

WG-80987-060514-BP-112 (N0980-01B) : Dilution Factor: 4
WG-80987-060614-BP-114 (N0980-03B) : Dilution Factor: 10
WG-80987-060614-BP-114 (N0980-03BDL) : Dilution Factor: 100
WG-80987-060614-BP-115 (N0980-04B) : Dilution Factor: 10
WG-80987-060614-BP-115 (N0980-04BDL) : Dilution Factor: 500
WG-80987-060614-BP-116 (N0980-05B) : Dilution Factor: 10
WG-80987-060614-BP-116 (N0980-05BDL) : Dilution Factor: 500

G. Samples:

No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data

quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

Manual integrations were performed on the following:

WG-80987-060614-BP-114 (N0980-03B) Anthracene due to M6

SSTD0056G Benzoic acid , Dibenzofuran due to M6

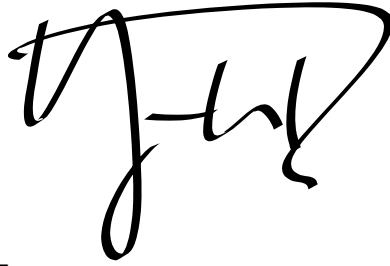
SSTD0106G Carbazole , Dibenzofuran due to M6

SSTD0406G Dibenzofuran due to M6

SSTD0606G Dibenzofuran due to M6

SSTD0806G Dibenzofuran due to M6

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

A handwritten signature in black ink, appearing to be 'J. H. P.', is positioned above the signature line.

Signed: _____

Date: _____ 6/20/2014 _____



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

- U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).
- J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
 - estimated concentration for Tentatively Identified Compound
- B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a “trace” concentration below the reporting limit and equal to or above the detection limit.
- D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis
- E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.
- P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.
- A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 2 of 2):

- N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

- * For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

- L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Sample ID Suffixes

- DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution
- RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.
- RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.
- RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.
- MS Matrix Spike.
- MSD Matrix Spike Duplicate
- DUP Duplicate analysis
- SD Serial Dilution
- PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060514-
BP-112

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-01B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8105.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	65	
111-44-4	Bis(2-chloroethyl)ether	40	U
95-57-8	2-Chlorophenol	40	U
95-48-7	2-Methylphenol	41	
108-60-1	2,2'-oxybis(1-Chloropropane)	40	U
106-44-5	4-Methylphenol	120	
621-64-7	N-Nitroso-di-n-propylamine	40	U
67-72-1	Hexachloroethane	40	U
98-95-3	Nitrobenzene	40	U
78-59-1	Isophorone	40	U
88-75-5	2-Nitrophenol	40	U
105-67-9	2,4-Dimethylphenol	120	
120-83-2	2,4-Dichlorophenol	40	U
91-20-3	Naphthalene	6.6	J
106-47-8	4-Chloroaniline	40	U
111-91-1	Bis(2-chloroethoxy)methane	40	U
87-68-3	Hexachlorobutadiene	40	U
59-50-7	4-Chloro-3-methylphenol	40	U
91-57-6	2-Methylnaphthalene	40	U
77-47-4	Hexachlorocyclopentadiene	40	U
88-06-2	2,4,6-Trichlorophenol	40	U
95-95-4	2,4,5-Trichlorophenol	80	U
91-58-7	2-Chloronaphthalene	40	U
88-74-4	2-Nitroaniline	80	U
131-11-3	Dimethylphthalate	40	U
208-96-8	Acenaphthylene	40	U
606-20-2	2,6-Dinitrotoluene	40	U
99-09-2	3-Nitroaniline	80	U
83-32-9	Acenaphthene	40	U
51-28-5	2,4-Dinitrophenol	80	U
100-02-7	4-Nitrophenol	80	U
132-64-9	Dibenzofuran	40	U
121-14-2	2,4-Dinitrotoluene	40	U
84-66-2	Diethylphthalate	40	U
7005-72-3	4-Chlorophenyl-phenylether	40	U
86-73-7	Fluorene	40	U

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060514-
BP-112

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-01B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8105.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
100-01-6	4-Nitroaniline	80	U
534-52-1	4,6-Dinitro-2-methylphenol	80	U
86-30-6	N-Nitrosodiphenylamine	40	U
101-55-3	4-Bromophenyl-phenylether	40	U
118-74-1	Hexachlorobenzene	40	U
87-86-5	Pentachlorophenol	80	U
85-01-8	Phenanthrene	40	U
120-12-7	Anthracene	40	U
86-74-8	Carbazole	40	U
84-74-2	Di-n-butylphthalate	40	U
206-44-0	Fluoranthene	40	U
129-00-0	Pyrene	40	U
85-68-7	Butylbenzylphthalate	40	U
91-94-1	3,3'-Dichlorobenzidine	40	U
56-55-3	Benzo(a)anthracene	40	U
218-01-9	Chrysene	40	U
117-81-7	Bis(2-ethylhexyl)phthalate	40	U
117-84-0	Di-n-octylphthalate	40	U
205-99-2	Benzo(b)fluoranthene	40	U
207-08-9	Benzo(k)fluoranthene	40	U
50-32-8	Benzo(a)pyrene	40	U
193-39-5	Indeno(1,2,3-cd)pyrene	40	U
53-70-3	Dibenzo(a,h)anthracene	40	U
191-24-2	Benzo(g,h,i)perylene	40	U
92-52-4	1,1'-Biphenyl	40	U
98-86-2	Acetophenone	40	U
1912-24-9	Atrazine	40	U
100-52-7	Benzaldehyde	40	U
105-60-2	Caprolactam	40	U

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8106.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	28	
111-44-4	Bis(2-chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
95-48-7	2-Methylphenol	28	
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	56	
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	78	
120-83-2	2,4-Dichlorophenol	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
111-91-1	Bis(2-chloroethoxy)methane	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8106.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	2.8	BJ
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U
92-52-4	1,1'-Biphenyl	10	U
98-86-2	Acetophenone	10	U
1912-24-9	Atrazine	10	U
100-52-7	Benzaldehyde	10	U
105-60-2	Caprolactam	10	U

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-03B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8109.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup:(Y/N) N pH: _____ Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	1800	E
111-44-4	Bis(2-chloroethyl)ether	100	U
95-57-8	2-Chlorophenol	100	U
95-48-7	2-Methylphenol	540	
108-60-1	2,2'-oxybis(1-Chloropropane)	100	U
106-44-5	4-Methylphenol	2000	E
621-64-7	N-Nitroso-di-n-propylamine	100	U
67-72-1	Hexachloroethane	100	U
98-95-3	Nitrobenzene	100	U
78-59-1	Isophorone	100	U
88-75-5	2-Nitrophenol	100	U
105-67-9	2,4-Dimethylphenol	1300	E
120-83-2	2,4-Dichlorophenol	100	U
91-20-3	Naphthalene	100	U
106-47-8	4-Chloroaniline	100	U
111-91-1	Bis(2-chloroethoxy)methane	100	U
87-68-3	Hexachlorobutadiene	100	U
59-50-7	4-Chloro-3-methylphenol	100	U
91-57-6	2-Methylnaphthalene	100	U
77-47-4	Hexachlorocyclopentadiene	100	U
88-06-2	2,4,6-Trichlorophenol	100	U
95-95-4	2,4,5-Trichlorophenol	200	U
91-58-7	2-Chloronaphthalene	100	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	100	U
208-96-8	Acenaphthylene	100	U
606-20-2	2,6-Dinitrotoluene	100	U
99-09-2	3-Nitroaniline	200	U
83-32-9	Acenaphthene	100	U
51-28-5	2,4-Dinitrophenol	200	U
100-02-7	4-Nitrophenol	200	U
132-64-9	Dibenzofuran	100	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	100	U
7005-72-3	4-Chlorophenyl-phenylether	100	U
86-73-7	Fluorene	100	U

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-03B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8109.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
100-01-6	4-Nitroaniline	200	U
534-52-1	4,6-Dinitro-2-methylphenol	200	U
86-30-6	N-Nitrosodiphenylamine	100	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	100	U
87-86-5	Pentachlorophenol	200	U
85-01-8	Phenanthrene	110	
120-12-7	Anthracene	25	J
86-74-8	Carbazole	100	U
84-74-2	Di-n-butylphthalate	100	U
206-44-0	Fluoranthene	100	U
129-00-0	Pyrene	21	J
85-68-7	Butylbenzylphthalate	100	U
91-94-1	3,3'-Dichlorobenzidine	100	U
56-55-3	Benzo(a)anthracene	100	U
218-01-9	Chrysene	100	U
117-81-7	Bis(2-ethylhexyl)phthalate	100	U
117-84-0	Di-n-octylphthalate	100	U
205-99-2	Benzo(b)fluoranthene	100	U
207-08-9	Benzo(k)fluoranthene	100	U
50-32-8	Benzo(a)pyrene	100	U
193-39-5	Indeno(1,2,3-cd)pyrene	100	U
53-70-3	Dibenzo(a,h)anthracene	100	U
191-24-2	Benzo(g,h,i)perylene	100	U
92-52-4	1,1'-Biphenyl	100	U
98-86-2	Acetophenone	100	U
1912-24-9	Atrazine	100	U
100-52-7	Benzaldehyde	100	U
105-60-2	Caprolactam	100	U

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-114DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-03BDL
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8110.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup:(Y/N) N pH: _____ Dilution Factor: 100.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	2500	D
111-44-4	Bis(2-chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
95-48-7	2-Methylphenol	730	DJ
108-60-1	2,2'-oxybis(1-Chloropropane)	1000	U
106-44-5	4-Methylphenol	2800	D
621-64-7	N-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1900	D
120-83-2	2,4-Dichlorophenol	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
111-91-1	Bis(2-chloroethoxy)methane	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
86-73-7	Fluorene	1000	U

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-114DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-03BDL

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8110.D

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014

GPC Cleanup:(Y/N) N pH: _____ Dilution Factor: 100.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	170	DJ
120-12-7	Anthracene	1000	U
86-74-8	Carbazole	1000	U
84-74-2	Di-n-butylphthalate	1000	U
206-44-0	Fluoranthene	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
56-55-3	Benzo(a)anthracene	1000	U
218-01-9	Chrysene	1000	U
117-81-7	Bis(2-ethylhexyl)phthalate	1000	U
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo(b)fluoranthene	1000	U
207-08-9	Benzo(k)fluoranthene	1000	U
50-32-8	Benzo(a)pyrene	1000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1000	U
53-70-3	Dibenzo(a,h)anthracene	1000	U
191-24-2	Benzo(g,h,i)perylene	1000	U
92-52-4	1,1'-Biphenyl	1000	U
98-86-2	Acetophenone	1000	U
1912-24-9	Atrazine	1000	U
100-52-7	Benzaldehyde	1000	U
105-60-2	Caprolactam	1000	U

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-115

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8111.D

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014

GPC Cleanup:(Y/N) N pH: _____ Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	7400	E
111-44-4	Bis(2-chloroethyl)ether	100	U
95-57-8	2-Chlorophenol	100	U
95-48-7	2-Methylphenol	2900	E
108-60-1	2,2'-oxybis(1-Chloropropane)	100	U
106-44-5	4-Methylphenol	9800	E
621-64-7	N-Nitroso-di-n-propylamine	100	U
67-72-1	Hexachloroethane	100	U
98-95-3	Nitrobenzene	100	U
78-59-1	Isophorone	100	U
88-75-5	2-Nitrophenol	100	U
105-67-9	2,4-Dimethylphenol	6500	E
120-83-2	2,4-Dichlorophenol	100	U
91-20-3	Naphthalene	60	J
106-47-8	4-Chloroaniline	100	U
111-91-1	Bis(2-chloroethoxy)methane	100	U
87-68-3	Hexachlorobutadiene	100	U
59-50-7	4-Chloro-3-methylphenol	100	U
91-57-6	2-Methylnaphthalene	100	U
77-47-4	Hexachlorocyclopentadiene	100	U
88-06-2	2,4,6-Trichlorophenol	31	J
95-95-4	2,4,5-Trichlorophenol	17	J
91-58-7	2-Chloronaphthalene	100	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	100	U
208-96-8	Acenaphthylene	100	U
606-20-2	2,6-Dinitrotoluene	100	U
99-09-2	3-Nitroaniline	200	U
83-32-9	Acenaphthene	100	U
51-28-5	2,4-Dinitrophenol	200	U
100-02-7	4-Nitrophenol	200	U
132-64-9	Dibenzofuran	100	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	100	U
7005-72-3	4-Chlorophenyl-phenylether	100	U
86-73-7	Fluorene	100	U

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-115

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-04B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8111.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
100-01-6	4-Nitroaniline	200	U
534-52-1	4,6-Dinitro-2-methylphenol	200	U
86-30-6	N-Nitrosodiphenylamine	100	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	100	U
87-86-5	Pentachlorophenol	200	U
85-01-8	Phenanthrene	100	U
120-12-7	Anthracene	100	U
86-74-8	Carbazole	100	U
84-74-2	Di-n-butylphthalate	100	U
206-44-0	Fluoranthene	100	U
129-00-0	Pyrene	100	U
85-68-7	Butylbenzylphthalate	100	U
91-94-1	3,3'-Dichlorobenzidine	100	U
56-55-3	Benzo(a)anthracene	100	U
218-01-9	Chrysene	100	U
117-81-7	Bis(2-ethylhexyl)phthalate	100	U
117-84-0	Di-n-octylphthalate	100	U
205-99-2	Benzo(b)fluoranthene	100	U
207-08-9	Benzo(k)fluoranthene	100	U
50-32-8	Benzo(a)pyrene	100	U
193-39-5	Indeno(1,2,3-cd)pyrene	100	U
53-70-3	Dibenzo(a,h)anthracene	100	U
191-24-2	Benzo(g,h,i)perylene	100	U
92-52-4	1,1'-Biphenyl	100	U
98-86-2	Acetophenone	100	U
1912-24-9	Atrazine	100	U
100-52-7	Benzaldehyde	100	U
105-60-2	Caprolactam	100	U

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-115DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-04BDL
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8112.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 500.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	13000	D
111-44-4	Bis(2-chloroethyl)ether	5000	U
95-57-8	2-Chlorophenol	5000	U
95-48-7	2-Methylphenol	4400	DJ
108-60-1	2,2'-oxybis(1-Chloropropane)	5000	U
106-44-5	4-Methylphenol	17000	D
621-64-7	N-Nitroso-di-n-propylamine	5000	U
67-72-1	Hexachloroethane	5000	U
98-95-3	Nitrobenzene	5000	U
78-59-1	Isophorone	5000	U
88-75-5	2-Nitrophenol	5000	U
105-67-9	2,4-Dimethylphenol	12000	D
120-83-2	2,4-Dichlorophenol	5000	U
91-20-3	Naphthalene	5000	U
106-47-8	4-Chloroaniline	5000	U
111-91-1	Bis(2-chloroethoxy)methane	5000	U
87-68-3	Hexachlorobutadiene	5000	U
59-50-7	4-Chloro-3-methylphenol	5000	U
91-57-6	2-Methylnaphthalene	5000	U
77-47-4	Hexachlorocyclopentadiene	5000	U
88-06-2	2,4,6-Trichlorophenol	5000	U
95-95-4	2,4,5-Trichlorophenol	10000	U
91-58-7	2-Chloronaphthalene	5000	U
88-74-4	2-Nitroaniline	10000	U
131-11-3	Dimethylphthalate	5000	U
208-96-8	Acenaphthylene	5000	U
606-20-2	2,6-Dinitrotoluene	5000	U
99-09-2	3-Nitroaniline	10000	U
83-32-9	Acenaphthene	5000	U
51-28-5	2,4-Dinitrophenol	10000	U
100-02-7	4-Nitrophenol	10000	U
132-64-9	Dibenzofuran	5000	U
121-14-2	2,4-Dinitrotoluene	5000	U
84-66-2	Diethylphthalate	5000	U
7005-72-3	4-Chlorophenyl-phenylether	5000	U
86-73-7	Fluorene	5000	U

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-115DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-04BDL
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8112.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 500.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
100-01-6	4-Nitroaniline	10000	U
534-52-1	4,6-Dinitro-2-methylphenol	10000	U
86-30-6	N-Nitrosodiphenylamine	5000	U
101-55-3	4-Bromophenyl-phenylether	5000	U
118-74-1	Hexachlorobenzene	5000	U
87-86-5	Pentachlorophenol	10000	U
85-01-8	Phenanthrene	5000	U
120-12-7	Anthracene	5000	U
86-74-8	Carbazole	5000	U
84-74-2	Di-n-butylphthalate	5000	U
206-44-0	Fluoranthene	5000	U
129-00-0	Pyrene	5000	U
85-68-7	Butylbenzylphthalate	5000	U
91-94-1	3,3'-Dichlorobenzidine	5000	U
56-55-3	Benzo(a)anthracene	5000	U
218-01-9	Chrysene	5000	U
117-81-7	Bis(2-ethylhexyl)phthalate	5000	U
117-84-0	Di-n-octylphthalate	5000	U
205-99-2	Benzo(b)fluoranthene	5000	U
207-08-9	Benzo(k)fluoranthene	5000	U
50-32-8	Benzo(a)pyrene	5000	U
193-39-5	Indeno(1,2,3-cd)pyrene	5000	U
53-70-3	Dibenzo(a,h)anthracene	5000	U
191-24-2	Benzo(g,h,i)perylene	5000	U
92-52-4	1,1'-Biphenyl	5000	U
98-86-2	Acetophenone	5000	U
1912-24-9	Atrazine	5000	U
100-52-7	Benzaldehyde	5000	U
105-60-2	Caprolactam	5000	U

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-116

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-05B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8113.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	7400	E
111-44-4	Bis(2-chloroethyl)ether	100	U
95-57-8	2-Chlorophenol	100	U
95-48-7	2-Methylphenol	3100	E
108-60-1	2,2'-oxybis(1-Chloropropane)	100	U
106-44-5	4-Methylphenol	10000	E
621-64-7	N-Nitroso-di-n-propylamine	100	U
67-72-1	Hexachloroethane	100	U
98-95-3	Nitrobenzene	100	U
78-59-1	Isophorone	100	U
88-75-5	2-Nitrophenol	100	U
105-67-9	2,4-Dimethylphenol	7300	E
120-83-2	2,4-Dichlorophenol	100	U
91-20-3	Naphthalene	44	J
106-47-8	4-Chloroaniline	100	U
111-91-1	Bis(2-chloroethoxy)methane	100	U
87-68-3	Hexachlorobutadiene	100	U
59-50-7	4-Chloro-3-methylphenol	100	U
91-57-6	2-Methylnaphthalene	11	J
77-47-4	Hexachlorocyclopentadiene	100	U
88-06-2	2,4,6-Trichlorophenol	23	J
95-95-4	2,4,5-Trichlorophenol	14	J
91-58-7	2-Chloronaphthalene	100	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	100	U
208-96-8	Acenaphthylene	100	U
606-20-2	2,6-Dinitrotoluene	100	U
99-09-2	3-Nitroaniline	200	U
83-32-9	Acenaphthene	100	U
51-28-5	2,4-Dinitrophenol	200	U
100-02-7	4-Nitrophenol	200	U
132-64-9	Dibenzofuran	100	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	100	U
7005-72-3	4-Chlorophenyl-phenylether	100	U
86-73-7	Fluorene	100	U

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-116

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-05B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8113.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
100-01-6	4-Nitroaniline	200	U
534-52-1	4,6-Dinitro-2-methylphenol	200	U
86-30-6	N-Nitrosodiphenylamine	100	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	100	U
87-86-5	Pentachlorophenol	200	U
85-01-8	Phenanthrene	100	U
120-12-7	Anthracene	100	U
86-74-8	Carbazole	100	U
84-74-2	Di-n-butylphthalate	100	U
206-44-0	Fluoranthene	100	U
129-00-0	Pyrene	100	U
85-68-7	Butylbenzylphthalate	100	U
91-94-1	3,3'-Dichlorobenzidine	100	U
56-55-3	Benzo(a)anthracene	100	U
218-01-9	Chrysene	100	U
117-81-7	Bis(2-ethylhexyl)phthalate	100	U
117-84-0	Di-n-octylphthalate	100	U
205-99-2	Benzo(b)fluoranthene	100	U
207-08-9	Benzo(k)fluoranthene	100	U
50-32-8	Benzo(a)pyrene	100	U
193-39-5	Indeno(1,2,3-cd)pyrene	100	U
53-70-3	Dibenzo(a,h)anthracene	100	U
191-24-2	Benzo(g,h,i)perylene	100	U
92-52-4	1,1'-Biphenyl	100	U
98-86-2	Acetophenone	100	U
1912-24-9	Atrazine	100	U
100-52-7	Benzaldehyde	100	U
105-60-2	Caprolactam	100	U

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-116DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-05BDL

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8114.D

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 500.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	14000	D
111-44-4	Bis(2-chloroethyl)ether	5000	U
95-57-8	2-Chlorophenol	5000	U
95-48-7	2-Methylphenol	5300	D
108-60-1	2,2'-oxybis(1-Chloropropane)	5000	U
106-44-5	4-Methylphenol	20000	D
621-64-7	N-Nitroso-di-n-propylamine	5000	U
67-72-1	Hexachloroethane	5000	U
98-95-3	Nitrobenzene	5000	U
78-59-1	Isophorone	5000	U
88-75-5	2-Nitrophenol	5000	U
105-67-9	2,4-Dimethylphenol	15000	D
120-83-2	2,4-Dichlorophenol	5000	U
91-20-3	Naphthalene	5000	U
106-47-8	4-Chloroaniline	5000	U
111-91-1	Bis(2-chloroethoxy)methane	5000	U
87-68-3	Hexachlorobutadiene	5000	U
59-50-7	4-Chloro-3-methylphenol	5000	U
91-57-6	2-Methylnaphthalene	5000	U
77-47-4	Hexachlorocyclopentadiene	5000	U
88-06-2	2,4,6-Trichlorophenol	5000	U
95-95-4	2,4,5-Trichlorophenol	10000	U
91-58-7	2-Chloronaphthalene	5000	U
88-74-4	2-Nitroaniline	10000	U
131-11-3	Dimethylphthalate	5000	U
208-96-8	Acenaphthylene	5000	U
606-20-2	2,6-Dinitrotoluene	5000	U
99-09-2	3-Nitroaniline	10000	U
83-32-9	Acenaphthene	5000	U
51-28-5	2,4-Dinitrophenol	10000	U
100-02-7	4-Nitrophenol	10000	U
132-64-9	Dibenzofuran	5000	U
121-14-2	2,4-Dinitrotoluene	5000	U
84-66-2	Diethylphthalate	5000	U
7005-72-3	4-Chlorophenyl-phenylether	5000	U
86-73-7	Fluorene	5000	U

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-116DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-05BDL
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8114.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 500.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
100-01-6	4-Nitroaniline	10000	U
534-52-1	4,6-Dinitro-2-methylphenol	10000	U
86-30-6	N-Nitrosodiphenylamine	5000	U
101-55-3	4-Bromophenyl-phenylether	5000	U
118-74-1	Hexachlorobenzene	5000	U
87-86-5	Pentachlorophenol	10000	U
85-01-8	Phenanthrene	5000	U
120-12-7	Anthracene	5000	U
86-74-8	Carbazole	5000	U
84-74-2	Di-n-butylphthalate	5000	U
206-44-0	Fluoranthene	5000	U
129-00-0	Pyrene	5000	U
85-68-7	Butylbenzylphthalate	5000	U
91-94-1	3,3'-Dichlorobenzidine	5000	U
56-55-3	Benzo(a)anthracene	5000	U
218-01-9	Chrysene	5000	U
117-81-7	Bis(2-ethylhexyl)phthalate	5000	U
117-84-0	Di-n-octylphthalate	5000	U
205-99-2	Benzo(b)fluoranthene	5000	U
207-08-9	Benzo(k)fluoranthene	5000	U
50-32-8	Benzo(a)pyrene	5000	U
193-39-5	Indeno(1,2,3-cd)pyrene	5000	U
53-70-3	Dibenzo(a,h)anthracene	5000	U
191-24-2	Benzo(g,h,i)perylene	5000	U
92-52-4	1,1'-Biphenyl	5000	U
98-86-2	Acetophenone	5000	U
1912-24-9	Atrazine	5000	U
100-52-7	Benzaldehyde	5000	U
105-60-2	Caprolactam	5000	U

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-77498

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-77498
 Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8092.D
 Level: (LOW/MED) LOW Extraction: (Type) SEPF
 % Moisture: _____ Decanted: (Y/N) _____ Date Received: _____
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
 GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/L
108-95-2	Phenol	10	U
111-44-4	Bis(2-chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
111-91-1	Bis(2-chloroethoxy)methane	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-77498

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-77498
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8092.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: _____
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	1.9	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U
92-52-4	1,1'-Biphenyl	10	U
98-86-2	Acetophenone	10	U
1912-24-9	Atrazine	10	U
100-52-7	Benzaldehyde	10	U
105-60-2	Caprolactam	10	U

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS-77498

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
 Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-77498
 Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8093.D
 Level: (LOW/MED) LOW Extraction: (Type) SEPF
 % Moisture: _____ Decanted: (Y/N) _____ Date Received: _____
 Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
 GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	32	
111-44-4	Bis(2-chloroethyl)ether	29	
95-57-8	2-Chlorophenol	31	
95-48-7	2-Methylphenol	31	
108-60-1	2,2'-oxybis(1-Chloropropane)	32	
106-44-5	4-Methylphenol	32	
621-64-7	N-Nitroso-di-n-propylamine	30	
67-72-1	Hexachloroethane	31	
98-95-3	Nitrobenzene	32	
78-59-1	Isophorone	32	
88-75-5	2-Nitrophenol	31	
105-67-9	2,4-Dimethylphenol	33	
120-83-2	2,4-Dichlorophenol	31	
91-20-3	Naphthalene	31	
106-47-8	4-Chloroaniline	26	
111-91-1	Bis(2-chloroethoxy)methane	31	
87-68-3	Hexachlorobutadiene	31	
59-50-7	4-Chloro-3-methylphenol	31	
91-57-6	2-Methylnaphthalene	32	
77-47-4	Hexachlorocyclopentadiene	27	
88-06-2	2,4,6-Trichlorophenol	31	
95-95-4	2,4,5-Trichlorophenol	31	
91-58-7	2-Chloronaphthalene	32	
88-74-4	2-Nitroaniline	31	
131-11-3	Dimethylphthalate	31	
208-96-8	Acenaphthylene	31	
606-20-2	2,6-Dinitrotoluene	31	
99-09-2	3-Nitroaniline	29	
83-32-9	Acenaphthene	31	
51-28-5	2,4-Dinitrophenol	36	
100-02-7	4-Nitrophenol	32	
132-64-9	Dibenzofuran	31	
121-14-2	2,4-Dinitrotoluene	31	
84-66-2	Diethylphthalate	31	
7005-72-3	4-Chlorophenyl-phenylether	31	
86-73-7	Fluorene	31	

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS-77498

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-77498
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8093.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: _____
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-01-6	4-Nitroaniline	30	
534-52-1	4,6-Dinitro-2-methylphenol	33	
86-30-6	N-Nitrosodiphenylamine	31	
101-55-3	4-Bromophenyl-phenylether	31	
118-74-1	Hexachlorobenzene	32	
87-86-5	Pentachlorophenol	35	
85-01-8	Phenanthrene	32	
120-12-7	Anthracene	31	
86-74-8	Carbazole	30	
84-74-2	Di-n-butylphthalate	33	B
206-44-0	Fluoranthene	31	
129-00-0	Pyrene	31	
85-68-7	Butylbenzylphthalate	31	
91-94-1	3,3'-Dichlorobenzidine	20	
56-55-3	Benzo(a)anthracene	30	
218-01-9	Chrysene	31	
117-81-7	Bis(2-ethylhexyl)phthalate	32	
117-84-0	Di-n-octylphthalate	31	
205-99-2	Benzo(b)fluoranthene	31	
207-08-9	Benzo(k)fluoranthene	32	
50-32-8	Benzo(a)pyrene	32	
193-39-5	Indeno(1,2,3-cd)pyrene	32	
53-70-3	Dibenzo(a,h)anthracene	32	
191-24-2	Benzo(g,h,i)perylene	32	
92-52-4	1,1'-Biphenyl	27	
98-86-2	Acetophenone	29	
1912-24-9	Atrazine	11	
100-52-7	Benzaldehyde	35	
105-60-2	Caprolactam	28	

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113MS

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02BMS
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8107.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	89	E
111-44-4	Bis(2-chloroethyl)ether	57	
95-57-8	2-Chlorophenol	28	
95-48-7	2-Methylphenol	88	E
108-60-1	2,2'-oxybis(1-Chloropropane)	46	
106-44-5	4-Methylphenol	150	E
621-64-7	N-Nitroso-di-n-propylamine	43	
67-72-1	Hexachloroethane	41	
98-95-3	Nitrobenzene	46	
78-59-1	Isophorone	45	
88-75-5	2-Nitrophenol	35	
105-67-9	2,4-Dimethylphenol	180	E
120-83-2	2,4-Dichlorophenol	34	
91-20-3	Naphthalene	44	
106-47-8	4-Chloroaniline	18	
111-91-1	Bis(2-chloroethoxy)methane	44	
87-68-3	Hexachlorobutadiene	43	
59-50-7	4-Chloro-3-methylphenol	66	
91-57-6	2-Methylnaphthalene	47	
77-47-4	Hexachlorocyclopentadiene	35	
88-06-2	2,4,6-Trichlorophenol	37	
95-95-4	2,4,5-Trichlorophenol	36	
91-58-7	2-Chloronaphthalene	46	
88-74-4	2-Nitroaniline	44	
131-11-3	Dimethylphthalate	45	
208-96-8	Acenaphthylene	45	
606-20-2	2,6-Dinitrotoluene	44	
99-09-2	3-Nitroaniline	29	
83-32-9	Acenaphthene	44	
51-28-5	2,4-Dinitrophenol	29	
100-02-7	4-Nitrophenol	8.0	J
132-64-9	Dibenzofuran	44	
121-14-2	2,4-Dinitrotoluene	44	
84-66-2	Diethylphthalate	45	
7005-72-3	4-Chlorophenyl-phenylether	43	
86-73-7	Fluorene	44	

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113MS

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02BMS
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8107.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-01-6	4-Nitroaniline	32	
534-52-1	4,6-Dinitro-2-methylphenol	37	
86-30-6	N-Nitrosodiphenylamine	44	
101-55-3	4-Bromophenyl-phenylether	44	
118-74-1	Hexachlorobenzene	45	
87-86-5	Pentachlorophenol	40	
85-01-8	Phenanthrene	44	
120-12-7	Anthracene	43	
86-74-8	Carbazole	43	
84-74-2	Di-n-butylphthalate	45	B
206-44-0	Fluoranthene	42	
129-00-0	Pyrene	45	
85-68-7	Butylbenzylphthalate	42	
91-94-1	3,3'-Dichlorobenzidine	11	
56-55-3	Benzo(a)anthracene	45	
218-01-9	Chrysene	43	
117-81-7	Bis(2-ethylhexyl)phthalate	44	
117-84-0	Di-n-octylphthalate	46	
205-99-2	Benzo(b)fluoranthene	43	
207-08-9	Benzo(k)fluoranthene	45	
50-32-8	Benzo(a)pyrene	44	
193-39-5	Indeno(1,2,3-cd)pyrene	47	
53-70-3	Dibenzo(a,h)anthracene	48	
191-24-2	Benzo(g,h,i)perylene	48	
92-52-4	1,1'-Biphenyl	40	
98-86-2	Acetophenone	43	
1912-24-9	Atrazine	39	
100-52-7	Benzaldehyde	58	
105-60-2	Caprolactam	5.3	J

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113MSD

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02BMSD
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8108.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	180	E
111-44-4	Bis(2-chloroethyl)ether	72	
95-57-8	2-Chlorophenol	27	
95-48-7	2-Methylphenol	130	E
108-60-1	2,2'-oxybis(1-Chloropropane)	44	
106-44-5	4-Methylphenol	270	E
621-64-7	N-Nitroso-di-n-propylamine	44	
67-72-1	Hexachloroethane	40	
98-95-3	Nitrobenzene	47	
78-59-1	Isophorone	46	
88-75-5	2-Nitrophenol	34	
105-67-9	2,4-Dimethylphenol	260	E
120-83-2	2,4-Dichlorophenol	33	
91-20-3	Naphthalene	45	
106-47-8	4-Chloroaniline	28	
111-91-1	Bis(2-chloroethoxy)methane	45	
87-68-3	Hexachlorobutadiene	41	
59-50-7	4-Chloro-3-methylphenol	81	E
91-57-6	2-Methylnaphthalene	47	
77-47-4	Hexachlorocyclopentadiene	28	
88-06-2	2,4,6-Trichlorophenol	34	
95-95-4	2,4,5-Trichlorophenol	35	
91-58-7	2-Chloronaphthalene	47	
88-74-4	2-Nitroaniline	44	
131-11-3	Dimethylphthalate	46	
208-96-8	Acenaphthylene	46	
606-20-2	2,6-Dinitrotoluene	46	
99-09-2	3-Nitroaniline	32	
83-32-9	Acenaphthene	46	
51-28-5	2,4-Dinitrophenol	24	
100-02-7	4-Nitrophenol	7.2	J
132-64-9	Dibenzofuran	46	
121-14-2	2,4-Dinitrotoluene	46	
84-66-2	Diethylphthalate	46	
7005-72-3	4-Chlorophenyl-phenylether	43	
86-73-7	Fluorene	45	

1E - FORM I SV-2
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG-80987-060614-
BP-113MSD

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02BMSD
Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B8108.D
Level: (LOW/MED) LOW Extraction: (Type) SEPF
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Concentrated Extract Volume: 1000 (uL) Date Extracted: 06/10/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 06/17/2014
GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-01-6	4-Nitroaniline	28	
534-52-1	4,6-Dinitro-2-methylphenol	33	
86-30-6	N-Nitrosodiphenylamine	47	
101-55-3	4-Bromophenyl-phenylether	43	
118-74-1	Hexachlorobenzene	43	
87-86-5	Pentachlorophenol	33	
85-01-8	Phenanthrene	46	
120-12-7	Anthracene	44	
86-74-8	Carbazole	46	
84-74-2	Di-n-butylphthalate	44	B
206-44-0	Fluoranthene	41	
129-00-0	Pyrene	42	
85-68-7	Butylbenzylphthalate	40	
91-94-1	3,3'-Dichlorobenzidine	18	
56-55-3	Benzo(a)anthracene	39	
218-01-9	Chrysene	41	
117-81-7	Bis(2-ethylhexyl)phthalate	41	
117-84-0	Di-n-octylphthalate	39	
205-99-2	Benzo(b)fluoranthene	41	
207-08-9	Benzo(k)fluoranthene	40	
50-32-8	Benzo(a)pyrene	42	
193-39-5	Indeno(1,2,3-cd)pyrene	46	
53-70-3	Dibenzo(a,h)anthracene	47	
191-24-2	Benzo(g,h,i)perylene	47	
92-52-4	1,1'-Biphenyl	41	
98-86-2	Acetophenone	42	
1912-24-9	Atrazine	49	
100-52-7	Benzaldehyde	56	
105-60-2	Caprolactam	5.2	J

2H - FORM II SV-2
WATER SEMIVOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980

	EPA SAMPLE NO.	SDMC1 (NBZ) #	SDMC2 (FBP) #	SDMC3 (TPH) #	SDMC4 (PHL) #	SDMC5 (2FP) #	SDMC6 (TBP) #			TOT OUT
01	MB-77498	70	72	73	65	64	69			0
02	LCS-77498	65	65	64	61	62	67			0
03	WG-80987-060 514-BP-112	63	55	20 D	16	15 D	31 D			3
04	WG-80987-060 614-BP-113	87	87	49 *	24	30	76			1
05	WG-80987-060 614-BP-113MS	90	92	47 *	17	23	76			1
06	WG-80987-060 614-BP-113MS D	92	95	40 *	19	21	70			1
07	WG-80987-060 614-BP-114	103	64	23 D	19	13 D	42			2
08	WG-80987-060 614-BP-114DL	0 D	0 D	0 D	0 D	0 D	0 D			6
09	WG-80987-060 614-BP-115	72	30 D	5 D	13	13 D	51			3
10	WG-80987-060 614-BP-115DL	0 D	0 D	0 D	0 D	0 D	0 D			6
11	WG-80987-060 614-BP-116	91	37 D	5 D	13	11 D	42			3
12	WG-80987-060 614-BP-116DL	0 D	0 D	0 D	0 D	0 D	0 D			6

QC LIMITS

SDMC1	(NBZ) = Nitrobenzene-d5	(40-110)
SDMC2	(FBP) = 2-Fluorobiphenyl	(50-110)
SDMC3	(TPH) = Terphenyl-d14	(50-135)
SDMC4	(PHL) = Phenol-d5	(10-115)
SDMC5	(2FP) = 2-Fluorophenol	(20-110)
SDMC6	(TBP) = 2,4,6-Tribromophenol	(40-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D DMC diluted out

som14.05.28.1137

3C - FORM III SV-1

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC.

Contract:

Lab Code: MITKEM

Case No.: N0980

Mod. Ref No.:

SDG No.: SN0980

Matrix Spike - EPA Sample No.: WG-80987-060614-BP-113

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
Phenol	50.0000	28.4842	88.9139	121	*	0-115
Bis(2-chloroethyl)ether	50.0000	0.0000	56.6537	113	*	35-110
2-Chlorophenol	50.0000	0.0000	27.9529	56		35-105
2-Methylphenol	50.0000	28.1395	87.5787	119	*	40-110
2,2'-oxybis(1-Chloropro	50.0000	0.0000	45.9632	92		30-123
4-Methylphenol	50.0000	55.7544	151.1481	191	*	30-110
N-Nitroso-di-n-propylam	50.0000	0.0000	43.3978	87		35-130
Hexachloroethane	50.0000	0.0000	40.9904	82		30-95
Nitrobenzene	50.0000	0.0000	46.0427	92		45-110
Isophorone	50.0000	0.0000	44.6893	89		50-110
2-Nitrophenol	50.0000	0.0000	35.4581	71		40-115
2,4-Dimethylphenol	50.0000	78.0910	176.1741	196	*	30-110
2,4-Dichlorophenol	50.0000	0.0000	33.7497	67		50-105
Naphthalene	50.0000	0.0000	44.3832	89		40-100
4-Chloroaniline	50.0000	0.0000	18.4365	37		15-110
Bis(2-chloroethoxy)meth	50.0000	0.0000	43.5819	87		45-105
Hexachlorobutadiene	50.0000	0.0000	43.1444	86		25-105
4-Chloro-3-methylphenol	50.0000	0.0000	66.3979	133	*	45-110
2-Methylnaphthalene	50.0000	0.0000	46.8640	94		45-105
Hexachlorocyclopentadie	50.0000	0.0000	34.6613	69		27-147
2,4,6-Trichlorophenol	50.0000	0.0000	37.4094	75		50-115
2,4,5-Trichlorophenol	50.0000	0.0000	35.9845	72		50-110
2-Chloronaphthalene	50.0000	0.0000	45.7117	91		50-105
2-Nitroaniline	50.0000	0.0000	43.6015	87		50-115
Dimethylphthalate	50.0000	0.0000	44.6497	89		25-125
Acenaphthylene	50.0000	0.0000	45.1695	90		50-105
2,6-Dinitrotoluene	50.0000	0.0000	43.7017	87		50-115
3-Nitroaniline	50.0000	0.0000	29.3178	59		20-125
Acenaphthene	50.0000	0.0000	44.2315	88		45-110
2,4-Dinitrophenol	50.0000	0.0000	29.4552	59		15-140
4-Nitrophenol	50.0000	0.0000	7.9767	16		0-125
Dibenzofuran	50.0000	0.0000	44.1174	88		55-105
2,4-Dinitrotoluene	50.0000	0.0000	44.4763	89		50-120
Diethylphthalate	50.0000	0.0000	45.1022	90		40-120
4-Chlorophenyl-phenylet	50.0000	0.0000	43.3654	87		50-110
Fluorene	50.0000	0.0000	43.8424	88		50-110
4-Nitroaniline	50.0000	0.0000	31.9513	64		35-120
4,6-Dinitro-2-methylphe	50.0000	0.0000	36.5058	73		40-130
N-Nitrosodiphenylamine	50.0000	0.0000	44.3701	89		50-110
4-Bromophenyl-phenyleth	50.0000	0.0000	44.1605	88		50-115
Hexachlorobenzene	50.0000	0.0000	45.0528	90		50-110
Pentachlorophenol	50.0000	0.0000	39.8628	80		40-115
Phenanthrene	50.0000	0.0000	44.4293	89		50-115
Anthracene	50.0000	0.0000	43.4130	87		55-110

3C - FORM III SV-1

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC.

Contract:

Lab Code: MITKEM

Case No.: N0980

Mod. Ref No.:

SDG No.: SN0980

Matrix Spike - EPA Sample No.: WG-80987-060614-BP-113

Carbazole	50.0000	0.0000	43.0608	86		50-115
Di-n-butylphthalate	50.0000	2.8411	44.6392	84		55-115
Fluoranthene	50.0000	0.0000	41.5761	83		55-115
Pyrene	50.0000	0.0000	44.9228	90		50-130
Butylbenzylphthalate	50.0000	0.0000	42.1947	84		45-115
3,3'-Dichlorobenzidine	50.0000	0.0000	10.7667	22		20-110
Benzo(a)anthracene	50.0000	0.0000	45.2488	90		55-110
Chrysene	50.0000	0.0000	42.8057	86		55-110
Bis(2-ethylhexyl)phthal	50.0000	0.0000	44.1381	88		40-125
Di-n-octylphthalate	50.0000	0.0000	45.5288	91		35-135
Benzo(b)fluoranthene	50.0000	0.0000	43.1327	86		45-120
Benzo(k)fluoranthene	50.0000	0.0000	45.0568	90		45-125
Benzo(a)pyrene	50.0000	0.0000	44.4869	89		55-110
Indeno(1,2,3-cd)pyrene	50.0000	0.0000	47.2903	95		45-125
Dibenzo(a,h)anthracene	50.0000	0.0000	48.0423	96		40-125
Benzo(g,h,i)perylene	50.0000	0.0000	48.4954	97		40-125
1,1'-Biphenyl	50.0000	0.0000	39.9636	80		55-108
Acetophenone	50.0000	0.0000	42.6900	85		56-145
Atrazine	50.0000	0.0000	38.6962	77		52-175
Benzaldehyde	50.0000	0.0000	58.4133	117		10-133
Caprolactam	50.0000	0.0000	5.3126	11		10-146

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS	
							RPD	REC.
Phenol	50.0000	183.7921	311	*	88	*	0-40	0-115
Bis(2-chloroethyl)ether	50.0000	72.2263	144	*	24		0-40	35-110
2-Chlorophenol	50.0000	26.9431	54		4		0-40	35-105
2-Methylphenol	50.0000	125.6955	195	*	49	*	0-40	40-110
2,2'-oxybis(1-Chloropro	50.0000	44.2066	88		4		0-40	30-123
4-Methylphenol	50.0000	269.3008	427	*	76	*	0-40	30-110
N-Nitroso-di-n-propylam	50.0000	43.7886	88		1		0-40	35-130
Hexachloroethane	50.0000	39.7689	80		3		0-40	30-95
Nitrobenzene	50.0000	46.5005	93		1		0-40	45-110
Isophorone	50.0000	45.6433	91		2		0-40	50-110
2-Nitrophenol	50.0000	34.0995	68		4		0-40	40-115
2,4-Dimethylphenol	50.0000	264.0196	372	*	62	*	0-40	30-110
2,4-Dichlorophenol	50.0000	32.5765	65		4		0-40	50-105
Naphthalene	50.0000	45.4100	91		2		0-40	40-100
4-Chloroaniline	50.0000	28.4659	57		43	*	0-40	15-110
Bis(2-chloroethoxy)meth	50.0000	44.5801	89		2		0-40	45-105
Hexachlorobutadiene	50.0000	40.7472	81		6		0-40	25-105
4-Chloro-3-methylphenol	50.0000	81.2443	162	*	20		0-40	45-110
2-Methylnaphthalene	50.0000	47.1786	94		1		0-40	45-105
Hexachlorocyclopentadie	50.0000	27.8731	56		22		0-40	27-147
2,4,6-Trichlorophenol	50.0000	34.1644	68		9		0-40	50-115
2,4,5-Trichlorophenol	50.0000	35.2108	70		2		0-40	50-110

3C - FORM III SV-1
WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
 Matrix Spike - EPA Sample No.: WG-80987-060614-BP-113

2-Chloronaphthalene	50.0000	47.0271	94		3		0-40	50-105
2-Nitroaniline	50.0000	43.8684	88		1		0-40	50-115
Dimethylphthalate	50.0000	46.0549	92		3		0-40	25-125
Acenaphthylene	50.0000	46.0938	92		2		0-40	50-105
2,6-Dinitrotoluene	50.0000	46.1077	92		5		0-40	50-115
3-Nitroaniline	50.0000	32.3791	65		10		0-40	20-125
Acenaphthene	50.0000	46.2369	92		4		0-40	45-110
2,4-Dinitrophenol	50.0000	23.7849	48		21		0-40	15-140
4-Nitrophenol	50.0000	7.2219	14		10		0-40	0-125
Dibenzofuran	50.0000	46.1502	92		5		0-40	55-105
2,4-Dinitrotoluene	50.0000	46.1068	92		4		0-40	50-120
Diethylphthalate	50.0000	45.8106	92		2		0-40	40-120
4-Chlorophenyl-phenylet	50.0000	43.4626	87		0		0-40	50-110
Fluorene	50.0000	45.1288	90		3		0-40	50-110
4-Nitroaniline	50.0000	27.9228	56		13		0-40	35-120
4,6-Dinitro-2-methylphe	50.0000	32.6780	65		11		0-40	40-130
N-Nitrosodiphenylamine	50.0000	47.0426	94		6		0-40	50-110
4-Bromophenyl-phenyleth	50.0000	43.2329	86		2		0-40	50-115
Hexachlorobenzene	50.0000	42.7958	86		5		0-40	50-110
Pentachlorophenol	50.0000	33.4920	67		17		0-40	40-115
Phenanthrene	50.0000	45.5402	91		2		0-40	50-115
Anthracene	50.0000	43.7153	87		1		0-40	55-110
Carbazole	50.0000	45.9579	92		7		0-40	50-115
Di-n-butylphthalate	50.0000	43.9708	82		2		0-40	55-115
Fluoranthene	50.0000	40.8280	82		2		0-40	55-115
Pyrene	50.0000	42.0518	84		7		0-40	50-130
Butylbenzylphthalate	50.0000	39.6115	79		6		0-40	45-115
3,3'-Dichlorobenzidine	50.0000	18.2275	36		51	*	0-40	20-110
Benzo(a)anthracene	50.0000	39.0910	78		15		0-40	55-110
Chrysene	50.0000	40.9572	82		4		0-40	55-110
Bis(2-ethylhexyl)phthal	50.0000	40.9742	82		7		0-40	40-125
Di-n-octylphthalate	50.0000	39.1953	78		15		0-40	35-135
Benzo(b)fluoranthene	50.0000	40.7209	81		6		0-40	45-120
Benzo(k)fluoranthene	50.0000	40.3261	81		11		0-40	45-125
Benzo(a)pyrene	50.0000	41.7051	83		6		0-40	55-110
Indeno(1,2,3-cd)pyrene	50.0000	45.9447	92		3		0-40	45-125
Dibenzo(a,h)anthracene	50.0000	47.2189	94		2		0-40	40-125
Benzo(g,h,i)perylene	50.0000	47.1604	94		3		0-40	40-125
1,1'-Biphenyl	50.0000	41.3307	83		3		0-40	55-108
Acetophenone	50.0000	41.7522	84		2		0-40	56-145
Atrazine	50.0000	49.0916	98		24		0-40	52-175
Benzaldehyde	50.0000	55.5502	111		5		0-40	10-133
Caprolactam	50.0000	5.1728	10		3		0-40	10-146

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

3C - FORM III SV-1
WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Matrix Spike - EPA Sample No.: WG-80987-060614-BP-113

RPD: 6 out of 65 outside limits
Spike Recovery: 12 out of 130 outside limits

COMMENTS: _____

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-77498

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Lab Sample ID: LCS-77498 LCS Lot No.: A0101343
Date Extracted: 06/10/2014 Date Analyzed (1): 06/17/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Phenol	50.0000	0.0000	31.5221	63		0 - 115
Bis(2-chloroethyl)ether	50.0000	0.0000	28.9418	58		35 - 110
2-Chlorophenol	50.0000	0.0000	30.6845	61		35 - 105
2-Methylphenol	50.0000	0.0000	31.3121	63		40 - 110
2,2'-oxybis(1-Chloropropan	50.0000	0.0000	31.6909	63		30 - 123
4-Methylphenol	50.0000	0.0000	31.9189	64		30 - 110
N-Nitroso-di-n-propylamine	50.0000	0.0000	30.2379	60		35 - 130
Hexachloroethane	50.0000	0.0000	31.1431	62		30 - 95
Nitrobenzene	50.0000	0.0000	31.6853	63		45 - 110
Isophorone	50.0000	0.0000	31.5131	63		50 - 110
2-Nitrophenol	50.0000	0.0000	30.6662	61		40 - 115
2,4-Dimethylphenol	50.0000	0.0000	32.8147	66		30 - 110
2,4-Dichlorophenol	50.0000	0.0000	31.1735	62		50 - 105
Naphthalene	50.0000	0.0000	30.9118	62		40 - 100
4-Chloroaniline	50.0000	0.0000	26.4374	53		15 - 110
Bis(2-chloroethoxy)methane	50.0000	0.0000	30.8323	62		45 - 105
Hexachlorobutadiene	50.0000	0.0000	30.6421	61		25 - 105
4-Chloro-3-methylphenol	50.0000	0.0000	30.9376	62		45 - 110
2-Methylnaphthalene	50.0000	0.0000	32.1913	64		45 - 105
Hexachlorocyclopentadiene	50.0000	0.0000	27.0808	54		27 - 147
2,4,6-Trichlorophenol	50.0000	0.0000	30.7252	61		50 - 115
2,4,5-Trichlorophenol	50.0000	0.0000	31.0596	62		50 - 110
2-Chloronaphthalene	50.0000	0.0000	31.7055	63		50 - 105
2-Nitroaniline	50.0000	0.0000	31.3414	63		50 - 115
Dimethylphthalate	50.0000	0.0000	31.0795	62		25 - 125
Acenaphthylene	50.0000	0.0000	31.3918	63		50 - 105
2,6-Dinitrotoluene	50.0000	0.0000	30.8465	62		50 - 115
3-Nitroaniline	50.0000	0.0000	29.4465	59		20 - 125
Acenaphthene	50.0000	0.0000	31.0336	62		45 - 110
2,4-Dinitrophenol	50.0000	0.0000	36.4436	73		15 - 140
4-Nitrophenol	50.0000	0.0000	32.1638	64		0 - 125
Dibenzofuran	50.0000	0.0000	30.9083	62		55 - 105
2,4-Dinitrotoluene	50.0000	0.0000	30.8682	62		50 - 120
Diethylphthalate	50.0000	0.0000	30.9228	62		40 - 120
4-Chlorophenyl-phenylether	50.0000	0.0000	31.1116	62		50 - 110
Fluorene	50.0000	0.0000	30.7184	61		50 - 110
4-Nitroaniline	50.0000	0.0000	30.2868	61		35 - 120
4,6-Dinitro-2-methylphenol	50.0000	0.0000	33.3567	67		40 - 130
N-Nitrosodiphenylamine	50.0000	0.0000	30.7049	61		50 - 110
4-Bromophenyl-phenylether	50.0000	0.0000	31.2241	62		50 - 115
Hexachlorobenzene	50.0000	0.0000	31.5626	63		50 - 110
Pentachlorophenol	50.0000	0.0000	34.9226	70		40 - 115
Phenanthrene	50.0000	0.0000	32.1415	64		50 - 115
Anthracene	50.0000	0.0000	30.7318	61		55 - 110

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-77498

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
Lab Sample ID: LCS-77498 LCS Lot No.: A0101343
Date Extracted: 06/10/2014 Date Analyzed (1): 06/17/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Carbazole	50.0000	0.0000	29.6001	59		50 - 115
Di-n-butylphthalate	50.0000	0.0000	33.1906	66		55 - 115
Fluoranthene	50.0000	0.0000	31.1824	62		55 - 115
Pyrene	50.0000	0.0000	31.4619	63		50 - 130
Butylbenzylphthalate	50.0000	0.0000	31.1052	62		45 - 115
3,3'-Dichlorobenzidine	50.0000	0.0000	20.1702	40		20 - 110
Benzo(a)anthracene	50.0000	0.0000	30.4845	61		55 - 110
Chrysene	50.0000	0.0000	30.7807	62		55 - 110
Bis(2-ethylhexyl)phthalate	50.0000	0.0000	31.5179	63		40 - 125
Di-n-octylphthalate	50.0000	0.0000	30.8746	62		35 - 135
Benzo(b)fluoranthene	50.0000	0.0000	30.6199	61		45 - 120
Benzo(k)fluoranthene	50.0000	0.0000	31.5157	63		45 - 125
Benzo(a)pyrene	50.0000	0.0000	31.9896	64		55 - 110
Indeno(1,2,3-cd)pyrene	50.0000	0.0000	31.7166	63		45 - 125
Dibenzo(a,h)anthracene	50.0000	0.0000	32.3625	65		40 - 125
Benzo(g,h,i)perylene	50.0000	0.0000	31.9605	64		40 - 125
1,1'-Biphenyl	50.0000	0.0000	27.3009	55	*	55 - 108
Acetophenone	50.0000	0.0000	28.9797	58		56 - 145
Atrazine	50.0000	0.0000	10.8291	22	*	52 - 175
Benzaldehyde	50.0000	0.0000	35.3494	71		10 - 133
Caprolactam	50.0000	0.0000	27.9470	56		10 - 146

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 2 out of 65 outside limits

COMMENTS: _____

4C - FORM IV SV
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-77498

Lab Name: SPECTRUM ANALYTICAL, INC.	Contract:
Lab Code: MITKEM Case No.: N0980	Mod. Ref No.: SDG No.: SN0980
Lab File ID: S6B8092.D	Lab Sample ID: MB-77498
Instrument ID: S6	Date Extracted: 06/10/2014
Matrix: (SOIL/SED/WATER) WATER	Date Analyzed: 06/17/2014
Level: (LOW/MED) LOW	Time Analyzed: 13:55
Extraction: (Type) SEPF	GPC Cleanup: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS-77498	LCS-77498	S6B8093.D	06/17/2014
02	WG-80987- 060514-BP- 112	N0980-01B	S6B8105.D	06/17/2014
03	WG-80987- 060614-BP- 113	N0980-02B	S6B8106.D	06/17/2014
04	WG-80987- 060614-BP- 113MS	N0980-02BMS	S6B8107.D	06/17/2014
05	WG-80987- 060614-BP- 113MSD	N0980-02BMSD	S6B8108.D	06/17/2014
06	WG-80987- 060614-BP- 114	N0980-03B	S6B8109.D	06/17/2014
07	WG-80987- 060614-BP- 114DL	N0980-03BDL	S6B8110.D	06/17/2014
08	WG-80987- 060614-BP- 115	N0980-04B	S6B8111.D	06/17/2014
09	WG-80987- 060614-BP- 115DL	N0980-04BDL	S6B8112.D	06/17/2014
10	WG-80987- 060614-BP- 116	N0980-05B	S6B8113.D	06/17/2014
11	WG-80987- 060614-BP- 116DL	N0980-05BDL	S6B8114.D	06/17/2014

COMMENTS:

8C - FORM VIII SV-1
SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
 GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 06/17/2014 06/17/2014
 EPA Sample No.(SSTD020##) SSTD0256H Date Analyzed: 06/17/2014
 Lab File ID (Standard): S6B8091.D Time Analyzed: 13:15
 Instrument ID: S6

		IS1 (DCB)		IS2 (NPT)		IS3 (ANT)	
		AREA	# RT	AREA	# RT	AREA	# RT
	12 HOUR STD	450198	4.237	1688387	5.318	1181790	6.769
	UPPER LIMIT	900396	4.737	3376774	5.818	2363580	7.269
	LOWER LIMIT	225099	3.737	844194	4.818	590895	6.269
	EPA SAMPLE NO.						
01	MB-77498	633757	4.237	2268848	5.318	1531713	6.769
02	LCS-77498	700005	4.243	2487731	5.324	1714276	6.775
03	WG-80987-060 514-BP-112	576430	4.243	2043612	5.318	1355990	6.769
04	WG-80987-060 614-BP-113	487454	4.243	1691216	5.318	1142082	6.769
05	WG-80987-060 614-BP-113MS	483691	4.243	1707645	5.324	1151578	6.769
06	WG-80987-060 614-BP-113MS D	465234	4.243	1591749	5.324	1056561	6.775
07	WG-80987-060 614-BP-114	560370	4.243	1978526	5.330	1330031	6.787
08	WG-80987-060 614-BP-114DL	584388	4.243	2033510	5.324	1361718	6.769
09	WG-80987-060 614-BP-115	588351	4.249	2146562	5.330	1411919	6.775
10	WG-80987-060 614-BP-115DL	582171	4.243	1971279	5.318	1319968	6.769

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8C - FORM VIII SV-1
SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
 GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 06/17/2014 06/17/2014
 EPA Sample No.(SSTD020##) SSTD0256H Date Analyzed: 06/17/2014
 Lab File ID (Standard): S6B8091.D Time Analyzed: 13:15
 Instrument ID: S6

		IS1 (DCB)		IS2 (NPT)		IS3 (ANT)	
		AREA	#	AREA	#	AREA	#
	12 HOUR STD	450198		1688387		1181790	
	UPPER LIMIT	900396		3376774		2363580	
	LOWER LIMIT	225099		844194		590895	
	EPA SAMPLE NO.						
11	WG-80987-060 614-BP-116	579847	4.248	2089994	5.330	1401657	6.775
12	WG-80987-060 614-BP-116DL	609818	4.243	2151851	5.318	1448072	6.769

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8D - FORM VIII SV-2
SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
 EPA Sample No.(SSTD020##) SSTD0256H Date Analyzed: 06/17/2014
 Lab File ID (Standard): S6B8091.D Time Analyzed: 13:15
 Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

	IS4 (PHN)		IS5 (CRY)		IS6 (PRY)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	2422452	7.985	2531504	10.212	2168522	11.781
UPPER LIMIT	4844904	8.485	5063008	10.712	4337044	12.281
LOWER LIMIT	1211226	7.485	1265752	9.712	1084261	11.281
EPA SAMPLE NO.						
01 MB-77498	3067954	7.985	3302828	10.224	2796817	11.799
02 LCS-77498	3449139	7.985	3656802	10.195	3204489	11.757
03 WG-80987-060 514-BP-112	2690447	7.985	2543695	10.171	2027106	11.722
04 WG-80987-060 614-BP-113	2228086	7.985	2104819	10.171	1680423	11.722
05 WG-80987-060 614-BP-113MS	2256070	7.986	2169020	10.183	1729199	11.734
06 WG-80987-060 614-BP-113MS D	2061201	7.985	2084843	10.177	1863585	11.728
07 WG-80987-060 614-BP-114	2713325	8.003	2605569	10.177	2204556	11.734
08 WG-80987-060 614-BP-114DL	2652583	7.986	2533876	10.171	2077372	11.722
09 WG-80987-060 614-BP-115	2785452	7.985	2671807	10.177	2192924	11.734
10 WG-80987-060 614-BP-115DL	2519377	7.986	2406848	10.171	2028587	11.722

IS4 (PHN) = Phenanthrene-d10

IS5 (CRY) = Chrysene-d12

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8D - FORM VIII SV-2
SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: _____ SDG No.: SN0980
 EPA Sample No.(SSTD020##) SSTD0256H Date Analyzed: 06/17/2014
 Lab File ID (Standard): S6B8091.D Time Analyzed: 13:15
 Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

		IS4 (PHN)		IS5 (CRY)		IS6 (PRY)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	2422452	7.985	2531504	10.212	2168522	11.781
	UPPER LIMIT	4844904	8.485	5063008	10.712	4337044	12.281
	LOWER LIMIT	1211226	7.485	1265752	9.712	1084261	11.281
	EPA SAMPLE NO.						
11	WG-80987-060 614-BP-116	2701473	7.985	2631209	10.177	2139552	11.734
12	WG-80987-060 614-BP-116DL	2854895	7.985	2697333	10.177	2155472	11.728

IS4 (PHN) = Phenanthrene-d10

IS5 (CRY) = Chrysene-d12

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

*** PCB Organics ***

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Conestoga-Rovers & Associates

Project: Friedrichsohn Cooperage Site

Laboratory Workorder / SDG #: N0980

SW846 8082A, PCB by GC-ECD

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code:
SW846 8082A

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: E2
Instrument Type: GC-ECD
Description: HP5890 II +
Manufacturer: Hewlett-Packard

Model: 5890

GC Column used: 30 m X 0.53 mm ID [0.50 um thickness] CLPPest capillary column.

GC Column used: 30 m X 0.53 mm ID [0.42 um thickness] CLPPestII capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits with the following exceptions. Please note that the acceptance criteria allow one surrogate recovery outside of the QC limits per fraction.

WG-80987-060514-BP-112 (N0980-01B) Surrogate outside of QC limit due to dilution, recovery is below criteria for Decachlorobiphenyl on rear column at 0% with criteria of (40-135), Decachlorobiphenyl on front column at 0% with criteria of (40-135), Tetrachloro-m-xylene on rear column at 0% with criteria of (34-137) and Tetrachloro-m-xylene on front column at 0% with criteria of (34-137).

WG-80987-060614-BP-113 (N0980-02B), recovery is below criteria for Decachlorobiphenyl on rear column at 16% with criteria of (40-135).

WG-80987-060614-BP-113 (N0980-02BMS), recovery is below criteria for Decachlorobiphenyl on rear column at 14% with criteria of (40-135) and Decachlorobiphenyl on front column at 13% with criteria of (40-135).

WG-80987-060614-BP-113 (N0980-02BMSD), recovery is below criteria for Decachlorobiphenyl on rear column at 18% with criteria of (40-135) and Decachlorobiphenyl on front column at 18% with criteria of (40-135).

WG-80987-060614-BP-114 (N0980-03B) Surrogate outside of QC limit due to dilution, recovery is below criteria for Decachlorobiphenyl on rear column at 0% with criteria of (40-135), Decachlorobiphenyl on front column at 0% with criteria of (40-135), Tetrachloro-m-xylene on

rear column at 0% with criteria of (34-137) and Tetrachloro-m-xylene on front column at 0% with criteria of (34-137).

WG-80987-060614-BP-115 (N0980-04B) Surrogate outside of QC limit due to dilution, recovery is below criteria for Decachlorobiphenyl on rear column at 7% with criteria of (40-135), Decachlorobiphenyl on front column at 9% with criteria of (40-135), Tetrachloro-m-xylene on rear column at 10% with criteria of (34-137) and Tetrachloro-m-xylene on front column at 21% with criteria of (34-137).

WG-80987-060614-BP-116 (N0980-05B) Surrogate outside of QC limit due to dilution, recovery is below criteria for Decachlorobiphenyl on rear column at 0% with criteria of (40-135), Decachlorobiphenyl on front column at 0% with criteria of (40-135), Tetrachloro-m-xylene on rear column at 0% with criteria of (34-137) and Tetrachloro-m-xylene on front column at 0% with criteria of (34-137).

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: WG-80987-060614-BP-113 (N0980-02BMS) and WG-80987-060614-BP-113 (N0980-02BMSD).

Percent recoveries were within the QC limits with the following exceptions:

WG-80987-060614-BP-113 (N0980-02BMS), recovery is below criteria for Aroclor-1260 on rear column at 22% with criteria of (30-145) and Aroclor-1260 on front column at 22% with criteria of (30-145).

WG-80987-060614-BP-113 (N0980-02BMSD), recovery is below criteria for Aroclor-1260 on rear column at 25% with criteria of (30-145) and Aroclor-1260 on front column at 26% with criteria of (30-145).

Replicate RPDs were within the advisory QC limits.

E. Dilutions:

The following samples were analyzed at dilution:

WG-80987-060514-BP-112 (N0980-01B) : Dilution Factor: 20
WG-80987-060614-BP-114 (N0980-03B) : Dilution Factor: 2000
WG-80987-060614-BP-115 (N0980-04B) : Dilution Factor: 5
WG-80987-060614-BP-116 (N0980-05B) : Dilution Factor: 20

F. Samples:

The lower concentration between the primary and confirmatory GC column concentrations is reported due to the presence of interferences unless otherwise indicated. P flags are assigned to compounds when D% between the two columns are greater than 40%.

No other unusual occurrences were noted during sample analysis.

G. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

The following samples were manually integrated:

AR12481X2 Aroclor-1248 on front column due to M3

AR12485X2 Aroclor-1248 on front column due to M3

I certify that this data package is in compliance with the terms and

conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

A handwritten signature in black ink, appearing to be 'JFW', is written over a horizontal line.

Signed: _____

Date: _____ 6/20/2014 _____



SPECTRUM ANALYTICAL, INC.

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HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

- U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).
- J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
 - estimated concentration for Tentatively Identified Compound
- B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a “trace” concentration below the reporting limit and equal to or above the detection limit.
- D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis
- E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.
- P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.
- A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 2 of 2):

- N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

- * For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

- L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Sample ID Suffixes

- DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution
- RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.
- RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.
- RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.
- MS Matrix Spike.
- MSD Matrix Spike Duplicate
- DUP Duplicate analysis
- SD Serial Dilution
- PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WG-80987-060514-
BP-112

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-01B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7889F.D/E2M7889R.D
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Extraction: (Type) SEPF Date Extracted: 06/11/2014
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/13/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 20.0
GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y
Acid Cleanup: (Y/N) Y _____

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/L
12674-11-2	Aroclor-1016	20	U
11104-28-2	Aroclor-1221	20	U
11141-16-5	Aroclor-1232	20	U
53469-21-9	Aroclor-1242	120	
12672-29-6	Aroclor-1248	20	U
11097-69-1	Aroclor-1254	20	U
11096-82-5	Aroclor-1260	20	U

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WG-80987-060614-
BP-113

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7832F.D/E2M7832R.D
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Extraction: (Type) SEPF Date Extracted: 06/11/2014
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/12/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y
Acid Cleanup: (Y/N) Y _____

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/L
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	4.8	
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WG-80987-060614-
BP-114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-03B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7914F.D/E2M7914R.D
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Extraction: (Type) SEPF Date Extracted: 06/11/2014
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/16/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 2000.0
GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y
Acid Cleanup: (Y/N) Y _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
12674-11-2	Aroclor-1016	2000	U
11104-28-2	Aroclor-1221	2000	U
11141-16-5	Aroclor-1232	2000	U
53469-21-9	Aroclor-1242	20000	
12672-29-6	Aroclor-1248	2000	U
11097-69-1	Aroclor-1254	2000	U
11096-82-5	Aroclor-1260	2000	U

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WG-80987-060614-
BP-115

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-04B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7891F.D/E2M7891R.D
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Extraction: (Type) SEPF Date Extracted: 06/11/2014
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/13/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 5.0
GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y
Acid Cleanup: (Y/N) Y _____

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/L
12674-11-2	Aroclor-1016	5.0	U
11104-28-2	Aroclor-1221	5.0	U
11141-16-5	Aroclor-1232	5.0	U
53469-21-9	Aroclor-1242	23	
12672-29-6	Aroclor-1248	5.0	U
11097-69-1	Aroclor-1254	5.0	U
11096-82-5	Aroclor-1260	5.0	U

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WG-80987-060614-
BP-116

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-05B
Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7892F.D/E2M7892R.D
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Extraction: (Type) SEPF Date Extracted: 06/11/2014
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/13/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 20.0
GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y
Acid Cleanup: (Y/N) Y _____

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/L
12674-11-2	Aroclor-1016	20	U
11104-28-2	Aroclor-1221	20	U
11141-16-5	Aroclor-1232	20	U
53469-21-9	Aroclor-1242	190	
12672-29-6	Aroclor-1248	20	U
11097-69-1	Aroclor-1254	20	U
11096-82-5	Aroclor-1260	20	U

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MB-77511

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-77511
Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7829F.D/E2M7829R.D
% Moisture: _____ Decanted: (Y/N) _____ Date Received: _____
Extraction: (Type) SEPF Date Extracted: 06/11/2014
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/12/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y
Acid Cleanup: (Y/N) Y _____

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/L
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

LCS-77511(1)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-77511
Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7830F.D
% Moisture: _____ Decanted: (Y/N) _____ Date Received: _____
Extraction: (Type) SEPF Date Extracted: 06/11/2014
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/12/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y
Acid Cleanup: (Y/N) Y _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
12674-11-2	Aroclor-1016	4.0	
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	4.2	

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

LCS-77511(2)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-77511
Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7830R.D
% Moisture: _____ Decanted: (Y/N) _____ Date Received: _____
Extraction: (Type) SEPF Date Extracted: 06/11/2014
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/12/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y
Acid Cleanup: (Y/N) Y _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
12674-11-2	Aroclor-1016	4.1	
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	4.0	

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WG-80987-060614-
BP-113MS(1)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02BMS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7833F.D

% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014

Extraction: (Type) SEPF Date Extracted: 06/11/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/12/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
12674-11-2	Aroclor-1016	4.2	
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	5.3	
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	0.87	J

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WG-80987-060614-
BP-113MS(2)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02BMS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7833R.D

% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014

Extraction: (Type) SEPF Date Extracted: 06/11/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/12/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
12674-11-2	Aroclor-1016	4.2	
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	5.3	
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	0.89	J

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WG-80987-060614-
BP-113MSD(1)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02BMSD
Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7834F.D
% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014
Extraction: (Type) SEPF Date Extracted: 06/11/2014
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/12/2014
Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y
Acid Cleanup: (Y/N) Y _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
12674-11-2	Aroclor-1016	4.6	
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	6.6	
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WG-80987-060614-
BP-113MSD(2)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0980-02BMSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2M7834R.D

% Moisture: _____ Decanted: (Y/N) _____ Date Received: 06/07/2014

Extraction: (Type) SEPF Date Extracted: 06/11/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/12/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
12674-11-2	Aroclor-1016	4.6	
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	6.5	
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	

2Q - FORM II ARO-1
WATER AROCLOR SURROGATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
 GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	MB-77511	92	94	80	78			0
02	LCS-77511	94	96	80	80			0
03	WG-80987-060 614-BP-113	39	39	45	16 *			1
04	WG-80987-060 614-BP-113MS	41	41	13 *	14 *			2
05	WG-80987-060 614-BP-113MS D	43	43	18 *	18 *			2
06	WG-80987-060 514-BP-112	0 D	0 D	0 D	0 D			4
07	WG-80987-060 614-BP-115	21 D	10 D	9 D	7 D			4
08	WG-80987-060 614-BP-116	0 D	0 D	0 D	0 D			4
09	WG-80987-060 614-BP-114	0 D	0 D	0 D	0 D			4

QC LIMITS
(34-137)
(40-135)

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

Column to be used to flag recovery values
 * Values outside of QC limits
 D Surrogate diluted out

som14.05.28.1137

3J - FORM III ARO-1
WATER AROCLOR MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix Spike - EPA Sample No.: WG-80987-060614-BP-113

Instrument ID: E2 GC Column : CLPPest ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
AR1016	4.0000	0.0000	4.2041	105		25-145
AR1260	4.0000	0.0000	0.8749	22	*	30-145

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS	
							RPD	REC.
AR1016	4.0000	4.6175	115		9		0-30	25-145
AR1260	4.0000	1.0309	26	*	16		0-30	30-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 2 out of 4 outside limits

COMMENTS: _____

3J - FORM III ARO-1
WATER AROCLOR MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980

Matrix Spike - EPA Sample No.: WG-80987-060614-BP-113

Instrument ID: E2 GC Column : CLPPestII ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
AR1016	4.0000	0.0000	4.1821	105		25-145
AR1260	4.0000	0.0000	0.8928	22	*	30-145

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS	
							RPD	REC.
AR1016	4.0000	4.6481	116		11		0-30	25-145
AR1260	4.0000	1.0092	25	*	12		0-30	30-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 2 out of 4 outside limits

COMMENTS: _____

3N - FORM III ARO-3
WATER AROCLOR LABORATORY CONTROL
SAMPLE RECOVERY

CLIENT SAMPLE NO.

LCS-77511

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Lab Sample ID: LCS-77511 LCS Lot No.: A082781
Date Extracted: 06/11/2014 Date Analyzed (1): 06/12/2014
Instrument ID (1): E2 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC #	QC LIMITS
Aroclor-1016	4.0000	4.0388	101	25-145
Aroclor-1260	4.0000	4.2234	106	30-145

Instrument ID (2): E2 GC Column(2): CLPPestII ID: 0.53 (mm)
Date Analyzed (2): 06/12/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC #	QC LIMITS
Aroclor-1016	4.0000	4.0817	102	25-145
Aroclor-1260	4.0000	3.9523	99	30-145

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 0 out of 4 outside limits.

COMMENTS:

4F - FORM IV ARO
AROCOLOR METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

MB-77511

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0980 Mod. Ref No.: 080987/1 SDG No.: SN0980
Lab File ID: E2M7829F.D / E2M7829R.D Lab Sample ID: MB-77511
Matrix: (SOIL/SED/WATER) WATER Extraction: (Type) SEPF Date Extracted: 06/11/2014
Sulfur Cleanup: (Y/N) Y GPC Cleanup: (Y/N) N
Acid Cleanup: (Y/N) Y
Date Analyzed (1): 06/12/2014 Date Analyzed (2): 06/12/2014
Time Analyzed (1): 22:26 Time Analyzed (2): 22:26
Instrument ID (1): E2 Instrument ID (2): E2
GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED (1)	DATE ANALYZED (2)
01	LCS-77511	LCS-77511	06/12/2014	06/12/2014
02	WG-80987-060 614-BP-113	N0980-02B	06/12/2014	06/12/2014
03	WG-80987-060 614-BP-113MS	N0980-02BMS	06/12/2014	06/12/2014
04	WG-80987-060 614-BP-113MS D	N0980-02BMSD	06/12/2014	06/12/2014
05	WG-80987-060 514-BP-112	N0980-01B	06/13/2014	06/13/2014
06	WG-80987-060 614-BP-115	N0980-04B	06/13/2014	06/13/2014
07	WG-80987-060 614-BP-116	N0980-05B	06/13/2014	06/13/2014
08	WG-80987-060 614-BP-114	N0980-03B	06/16/2014	06/16/2014

COMMENTS:



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

*** Metals ***

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Conestoga-Rovers & Associates

Project: Friedrichsohn Cooperage Site

Laboratory Workorder / SDG #: N0980

SW846 6020A, SW846 7470A

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code:
SW846 6020A, SW846 7470A

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3005A

Aqueous Samples were prepared following procedures in laboratory test code: SW7470A

V. INSTRUMENTATION

The following instrumentation was used:

Instrument Code: FIMS2
Instrument Type: CVAA
Description: FIMS
Manufacturer: Perkin-Elmer
Model: FIMS100

Instrument Code: X1
Instrument Type: ICPMS
Description: X1
Manufacturer: ThermoFisher
Model: X-Series 2

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix spike (MS):

Matrix spikes were performed on sample: WG-80987-060614-BP-113 (N0980-02CMS).

Percent recoveries were within the QC limits with the following exceptions:

WG-80987-060614-BP-113 (N0980-02CMS), recovery is below criteria for Lead at 14% with criteria of (75-125) and Selenium at 62% with criteria of (75-125).

D. Post Digestion Spike (PDS):

Post-digestion spike analysis was performed on sample: WG-80987-060614-BP-113 (N0980-02CPDS).

WG-80987-060614-BP-113 (N0980-02CPDS) for Lead and Selenium

due to recoveries of these elements outside of QC limits in the matrix spike.

E. Duplicate sample:

Duplicate analyses were performed on sample: WG-80987-060614-BP-113 (N0980-02CDUP).

Relative percent differences were within the QC limits.

F. Serial Dilution (SD):

Serial Dilution analyses were performed on sample: WG-80987-060614-BP-113 (N0980-02CSD).

Percent differences were within the QC limits with the exception of the following:

WG-80987-060614-BP-113 (N0980-02CSD), Serial Dilution analysis not within control limit for Copper, Iron and Nickel.

G. Samples:

Samples required dilution to protect the ICP MS from high salt content. No other unusual occurrences were noted during sample analysis.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:  _____

Date: 06/20/2014



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

- U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).
- J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
 - estimated concentration for Tentatively Identified Compound
- B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a “trace” concentration below the reporting limit and equal to or above the detection limit.
- D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis
- E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.
- P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.
- A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 2 of 2):

- N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.
- * For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.
- L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Sample ID Suffixes

- DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution
- RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.
- RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.
- RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.
- MS Matrix Spike.
- MSD Matrix Spike Duplicate
- DUP Duplicate analysis
- SD Serial Dilution
- PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

WG-80987-060514-BP-112

Lab Name: Spectrum Analytical, Inc.

Contract: 4068085

Lab Code: MITKEM

Case No.:

SAS No.:

SDG No.: SN0980

Matrix (soil/water): WATER

Lab Sample ID: N0980-01

Level (low/med): MED

Date Received: 06/07/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11800			MS
7440-36-0	Antimony	1.1	J		MS
7440-38-2	Arsenic	18.0			MS
7440-39-3	Barium	177			MS
7440-41-7	Beryllium	1.1	J		MS
7440-43-9	Cadmium	0.92	J		MS
7440-70-2	Calcium	10700			MS
7440-47-3	Chromium	24.2			MS
7440-48-4	Cobalt	11.0			MS
7440-50-8	Copper	74.7		E	MS
7439-89-6	Iron	19800		E	MS
7439-92-1	Lead	67.5		N	MS
7439-95-4	Magnesium	4220			MS
7439-96-5	Manganese	1240			MS
7439-97-6	Mercury	0.15	J		CV
7440-02-0	Nickel	38.5		E	MS
7440-09-7	Potassium	4780			MS
7782-49-2	Selenium	1.6	J	N	MS
7440-22-4	Silver	0.38	J		MS
7440-23-5	Sodium	549000			MS
7440-28-0	Thallium	0.49	J		MS
7440-62-2	Vanadium	64.6			MS
7440-66-6	Zinc	76.2			MS

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

WG-80987-060614-BP-113

Lab Name: Spectrum Analytical, Inc.

Contract: 4068085

Lab Code: MITKEM

Case No.:

SAS No.:

SDG No.: SN0980

Matrix (soil/water): WATER

Lab Sample ID: N0980-02

Level (low/med): MED

Date Received: 06/07/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11400			MS
7440-36-0	Antimony	0.60	U		MS
7440-38-2	Arsenic	25.0			MS
7440-39-3	Barium	421			MS
7440-41-7	Beryllium	0.75	J		MS
7440-43-9	Cadmium	0.59	J		MS
7440-70-2	Calcium	19100			MS
7440-47-3	Chromium	18.9			MS
7440-48-4	Cobalt	14.7			MS
7440-50-8	Copper	56.0		E	MS
7439-89-6	Iron	29200		E	MS
7439-92-1	Lead	42.4		N	MS
7439-95-4	Magnesium	8130			MS
7439-96-5	Manganese	7590			MS
7439-97-6	Mercury	0.14	J		CV
7440-02-0	Nickel	40.0		E	MS
7440-09-7	Potassium	9290			MS
7782-49-2	Selenium	0.45	U	N	MS
7440-22-4	Silver	0.15	J		MS
7440-23-5	Sodium	398000			MS
7440-28-0	Thallium	0.24	J		MS
7440-62-2	Vanadium	30.4			MS
7440-66-6	Zinc	92.0			MS

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

WG-80987-060614-BP-114

Lab Name: Spectrum Analytical, Inc.

Contract: 4068085

Lab Code: MITKEM

Case No.:

SAS No.:

SDG No.: SN0980

Matrix (soil/water): WATER

Lab Sample ID: N0980-03

Level (low/med): MED

Date Received: 06/07/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20400			MS
7440-36-0	Antimony	1.5	J		MS
7440-38-2	Arsenic	92.7			MS
7440-39-3	Barium	1920			MS
7440-41-7	Beryllium	2.0	J		MS
7440-43-9	Cadmium	0.89	J		MS
7440-70-2	Calcium	92700			MS
7440-47-3	Chromium	37.2			MS
7440-48-4	Cobalt	30.0			MS
7440-50-8	Copper	79.7		E	MS
7439-89-6	Iron	240000		E	MS
7439-92-1	Lead	80.1		N	MS
7439-95-4	Magnesium	26200			MS
7439-96-5	Manganese	5120			MS
7439-97-6	Mercury	0.028	U		CV
7440-02-0	Nickel	64.3		E	MS
7440-09-7	Potassium	17000			MS
7782-49-2	Selenium	1.3	J	N	MS
7440-22-4	Silver	0.21	J		MS
7440-23-5	Sodium	401000			MS
7440-28-0	Thallium	0.15	J		MS
7440-62-2	Vanadium	72.2			MS
7440-66-6	Zinc	224			MS

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

WG-80987-060614-BP-115

Lab Name: Spectrum Analytical, Inc.

Contract: 4068085

Lab Code: MITKEM

Case No.:

SAS No.:

SDG No.: SN0980

Matrix (soil/water): WATER

Lab Sample ID: N0980-04

Level (low/med): MED

Date Received: 06/07/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4390			MS
7440-36-0	Antimony	5.1	J		MS
7440-38-2	Arsenic	64.9			MS
7440-39-3	Barium	471			MS
7440-41-7	Beryllium	3.5	J		MS
7440-43-9	Cadmium	2.6	J		MS
7440-70-2	Calcium	16100			MS
7440-47-3	Chromium	63.8			MS
7440-48-4	Cobalt	16.3	J		MS
7440-50-8	Copper	204		E	MS
7439-89-6	Iron	15800		E	MS
7439-92-1	Lead	185		N	MS
7439-95-4	Magnesium	912	J		MS
7439-96-5	Manganese	973			MS
7439-97-6	Mercury	0.58			CV
7440-02-0	Nickel	225		E	MS
7440-09-7	Potassium	13200			MS
7782-49-2	Selenium	4.1	J	N	MS
7440-22-4	Silver	0.99	J		MS
7440-23-5	Sodium	2050000			MS
7440-28-0	Thallium	0.96	U		MS
7440-62-2	Vanadium	443			MS
7440-66-6	Zinc	69.9			MS

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

WG-80987-060614-BP-116

Lab Name: Spectrum Analytical, Inc.

Contract: 4068085

Lab Code: MITKEM

Case No.:

SAS No.:

SDG No.: SN0980

Matrix (soil/water): WATER

Lab Sample ID: N0980-05

Level (low/med): MED

Date Received: 06/07/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3880			MS
7440-36-0	Antimony	4.8	J		MS
7440-38-2	Arsenic	63.5			MS
7440-39-3	Barium	464			MS
7440-41-7	Beryllium	3.5	J		MS
7440-43-9	Cadmium	2.7	J		MS
7440-70-2	Calcium	15200			MS
7440-47-3	Chromium	60.8			MS
7440-48-4	Cobalt	15.0	J		MS
7440-50-8	Copper	199		E	MS
7439-89-6	Iron	13900		E	MS
7439-92-1	Lead	179		N	MS
7439-95-4	Magnesium	653	J		MS
7439-96-5	Manganese	859			MS
7439-97-6	Mercury	0.58			CV
7440-02-0	Nickel	218		E	MS
7440-09-7	Potassium	13000			MS
7782-49-2	Selenium	5.0	J	N	MS
7440-22-4	Silver	0.86	J		MS
7440-23-5	Sodium	2030000			MS
7440-28-0	Thallium	0.96	U		MS
7440-62-2	Vanadium	444			MS
7440-66-6	Zinc	61.9			MS

Comments:

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc.

Contract: 4068085

Lab Code: MITKEM

Case No.:

SAS No.:

SDG No.:

SN0980

Solid LCS Source:

LCS(D) ID:

Aqueous LCS Source:

LCS-77471

Analyte	Aqueous (ug/L)			Solid (mg/Kg)					
	True	Found	%R	True	Found	C	Limits	%R	
Aluminum	2000.0	2013.91	100.7						
Antimony	100.0	97.04	97.0						
Arsenic	40.0	42.15	105.4						
Barium	2000.0	2048.40	102.4						
Beryllium	50.0	51.34	102.7						
Cadmium	50.0	52.79	105.6						
Calcium	5000.0	5174.20	103.5						
Chromium	200.0	214.28	107.1						
Cobalt	500.0	504.28	100.9						
Copper	250.0	267.26	106.9						
Iron	1000.0	1058.17	105.8						
Lead	20.0	21.68	108.4						
Magnesium	5000.0	5060.62	101.2						
Manganese	500.0	522.65	104.5						
Nickel	500.0	534.65	106.9						
Potassium	5000.0	5066.20	101.3						
Selenium	50.0	53.91	107.8						
Silver	50.0	55.97	111.9						
Sodium	5000.0	5056.37	101.1						
Thallium	50.0	54.33	108.7						
Vanadium	500.0	487.07	97.4						
Zinc	500.0	550.58	110.1						

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7
LABORATORY CONTROL SAMPLE

Lab Name:	Spectrum Analytical, Inc.	Contract:	4068085		
Lab Code:	MITKEM	Case No.:	SAS No.:	SDG No.:	SN0980
Solid LCS Source:			LCS(D) ID:		
Aqueous LCS Source:			LCS-77585		

	Aqueous (ug/L)			Solid (mg/Kg)					
Analyte	True	Found	%R	True	Found	C	Limits	%R	
Mercury	4.6	4.76	103.5						

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5A

EPA SAMPLE NO.

SPIKE SAMPLE RECOVERY

WG-80987-060614-BP-113S

Lab Name: Spectrum Analytical, Inc.

Contract: 4068085

Lab Code: MITKEM

Case No.:

SAS No.:

SDG No.: SN0980

Matrix (soil/water): WATER

Level (low/med): MED

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Aluminum		7670	11400	2000	-188		MS
Antimony	75-125	84.6	0.60	100	85		MS
Arsenic	75-125	60.6	25.0	40.0	89		MS
Barium	75-125	2450	421	2000	102		MS
Beryllium	75-125	50.3	0.75	50.0	99		MS
Cadmium	75-125	51.3	0.59	50.0	102		MS
Chromium	75-125	204	18.9	200	93		MS
Cobalt	75-125	497	14.7	500	96		MS
Copper	75-125	261	56.0	250	82		MS
Iron		21200	29200	1000	-796		MS
Lead	75-125	45.3	42.4	20.0	14	N	MS
Manganese		8580	7590	500	199		MS
Nickel	75-125	506	40.0	500	93		MS
Selenium	75-125	31.2	0.45	50.0	63	N	MS
Silver	75-125	52.5	0.15	50.0	105		MS
Thallium	75-125	54.1	0.24	50.0	108		MS
Vanadium	75-125	509	30.4	500	96		MS
Zinc	75-125	530	92.0	500	88		MS
Mercury	75-125	4.7	0.14	4.6	100		CV

Comments:

U.S. EPA - CLP

5B

EPA SAMPLE NO.

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Spectrum Analytical, Inc.Contract: 4068085

WG-80987-060614-BP-113A

Lab Code: MITKEM

Case No.: _____

SAS No.: _____

SDG No.: SN0980Matrix (soil/water): WATERLevel (low/med): MED

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit %R	Spike Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Lead		44.59	14.15	33.3	91		MS
Selenium		31.99	0.15 U	33.3	96		MS

Comments:

U.S. EPA - CLP

6

EPA SAMPLE NO.

DUPLICATES

Lab Name: Spectrum Analytical, Inc.

Contract: 4068085

WG-80987-060614-BP-113D

Lab Code: MITKEM

Case No.:

SAS No.:

SDG No.: SN0980

Matrix (soil/water): WATER

Level (low/med): MED

% Solids for Sample: 0.0

% Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit	Sample (S) C	Duplicate (D) C	RPD	Q	M
Aluminum		11430.1701	10930.1650	4.5		MS
Antimony		0.6000 U	0.6000 U			MS
Arsenic	6.0	24.9739	24.5263	1.8		MS
Barium		421.2760	406.2412	3.6		MS
Beryllium		0.7471 J	0.8138 J	8.5		MS
Cadmium		0.5913 J	0.6290 J	6.2		MS
Calcium		19092.5947	19024.2737	0.4		MS
Chromium	6.0	18.8753	18.2692	3.3		MS
Cobalt	3.0	14.7074	14.2113	3.4		MS
Copper		56.0423	54.0315	3.7		MS
Iron		29187.6527	28563.0577	2.2		MS
Lead		42.4495	40.8852	3.8		MS
Magnesium		8125.0900	7777.4143	4.4		MS
Manganese		7585.3519	7570.0593	0.2		MS
Nickel		39.9834	38.5001	3.8		MS
Potassium		9288.0610	9265.4049	0.2		MS
Selenium		0.4500 U	0.4500 U			MS
Silver		0.1494 J	0.1489 J	0.3		MS
Sodium		397608.3720	397093.3258	0.1		MS
Thallium		0.2417 J	0.1400 U	200		MS
Vanadium	15.0	30.3808	30.0368	1.1		MS
Zinc		91.9660	86.7650	5.8		MS
Mercury		0.1371 J	0.1332 J	2.9		CV

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: 4068085

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN0980

Preparation Blank Matrix (soil/water): WATER

Method Blank ID:

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

MB-77585**FIMS2_140617A**

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
		C	06/17/14 17:52	C	06/17/14 18:10	C		C		C	
Mercury	0.028	U	0.028	U	0.028	U			0.028	U	CV

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: 4068085

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN0980

Preparation Blank Matrix (soil/water): WATER

Method Blank ID:

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

MB-77471**X1_140613A**

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
		C	06/13/14 15:44	C	06/13/14 16:30	C	06/13/14 17:20	C		C	
Aluminum	2.900	U	2.900	U	2.900	U	2.900	U	2.900	U	MS
Antimony	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	MS
Arsenic	0.285	J	0.190	U	0.190	U	0.191	J	0.190	U	MS
Barium	1.300	U	1.300	U	1.300	U	1.300	U	1.300	U	MS
Beryllium	0.072	U	0.072	U	0.072	U	0.072	U	0.072	U	MS
Cadmium	0.084	U	0.084	U	0.084	U	0.084	U	0.084	U	MS
Calcium	24.000	U	24.000	U	24.000	U	24.000	U	24.000	U	MS
Chromium	0.160	U	0.160	U	0.160	U	0.160	U	0.160	U	MS
Cobalt	0.056	J	-0.048	J	0.024	U	-0.034	J	0.024	U	MS
Copper	0.230	U	0.230	U	0.230	U	0.230	U	0.230	U	MS
Iron	14.000	U	14.000	U	14.000	U	14.000	U	14.000	U	MS
Lead	0.075	J	0.068	U	0.068	U	0.068	U	0.068	U	MS
Magnesium	7.800	U	7.800	U	12.534	J	9.842	J	7.800	U	MS
Manganese	0.830	U	0.830	U	0.830	U	0.830	U	0.830	U	MS
Nickel	0.170	U	0.170	U	0.170	U	0.170	U	0.170	U	MS
Potassium	14.000	U	14.000	U	14.000	U	14.000	U	14.000	U	MS
Selenium	0.328	J	0.150	U	0.150	U	0.150	U	0.150	U	MS
Silver	0.101	J	0.022	U	0.053	J	0.033	J	0.022	U	MS
Sodium	33.000	U	33.000	U	33.000	U	33.000	U	33.000	U	MS
Thallium	0.404	J	0.333	J	0.342	J	0.347	J	0.063	J	MS
Vanadium	0.610	U	0.610	U	0.610	U	0.610	U	0.610	U	MS
Zinc	0.730	U	0.730	U	0.730	U	0.730	U	0.730	U	MS

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: 4068085

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN0980

Preparation Blank Matrix (soil/water): Method Blank ID:

Preparation Blank Concentration Units (ug/L or mg/kg):

X1_140613A

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
		C	06/13/14 18:10	C	06/13/14 18:46	C	06/13/14 19:36	C		C	
Aluminum			2.900	U	2.900	U	2.900	U			MS
Antimony			0.200	U	0.200	U	0.200	U			MS
Arsenic			0.190	U	0.190	U	0.226	J			MS
Barium			1.300	U	1.300	U	1.300	U			MS
Beryllium			0.072	U	0.073	J	0.104	J			MS
Cadmium			0.084	U	0.084	U	0.100	J			MS
Calcium			24.000	U	31.760	J	41.084	J			MS
Chromium			0.160	U	0.160	U	0.160	U			MS
Cobalt			0.024	U	0.024	U	0.035	J			MS
Copper			0.230	U	0.230	U	0.230	U			MS
Iron			14.000	U	14.000	U	18.470	J			MS
Lead			0.068	U	0.068	U	0.068	U			MS
Magnesium			14.191	J	20.962	J	30.507	J			MS
Manganese			0.830	U	0.830	U	0.830	U			MS
Nickel			0.170	U	0.170	U	0.170	U			MS
Potassium			14.000	U	17.933	J	28.955	J			MS
Selenium			0.150	U	0.150	U	0.150	U			MS
Silver			0.048	J	0.068	J	0.110	J			MS
Sodium			33.000	U	37.735	J	59.323	J			MS
Thallium			0.352	J	0.379	J	0.413	J			MS
Vanadium			0.610	U	0.610	U	0.610	U			MS
Zinc			0.730	U	0.730	U	0.730	U			MS

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: 4068085

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN0980

Preparation Blank Matrix (soil/water): Method Blank ID:

Preparation Blank Concentration Units (ug/L or mg/kg):

X1_140616A

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
		C	06/16/14 13:27	C	06/16/14 14:18	C		C		C	
Lead	0.068	U	0.068	U	0.068	U					MS
Selenium	0.241	J	0.150	U	0.150	U					MS

Appendix J

Wastewater Analytical Data Reports

Report Date:
05-Jun-14 12:20



- ☒ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Conestoga-Rovers & Associates
2055 Niagara Falls Boulevard, Suite 3
Niagara Falls, NY 14304

Work Order: N0888
Project : Friedrichsohn Cooperage Site
Project #: 080987-001

Attn: Kathy Shaw

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
N0888-01	WW-80987-052214-BP-110	Aqueous	22-May-14 14:00	23-May-14 09:24
N0888-01	WW-80987-052214-BP-110	Waste Water	22-May-14 14:00	23-May-14 09:24

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirements have been met.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033



Authorized by:

Yihai Ding
Laboratory Director

WorkOrder: N0888

Case:

HC Due: 06/04/14

Report Level: ASP-B

Project: Friedrichsohn Cooperage Site

Fax Due:

Special Program:

WO Name: Friedrichsohn Cooperage Site

Fax Report: ☐

EDD: EQUIS_4_CRA

Location: CRA_FRIEDRICHSOHN, 080987-001

PO: 4068085

Comments: More sample volume will sent for TCLP SVOA, TCLP metals and PCB. These have been deleted until extra volume is received. Water sample, not soil. Report "J".

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
N0888-01A	WW-80987-052214-BP-110	05/22/2014 14:00	05/23/2014	Waste Wat	SM4500_H+	/					A4
N0888-01A	WW-80987-052214-BP-110	05/22/2014 14:00	05/23/2014	Waste Wat	SW7.3.3.2_W	/ REACTIVITY					A4
N0888-01A	WW-80987-052214-BP-110	05/22/2014 14:00	05/23/2014	Waste Wat	SW7.3.4.2_W	/ REACTIVITY					A4
N0888-01B	WW-80987-052214-BP-110	05/22/2014 14:00	05/23/2014	Aqueous	SW8260_W	/ TCLP,				Y	VOA
N0888-01C	WW-80987-052214-BP-110	05/22/2014 14:00	05/23/2014	Aqueous	SW1010_S	/ SPECTRUM--		Y			SUB
N0888-01C	WW-80987-052214-BP-110	05/22/2014 14:00	05/23/2014	Aqueous	SW1010_W	/ SPECTRUM--					SUB

Sample Transmittal Documentation



CONESTOGA-ROVERS
& ASSOCIATES

CHAIN OF CUSTODY RECORD
Address: 2055 Niagara Falls Blvd. N. Tonawanda, NY 14204
Phone: 716-297-2160 Fax: 716-297-2565

COC NO.: 35135
PAGE 1 OF 1
(See Reverse Side for Instructions)

Project No/Phase/Task Code: 080987		Laboratory Name: Spectrum Analytical		Lab Location: North Tonawanda, PA		SSOW ID:	
Project Name: Friedrichsohn Cooperage		Lab Contact: Kathy Shaw		Lab Quote No:		Cooler No:	
Project Location: Watford, NY		Chemistry Contact: Brian Pickett		Carrier: FedEx		Airbill No:	
Sampler(s):		Flashpoint		Date Shipped: 5/22/14		COMMENTS/SPECIAL INSTRUCTIONS:	
SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)		DATE (mm/dd/yy)		TIME (hh:mm)		MS/MSD Request	
1 NW-80987-052214-BP-110		5/22/14		1400		Flashpoint by Pensky-Martens Closed-Cup method	
2						Reactive Cyanide Released from Wastes	
3						Reactive Sulfide Released from Waste Soil & Wastes	
4						VOCs by GC-MS	
5						Metals by ICP	
6						Mercury by FDA	
7						SVOCs by GC-MS	
8							
9							
10							
11							
12							
13							
14							
15							
TAT Required in business days (use separate COCs for different TATs):		DATE		TIME		Notes/Special Requirements:	
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☐ Other:		5/22/14		1600		Total Number of Containers: 4	
RELINQUISHED BY: [Signature]		COMPANY: CRA INC.		RECEIVED BY: [Signature]		All Samples in Cooler must be on COC	
1. [Signature]		5/22/14		1600		SPECTRUM	
2. [Signature]						05/23/14 08:50	
3. [Signature]							
85						IR 2.7c	

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE - Fully Executed Copy (CRA)

YELLOW - Receiving Laboratory Copy

PINK - Shipper

GOLDENROD - Sampling Crew

CRA Form: COC-10B (20110804)

Received By: <u>WJL</u>		Page 01 of 00									
Reviewed By: <u>WJL</u>		Log-in Date 05/23/2014									
Work Order: N0888		Client Name: Conestoga-Rovers & Associates									
Project Name/Event: Friedrichsohn Cooperage Site / 080987-001											
Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.		Preservation (pH)									
		Lab Sample ID	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>HNO3</td> <td>H2SO4</td> <td>HCl</td> <td>NaOH</td> <td>H3PO4</td> </tr> <tr> <td>N0888-01</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	HNO3	H2SO4	HCl	NaOH	H3PO4	N0888-01		
HNO3	H2SO4	HCl	NaOH	H3PO4							
N0888-01											
1. Custody Seal(s) <u>Present / Absent</u> <u>Intact / Broken</u> 2. Custody Seal Nos. <u>N/A</u> 3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists <u>Present / Absent</u> 4. Airbill <u>AirBill / Sticker</u> <u>Present / Absent</u> 5. Airbill No. <u>FedEx 8048 6348 8871</u> 6. Sample Tags <u>Present / Absent</u> Sample Tag Numbers <u>Listed /</u> <u>Not Listed on Chain-of-Custody</u> 7. Sample Condition <u>Intact / Broken /</u> <u>Leaking</u> 8. Cooler Temperature Indicator Bottle <u>Present / Absent</u> 9. Cooler Temperature <u>2.7 °C</u> 10. Does information on TR/COCs and sample tags agree? <u>Yes / No</u> 11. Date Received at Laboratory <u>05/23/2014</u> 12. Time Received <u>08:50</u> Sample Transfer <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Fraction (1) TVOA/VOA</td> <td>Fraction (2) SVOA/PEST/ARO</td> </tr> <tr> <td>Area #</td> <td>Area #</td> </tr> <tr> <td>By</td> <td>By</td> </tr> <tr> <td>On</td> <td>On</td> </tr> </table> IR Temp Gun ID: MT-74 Coolant Condition: ICE Preservative Name/Lot No:		Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO	Area #	Area #	By	By	On	On	VOA Matrix Key: US = Unpreserved Soil A = Air UA = Unpreserved Aqueous H = HCl M = MeOH E = Encore N = NaHSO4 F = Freeze See Sample Condition Notification/Corrective Action Form Yes / <u>No</u> Rad OK <u>Yes</u> / No	
Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO										
Area #	Area #										
By	By										
On	On										



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

*** Volatiles ***

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Conestoga-Rovers & Associates

Project: Friedrichsohn Cooperage Site

Laboratory Workorder / SDG #: N0888

SW846 8260C, VOC by GC-MS

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code:
SW846 8260C

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: V10
Instrument Type: GCMS-VOA

Description: HP7890A
Manufacturer: Agilent
Model: 7890A / 5975C

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

No client-requested MS/MSD analyses were included in this SDG.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

The following samples were analyzed at dilution:

WW-80987-052214-BP-110 (N0888-01B) : Dilution Factor: 50

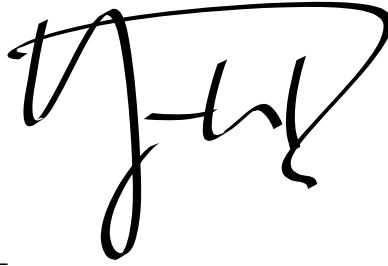
G. Samples:

No other unusual occurrences were noted during sample analysis.

H. Manual Integration

No manual integrations were performed on any sample or standard.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

A handwritten signature in black ink, appearing to be 'J. H. P.', is written over a horizontal line.

Signed: _____

Date: _____ 6/4/2014 _____



SPECTRUM ANALYTICAL, INC.

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HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

- U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).
- J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
 - estimated concentration for Tentatively Identified Compound
- B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a “trace” concentration below the reporting limit and equal to or above the detection limit.
- D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis
- E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.
- P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.
- A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.



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HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 2 of 2):

- N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

- * For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

- L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Sample ID Suffixes

- DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution
- RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.
- RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.
- RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.
- MS Matrix Spike.
- MSD Matrix Spike Duplicate
- DUP Duplicate analysis
- SD Serial Dilution
- PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

2B - FORM II VOA-2
WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0888 Mod. Ref No.: _____ SDG No.: SN0888
Level: (TRACE or LOW) LOW

	EPA SAMPLE NO.	VDMC1 (DBFM) #	VDMC2 (DCE) #	VDMC3 (TOL) #	VDMC4 (BFB) #				TOT OUT
01	LCS-77312	96	98	102	99				0
02	MB-77312	102	98	102	92				0
03	WW-80987-052 214-BP-110	103	102	100	97				0

VDMC1 (DBFM) Dibromofluoromethane
VDMC2 (DCE) = 1,2-Dichloroethane-d4
VDMC3 (TOL) = Toluene-d8
VDMC4 (BFB) = Bromofluorobenzene

QC LIMITS
(85-115)
(70-120)
(85-120)
(75-120)

Column to be used to flag recovery values
* Values outside of contract required QC limits

som14.05.28.1137

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-77312

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0888 Mod. Ref No.: _____ SDG No.: SN0888
Lab Sample ID: LCS-77312 LCS Lot No.: _____
Date Extracted: 05/29/2014 Date Analyzed (1): 05/29/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Vinyl chloride	50.0000	0.0000	46.6643	93		50 - 145
1,1-Dichloroethene	50.0000	0.0000	44.0282	88		70 - 130
2-Butanone	50.0000	0.0000	54.7921	110		30 - 150
Chloroform	50.0000	0.0000	45.6057	91		65 - 135
Carbon tetrachloride	50.0000	0.0000	47.2512	95		65 - 140
1,2-Dichloroethane	50.0000	0.0000	43.9622	88		70 - 130
Benzene	50.0000	0.0000	47.1378	94		80 - 120
Trichloroethene	50.0000	0.0000	47.8859	96		70 - 125
Tetrachloroethene	50.0000	0.0000	48.6159	97		45 - 150
Chlorobenzene	50.0000	0.0000	48.0808	96		80 - 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

4A - FORM IV VOA
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-77312

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0888 Mod. Ref No.: _____ SDG No.: SN0888
Lab File ID: V8D5035.D Lab Sample ID: MB-77312
Instrument ID: V10
Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 05/29/2014
Level: (TRACE or LOW/MED) LOW Time Analyzed: 15:39
GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-77312	LCS-77312	V8D5031.D	13:49
02	WW-80987-052 214-BP-110	N0888-01B	V8D5036.D	16:07

COMMENTS: _____

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB10A

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0888 Mod. Ref No.: _____ SDG No.: SN0888
Lab File ID: V8D5022.D BFB Injection Date: 05/29/2014
Instrument ID: V10 BFB Injection Time: 9:29
GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	35.8
75	30.0 - 80.0% of mass 95	62.1
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.0
173	Less than 2.0% of mass 174	1.2 (1.4)1
174	50.0 - 120% of mass 95	84.9
175	5.0 - 9.0% of mass 174	6.2 (7.3)1
176	95.0 - 101% of mass 174	84.9 (100.0)1
177	5.0 - 9.0% of mass 176	4.9 (5.8)2

1 - Value is % mass 174

2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD02010A	VSTD02010A	V8D5023.D	05/29/2014	9:56
02	VSTD00510A	VSTD00510A	V8D5024.D	05/29/2014	10:24
03	VSTD00110A	VSTD00110A	V8D5026.D	05/29/2014	11:19
04	VSTD20010A	VSTD20010A	V8D5027.D	05/29/2014	11:46
05	VSTD10010A	VSTD10010A	V8D5028.D	05/29/2014	12:14
06	VSTD05010A	VSTD05010A	V8D5029.D	05/29/2014	12:40
07	LCS-77312	LCS-77312	V8D5031.D	05/29/2014	13:49
08	MB-77312	MB-77312	V8D5035.D	05/29/2014	15:39
09	WW-80987-052 214-BP-110	N0888-01B	V8D5036.D	05/29/2014	16:07

8A - FORM VIII VOA
VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
 Lab Code: MITKEM Case No.: N0888 Mod. Ref No.: _____ SDG No.: SN0888
 GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 05/29/2014 05/29/2014
 EPA Sample No.(VSTD#####): VSTD05010A Date Analyzed: 05/29/2014
 Lab File ID (Standard): V8D5029.D Time Analyzed: 12:40
 Instrument ID: V10 Heated Purge: (Y/N) N

	IS1 (S1)		IS2 (S2)		IS3 (S3)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	418592	5.236	343850	8.223	183305	10.725
UPPER LIMIT	837184	5.736	687700	8.723	366610	11.225
LOWER LIMIT	209296	4.736	171925	7.723	91653	10.225
EPA SAMPLE NO.						
01 LCS-77312	423329	5.236	348723	8.223	184467	10.728
02 MB-77312	414122	5.236	339674	8.223	146302	10.728
03 WW-80987-052 214-BP-110	403778	5.236	345171	8.223	161653	10.728

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of
internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of
internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles)
minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles)
minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WW-80987-052214-
BP-110

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0888 Mod. Ref No.: _____ SDG No.: SN0888
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N0888-01B
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5036.D
Level: (TRACE/LOW/MED) LOW Date Received: 05/23/2014
% Moisture: not dec. Date Analyzed: 05/29/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 50.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl chloride	250	U
75-35-4	1,1-Dichloroethene	250	U
78-93-3	2-Butanone	250	U
67-66-3	Chloroform	250	U
56-23-5	Carbon tetrachloride	250	U
107-06-2	1,2-Dichloroethane	250	U
71-43-2	Benzene	76	J
79-01-6	Trichloroethene	110	J
127-18-4	Tetrachloroethene	43	J
108-90-7	Chlorobenzene	85	J

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil
Data file : \\Avogadro\Organics\V10.I\140529.B\V8D5036.d
Lab Smp Id: N0888-01B Client Smp ID: WW-80987-052214-BP-
Inj Date : 29-MAY-2014 16:07
Operator : WL SRC: LIMS Inst ID: V10.i
Smp Info : 5ML,N0888-01B,,77312,50
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\140529.B\v108260Gadd-6lv1.m
Meth Date : 02-Jun-2014 10:18 amarquis Quant Type: ISTD
Cal Date : 29-MAY-2014 12:40 Cal File: V8D5029.d
Als bottle: 17
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: TCLP.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	50.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

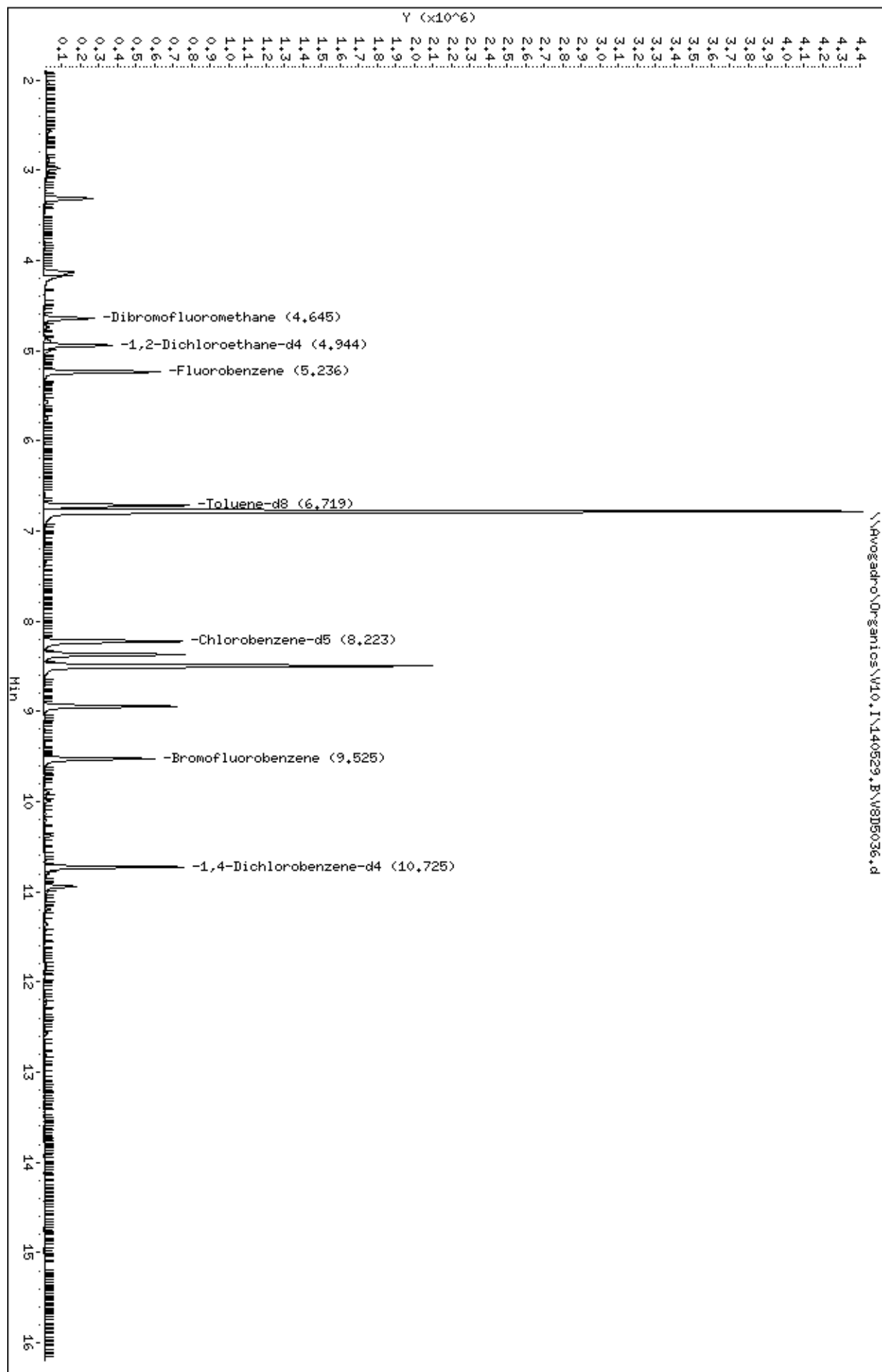
Compounds	QUANT SIG MASS					CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 36 Dibromofluoromethane	113	4.641	4.644	(0.886)	145139	51.4493	51
\$ 42 1,2-Dichloroethane-d4	102	4.940	4.943	(0.944)	25294	50.8378	51
43 Benzene	78	5.007	5.004	(0.956)	14319	1.51104	76
* 46 Fluorobenzene	96	5.236	5.236	(1.000)	403778	50.0000	
47 Trichloroethene	130	5.570	5.564	(1.064)	5692	2.26104	110
\$ 58 Toluene-d8	98	6.715	6.715	(0.817)	441733	50.0706	50
63 Tetrachloroethene	164	7.351	7.345	(0.894)	2160	0.85823	43
* 68 Chlorobenzene-d5	117	8.223	8.223	(1.000)	345171	50.0000	
70 Chlorobenzene	112	8.255	8.252	(1.004)	11302	1.69392	85(Q)
\$ 79 Bromofluorobenzene	95	9.525	9.525	(1.158)	198042	48.5809	48
* 92 1,4-Dichlorobenzene-d4	152	10.728	10.724	(1.000)	161653	50.0000	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\Avogadro\Organics\W10.1\140529.B\W8D5036.d
Date : 29-May-2014 16:07
Client ID: MH-80987-052214-BP-
Sample Info: 5HL,N0888-01B,,77312,50
Purge Volume: 5.0
Column phase: DB-624

Instrument: W10.i
Operator: ML SRC: LIMS
Column diameter: 0.25



Data File: \\Avogadro\Organics\V10.I\140529.B\V8D5036.d

Date : 29-MAY-2014 16:07

Client ID: MW-80987-052214-BP-

Instrument: V10.i

Sample Info: 5HL,N0888-01B,,77312,50

Purge Volume: 5.0

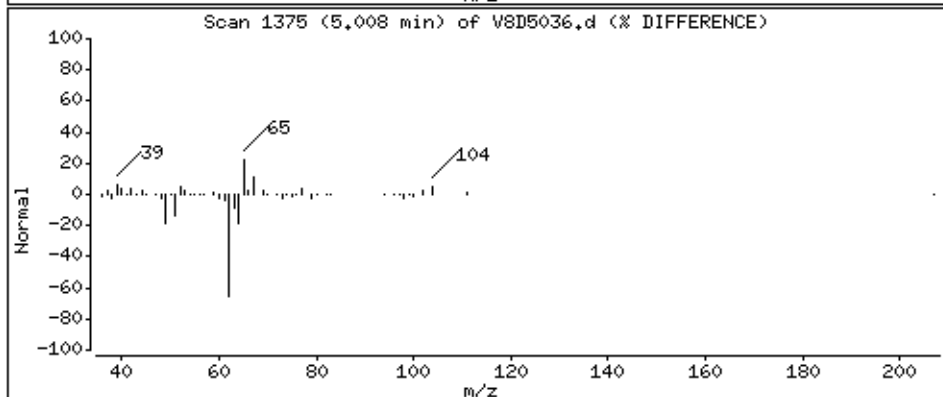
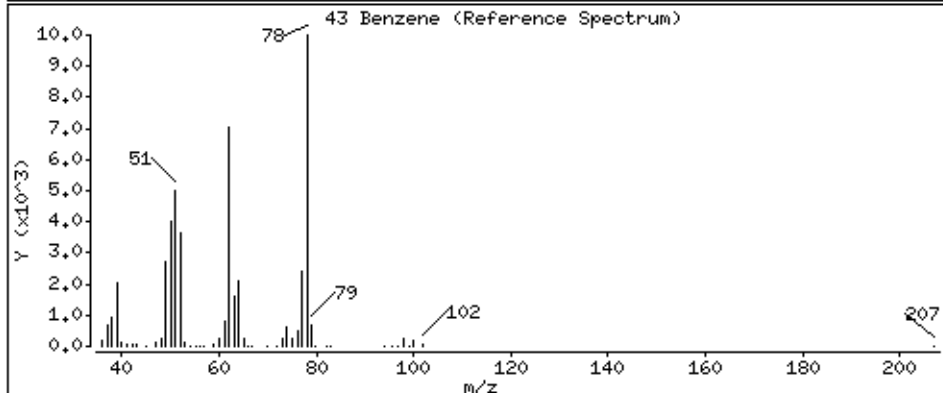
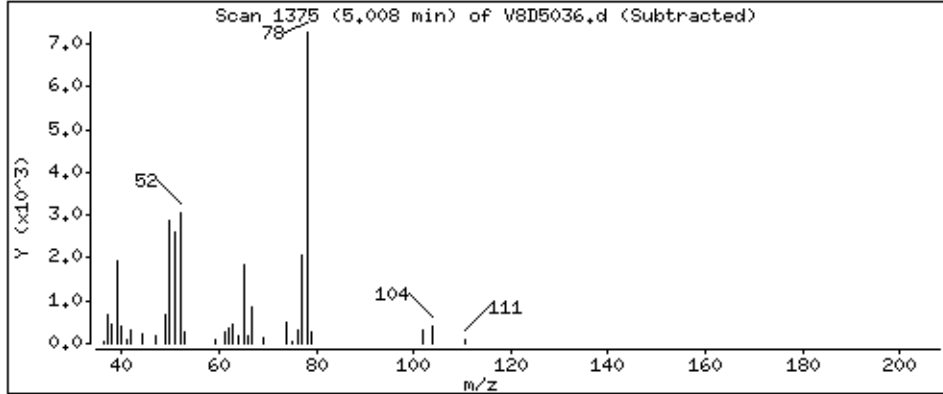
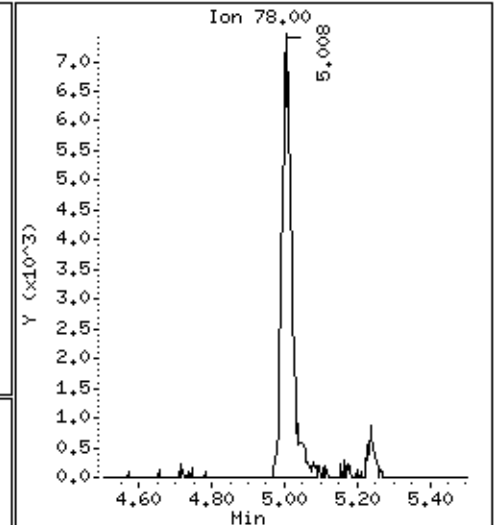
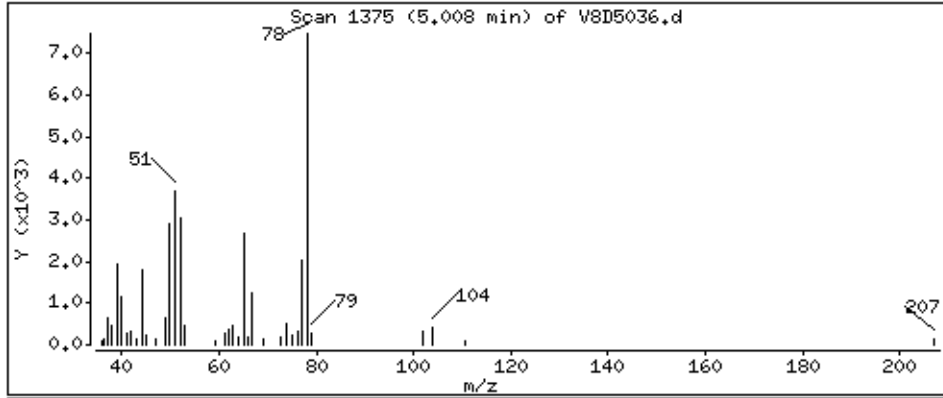
Operator: WL SRC: LIMS

Column phase: DB-624

Column diameter: 0.25

43 Benzene

Concentration: 76 ug/L



Data File: \\Avogadro\Organics\V10.I\140529.B\V8D5036.d

Date : 29-MAY-2014 16:07

Client ID: MW-80987-052214-BP-

Instrument: V10.i

Sample Info: 5HL,N0888-01B,,77312,50

Purge Volume: 5.0

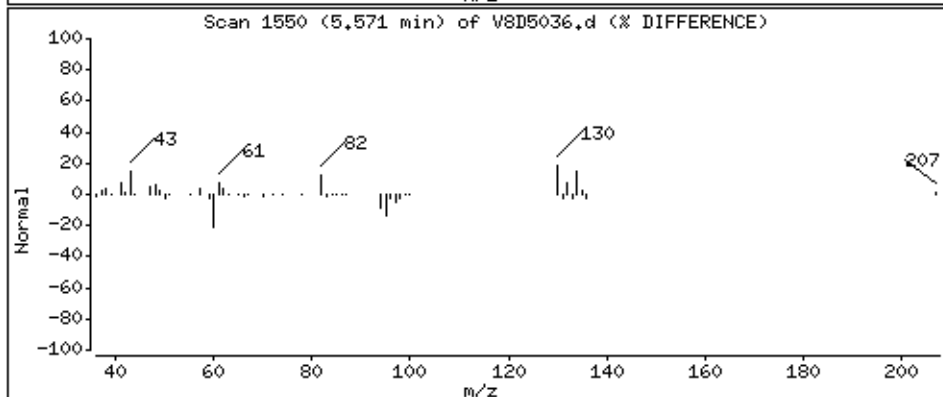
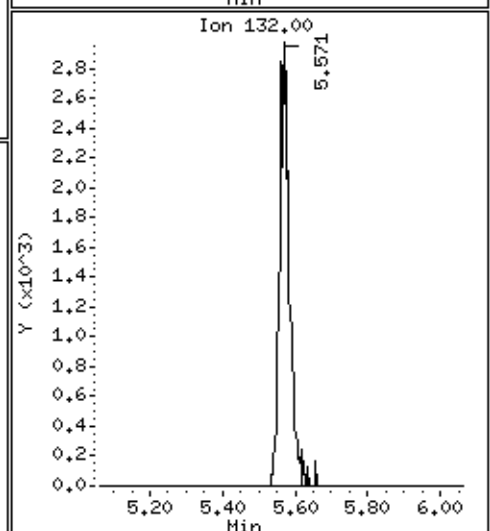
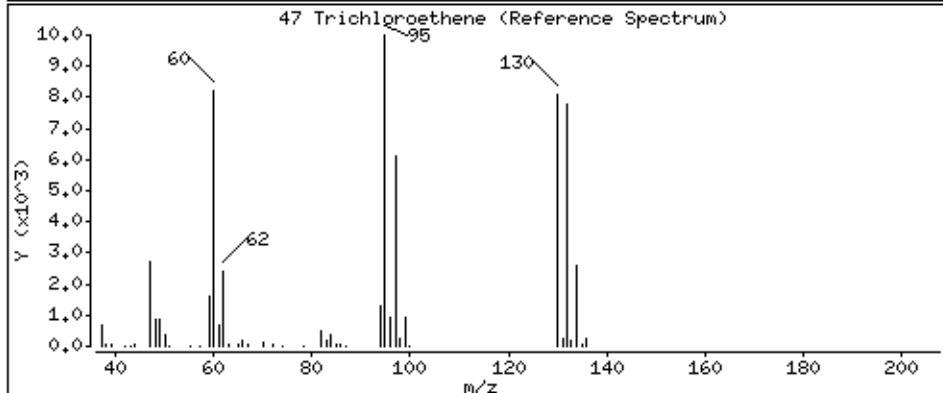
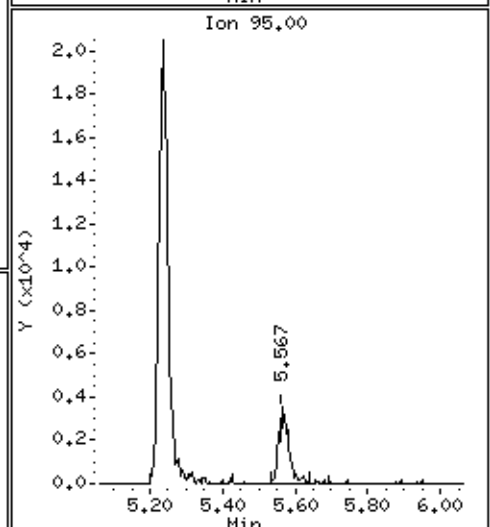
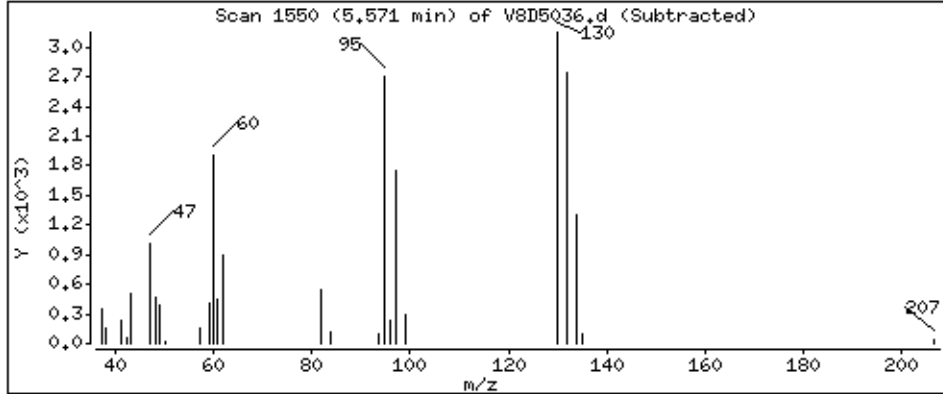
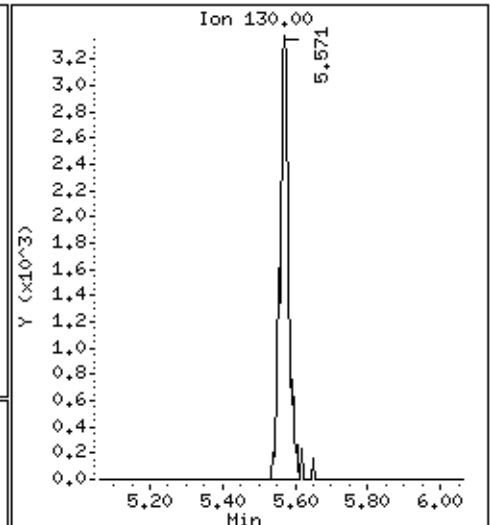
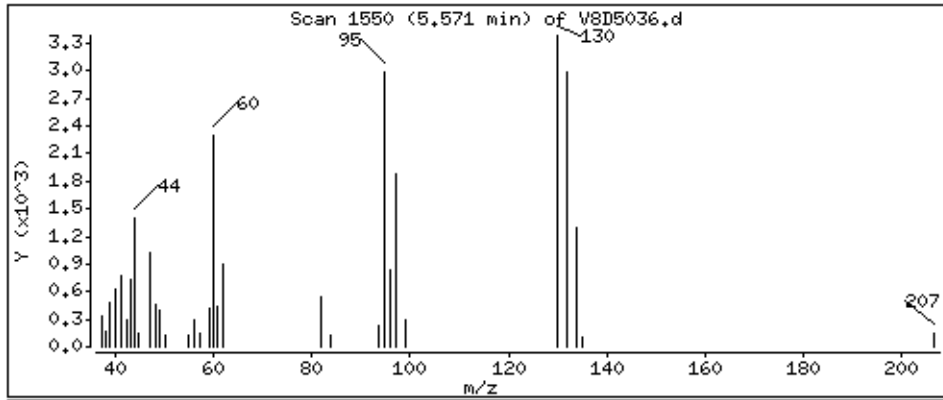
Operator: WL SRC: LIMS

Column phase: DB-624

Column diameter: 0.25

47 Trichloroethene

Concentration: 110 ug/L



Data File: \\Avogadro\Organics\V10.I\140529.B\V8D5036.d

Date : 29-MAY-2014 16:07

Client ID: MW-80987-052214-BP-

Instrument: V10.i

Sample Info: 5HL,N0888-01B,,77312,50

Purge Volume: 5.0

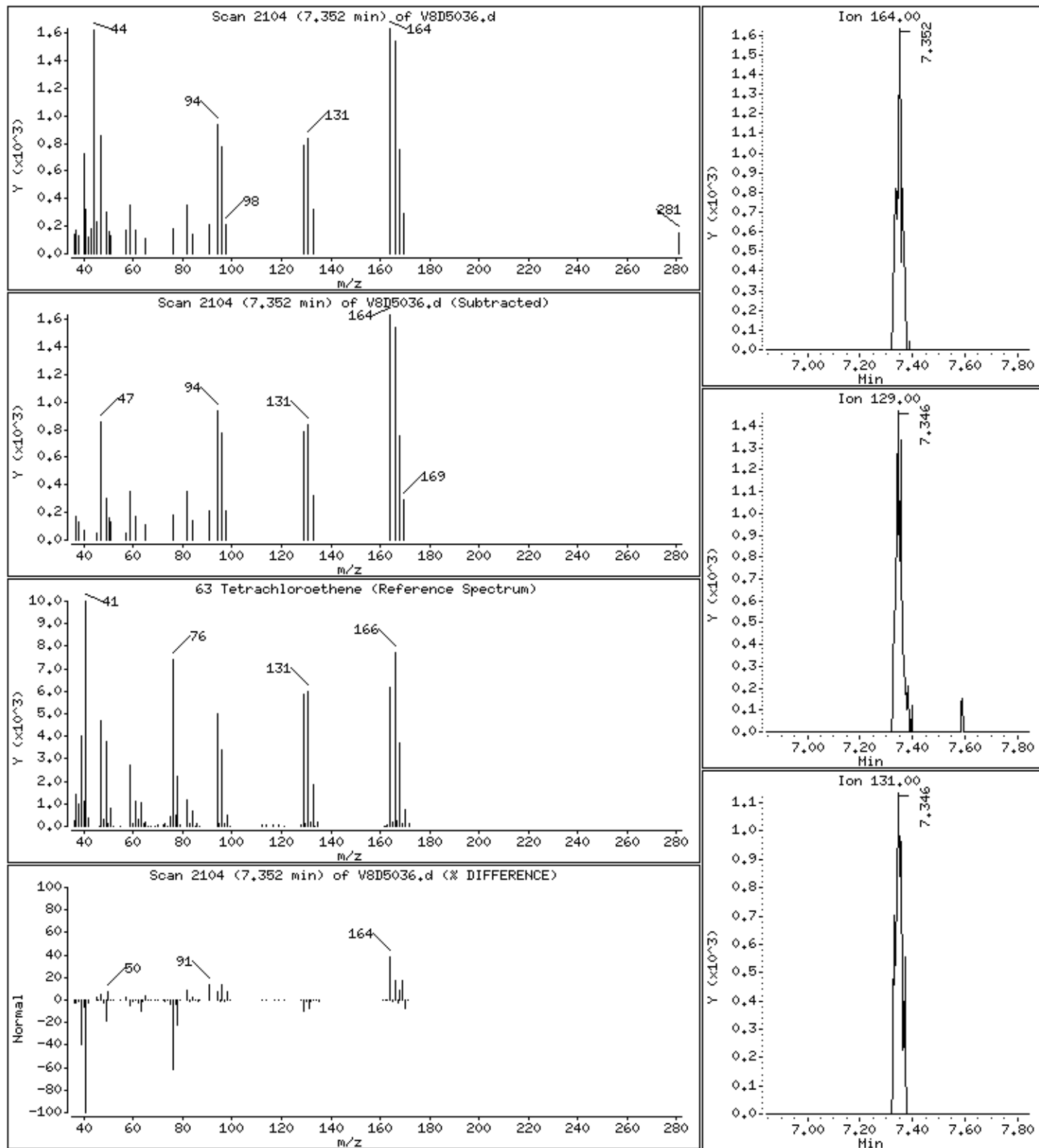
Operator: WL SRC: LIMS

Column phase: DB-624

Column diameter: 0.25

63 Tetrachloroethene

Concentration: 43 ug/L



Data File: \\Avogadro\Organics\V10.I\140529.B\V8D5036.d

Date : 29-MAY-2014 16:07

Client ID: MW-80987-052214-BP-

Instrument: V10.i

Sample Info: 5HL,N0888-01B,,77312,50

Purge Volume: 5.0

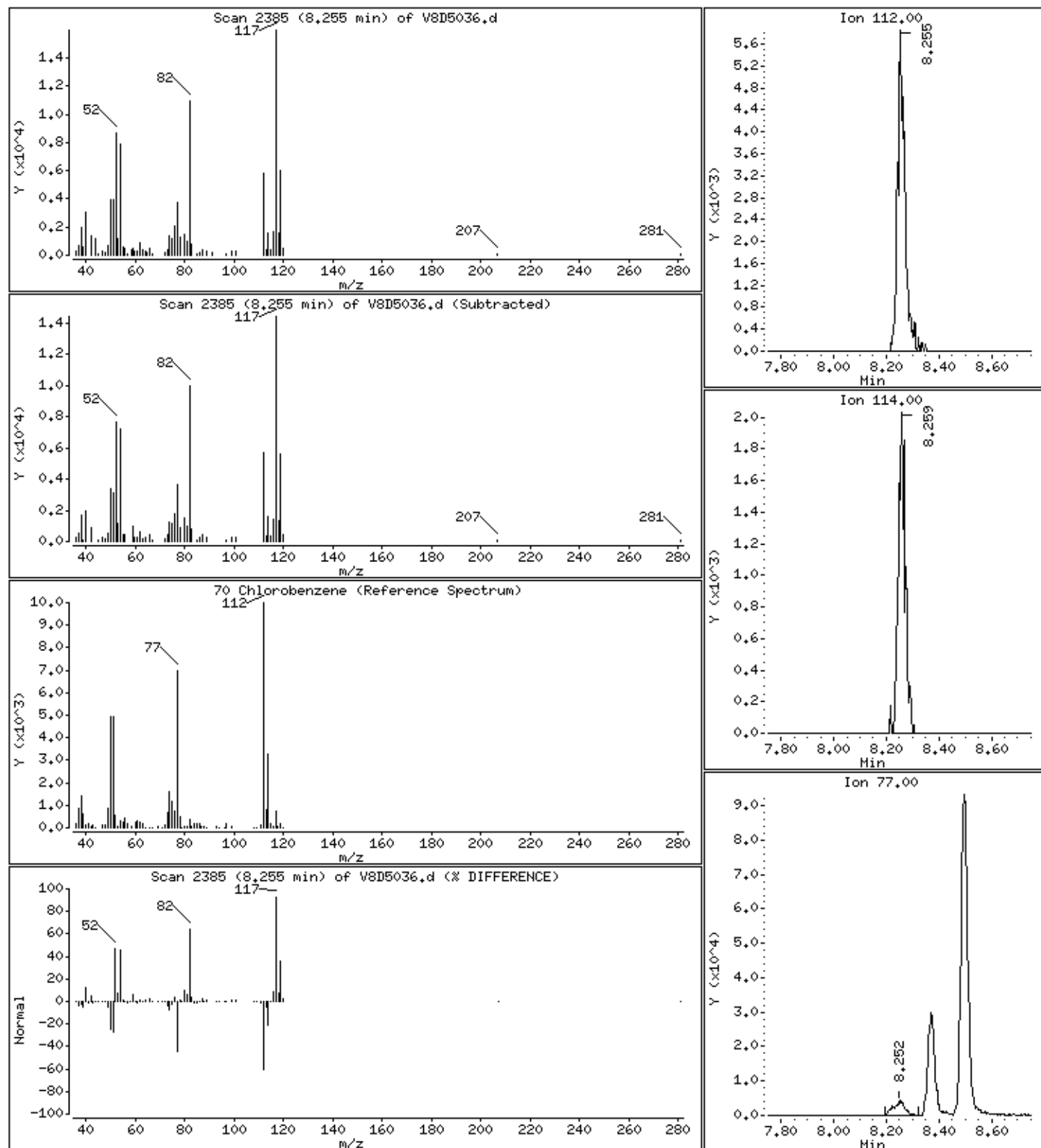
Operator: WL SRC: LIMS

Column phase: DB-624

Column diameter: 0.25

70 Chlorobenzene

Concentration: 85 ug/L



Lab Code: MITKEM

Case No.: N0888

SAS No.:

SDG No.: SN0888

Instrument ID: V10

Calibration Date(s): 05/29/2014

05/29/2014

Heated Purge: (Y/N) N

Calibration Times: 9:56

12:40

Purge Volume: 5

(mL)

GC Column: DB-624

ID: 0.25

(mm)

Length: 30

(mm)

LAB FILE ID: RRF005 = <u>V8D5024.D</u> RRF020 = <u>V8D5023.D</u> RRF050 = <u>V8D5029.D</u> RRF100 = <u>V8D5028.D</u> RRF200 = <u>V8D5027.D</u> RRF001 = <u>V8D5026.D</u>											
COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001				RRF	% RSD
Vinyl chloride	0.500	0.594	0.575	0.541	0.489	0.572				0.545	7.9
1,1-Dichloroethene	0.308	0.343	0.324	0.304	0.291	0.404				0.329	12.5
2-Butanone	0.027	0.039	0.043	0.042	0.042					0.039	17.0
Chloroform	0.763	0.881	0.799	0.754	0.741	0.856				0.799	7.2
Carbon tetrachloride	0.622	0.765	0.731	0.688	0.680	0.657				0.691	7.4
1,2-Dichloroethane	0.900	1.061	0.915	0.922	0.918	1.175				0.982	11.4
Benzene	1.112	1.265	1.212	1.135	1.120	1.198				1.173	5.2
Trichloroethene	0.285	0.342	0.332	0.312	0.307	0.292				0.312	7.2
Tetrachloroethene	0.343	0.387	0.384	0.348	0.331	0.395				0.365	7.4
Chlorobenzene	0.926	1.035	1.004	0.923	0.886	1.024				0.966	6.4

Contract:

Lab Code: MITKEM

Case No.: N0888

SAS No.:

SDG No.: SN0888

Instrument ID: V10

Calibration Date(s): 05/29/2014

05/29/2014

Heated Purge: (Y/N) N

Calibration Times: 9:56

12:40

Purge Volume: 5

(mL)

GC Column: DB-624

ID: 0.25

(mm)

Length: 30

(mm)

LAB FILE ID: RRF005 = <u>V8D5024.D</u> RRF020 = <u>V8D5023.D</u> RRF050 = <u>V8D5029.D</u> RRF100 = <u>V8D5028.D</u> RRF200 = <u>V8D5027.D</u>											
RRF001 = <u>V8D5026.D</u>											
COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001				RRF	% RSD
Dibromofluoromethane	0.348	0.360	0.340	0.346	0.353					0.349	2.1
1,2-Dichloroethane-d4	0.063	0.066	0.057	0.061	0.061					0.062	5.2
Toluene-d8	1.296	1.290	1.305	1.265	1.234					1.278	2.2
Bromofluorobenzene	0.565	0.594	0.597	0.597	0.600					0.591	2.5

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil
Data file : \\Avogadro\Organics\V10.I\140529.B\V8D5023.d
Lab Smp Id: VSTD02010A Client Smp ID: VSTD02010A
Inj Date : 29-MAY-2014 09:56
Operator : WL SRC: WL Inst ID: V10.i
Smp Info : 5ML,VSTD02010A,VSTD02010A
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\140529.B\v108260Gadd-6lvl.m
Meth Date : 02-Jun-2014 10:18 amarquis Quant Type: ISTD
Cal Date : 29-MAY-2014 09:56 Cal File: V8D5023.d
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS					AMOUNTS	
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.589	1.586 (0.304)		100996	20.0000	22
2 Freon114	85	1.705	1.705 (0.326)		67066	20.0000	22
3 Chloromethane	50	1.753	1.753 (0.335)		153043	20.0000	20
4 Vinyl Chloride	62	1.856	1.856 (0.355)		102033	20.0000	22
5 Bromomethane	94	2.146	2.142 (0.410)		38776	20.0000	20
6 Chloroethane	64	2.229	2.229 (0.426)		50294	20.0000	22
7 Trichlorofluoromethane	101	2.441	2.441 (0.466)		147351	20.0000	22
126 Ethanol	46	2.567	2.567 (0.490)		51314	2000.00	2100(AQ)
8 Ether	59	2.670	2.667 (0.510)		78532	20.0000	21
9 Acrolein	56	2.769	2.769 (0.529)		104988	100.000	98
10 1,1-Dichloroethene	96	2.856	2.856 (0.546)		58933	20.0000	21
11 1,1,2-Trichloro-1,2,2-Trifluo	101	2.850	2.850 (0.544)		74413	20.0000	21
12 Acetone	58	2.888	2.885 (0.552)		8917	20.0000	19(Q)
13 Iodomethane	142	2.982	2.982 (0.570)		29465	20.0000	18(Q)
14 Carbon Disulfide	76	3.046	3.046 (0.582)		187327	20.0000	20
15 Acetonitrile	41	3.136	3.136 (0.599)		228188	200.000	220(A)
16 Allyl Chloride	39	3.136	3.136 (0.599)		172488	20.0000	23
17 Methyl Acetate	43	3.146	3.146 (0.601)		113314	20.0000	20
18 Methylene Chloride	84	3.232	3.229 (0.617)		61606	20.0000	21
19 tert-Butanol	59	3.294	3.297 (0.629)		21616	40.0000	41
20 Acrylonitrile	53	3.425	3.422 (0.654)		46868	20.0000	19
21 trans-1,2-Dichloroethene	96	3.454	3.454 (0.660)		56393	20.0000	22
22 Methyl tert-butyl ether	73	3.448	3.448 (0.659)		215449	20.0000	21

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
23 1,1-Dichloroethane	63	3.785	3.785 (0.723)		158501		20.0000	22
24 Vinyl acetate	43	3.821	3.818 (0.730)		423989		20.0000	22
25 Diisopropyl Ether	45	3.824	3.824 (0.730)		436165		20.0000	22
26 2-Chloro-1,3-Butadiene	53	3.863	3.863 (0.738)		197743		20.0000	21
27 Ethyl tert-butyl ether	59	4.120	4.117 (0.787)		300410		20.0000	21
29 2,2-Dichloropropane	77	4.258	4.258 (0.813)		125530		20.0000	22
28 cis-1,2-Dichloroethene	96	4.252	4.255 (0.812)		61129		20.0000	22
30 2-Butanone	72	4.265	4.261 (0.815)		6706		20.0000	20(Q)
32 Propionitrile	54	4.310	4.303 (0.823)		157011		200.000	210(A)
33 Methacrylonitrile	41	4.438	4.435 (0.848)		145630		40.0000	41
34 Bromochloromethane	128	4.451	4.457 (0.850)		30929		20.0000	24
31 Tetrahydrofuran	72	4.499	4.499 (0.859)		14334		40.0000	41
35 Chloroform	83	4.509	4.509 (0.861)		151351		20.0000	22
\$ 36 Dibromofluoromethane	113	4.641	4.644 (0.886)		154531		50.0000	52
37 1,1,1-Trichloroethane	97	4.679	4.683 (0.894)		151602		20.0000	22
38 Cyclohexane	56	4.740	4.740 (0.905)		168078		20.0000	22
39 1,1-Dichloropropene	110	4.824	4.821 (0.921)		27511		20.0000	21
40 Carbon Tetrachloride	117	4.824	4.827 (0.921)		131427		20.0000	22
41 Isobutyl Alcohol	43	4.872	4.872 (0.931)		91432		400.000	440(A)
\$ 42 1,2-Dichloroethane-d4	102	4.943	4.943 (0.944)		28205		50.0000	53
43 Benzene	78	5.001	5.004 (0.955)		217271		20.0000	22
44 1,2-Dichloroethane	62	5.007	5.007 (0.956)		182137		20.0000	22
45 tert-Amyl methyl ether	73	5.078	5.081 (0.970)		178573		20.0000	21
M 50 1,2-Dichloroethene (Total)	96				117522		40.0000	(a)
* 46 Fluorobenzene	96	5.236	5.236 (1.000)		429360		50.0000	
47 Trichloroethene	130	5.567	5.564 (1.063)		58765		20.0000	22
48 Methylcyclohexane	83	5.753	5.753 (1.099)		90271		20.0000	21
49 1,2-Dichloropropane	63	5.773	5.769 (1.103)		76279		20.0000	22
51 Methyl Methacrylate	69	5.850	5.850 (1.117)		42257		20.0000	19
52 Dibromomethane	93	5.882	5.879 (1.123)		47267		20.0000	21
53 1,4-Dioxane	88	5.888	5.882 (1.125)		12310		400.000	400(A)
54 Bromodichloromethane	83	6.014	6.014 (1.149)		110785		20.0000	22
55 2-Chloroethyl vinyl ether	63	6.441	6.441 (1.230)		989		20.0000	26(TQ)
56 cis-1,3-Dichloropropene	75	6.441	6.444 (1.230)		98132		20.0000	22
57 4-Methyl-2-pentanone	43	6.583	6.583 (1.257)		112034		20.0000	20
\$ 58 Toluene-d8	98	6.715	6.715 (0.816)		471674		50.0000	50
59 Toluene	91	6.785	6.785 (1.296)		237097		20.0000	22
60 trans-1,3-Dichloropropene	75	6.988	6.988 (1.335)		92765		20.0000	22
61 Ethyl Methacrylate	69	7.068	7.071 (1.350)		49637		20.0000	20
62 1,1,2-Trichloroethane	97	7.178	7.178 (1.371)		52777		20.0000	21
63 Tetrachloroethene	164	7.342	7.345 (0.893)		56549		20.0000	21
64 1,3-Dichloropropane	76	7.354	7.354 (0.894)		95292		20.0000	21
65 2-Hexanone	43	7.435	7.435 (0.904)		67554		20.0000	19
66 Dibromochloromethane	129	7.592	7.596 (0.923)		72755		20.0000	21
67 1,2-Dibromoethane	107	7.734	7.727 (0.940)		58745		20.0000	22
69 1-Chlorohexane	91	8.216	8.216 (0.999)		73374		20.0000	20(Q)
* 68 Chlorobenzene-d5	117	8.226	8.223 (1.000)		365661		50.0000	
70 Chlorobenzene	112	8.252	8.252 (1.003)		151374		20.0000	21
71 1,1,1,2-Tetrachloroethane	131	8.338	8.335 (1.014)		68136		20.0000	21
72 Ethylbenzene	106	8.371	8.370 (1.018)		77206		20.0000	22
73 m,p-Xylene	106	8.496	8.499 (1.033)		192483		40.0000	45
74 o-Xylene	106	8.946	8.943 (1.088)		91127		20.0000	22
75 Styrene	104	8.959	8.959 (1.089)		140860		20.0000	22
76 Bromoform	173	9.168	9.168 (1.115)		42814		20.0000	20

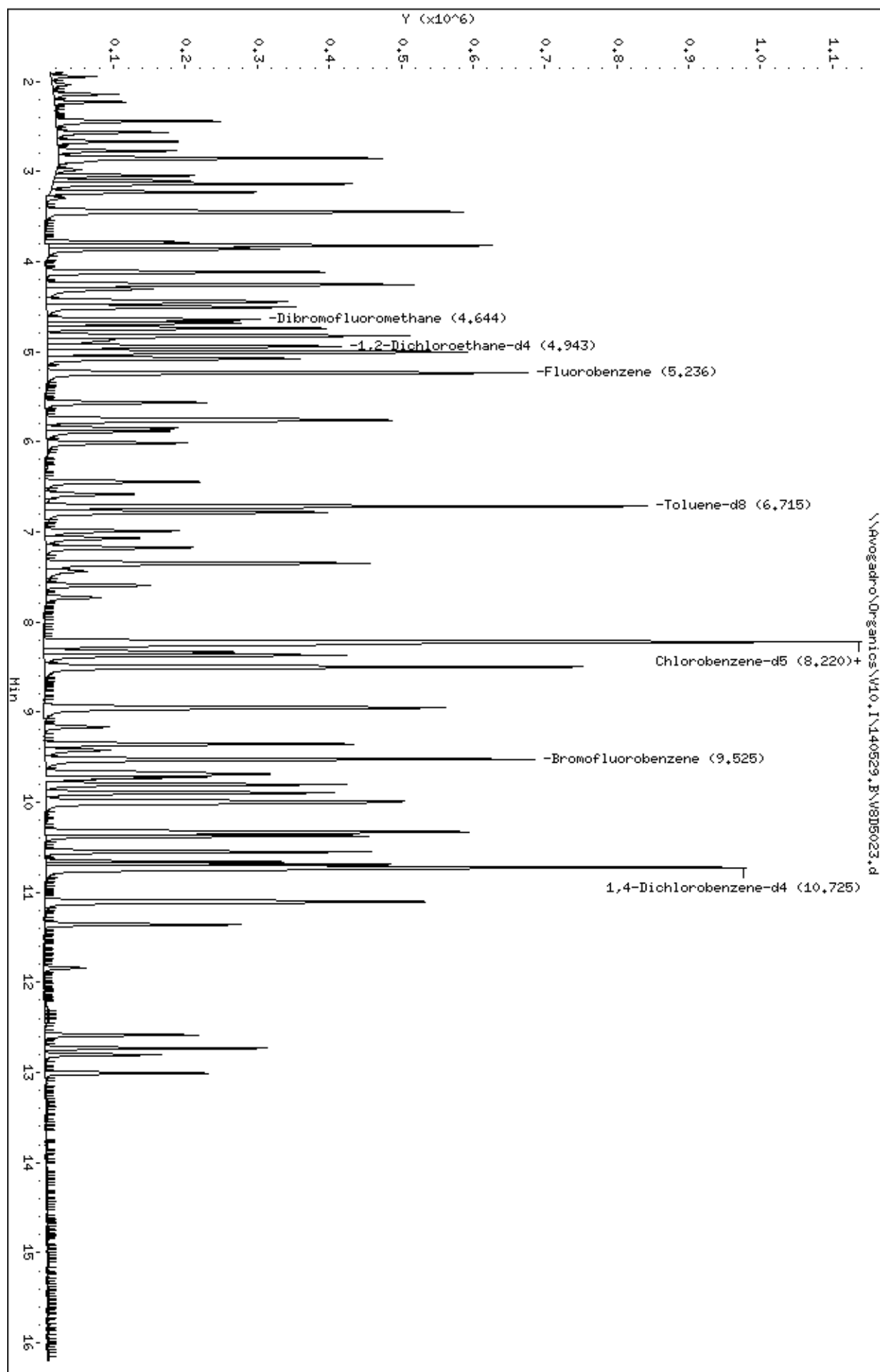
Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
77 Isopropylbenzene	105	9.358	9.358 (1.138)		258194		20.0000	22
78 trans-1,4-Dichloro-2-butene	75	9.425	9.419 (1.146)		13058		20.0000	18
\$ 79 Bromofluorobenzene	95	9.525	9.525 (1.158)		217268		50.0000	50
80 1,1,2,2-Tetrachloroethane	83	9.666	9.669 (0.901)		71573		20.0000	20
81 Bromobenzene	156	9.689	9.689 (0.903)		66085		20.0000	21
82 1,2,3-Trichloropropane	75	9.721	9.721 (0.906)		90108		20.0000	21(Q)
83 n-Propylbenzene	120	9.801	9.801 (0.914)		59402		20.0000	21
84 2-Chlorotoluene	126	9.895	9.895 (0.923)		55913		20.0000	21
85 1,3,5-Trimethylbenzene	105	9.988	9.988 (0.931)		228626		20.0000	22
86 4-Chlorotoluene	126	10.014	10.010 (0.934)		57652		20.0000	21
M 94 Xylene (Total)	106				283610		60.0000	(a)
87 tert-Butylbenzene	119	10.329	10.325 (0.963)		216369		20.0000	20
88 1,2,4-Trimethylbenzene	105	10.377	10.377 (0.968)		226638		20.0000	22
89 sec-Butylbenzene	105	10.550	10.550 (0.984)		259281		20.0000	22
90 1,3-Dichlorobenzene	146	10.663	10.663 (0.994)		110513		20.0000	21
91 4-Isopropyltoluene	119	10.692	10.695 (0.997)		213424		20.0000	22
* 92 1,4-Dichlorobenzene-d4	152	10.724	10.724 (1.000)		189457		50.0000	
93 1,4-Dichlorobenzene	146	10.750	10.747 (1.002)		117713		20.0000	21
95 n-Butylbenzene	91	11.097	11.097 (1.035)		192098		20.0000	21
96 1,2-Dichlorobenzene	146	11.113	11.113 (1.036)		111437		20.0000	22
97 Hexachloroethane	117	11.358	11.357 (1.059)		40886		20.0000	21
98 1,2-Dibromo-3-chloropropane	75	11.846	11.840 (1.105)		13707		20.0000	20
141 1,3,5-Trichlorobenzene	182	12.586	12.583 (2.404)		51006		20.0000	(a)
99 1,2,4-Trichlorobenzene	180	12.586	12.586 (1.174)		54366		20.0000	20
100 Hexachlorobutadiene	225	12.730	12.730 (1.187)		47293		20.0000	21
101 Naphthalene	128	12.804	12.801 (1.194)		100804		20.0000	18
102 1,2,3-Trichlorobenzene	180	13.007	13.010 (1.213)		54335		20.0000	20

QC Flag Legend

- T - Target compound detected outside RT window.
- a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
- A - Target compound detected but, quantitated amount exceeded maximum amount.
- Q - Qualifier signal failed the ratio test.

Data File: \\Avogadro\Organics\W10.I\140529.B\W8D5023.d
Date : 29-May-2014 09:56
Client ID: WSTD02010A
Sample Info: 5HL,WSTD02010A,WSTD02010A
Purge Volume: 5.0
Column phase: DB-624

Instrument: W10.i
Operator: ML SRC: ML
Column diameter: 0.25



Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil
Data file : \\Avogadro\Organics\V10.I\140529.B\V8D5024.d
Lab Smp Id: VSTD00510A Client Smp ID: VSTD00510A
Inj Date : 29-MAY-2014 10:24
Operator : WL SRC: WL Inst ID: V10.i
Smp Info : 5ML,VSTD00510A,VSTD00510A
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\140529.B\v108260Gadd-6lv1.m
Meth Date : 02-Jun-2014 10:18 amarquis Quant Type: ISTD
Cal Date : 29-MAY-2014 10:24 Cal File: V8D5024.d
Als bottle: 5 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS					AMOUNTS	
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.586	1.586 (0.303)		20859	5.00000	4.6
2 Freon114	85	1.705	1.705 (0.326)		14219	5.00000	4.7
3 Chloromethane	50	1.754	1.753 (0.335)		34693	5.00000	4.6
4 Vinyl Chloride	62	1.853	1.856 (0.354)		21139	5.00000	4.6
5 Bromomethane	94	2.146	2.142 (0.410)		8429	5.00000	4.5
6 Chloroethane	64	2.229	2.229 (0.426)		11112	5.00000	5.0
7 Trichlorofluoromethane	101	2.442	2.441 (0.466)		31518	5.00000	4.7
126 Ethanol	46	2.567	2.567 (0.490)		10668	500.000	450(AQ)
8 Ether	59	2.667	2.667 (0.509)		16883	5.00000	4.6
9 Acrolein	56	2.773	2.769 (0.530)		23928	25.0000	23
10 1,1-Dichloroethene	96	2.853	2.856 (0.545)		12992	5.00000	4.7
11 1,1,2-Trichloro-1,2,2-Trifluo	101	2.847	2.850 (0.544)		15964	5.00000	4.6
12 Acetone	58	2.885	2.885 (0.551)		1830	5.00000	4.0(Q)
13 Iodomethane	142	2.979	2.982 (0.569)		5132	5.00000	3.3(Q)
14 Carbon Disulfide	76	3.043	3.046 (0.581)		42525	5.00000	4.6
15 Acetonitrile	41	3.136	3.136 (0.599)		52679	50.0000	52
16 Allyl Chloride	39	3.136	3.136 (0.599)		33608	5.00000	4.6
17 Methyl Acetate	43	3.149	3.146 (0.601)		25661	5.00000	4.5
18 Methylene Chloride	84	3.229	3.229 (0.617)		12975	5.00000	4.6
19 tert-Butanol	59	3.297	3.297 (0.630)		4729	10.0000	9.0
20 Acrylonitrile	53	3.426	3.422 (0.654)		10294	5.00000	4.3
21 trans-1,2-Dichloroethene	96	3.458	3.454 (0.660)		11730	5.00000	4.6
22 Methyl tert-butyl ether	73	3.445	3.448 (0.658)		45212	5.00000	4.5

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
23 1,1-Dichloroethane	63	3.786	3.785 (0.723)		34822		5.00000	4.8
24 Vinyl acetate	43	3.824	3.818 (0.730)		80156		5.00000	4.2
25 Diisopropyl Ether	45	3.824	3.824 (0.730)		88097		5.00000	4.5
26 2-Chloro-1,3-Butadiene	53	3.860	3.863 (0.737)		40236		5.00000	4.4
27 Ethyl tert-butyl ether	59	4.120	4.117 (0.787)		62491		5.00000	4.5
29 2,2-Dichloropropane	77	4.258	4.258 (0.813)		21742		5.00000	3.9
28 cis-1,2-Dichloroethene	96	4.255	4.255 (0.813)		12235		5.00000	4.4
30 2-Butanone	72	4.258	4.261 (0.813)		1152		5.00000	3.5(Q)
32 Propionitrile	54	4.316	4.303 (0.824)		33066		50.0000	44
33 Methacrylonitrile	41	4.435	4.435 (0.847)		28241		10.0000	8.0
34 Bromochloromethane	128	4.458	4.457 (0.851)		6264		5.00000	4.8
31 Tetrahydrofuran	72	4.506	4.499 (0.861)		2859		10.0000	8.3
35 Chloroform	83	4.506	4.509 (0.861)		32239		5.00000	4.8
\$ 36 Dibromofluoromethane	113	4.644	4.644 (0.887)		146865		50.0000	50
37 1,1,1-Trichloroethane	97	4.680	4.683 (0.894)		32011		5.00000	4.7
38 Cyclohexane	56	4.741	4.740 (0.905)		34033		5.00000	4.5
39 1,1-Dichloropropene	110	4.824	4.821 (0.921)		5626		5.00000	4.4
40 Carbon Tetrachloride	117	4.827	4.827 (0.922)		26283		5.00000	4.5
41 Isobutyl Alcohol	43	4.879	4.872 (0.932)		9630		100.000	47
\$ 42 1,2-Dichloroethane-d4	102	4.940	4.943 (0.944)		26605		50.0000	51
43 Benzene	78	5.004	5.004 (0.956)		46958		5.00000	4.7
44 1,2-Dichloroethane	62	5.011	5.007 (0.957)		38000		5.00000	4.6
45 tert-Amyl methyl ether	73	5.078	5.081 (0.970)		37543		5.00000	4.5
M 50 1,2-Dichloroethene (Total)	96				23965		10.0000	(a)
* 46 Fluorobenzene	96	5.236	5.236 (1.000)		422448		50.0000	
47 Trichloroethene	130	5.573	5.564 (1.064)		12038		5.00000	4.6
48 Methylcyclohexane	83	5.753	5.753 (1.099)		17603		5.00000	4.2
49 1,2-Dichloropropane	63	5.770	5.769 (1.102)		16375		5.00000	4.8
51 Methyl Methacrylate	69	5.853	5.850 (1.118)		8632		5.00000	4.0
52 Dibromomethane	93	5.885	5.879 (1.124)		10630		5.00000	4.9
53 1,4-Dioxane	88	5.895	5.882 (1.126)		2585		100.000	84
54 Bromodichloromethane	83	6.014	6.014 (1.149)		23124		5.00000	4.6
55 2-Chloroethyl vinyl ether	63	6.438	6.441 (1.230)		136		5.00000	3.6(TQ)
56 cis-1,3-Dichloropropene	75	6.445	6.444 (1.231)		17319		5.00000	4.0
57 4-Methyl-2-pentanone	43	6.586	6.583 (1.258)		22437		5.00000	4.2
\$ 58 Toluene-d8	98	6.718	6.715 (0.817)		451685		50.0000	51
59 Toluene	91	6.782	6.785 (1.295)		48053		5.00000	4.5
60 trans-1,3-Dichloropropene	75	6.998	6.988 (1.336)		15115		5.00000	3.7
61 Ethyl Methacrylate	69	7.081	7.071 (1.352)		9323		5.00000	3.8
62 1,1,2-Trichloroethane	97	7.184	7.178 (1.372)		11677		5.00000	4.8
63 Tetrachloroethene	164	7.342	7.345 (0.893)		11943		5.00000	4.7
64 1,3-Dichloropropane	76	7.361	7.354 (0.895)		19293		5.00000	4.5
65 2-Hexanone	43	7.451	7.435 (0.906)		14344		5.00000	4.2
66 Dibromochloromethane	129	7.596	7.596 (0.924)		14347		5.00000	4.4
67 1,2-Dibromoethane	107	7.731	7.727 (0.940)		11402		5.00000	4.5
69 1-Chlorohexane	91	8.220	8.216 (1.000)		14514		5.00000	4.2(Q)
* 68 Chlorobenzene-d5	117	8.223	8.223 (1.000)		348549		50.0000	
70 Chlorobenzene	112	8.255	8.252 (1.004)		32292		5.00000	4.8
71 1,1,1,2-Tetrachloroethane	131	8.335	8.335 (1.014)		14312		5.00000	4.7
72 Ethylbenzene	106	8.374	8.370 (1.018)		15694		5.00000	4.7
73 m,p-Xylene	106	8.499	8.499 (1.034)		36273		10.0000	8.9
74 o-Xylene	106	8.949	8.943 (1.088)		17565		5.00000	4.4
75 Styrene	104	8.969	8.959 (1.091)		24990		5.00000	4.0
76 Bromoform	173	9.168	9.168 (1.115)		8492		5.00000	4.3

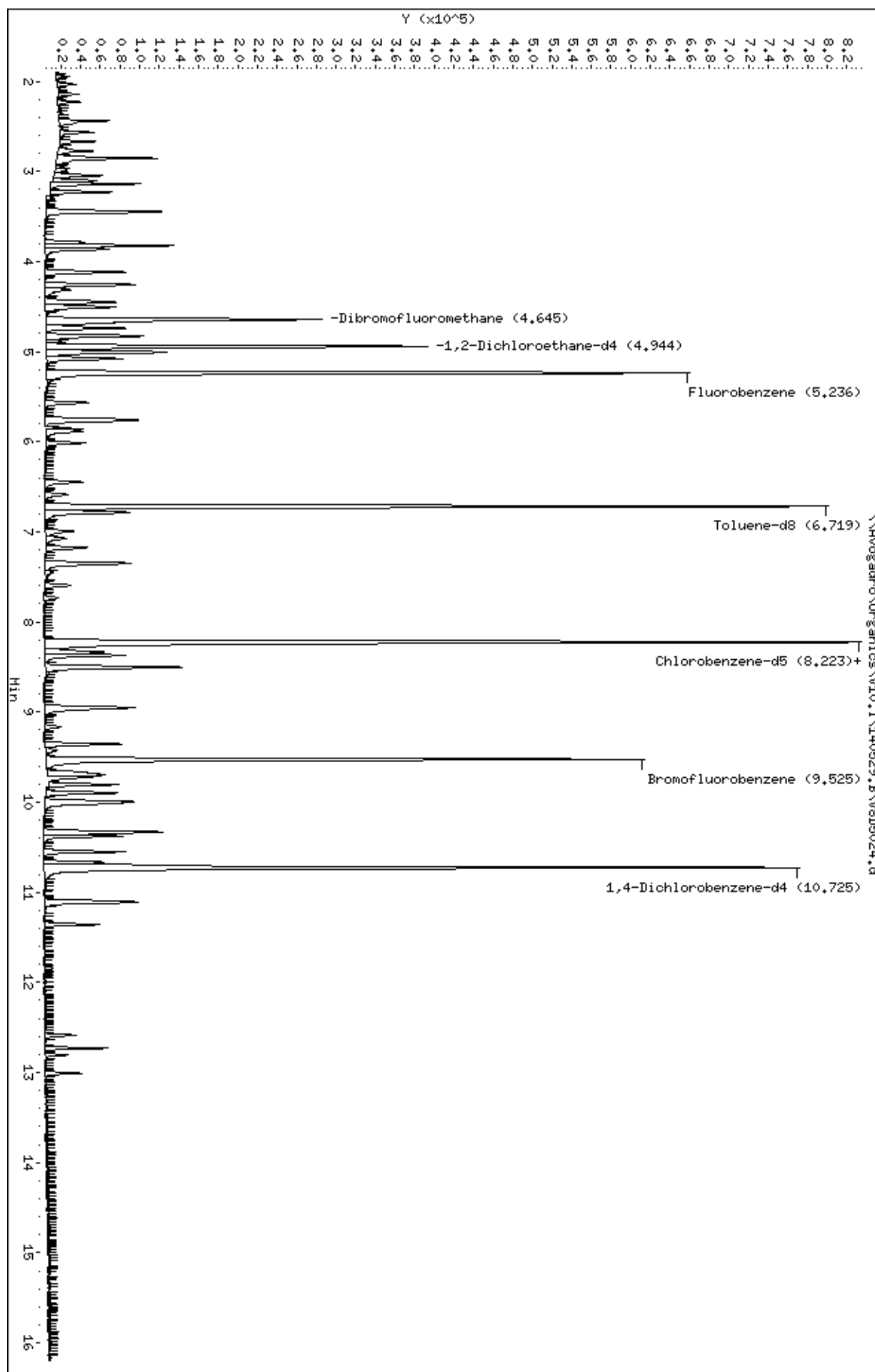
Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
77 Isopropylbenzene	105	9.355	9.358 (1.138)		46902		5.00000	4.2
78 trans-1,4-Dichloro-2-butene	75	9.425	9.419 (1.146)		2133		5.00000	3.0
\$ 79 Bromofluorobenzene	95	9.528	9.525 (1.159)		196855		50.0000	48
80 1,1,2,2-Tetrachloroethane	83	9.666	9.669 (0.901)		14511		5.00000	4.7
81 Bromobenzene	156	9.692	9.689 (0.904)		13580		5.00000	5.1
82 1,2,3-Trichloropropane	75	9.715	9.721 (0.906)		13141		5.00000	3.6(Q)
83 n-Propylbenzene	120	9.805	9.801 (0.914)		11308		5.00000	4.7
84 2-Chlorotoluene	126	9.898	9.895 (0.923)		11639		5.00000	5.2
85 1,3,5-Trimethylbenzene	105	9.988	9.988 (0.931)		41525		5.00000	4.7
86 4-Chlorotoluene	126	10.014	10.010 (0.934)		11674		5.00000	5.1
M 94 Xylene (Total)	106				53838		15.0000	(a)
87 tert-Butylbenzene	119	10.332	10.325 (0.963)		45758		5.00000	5.0
88 1,2,4-Trimethylbenzene	105	10.377	10.377 (0.968)		40628		5.00000	4.7
89 sec-Butylbenzene	105	10.551	10.550 (0.984)		48292		5.00000	4.7
90 1,3-Dichlorobenzene	146	10.670	10.663 (0.995)		20849		5.00000	4.7
91 4-Isopropyltoluene	119	10.695	10.695 (0.997)		38987		5.00000	4.7
* 92 1,4-Dichlorobenzene-d4	152	10.724	10.724 (1.000)		161646		50.0000	
93 1,4-Dichlorobenzene	146	10.750	10.747 (1.002)		23413		5.00000	4.9
95 n-Butylbenzene	91	11.097	11.097 (1.035)		34904		5.00000	4.6
96 1,2-Dichlorobenzene	146	11.117	11.113 (1.037)		22064		5.00000	5.0
97 Hexachloroethane	117	11.361	11.357 (1.059)		7960		5.00000	4.8
98 1,2-Dibromo-3-chloropropane	75	11.843	11.840 (1.104)		2342		5.00000	4.0
141 1,3,5-Trichlorobenzene	182	12.589	12.583 (2.404)		8320		5.00000	(a)
99 1,2,4-Trichlorobenzene	180	12.592	12.586 (1.174)		8140		5.00000	3.6
100 Hexachlorobutadiene	225	12.731	12.730 (1.187)		10146		5.00000	5.2
101 Naphthalene	128	12.805	12.801 (1.194)		15220		5.00000	3.3
102 1,2,3-Trichlorobenzene	180	13.007	13.010 (1.213)		9037		5.00000	4.0

QC Flag Legend

- T - Target compound detected outside RT window.
- a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
- A - Target compound detected but, quantitated amount exceeded maximum amount.
- Q - Qualifier signal failed the ratio test.

Data File: \\Avogadro\Organics\W10.I\140529.B\W8D5024.d
 Date : 29-May-2014 10:24
 Client ID: WSTD00510A
 Sample Info: 5HL,WSTD00510A,WSTD00510A
 Purge Volume: 5.0
 Column phase: DB-624

Instrument: W10.i
 Operator: ML SRC: ML
 Column diameter: 0.25



Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil
Data file : \\Avogadro\Organics\V10.I\140529.B\V8D5026.d
Lab Smp Id: VSTD00110A Client Smp ID: VSTD00110A
Inj Date : 29-MAY-2014 11:19
Operator : WL SRC: WL Inst ID: V10.i
Smp Info : 5ML,VSTD00110A,VSTD00110A
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\140529.B\v108260Gadd-6lvl.m
Meth Date : 02-Jun-2014 10:18 amarquis Quant Type: ISTD
Cal Date : 29-MAY-2014 11:19 Cal File: V8D5026.d
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS					AMOUNTS	
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.590	1.586 (0.304)		4854	1.00000	1.1
2 Freon114	85	1.709	1.705 (0.326)		2878	1.00000	0.98
3 Chloromethane	50	1.754	1.753 (0.335)		8879	1.00000	1.2
4 Vinyl Chloride	62	1.853	1.856 (0.354)		4701	1.00000	1.0(Q)
5 Bromomethane	94	2.139	2.142 (0.409)		2423	1.00000	1.3
6 Chloroethane	64	2.229	2.229 (0.426)		1914	1.00000	0.88
7 Trichlorofluoromethane	101	2.442	2.441 (0.466)		7532	1.00000	1.2
126 Ethanol	46	2.567	2.567 (0.490)		6591	500.000	290(AQ)
8 Ether	59	2.667	2.667 (0.509)		4123	1.00000	1.2
9 Acrolein	56	2.776	2.769 (0.530)		5955	5.00000	5.8
10 1,1-Dichloroethene	96	2.853	2.856 (0.545)		3320	1.00000	1.2
11 1,1,2-Trichloro-1,2,2-Trifluo	101	2.856	2.850 (0.546)		3895	1.00000	1.2
12 Acetone	58	2.889	2.885 (0.552)		1009	1.00000	2.2(Q)
13 Iodomethane	142	2.985	2.982 (0.570)		1185	1.00000	0.78
14 Carbon Disulfide	76	3.043	3.046 (0.581)		11229	1.00000	1.2
15 Acetonitrile	41	3.104	3.136 (0.593)		24776	1.00000	25(Q)
16 Allyl Chloride	39	3.133	3.136 (0.598)		8063	1.00000	1.1(Q)
17 Methyl Acetate	43	3.149	3.146 (0.601)		7324	1.00000	1.3
18 Methylene Chloride	84	3.229	3.229 (0.617)		3418	1.00000	1.2
19 tert-Butanol	59	3.294	3.297 (0.629)		2484	1.00000	4.9
20 Acrylonitrile	53	3.422	3.422 (0.654)		3188	1.00000	1.4
21 trans-1,2-Dichloroethene	96	3.451	3.454 (0.659)		2574	1.00000	1.0
22 Methyl tert-butyl ether	73	3.448	3.448 (0.659)		10030	1.00000	1.0

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
23 1,1-Dichloroethane	63	3.779	3.785 (0.722)		7412		1.00000	1.1
24 Vinyl acetate	43	3.821	3.818 (0.730)		16991		1.00000	0.91
25 Diisopropyl Ether	45	3.821	3.824 (0.730)		19515		1.00000	1.0
26 2-Chloro-1,3-Butadiene	53	3.866	3.863 (0.738)		7625		1.00000	0.86
27 Ethyl tert-butyl ether	59	4.120	4.117 (0.787)		13885		1.00000	1.0
29 2,2-Dichloropropane	77	4.265	4.258 (0.815)		4574		1.00000	0.84
28 cis-1,2-Dichloroethene	96	4.261	4.255 (0.814)		2958		1.00000	1.1(Q)
30 2-Butanone	72	4.503	4.261 (0.860)		773		1.00000	2.4(TQ)
32 Propionitrile	54	4.313	4.303 (0.824)		8881		1.00000	12
33 Methacrylonitrile	41	4.448	4.435 (0.850)		6631		1.00000	1.9
34 Bromochloromethane	128	4.464	4.457 (0.853)		1184		1.00000	0.94(Q)
31 Tetrahydrofuran	72	4.503	4.499 (0.860)		743		1.00000	2.2
35 Chloroform	83	4.509	4.509 (0.861)		7030		1.00000	1.1
\$ 36 Dibromofluoromethane	113	4.644	4.644 (0.887)		147047		1.00000	51
37 1,1,1-Trichloroethane	97	4.686	4.683 (0.895)		6904		1.00000	1.0
38 Cyclohexane	56	4.744	4.740 (0.906)		7202		1.00000	0.97
39 1,1-Dichloropropene	110	4.834	4.821 (0.923)		1379		1.00000	1.1
40 Carbon Tetrachloride	117	4.831	4.827 (0.923)		5398		1.00000	0.95
41 Isobutyl Alcohol	43	4.872	4.872 (0.931)		2181		1.00000	11
\$ 42 1,2-Dichloroethane-d4	102	4.940	4.943 (0.944)		25094		1.00000	50
43 Benzene	78	5.004	5.004 (0.956)		9839		1.00000	1.0
44 1,2-Dichloroethane	62	5.011	5.007 (0.957)		9650		1.00000	1.2
45 tert-Amyl methyl ether	73	5.075	5.081 (0.969)		8052		1.00000	1.0
M 50 1,2-Dichloroethene (Total)	96				5532		2.00000	(a)
* 46 Fluorobenzene	96	5.236	5.236 (1.000)		410772		50.00000	
47 Trichloroethene	130	5.564	5.564 (1.063)		2397		1.00000	0.94(Q)
48 Methylcyclohexane	83	5.750	5.753 (1.098)		3989		1.00000	0.99
49 1,2-Dichloropropane	63	5.782	5.769 (1.104)		3304		1.00000	0.99
51 Methyl Methacrylate	69	5.869	5.850 (1.121)		1799		1.00000	0.86(Q)
52 Dibromomethane	93	5.885	5.879 (1.124)		2262		1.00000	1.1
53 1,4-Dioxane	88	5.898	5.882 (1.126)		1092		1.00000	37
54 Bromodichloromethane	83	6.014	6.014 (1.149)		4874		1.00000	1.00
55 2-Chloroethyl vinyl ether	63	6.715	6.441 (1.282)		749		1.00000	20(TQ)
56 cis-1,3-Dichloropropene	75	6.454	6.444 (1.233)		3566		1.00000	0.85
57 4-Methyl-2-pentanone	43	6.589	6.583 (1.259)		6866		1.00000	1.3
\$ 58 Toluene-d8	98	6.715	6.715 (0.817)		438382		1.00000	50
59 Toluene	91	6.785	6.785 (1.296)		11365		1.00000	1.1
60 trans-1,3-Dichloropropene	75	7.004	6.988 (1.338)		3225		1.00000	0.80
61 Ethyl Methacrylate	69	7.085	7.071 (1.353)		1910		1.00000	0.80
62 1,1,2-Trichloroethane	97	7.181	7.178 (1.371)		2616		1.00000	1.1
63 Tetrachloroethene	164	7.335	7.345 (0.892)		2690		1.00000	1.1
64 1,3-Dichloropropane	76	7.371	7.354 (0.896)		4379		1.00000	1.0
65 2-Hexanone	43	7.435	7.435 (0.904)		601		1.00000	0.18(aQ)
66 Dibromochloromethane	129	7.596	7.596 (0.924)		3000		1.00000	0.95(T)
67 1,2-Dibromoethane	107	7.737	7.727 (0.941)		2353		1.00000	0.94(T)
69 1-Chlorohexane	91	8.216	8.216 (0.999)		3862		1.00000	1.1(Q)
* 68 Chlorobenzene-d5	117	8.223	8.223 (1.000)		340320		50.00000	
70 Chlorobenzene	112	8.255	8.252 (1.004)		6970		1.00000	1.0
71 1,1,1,2-Tetrachloroethane	131	8.338	8.335 (1.014)		3230		1.00000	1.1(Q)
72 Ethylbenzene	106	8.374	8.370 (1.018)		2995		1.00000	0.91
73 m,p-Xylene	106	8.502	8.499 (1.034)		6970		2.00000	1.7
74 o-Xylene	106	8.946	8.943 (1.088)		3843		1.00000	0.98(Q)
75 Styrene	104	8.975	8.959 (1.091)		4745		1.00000	0.78
76 Bromoform	173	9.174	9.168 (1.116)		1785		1.00000	0.92(T)

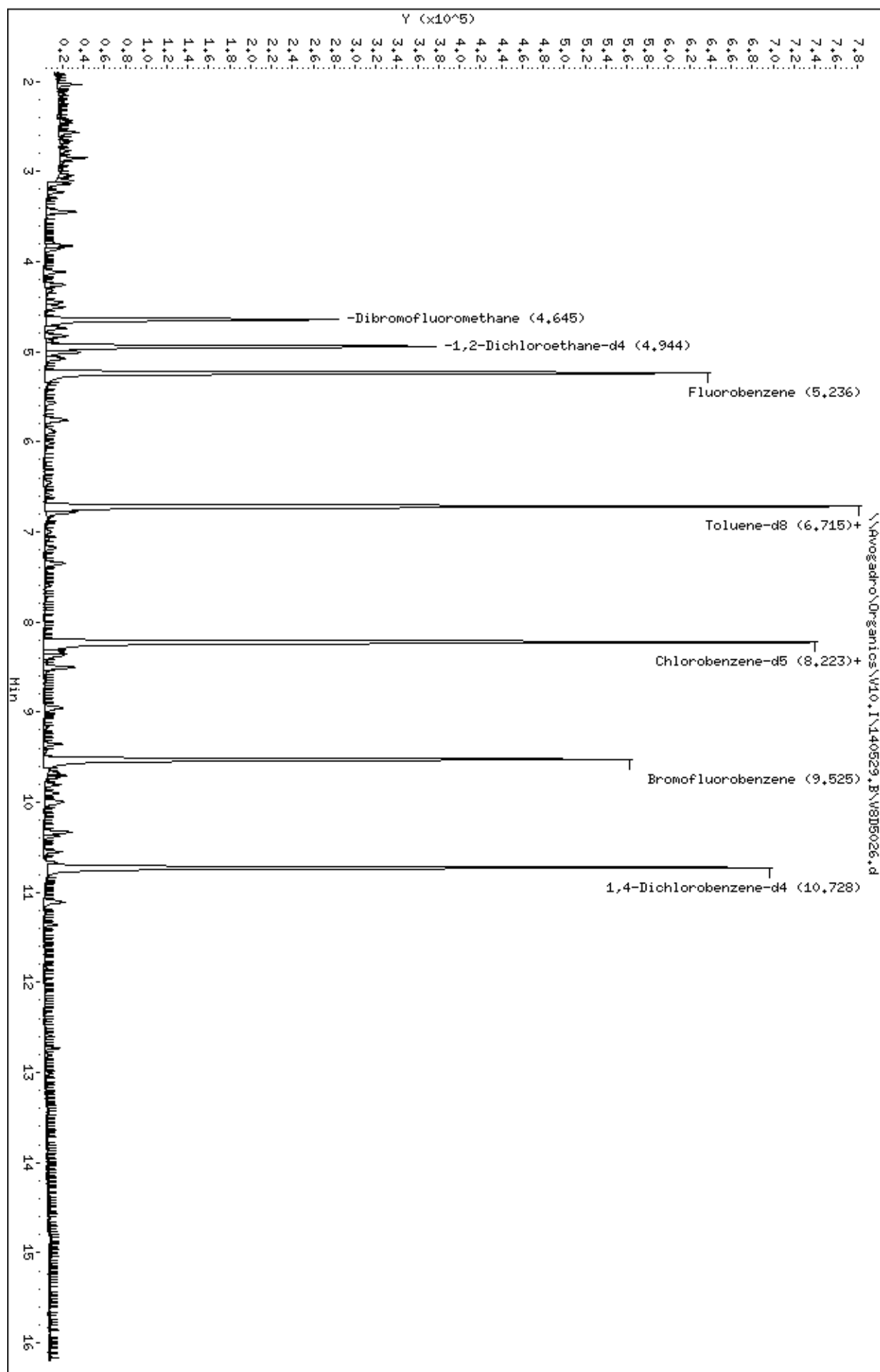
Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
77 Isopropylbenzene	105	9.355	9.358 (1.138)		9889		1.00000	0.91
78 trans-1,4-Dichloro-2-butene	75	9.428	9.419 (1.147)		253		1.00000	0.37(aQ)
\$ 79 Bromofluorobenzene	95	9.525	9.525 (1.158)		194030		1.00000	48
80 1,1,2,2-Tetrachloroethane	83	9.673	9.669 (0.902)		4113		1.00000	1.4
81 Bromobenzene	156	9.695	9.689 (0.904)		2764		1.00000	1.1(Q)
82 1,2,3-Trichloropropane	75	9.721	9.721 (0.906)		4407		1.00000	1.3(Q)
83 n-Propylbenzene	120	9.805	9.801 (0.914)		2414		1.00000	1.0
84 2-Chlorotoluene	126	9.891	9.895 (0.922)		2144		1.00000	1.0(Q)
85 1,3,5-Trimethylbenzene	105	9.988	9.988 (0.931)		8077		1.00000	0.96
86 4-Chlorotoluene	126	10.020	10.010 (0.934)		2307		1.00000	1.0
M 94 Xylene (Total)	106				10813		3.00000	(a)
87 tert-Butylbenzene	119	10.326	10.325 (0.963)		9100		1.00000	1.0
88 1,2,4-Trimethylbenzene	105	10.380	10.377 (0.968)		8210		1.00000	0.99
89 sec-Butylbenzene	105	10.551	10.550 (0.984)		9892		1.00000	1.0
90 1,3-Dichlorobenzene	146	10.670	10.663 (0.995)		4897		1.00000	1.1
91 4-Isopropyltoluene	119	10.695	10.695 (0.997)		7156		1.00000	0.90
* 92 1,4-Dichlorobenzene-d4	152	10.727	10.724 (1.000)		155122		50.0000	
93 1,4-Dichlorobenzene	146	10.750	10.747 (1.002)		5648		1.00000	1.2(Q)
95 n-Butylbenzene	91	11.094	11.097 (1.034)		6585		1.00000	0.90
96 1,2-Dichlorobenzene	146	11.117	11.113 (1.036)		4532		1.00000	1.1
97 Hexachloroethane	117	11.361	11.357 (1.059)		1560		1.00000	0.97
98 1,2-Dibromo-3-chloropropane	75	11.837	11.840 (1.103)		527		1.00000	0.94(Q)
141 1,3,5-Trichlorobenzene	182	12.596	12.583 (2.406)		1413		1.00000	(aQ)
99 1,2,4-Trichlorobenzene	180	12.592	12.586 (1.174)		1934		1.00000	0.88(Q)
100 Hexachlorobutadiene	225	12.737	12.730 (1.187)		2063		1.00000	1.1
101 Naphthalene	128	12.808	12.801 (1.194)		4090		1.00000	0.92
102 1,2,3-Trichlorobenzene	180	13.014	13.010 (1.213)		1956		1.00000	0.90

QC Flag Legend

- T - Target compound detected outside RT window.
- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
- A - Target compound detected but, quantitated amount
exceeded maximum amount.
- Q - Qualifier signal failed the ratio test.

Data File: \\Avogadro\Organics\W10.I\140529.B\W8D5026.d
Date : 29-May-2014 11:19
Client ID: WSTD00110A
Sample Info: 5ML,WSTD00110A,WSTD00110A
Purge Volume: 5.0
Column phase: DB-624

Instrument: W10.i
Operator: ML SRC: ML
Column diameter: 0.25



Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil
Data file : \\Avogadro\Organics\V10.I\140529.B\V8D5027.d
Lab Smp Id: VSTD20010A Client Smp ID: VSTD20010A
Inj Date : 29-MAY-2014 11:46
Operator : WL SRC: WL Inst ID: V10.i
Smp Info : 5ML,VSTD20010A,VSTD20010A
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\140529.B\v108260Gadd-6lv1.m
Meth Date : 02-Jun-2014 10:18 amarquis Quant Type: ISTD
Cal Date : 29-MAY-2014 11:46 Cal File: V8D5027.d
Als bottle: 8 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS					AMOUNTS	
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.586	1.586 (0.303)		854705	200.000	180
2 Freon114	85	1.705	1.705 (0.326)		574268	200.000	180
3 Chloromethane	50	1.753	1.753 (0.335)		1337511	200.000	170
4 Vinyl Chloride	62	1.853	1.856 (0.354)		853778	200.000	180(Q)
5 Bromomethane	94	2.136	2.142 (0.408)		301804	200.000	160
6 Chloroethane	64	2.223	2.229 (0.425)		436940	200.000	190
7 Trichlorofluoromethane	101	2.441	2.441 (0.466)		1253302	200.000	180
126 Ethanol	46	2.570	2.567 (0.491)		458508	20000.0	19000(AQ)
8 Ether	59	2.667	2.667 (0.509)		703333	200.000	180
9 Acrolein	56	2.766	2.769 (0.528)		1026117	1000.00	940
10 1,1-Dichloroethene	96	2.856	2.856 (0.546)		508317	200.000	180(Q)
11 1,1,2-Trichloro-1,2,2-Trifluo	101	2.850	2.850 (0.544)		647652	200.000	180
12 Acetone	58	2.888	2.885 (0.552)		102354	200.000	210(AQ)
13 Iodomethane	142	2.982	2.982 (0.570)		388624	200.000	240(AQ)
14 Carbon Disulfide	76	3.043	3.046 (0.581)		1726938	200.000	180
15 Acetonitrile	41	3.136	3.136 (0.599)		1787345	2000.00	1700(AQ)
16 Allyl Chloride	39	3.136	3.136 (0.599)		1371695	200.000	180(Q)
17 Methyl Acetate	43	3.142	3.146 (0.600)		1012763	200.000	170
18 Methylene Chloride	84	3.229	3.229 (0.617)		524469	200.000	180
19 tert-Butanol	59	3.300	3.297 (0.630)		213226	400.000	390(A)
20 Acrylonitrile	53	3.419	3.422 (0.653)		437839	200.000	180
21 trans-1,2-Dichloroethene	96	3.451	3.454 (0.659)		498087	200.000	190
22 Methyl tert-butyl ether	73	3.445	3.448 (0.658)		2041416	200.000	200

Compounds	QUANT	SIG						AMOUNTS	
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL
								(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====		
23 1,1-Dichloroethane	63	3.785	3.785	(0.723)	1370106	200.000	180		
24 Vinyl acetate	43	3.814	3.818	(0.729)	4211093	200.000	210(A)		
25 Diisopropyl Ether	45	3.824	3.824	(0.730)	4005540	200.000	200		
26 2-Chloro-1,3-Butadiene	53	3.859	3.863	(0.737)	1843560	200.000	200		
27 Ethyl tert-butyl ether	59	4.117	4.117	(0.786)	2779256	200.000	190		
29 2,2-Dichloropropane	77	4.258	4.258	(0.813)	1240602	200.000	210(A)		
28 cis-1,2-Dichloroethene	96	4.252	4.255	(0.812)	534653	200.000	190		
30 2-Butanone	72	4.258	4.261	(0.813)	73505	200.000	220(AQ)		
32 Propionitrile	54	4.300	4.303	(0.821)	1517549	2000.00	2000(A)		
33 Methacrylonitrile	41	4.432	4.435	(0.846)	1546822	400.000	420(A)		
34 Bromochloromethane	128	4.454	4.457	(0.851)	250617	200.000	190(Q)		
31 Tetrahydrofuran	72	4.496	4.499	(0.859)	142077	400.000	400(A)		
35 Chloroform	83	4.506	4.509	(0.861)	1294996	200.000	180		
\$ 36 Dibromofluoromethane	113	4.644	4.644	(0.887)	154104	50.0000	50		
37 1,1,1-Trichloroethane	97	4.682	4.683	(0.894)	1315615	200.000	190		
38 Cyclohexane	56	4.740	4.740	(0.905)	1537404	200.000	200		
39 1,1-Dichloropropene	110	4.818	4.821	(0.920)	256433	200.000	190(Q)		
40 Carbon Tetrachloride	117	4.827	4.827	(0.922)	1187979	200.000	200		
41 Isobutyl Alcohol	43	4.869	4.872	(0.930)	961843	4000.00	4500(A)		
\$ 42 1,2-Dichloroethane-d4	102	4.943	4.943	(0.944)	26751	50.0000	50		
43 Benzene	78	5.001	5.004	(0.955)	1957453	200.000	190		
44 1,2-Dichloroethane	62	5.004	5.007	(0.956)	1604108	200.000	190		
45 tert-Amyl methyl ether	73	5.078	5.081	(0.970)	1705469	200.000	200		
M 50 1,2-Dichloroethene (Total)	96				1032740	400.000	(a)		
* 46 Fluorobenzene	96	5.236	5.236	(1.000)	436930	50.0000			
47 Trichloroethene	130	5.563	5.564	(1.063)	536916	200.000	200(Q)		
48 Methylcyclohexane	83	5.753	5.753	(1.099)	858939	200.000	200		
49 1,2-Dichloropropane	63	5.769	5.769	(1.102)	691768	200.000	190		
51 Methyl Methacrylate	69	5.850	5.850	(1.117)	482887	200.000	220(A)		
52 Dibromomethane	93	5.879	5.879	(1.123)	429565	200.000	190		
53 1,4-Dioxane	88	5.882	5.882	(1.123)	128164	4000.00	4000(A)		
54 Bromodichloromethane	83	6.014	6.014	(1.149)	1048082	200.000	200		
55 2-Chloroethyl vinyl ether	63	6.438	6.441	(1.230)	8023	200.000	200(Q)		
56 cis-1,3-Dichloropropene	75	6.438	6.444	(1.230)	963922	200.000	220(A)		
57 4-Methyl-2-pentanone	43	6.583	6.583	(1.257)	1156003	200.000	210(A)		
\$ 58 Toluene-d8	98	6.718	6.715	(0.817)	484113	50.0000	48		
59 Toluene	91	6.785	6.785	(1.296)	2134475	200.000	190		
60 trans-1,3-Dichloropropene	75	6.985	6.988	(1.334)	986142	200.000	230(A)		
61 Ethyl Methacrylate	69	7.068	7.071	(1.350)	555942	200.000	220(A)		
62 1,1,2-Trichloroethane	97	7.178	7.178	(1.371)	487513	200.000	190		
63 Tetrachloroethene	164	7.345	7.345	(0.893)	519713	200.000	180		
64 1,3-Dichloropropane	76	7.354	7.354	(0.894)	912529	200.000	190		
65 2-Hexanone	43	7.428	7.435	(0.903)	790789	200.000	200(Q)		
66 Dibromochloromethane	129	7.592	7.596	(0.923)	735294	200.000	200		
67 1,2-Dibromoethane	107	7.727	7.727	(0.940)	566970	200.000	200		
69 1-Chlorohexane	91	8.213	8.216	(0.999)	741029	200.000	190(Q)		
* 68 Chlorobenzene-d5	117	8.223	8.223	(1.000)	392277	50.0000			
70 Chlorobenzene	112	8.251	8.252	(1.004)	1390038	200.000	180		
71 1,1,1,2-Tetrachloroethane	131	8.335	8.335	(1.014)	633288	200.000	180(Q)		
72 Ethylbenzene	106	8.370	8.370	(1.018)	733152	200.000	190		
73 m,p-Xylene	106	8.499	8.499	(1.034)	1822063	400.000	400(A)		
74 o-Xylene	106	8.943	8.943	(1.088)	876923	200.000	190(Q)		
75 Styrene	104	8.956	8.959	(1.089)	1437928	200.000	200(A)		
76 Bromoform	173	9.165	9.168	(1.115)	471565	200.000	210(A)		

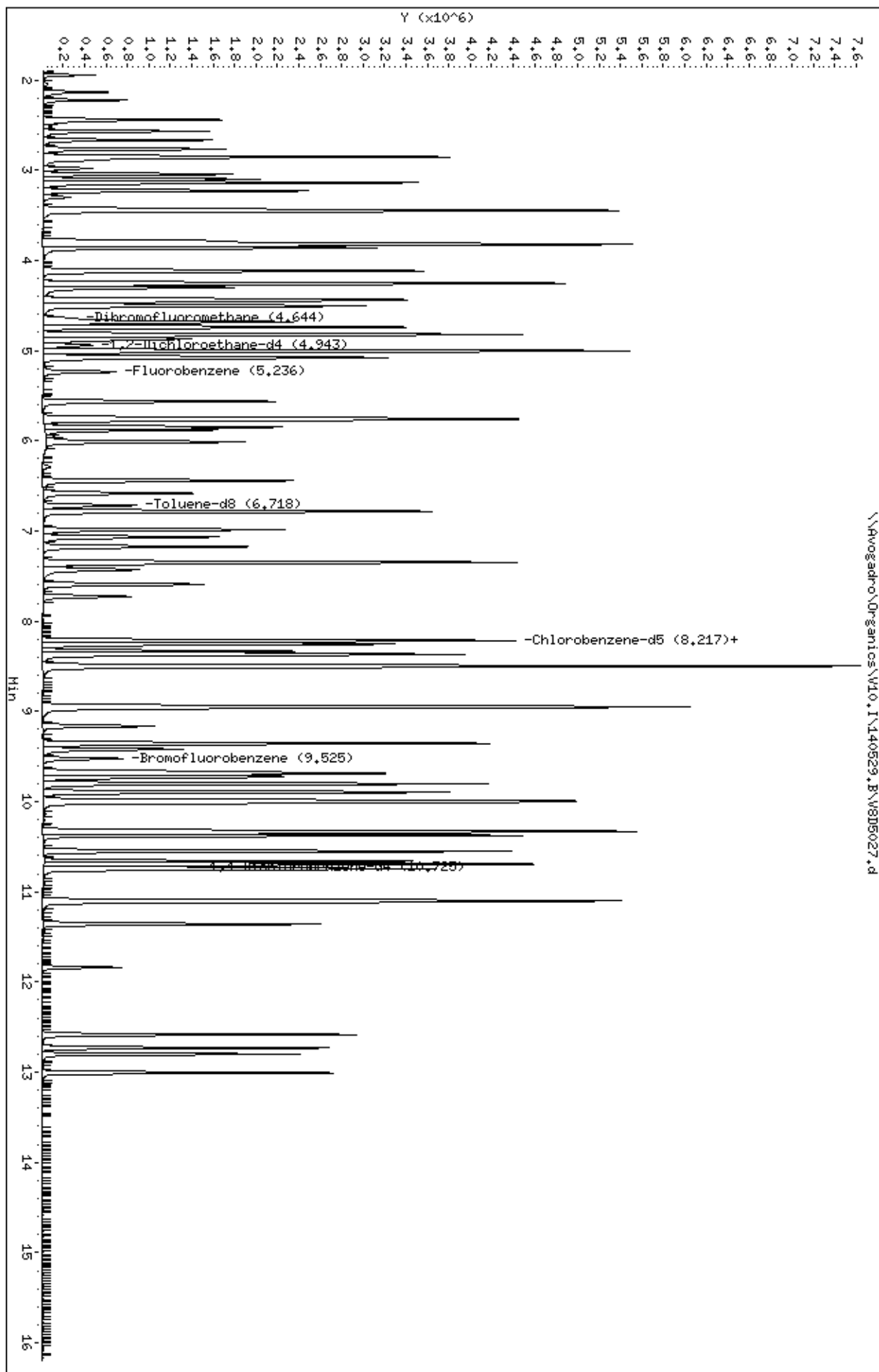
						AMOUNTS		
		QUANT	SIG					
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)	
=====	=====	=====	=====	=====	=====	=====	=====	
77 Isopropylbenzene	105	9.354	9.358	(1.138)	2540061	200.000	200	
78 trans-1,4-Dichloro-2-butene	75	9.419	9.419	(1.145)	188652	200.000	240(AQ)	
\$ 79 Bromofluorobenzene	95	9.525	9.525	(1.158)	235503	50.0000	51	
80 1,1,2,2-Tetrachloroethane	83	9.669	9.669	(0.902)	692904	200.000	170	
81 Bromobenzene	156	9.689	9.689	(0.903)	648610	200.000	180(Q)	
82 1,2,3-Trichloropropane	75	9.721	9.721	(0.906)	908781	200.000	190	
83 n-Propylbenzene	120	9.801	9.801	(0.914)	596199	200.000	180	
84 2-Chlorotoluene	126	9.895	9.895	(0.923)	538432	200.000	180(Q)	
85 1,3,5-Trimethylbenzene	105	9.988	9.988	(0.931)	2207295	200.000	190	
86 4-Chlorotoluene	126	10.010	10.010	(0.933)	564682	200.000	180	
M 94 Xylene (Total)	106				2698986	600.000	(a)	
87 tert-Butylbenzene	119	10.325	10.325	(0.963)	2332302	200.000	190	
88 1,2,4-Trimethylbenzene	105	10.377	10.377	(0.968)	2194017	200.000	190	
89 sec-Butylbenzene	105	10.550	10.550	(0.984)	2552118	200.000	180	
90 1,3-Dichlorobenzene	146	10.660	10.663	(0.994)	1099926	200.000	180	
91 4-Isopropyltoluene	119	10.695	10.695	(0.997)	2157518	200.000	190	
* 92 1,4-Dichlorobenzene-d4	152	10.724	10.724	(1.000)	217298	50.0000	(Q)	
93 1,4-Dichlorobenzene	146	10.747	10.747	(1.002)	1137422	200.000	180(Q)	
95 n-Butylbenzene	91	11.094	11.097	(1.034)	2039633	200.000	200	
96 1,2-Dichlorobenzene	146	11.113	11.113	(1.036)	1073396	200.000	180	
97 Hexachloroethane	117	11.357	11.357	(1.059)	432051	200.000	190(Q)	
98 1,2-Dibromo-3-chloropropane	75	11.840	11.840	(1.104)	170674	200.000	220(AQ)	
141 1,3,5-Trichlorobenzene	182	12.583	12.583	(2.403)	678844	200.000	(aQ)	
99 1,2,4-Trichlorobenzene	180	12.583	12.586	(1.173)	707294	200.000	230(A)	
100 Hexachlorobutadiene	225	12.730	12.730	(1.187)	437096	200.000	170	
101 Naphthalene	128	12.801	12.801	(1.194)	1408314	200.000	230(A)	
102 1,2,3-Trichlorobenzene	180	13.007	13.010	(1.213)	659047	200.000	220(A)	

QC Flag Legend

- a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
- A - Target compound detected but, quantitated amount exceeded maximum amount.
- Q - Qualifier signal failed the ratio test.

Data File: \\Avogadro\Organics\W10.I\140529.B\W8D5027.d
Date : 29-May-2014 11:46
Client ID: WSTD0010A
Sample Info: 5ML,WSTD0010A,WSTD0010A
Purge Volume: 5.0
Column phase: DB-624

Instrument: W10.i
Operator: ML SRC: ML
Column diameter: 0.25



Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil
Data file : \\Avogadro\Organics\V10.I\140529.B\V8D5028.d
Lab Smp Id: VSTD10010A Client Smp ID: VSTD10010A
Inj Date : 29-MAY-2014 12:14
Operator : WL SRC: WL Inst ID: V10.i
Smp Info : 5ML,VSTD10010A,VSTD10010A
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\140529.B\v108260Gadd-6lvl.m
Meth Date : 02-Jun-2014 10:18 amarquis Quant Type: ISTD
Cal Date : 29-MAY-2014 12:14 Cal File: V8D5028.d
Als bottle: 9 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS					AMOUNTS	
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.586	1.586 (0.303)		454127	100.000	94
2 Freon114	85	1.705	1.705 (0.326)		323654	100.000	100
3 Chloromethane	50	1.754	1.753 (0.335)		784254	100.000	99
4 Vinyl Chloride	62	1.853	1.856 (0.354)		486229	100.000	99
5 Bromomethane	94	2.139	2.142 (0.408)		182752	100.000	92
6 Chloroethane	64	2.226	2.229 (0.425)		243330	100.000	100
7 Trichlorofluoromethane	101	2.442	2.441 (0.466)		651201	100.000	92
126 Ethanol	46	2.567	2.567 (0.490)		256283	10000.0	10000(A)
8 Ether	59	2.663	2.667 (0.508)		381641	100.000	98
9 Acrolein	56	2.770	2.769 (0.529)		557860	500.000	500
10 1,1-Dichloroethene	96	2.856	2.856 (0.545)		273376	100.000	92
11 1,1,2-Trichloro-1,2,2-Trifluo	101	2.850	2.850 (0.544)		345118	100.000	94
12 Acetone	58	2.885	2.885 (0.551)		50184	100.000	100
13 Iodomethane	142	2.982	2.982 (0.569)		201998	100.000	120
14 Carbon Disulfide	76	3.043	3.046 (0.581)		909919	100.000	92
15 Acetonitrile	41	3.136	3.136 (0.599)		1002422	1000.00	930(A)
16 Allyl Chloride	39	3.136	3.136 (0.599)		748989	100.000	97
17 Methyl Acetate	43	3.146	3.146 (0.600)		551080	100.000	92
18 Methylene Chloride	84	3.229	3.229 (0.616)		282278	100.000	93
19 tert-Butanol	59	3.300	3.297 (0.630)		114238	200.000	200(A)
20 Acrylonitrile	53	3.419	3.422 (0.653)		231445	100.000	92
21 trans-1,2-Dichloroethene	96	3.451	3.454 (0.659)		263551	100.000	96
22 Methyl tert-butyl ether	73	3.445	3.448 (0.658)		1070377	100.000	100

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
23 1,1-Dichloroethane	63	3.782	3.785 (0.722)		729506		100.000	95
24 Vinyl acetate	43	3.815	3.818 (0.728)		2163014		100.000	100
25 Diisopropyl Ether	45	3.824	3.824 (0.730)		2080290		100.000	99
26 2-Chloro-1,3-Butadiene	53	3.863	3.863 (0.737)		958065		100.000	99
27 Ethyl tert-butyl ether	59	4.117	4.117 (0.786)		1485899		100.000	100
29 2,2-Dichloropropane	77	4.258	4.258 (0.813)		634670		100.000	110
28 cis-1,2-Dichloroethene	96	4.255	4.255 (0.812)		284799		100.000	97
30 2-Butanone	72	4.255	4.261 (0.812)		37555		100.000	110
32 Propionitrile	54	4.303	4.303 (0.821)		808624		1000.00	1000(A)
33 Methacrylonitrile	41	4.432	4.435 (0.846)		787098		200.000	210(A)
34 Bromochloromethane	128	4.454	4.457 (0.850)		132913		100.000	97
31 Tetrahydrofuran	72	4.496	4.499 (0.858)		75584		200.000	210(A)
35 Chloroform	83	4.506	4.509 (0.860)		678142		100.000	94
\$ 36 Dibromofluoromethane	113	4.641	4.644 (0.886)		155521		50.0000	50
37 1,1,1-Trichloroethane	97	4.683	4.683 (0.894)		681158		100.000	94
38 Cyclohexane	56	4.741	4.740 (0.905)		811958		100.000	100
39 1,1-Dichloropropene	110	4.824	4.821 (0.921)		135859		100.000	99
40 Carbon Tetrachloride	117	4.827	4.827 (0.921)		618545		100.000	100
41 Isobutyl Alcohol	43	4.872	4.872 (0.930)		500209		2000.00	2300(A)
\$ 42 1,2-Dichloroethane-d4	102	4.940	4.943 (0.943)		27508		50.0000	50
43 Benzene	78	5.004	5.004 (0.955)		1020014		100.000	97
44 1,2-Dichloroethane	62	5.007	5.007 (0.956)		828776		100.000	94
45 tert-Amyl methyl ether	73	5.078	5.081 (0.969)		890938		100.000	100
M 50 1,2-Dichloroethene (Total)	96				548350		200.000	(a)
* 46 Fluorobenzene	96	5.239	5.236 (1.000)		449505		50.0000	
47 Trichloroethene	130	5.564	5.564 (1.062)		280505		100.000	100
48 Methylcyclohexane	83	5.750	5.753 (1.098)		451272		100.000	100
49 1,2-Dichloropropane	63	5.769	5.769 (1.101)		361721		100.000	99
51 Methyl Methacrylate	69	5.847	5.850 (1.116)		244622		100.000	110
52 Dibromomethane	93	5.879	5.879 (1.122)		219880		100.000	95
53 1,4-Dioxane	88	5.882	5.882 (1.123)		70878		2000.00	2200(A)
54 Bromodichloromethane	83	6.014	6.014 (1.148)		531579		100.000	100
55 2-Chloroethyl vinyl ether	63	6.441	6.441 (1.230)		4128		100.000	100(T)
56 cis-1,3-Dichloropropene	75	6.445	6.444 (1.230)		494435		100.000	110
57 4-Methyl-2-pentanone	43	6.580	6.583 (1.256)		594714		100.000	100
\$ 58 Toluene-d8	98	6.715	6.715 (0.817)		491843		50.0000	50
59 Toluene	91	6.782	6.785 (1.295)		1106396		100.000	97
60 trans-1,3-Dichloropropene	75	6.985	6.988 (1.333)		498904		100.000	110
61 Ethyl Methacrylate	69	7.065	7.071 (1.349)		283709		100.000	110
62 1,1,2-Trichloroethane	97	7.175	7.178 (1.369)		251352		100.000	96
63 Tetrachloroethene	164	7.342	7.345 (0.893)		270486		100.000	95
64 1,3-Dichloropropane	76	7.355	7.354 (0.894)		471058		100.000	99
65 2-Hexanone	43	7.432	7.435 (0.904)		411693		100.000	110
66 Dibromochloromethane	129	7.593	7.596 (0.923)		372923		100.000	100
67 1,2-Dibromoethane	107	7.728	7.727 (0.940)		292128		100.000	100
69 1-Chlorohexane	91	8.216	8.216 (0.999)		378144		100.000	98
* 68 Chlorobenzene-d5	117	8.223	8.223 (1.000)		388728		50.0000	
70 Chlorobenzene	112	8.255	8.252 (1.004)		717950		100.000	96
71 1,1,1,2-Tetrachloroethane	131	8.335	8.335 (1.014)		320406		100.000	95
72 Ethylbenzene	106	8.367	8.370 (1.018)		375676		100.000	100
73 m,p-Xylene	106	8.499	8.499 (1.034)		935966		200.000	200(A)
74 o-Xylene	106	8.946	8.943 (1.088)		452298		100.000	100
75 Styrene	104	8.959	8.959 (1.090)		709776		100.000	100
76 Bromoform	173	9.165	9.168 (1.115)		238397		100.000	110

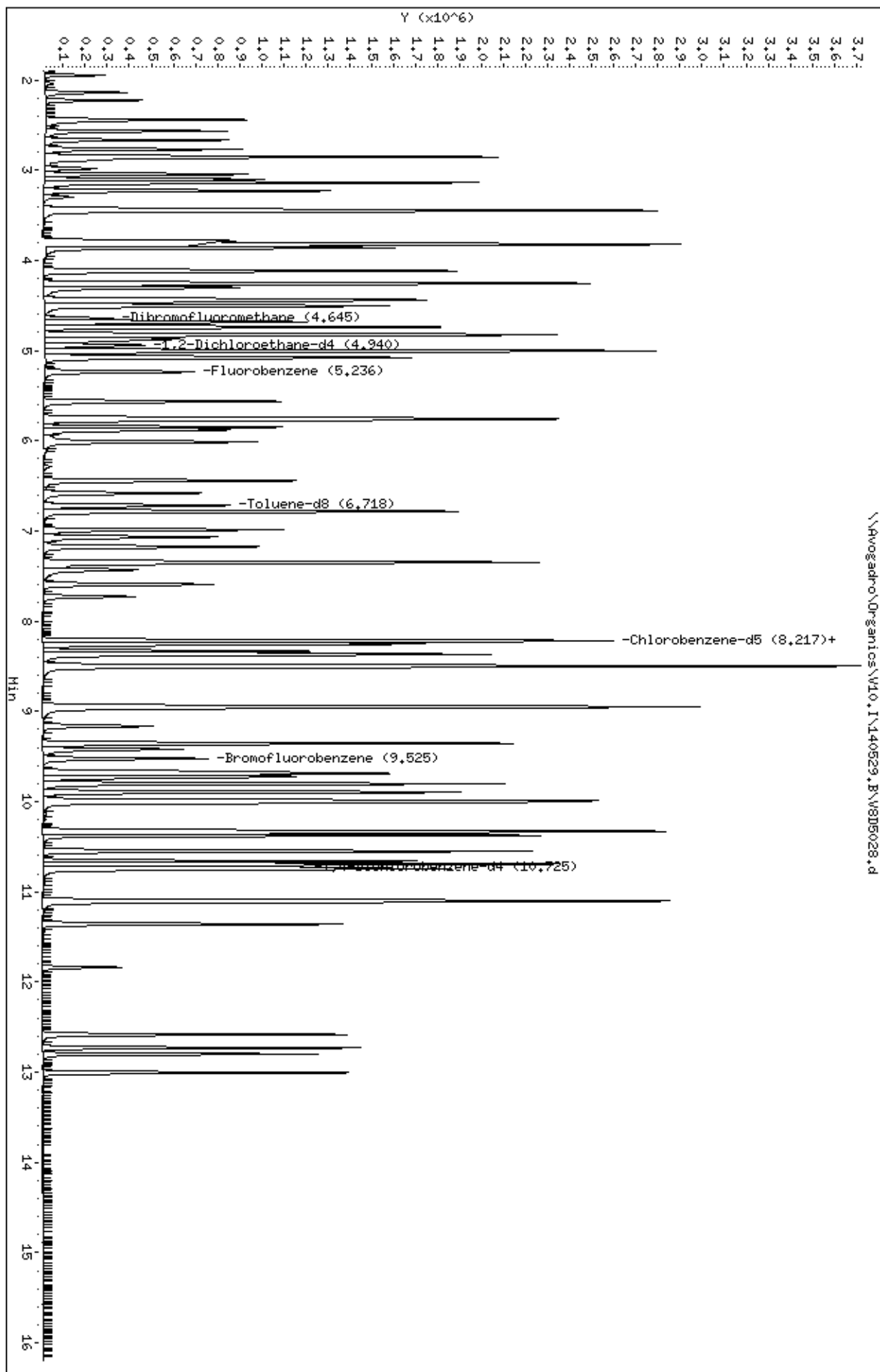
Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
77 Isopropylbenzene	105	9.355	9.358 (1.138)		1291655		100.000	100
78 trans-1,4-Dichloro-2-butene	75	9.419	9.419 (1.145)		93778		100.000	120
\$ 79 Bromofluorobenzene	95	9.525	9.525 (1.158)		231935		50.0000	50
80 1,1,2,2-Tetrachloroethane	83	9.666	9.669 (0.901)		349897		100.000	86
81 Bromobenzene	156	9.689	9.689 (0.903)		322542		100.000	92
82 1,2,3-Trichloropropane	75	9.721	9.721 (0.906)		458500		100.000	95
83 n-Propylbenzene	120	9.801	9.801 (0.914)		303258		100.000	96
84 2-Chlorotoluene	126	9.895	9.895 (0.923)		278098		100.000	94
85 1,3,5-Trimethylbenzene	105	9.988	9.988 (0.931)		1107401		100.000	95
86 4-Chlorotoluene	126	10.010	10.010 (0.933)		286185		100.000	93
M 94 Xylene (Total)	106				1388264		300.000	(a)
87 tert-Butylbenzene	119	10.326	10.325 (0.963)		1197099		100.000	97
88 1,2,4-Trimethylbenzene	105	10.374	10.377 (0.967)		1112703		100.000	96
89 sec-Butylbenzene	105	10.551	10.550 (0.984)		1312062		100.000	96
90 1,3-Dichlorobenzene	146	10.660	10.663 (0.994)		549401		100.000	93
91 4-Isopropyltoluene	119	10.692	10.695 (0.997)		1095646		100.000	99
* 92 1,4-Dichlorobenzene-d4	152	10.724	10.724 (1.000)		215159		50.0000	(Q)
93 1,4-Dichlorobenzene	146	10.747	10.747 (1.002)		578727		100.000	91
95 n-Butylbenzene	91	11.094	11.097 (1.034)		1035353		100.000	100
96 1,2-Dichlorobenzene	146	11.113	11.113 (1.036)		547267		100.000	93
97 Hexachloroethane	117	11.358	11.357 (1.059)		222269		100.000	100
98 1,2-Dibromo-3-chloropropane	75	11.840	11.840 (1.104)		82193		100.000	100
141 1,3,5-Trichlorobenzene	182	12.586	12.583 (2.402)		324499		100.000	(a)
99 1,2,4-Trichlorobenzene	180	12.583	12.586 (1.173)		344175		100.000	110
100 Hexachlorobutadiene	225	12.731	12.730 (1.187)		230988		100.000	90
101 Naphthalene	128	12.798	12.801 (1.193)		733733		100.000	120
102 1,2,3-Trichlorobenzene	180	13.007	13.010 (1.213)		334347		100.000	110

QC Flag Legend

- T - Target compound detected outside RT window.
- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
- A - Target compound detected but, quantitated amount
exceeded maximum amount.
- Q - Qualifier signal failed the ratio test.

Data File: \\Avogadro\Organics\W10.I\140529.B\W8D5028.d
Date : 29-May-2014 12:14
Client ID: WSTD10010A
Sample Info: 5ML,WSTD10010A,WSTD10010A
Purge Volume: 5.0
Column phase: DB-624

Instrument: W10.i
Operator: ML SRC: ML
Column diameter: 0.25



Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil
Data file : \\Avogadro\Organics\V10.I\140529.B\V8D5029.d
Lab Smp Id: VSTD05010A Client Smp ID: VSTD05010A
Inj Date : 29-MAY-2014 12:40
Operator : WL SRC: WL Inst ID: V10.i
Smp Info : 5ML,VSTD05010A,VSTD05010A
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\140529.B\v108260Gadd-6lvl.m
Meth Date : 02-Jun-2014 10:18 amarquis Quant Type: ISTD
Cal Date : 29-MAY-2014 12:40 Cal File: V8D5029.d
Als bottle: 10 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS					AMOUNTS	
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.586	1.586 (0.303)		226402	50.0000	50
2 Freon114	85	1.705	1.705 (0.326)		158566	50.0000	53
3 Chloromethane	50	1.753	1.753 (0.335)		358831	50.0000	49
4 Vinyl Chloride	62	1.853	1.856 (0.354)		240704	50.0000	53
5 Bromomethane	94	2.142	2.142 (0.409)		97649	50.0000	53
6 Chloroethane	64	2.226	2.229 (0.425)		118873	50.0000	53
7 Trichlorofluoromethane	101	2.442	2.441 (0.466)		326569	50.0000	49
126 Ethanol	46	2.567	2.567 (0.490)		122180	5000.00	5200(A)
8 Ether	59	2.667	2.667 (0.509)		176227	50.0000	48
9 Acrolein	56	2.769	2.769 (0.529)		260013	250.000	250
10 1,1-Dichloroethene	96	2.856	2.856 (0.546)		135480	50.0000	49
11 1,1,2-Trichloro-1,2,2-Trifluo	101	2.850	2.850 (0.544)		172012	50.0000	50
12 Acetone	58	2.892	2.885 (0.552)		26705	50.0000	58
13 Iodomethane	142	2.982	2.982 (0.570)		97189	50.0000	62
14 Carbon Disulfide	76	3.046	3.046 (0.582)		473816	50.0000	51
15 Acetonitrile	41	3.136	3.136 (0.599)		544172	500.000	540(A)
16 Allyl Chloride	39	3.136	3.136 (0.599)		371092	50.0000	51
17 Methyl Acetate	43	3.146	3.146 (0.601)		274184	50.0000	49
18 Methylene Chloride	84	3.229	3.229 (0.617)		134539	50.0000	48
19 tert-Butanol	59	3.297	3.297 (0.630)		55293	100.000	110
20 Acrylonitrile	53	3.419	3.422 (0.653)		113402	50.0000	48
21 trans-1,2-Dichloroethene	96	3.451	3.454 (0.659)		135725	50.0000	53
22 Methyl tert-butyl ether	73	3.445	3.448 (0.658)		492649	50.0000	50

						AMOUNTS	
QUANT SIG						CAL-AMT	ON-COL
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
23 1,1-Dichloroethane	63	3.786	3.785	(0.723)	359185	50.0000	50
24 Vinyl acetate	43	3.818	3.818	(0.729)	1006944	50.0000	53
25 Diisopropyl Ether	45	3.824	3.824	(0.730)	984236	50.0000	50
26 2-Chloro-1,3-Butadiene	53	3.863	3.863	(0.738)	480144	50.0000	53
27 Ethyl tert-butyl ether	59	4.117	4.117	(0.786)	683664	50.0000	50
29 2,2-Dichloropropane	77	4.258	4.258	(0.813)	323874	50.0000	58
28 cis-1,2-Dichloroethene	96	4.258	4.255	(0.813)	141046	50.0000	51
30 2-Butanone	72	4.258	4.261	(0.813)	18111	50.0000	56
32 Propionitrile	54	4.303	4.303	(0.822)	405076	500.000	540(A)
33 Methacrylonitrile	41	4.435	4.435	(0.847)	376721	100.000	110
34 Bromochloromethane	128	4.454	4.457	(0.851)	64406	50.0000	50
31 Tetrahydrofuran	72	4.503	4.499	(0.860)	37174	100.000	110
35 Chloroform	83	4.509	4.509	(0.861)	334328	50.0000	50
\$ 36 Dibromofluoromethane	113	4.644	4.644	(0.887)	142486	50.0000	49
37 1,1,1-Trichloroethane	97	4.683	4.683	(0.894)	341932	50.0000	51
38 Cyclohexane	56	4.740	4.740	(0.905)	398507	50.0000	53
39 1,1-Dichloropropene	110	4.824	4.821	(0.921)	66542	50.0000	52
40 Carbon Tetrachloride	117	4.827	4.827	(0.922)	305943	50.0000	53
41 Isobutyl Alcohol	43	4.875	4.872	(0.931)	239395	1000.00	1200(A)
\$ 42 1,2-Dichloroethane-d4	102	4.946	4.943	(0.945)	23845	50.0000	46
43 Benzene	78	5.004	5.004	(0.956)	507257	50.0000	52
44 1,2-Dichloroethane	62	5.007	5.007	(0.956)	383178	50.0000	47
45 tert-Amyl methyl ether	73	5.081	5.081	(0.971)	414881	50.0000	51
M 50 1,2-Dichloroethene (Total)	96				276771	100.000	100
* 46 Fluorobenzene	96	5.236	5.236	(1.000)	418592	50.0000	
47 Trichloroethene	130	5.564	5.564	(1.063)	139091	50.0000	53
48 Methylcyclohexane	83	5.750	5.753	(1.098)	217785	50.0000	53
49 1,2-Dichloropropane	63	5.769	5.769	(1.102)	171356	50.0000	50
51 Methyl Methacrylate	69	5.853	5.850	(1.118)	113183	50.0000	53
52 Dibromomethane	93	5.879	5.879	(1.123)	104075	50.0000	48
53 1,4-Dioxane	88	5.885	5.882	(1.124)	32352	1000.00	1100(A)
54 Bromodichloromethane	83	6.014	6.014	(1.149)	245823	50.0000	49
55 2-Chloroethyl vinyl ether	63	6.448	6.441	(1.232)	1828	50.0000	48(T)
56 cis-1,3-Dichloropropene	75	6.441	6.444	(1.230)	225356	50.0000	53
57 4-Methyl-2-pentanone	43	6.583	6.583	(1.257)	284636	50.0000	53
\$ 58 Toluene-d8	98	6.718	6.715	(0.817)	448566	50.0000	51
59 Toluene	91	6.785	6.785	(1.296)	537856	50.0000	50
60 trans-1,3-Dichloropropene	75	6.988	6.988	(1.335)	218025	50.0000	53
61 Ethyl Methacrylate	69	7.072	7.071	(1.351)	129808	50.0000	53
62 1,1,2-Trichloroethane	97	7.174	7.178	(1.370)	118214	50.0000	49
63 Tetrachloroethene	164	7.348	7.345	(0.894)	131980	50.0000	53
64 1,3-Dichloropropane	76	7.354	7.354	(0.894)	214885	50.0000	51
65 2-Hexanone	43	7.432	7.435	(0.904)	196227	50.0000	58
66 Dibromochloromethane	129	7.592	7.596	(0.923)	164863	50.0000	52
67 1,2-Dibromoethane	107	7.727	7.727	(0.940)	133595	50.0000	53
69 1-Chlorohexane	91	8.213	8.216	(0.999)	180812	50.0000	53
* 68 Chlorobenzene-d5	117	8.223	8.223	(1.000)	343850	50.0000	
70 Chlorobenzene	112	8.255	8.252	(1.004)	345290	50.0000	52
71 1,1,1,2-Tetrachloroethane	131	8.335	8.335	(1.014)	151042	50.0000	50
72 Ethylbenzene	106	8.374	8.370	(1.018)	181326	50.0000	55
73 m,p-Xylene	106	8.496	8.499	(1.033)	447256	100.000	110
74 o-Xylene	106	8.943	8.943	(1.088)	213230	50.0000	54
75 Styrene	104	8.959	8.959	(1.090)	332309	50.0000	54
76 Bromoform	173	9.165	9.168	(1.115)	104829	50.0000	53

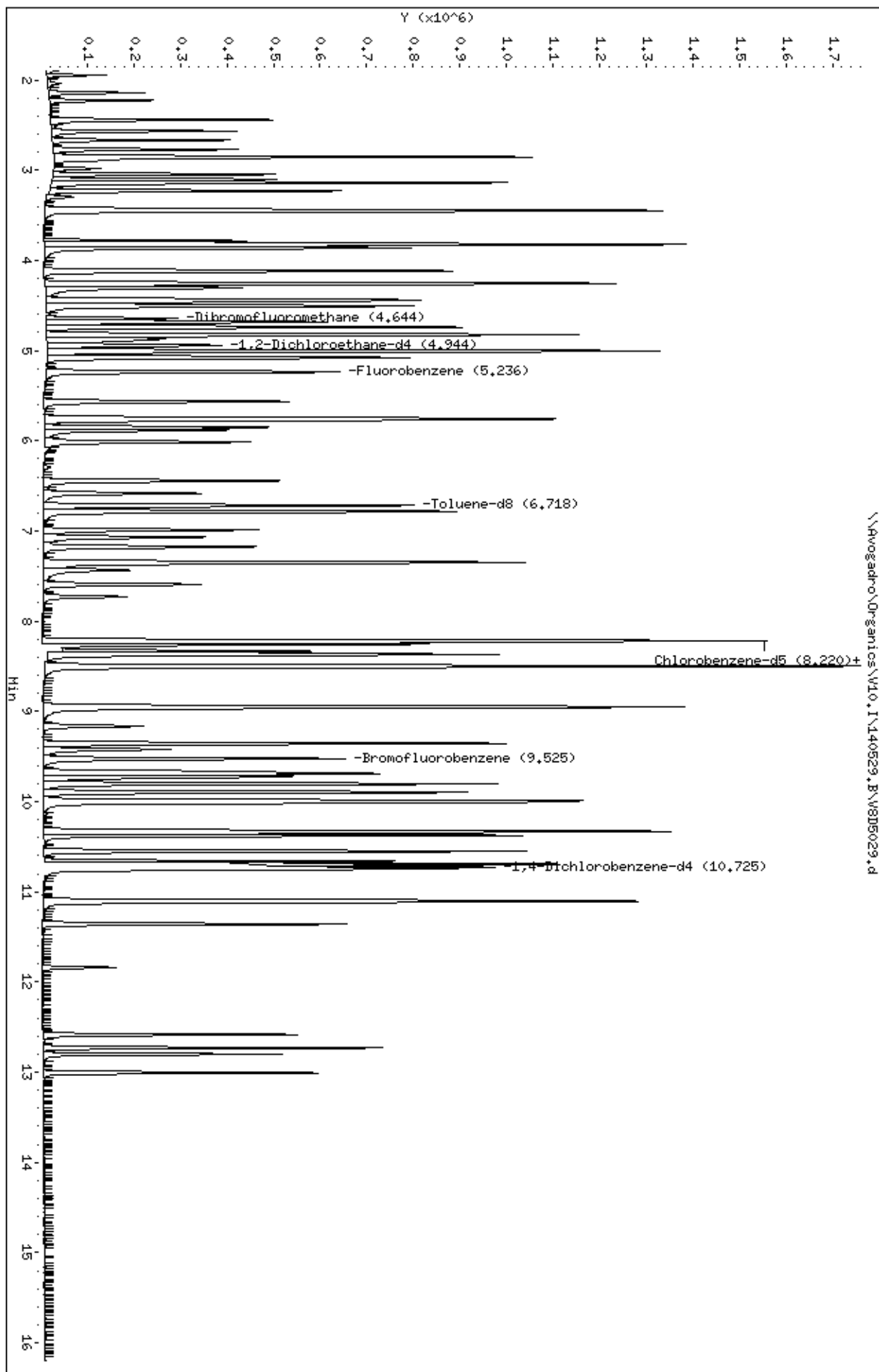
Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
77 Isopropylbenzene	105	9.358	9.358	(1.138)	604763		50.0000	55
78 trans-1,4-Dichloro-2-butene	75	9.419	9.419	(1.145)	38280		50.0000	55
\$ 79 Bromofluorobenzene	95	9.525	9.525	(1.158)	205137		50.0000	50
80 1,1,2,2-Tetrachloroethane	83	9.670	9.669	(0.902)	168547		50.0000	48
81 Bromobenzene	156	9.692	9.689	(0.904)	148398		50.0000	49
82 1,2,3-Trichloropropane	75	9.721	9.721	(0.906)	216280		50.0000	53
83 n-Propylbenzene	120	9.805	9.801	(0.914)	142001		50.0000	52
84 2-Chlorotoluene	126	9.895	9.895	(0.923)	133247		50.0000	53
85 1,3,5-Trimethylbenzene	105	9.988	9.988	(0.931)	521125		50.0000	52
86 4-Chlorotoluene	126	10.010	10.010	(0.933)	134831		50.0000	52
M 94 Xylene (Total)	106				660486		150.000	160
87 tert-Butylbenzene	119	10.325	10.325	(0.963)	559191		50.0000	53
88 1,2,4-Trimethylbenzene	105	10.377	10.377	(0.968)	514426		50.0000	52
89 sec-Butylbenzene	105	10.551	10.550	(0.984)	617244		50.0000	53
90 1,3-Dichlorobenzene	146	10.663	10.663	(0.994)	254152		50.0000	50
91 4-Isopropyltoluene	119	10.695	10.695	(0.997)	515886		50.0000	55
* 92 1,4-Dichlorobenzene-d4	152	10.724	10.724	(1.000)	183305		50.0000	
93 1,4-Dichlorobenzene	146	10.747	10.747	(1.002)	261196		50.0000	48
95 n-Butylbenzene	91	11.097	11.097	(1.035)	481664		50.0000	56
96 1,2-Dichlorobenzene	146	11.110	11.113	(1.036)	253903		50.0000	51
97 Hexachloroethane	117	11.358	11.357	(1.059)	101988		50.0000	54
98 1,2-Dibromo-3-chloropropane	75	11.840	11.840	(1.104)	37463		50.0000	56
141 1,3,5-Trichlorobenzene	182	12.586	12.583	(2.404)	134957		50.0000	(a)
99 1,2,4-Trichlorobenzene	180	12.586	12.586	(1.174)	142812		50.0000	55
100 Hexachlorobutadiene	225	12.730	12.730	(1.187)	117293		50.0000	53
101 Naphthalene	128	12.801	12.801	(1.194)	306155		50.0000	58
102 1,2,3-Trichlorobenzene	180	13.007	13.010	(1.213)	141585		50.0000	55

QC Flag Legend

- T - Target compound detected outside RT window.
- a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
- A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\Avogadro\Organics\W10.I\140529.B\W8D5029.d
Date : 29-May-2014 12:40
Client ID: WSTD05010A
Sample Info: 5HL,WSTD05010A,WSTD05010A
Purge Volume: 5.0
Column phase: DB-624

Instrument: W10.i
Operator: ML SRC: ML
Column diameter: 0.25



Spectrum Analytical, Inc. RI Division

Data file : \\Avogadro\Organics\V10.I\140529.B\V8D5022.d
 Lab Smp Id: BFB10A Client Smp ID: BFB10A
 Inj Date : 29-MAY-2014 09:29
 Operator : WL SRC: WL Inst ID: V10.i
 Smp Info : 5ML, BFB10A, BFB10A
 Misc Info :
 Comment :
 Method : \\Avogadro\Organics\V10.I\140529.B\BFBSOM_V10.m
 Meth Date : 21-May-2014 09:55 mscarpaci Quant Type: ISTD
 Cal Date : 01-DEC-2012 00:40 Cal File: V8B5840.d
 Als bottle: 3 QC Sample: BFB
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: all.sub
 Target Version: 4.14 Sample Matrix: WATER

Concentration Formula: Amt * DF * Uf * Vf * VI * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vf	1.000	Volumetric correction factor
VI	1.000	Injection Volume
Cpnd Variable		Local Compound Variable

CONCENTRATIONS									
RT	EXP RT	REL RT	MASS	RESPONSE	ON-COL		TARGET	RANGE	RATIO
					(ug/L)	FINAL			
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
1 bfb					CAS #: 460-00-4				
0.000	9.000	(0.000)	95	52936			0.00-	100.00	100.00
0.000	9.000	(0.000)	50	18940			15.00-	40.00	35.78
0.000	9.000	(0.000)	75	32892			30.00-	80.00	62.14
0.000	9.000	(0.000)	96	3150			5.00-	9.00	5.95
0.000	9.000	(0.000)	173	625			0.00-	2.00	1.39
0.000	9.000	(0.000)	174	44928			50.00-	120.00	84.87
0.000	9.000	(0.000)	175	3286			5.00-	9.00	7.31
0.000	9.000	(0.000)	176	44928			95.00-	101.00	100.00
0.000	9.000	(0.000)	177	2585			5.00-	9.00	5.75

Date : 29-MAY-2014 09:29

Client ID: BFB10A

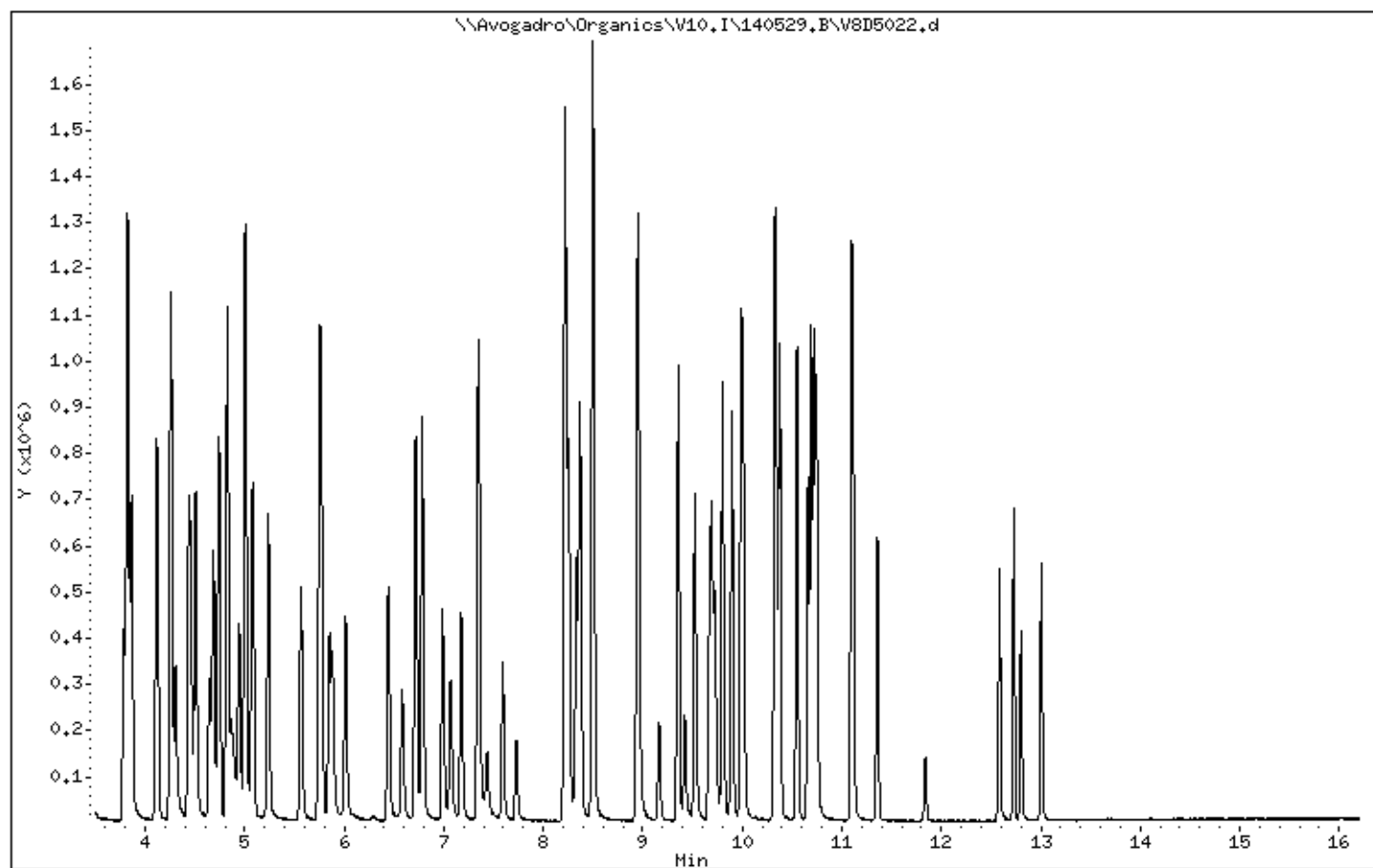
Instrument: V10.i

Sample Info: 5HL,BFB10A,BFB10A

Operator: WL SRC: WL

Column phase: DB-624

Column diameter: 0.25



Date : 29-MAY-2014 09:29

Client ID: BFB10A

Instrument: V10.i

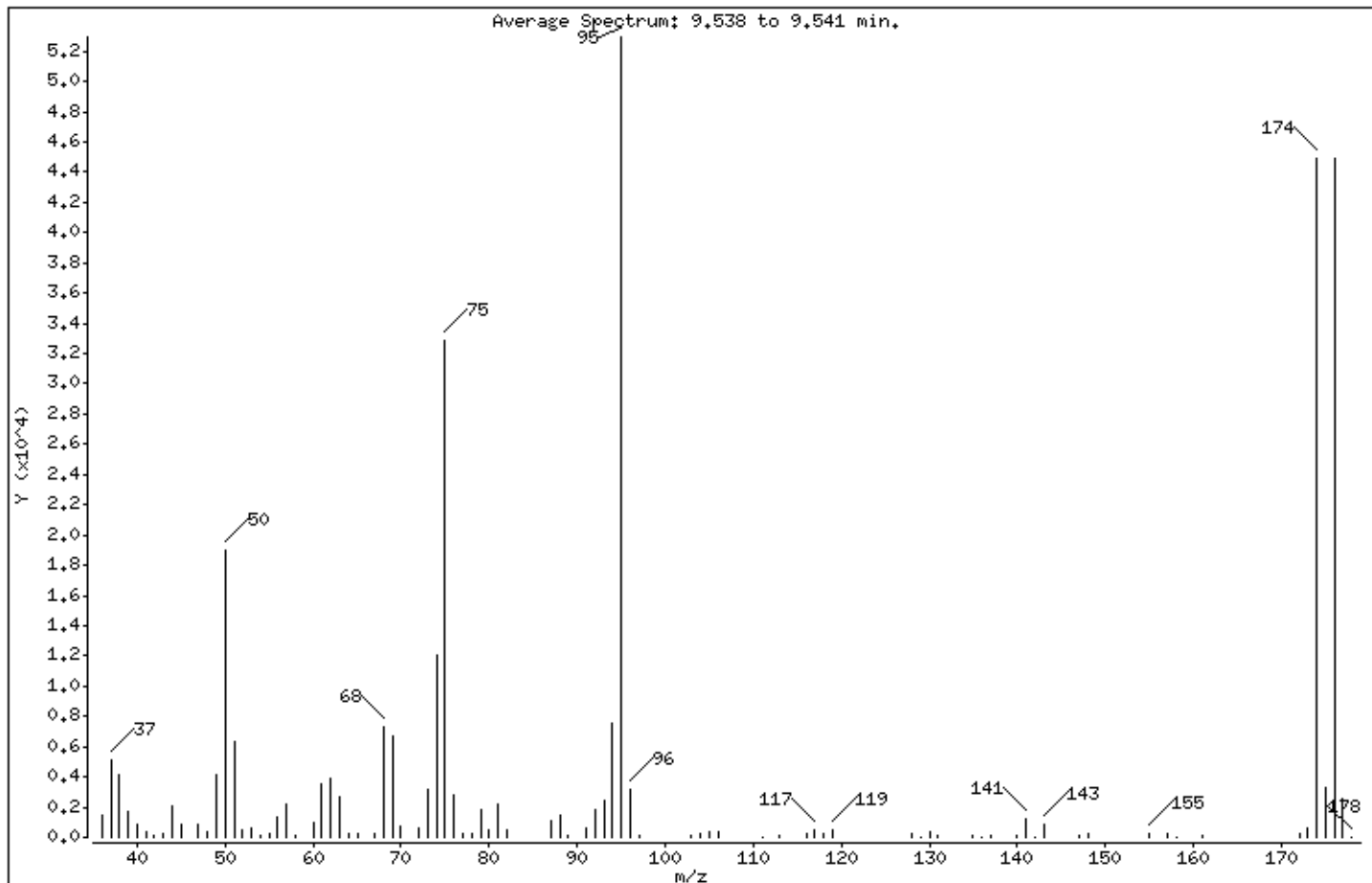
Sample Info: 5ML,BFB10A,BFB10A

Operator: WL SRC: WL

Column phase: DB-624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	35.78
75	30.00 - 80.00% of mass 95	62.14
96	5.00 - 9.00% of mass 95	5.95
173	Less than 2.00% of mass 174	1.18 (1.39)
174	50.00 - 120.00% of mass 95	84.87
175	5.00 - 9.00% of mass 174	6.21 (7.31)
176	95.00 - 101.00% of mass 174	84.87 (100.00)
177	5.00 - 9.00% of mass 176	4.88 (5.75)

Date : 29-MAY-2014 09:29

Client ID: BFB10A

Instrument: V10.i

Sample Info: 5HL,BFB10A,BFB10A

Operator: WL SRC: WL

Column phase: DB-624

Column diameter: 0.25

Data File: V8D5022.d

Spectrum: Average Spectrum: 9.538 to 9.541 min.

Location of Maximum: 95.00

Number of points: 87

m/z	Y	m/z	Y	m/z	Y	m/z	Y

36.00	1407	60.00	942	88.00	1431	131.00	65
37.00	5163	61.00	3544	89.00	117	135.00	99
38.00	4194	62.00	3906	91.00	605	136.00	58
39.00	1672	63.00	2622	92.00	1810	137.00	65
40.00	821	64.00	293	93.00	2411	140.00	70

41.00	348	65.00	283	94.00	7580	141.00	1185
42.00	71	67.00	268	95.00	52936	142.00	58
43.00	268	68.00	7332	96.00	3150	143.00	844
44.00	2031	69.00	6652	97.00	182	147.00	94
45.00	842	70.00	737	103.00	72	148.00	188

47.00	898	72.00	563	104.00	238	155.00	240
48.00	410	73.00	3155	105.00	336	157.00	230
49.00	4139	74.00	12014	106.00	413	158.00	53
50.00	18936	75.00	32888	111.00	52	161.00	80
51.00	6271	76.00	2823	113.00	108	172.00	196

52.00	430	77.00	295	116.00	221	173.00	625
53.00	557	78.00	287	117.00	480	174.00	44928
54.00	153	79.00	1832	118.00	238	175.00	3286
55.00	295	80.00	513	119.00	532	176.00	44928
56.00	1319	81.00	2174	128.00	268	177.00	2585

57.00	2216	82.00	434	129.00	59	178.00	54
58.00	108	87.00	1151	130.00	355		

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-77312

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0888 Mod. Ref No.: _____ SDG No.: SN0888
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-77312
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5035.D
Level: (TRACE/LOW/MED) LOW Date Received: _____
% Moisture: not dec. Date Analyzed: 05/29/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl chloride	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
78-93-3	2-Butanone	5.0	U
67-66-3	Chloroform	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
127-18-4	Tetrachloroethene	5.0	U
108-90-7	Chlorobenzene	5.0	U

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil
 Data file : \\Avogadro\Organics\V10.I\140529.B\V8D5035.d
 Lab Smp Id: MB-77312 Client Smp ID: MB-77312
 Inj Date : 29-MAY-2014 15:39
 Operator : WL SRC: LIMS Inst ID: V10.i
 Smp Info : 5ML,MB-77312,MB-77312,77312
 Misc Info :
 Comment :
 Method : \\Avogadro\Organics\V10.I\140529.B\v108260Gadd-6lvl.m
 Meth Date : 02-Jun-2014 10:18 amarquis Quant Type: ISTD
 Cal Date : 29-MAY-2014 12:40 Cal File: V8D5029.d
 Als bottle: 16 QC Sample: BLANK
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: all.sub
 Target Version: 4.14

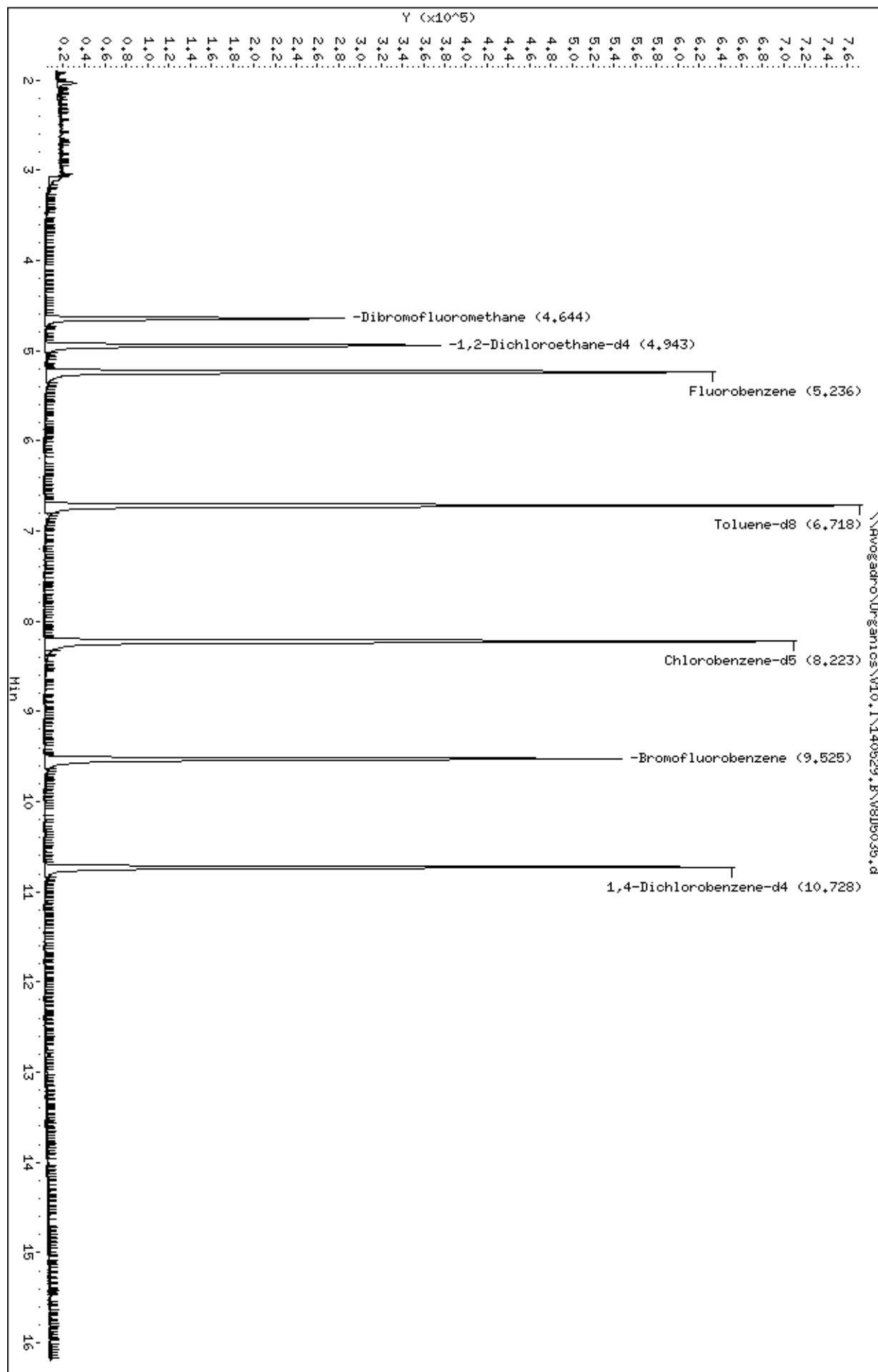
Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 36 Dibromofluoromethane	113	4.644	4.644	(0.887)	146967	50.7960	51
\$ 42 1,2-Dichloroethane-d4	102	4.940	4.943	(0.944)	24895	48.7861	49
* 46 Fluorobenzene	96	5.236	5.236	(1.000)	414122	50.0000	
\$ 58 Toluene-d8	98	6.718	6.715	(0.817)	444043	51.1470	51
* 68 Chlorobenzene-d5	117	8.223	8.223	(1.000)	339674	50.0000	
\$ 79 Bromofluorobenzene	95	9.525	9.525	(1.158)	184473	45.9847	46
* 92 1,4-Dichlorobenzene-d4	152	10.727	10.724	(1.000)	146302	50.0000	

Data File: \\Avogadro\Organics\W10.I\140529.B\W8D5035.d
Date : 29-May-2014 15:39
Client ID: MB-77312
Sample Info: 5ML,MB-77312,MB-77312,77312
Purge Volume: 5.0
Column phase: DB-624

Instrument: W10.i
Operator: ML SRC: LIMS
Column diameter: 0.25



1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
LCS-77312

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____
Lab Code: MITKEM Case No.: N0888 Mod. Ref No.: _____ SDG No.: SN0888
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-77312
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D5031.D
Level: (TRACE/LOW/MED) LOW Date Received: _____
% Moisture: not dec. Date Analyzed: 05/29/2014
GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl chloride	47	
75-35-4	1,1-Dichloroethene	44	
78-93-3	2-Butanone	55	
67-66-3	Chloroform	46	
56-23-5	Carbon tetrachloride	47	
107-06-2	1,2-Dichloroethane	44	
71-43-2	Benzene	47	
79-01-6	Trichloroethene	48	
127-18-4	Tetrachloroethene	49	
108-90-7	Chlorobenzene	48	

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil
Data file : \\Avogadro\Organics\V10.I\140529.B\V8D5031.d
Lab Smp Id: LCS-77312 Client Smp ID: LCS-77312
Inj Date : 29-MAY-2014 13:49
Operator : WL SRC: LIMS Inst ID: V10.i
Smp Info : 5ML, LCS-77312, LCS-77312, 77312
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\140529.B\v108260Gadd-6lvl.m
Meth Date : 02-Jun-2014 10:18 amarquis Quant Type: ISTD
Cal Date : 29-MAY-2014 12:40 Cal File: V8D5029.d
Als bottle: 12 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS					AMOUNTS	
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.586	1.586 (0.303)		201315	50.0000	44
2 Freon114	85	1.705	1.705 (0.326)		138947	50.0000	46
3 Chloromethane	50	1.753	1.753 (0.335)		326441	50.0000	44
4 Vinyl Chloride	62	1.856	1.856 (0.355)		215395	50.0000	47
5 Bromomethane	94	2.142	2.142 (0.409)		85726	50.0000	46
6 Chloroethane	64	2.229	2.229 (0.426)		110129	50.0000	49
7 Trichlorofluoromethane	101	2.441	2.441 (0.466)		293245	50.0000	44
126 Ethanol	46	2.567	2.567 (0.490)		122846	5000.00	5200(A)
8 Ether	59	2.667	2.667 (0.509)		164871	50.0000	45
9 Acrolein	56	2.769	2.769 (0.529)		253769	250.000	240
10 1,1-Dichloroethene	96	2.856	2.856 (0.546)		122603	50.0000	44
11 1,1,2-Trichloro-1,2,2-Trifluo	101	2.850	2.850 (0.544)		153597	50.0000	44
12 Acetone	58	2.885	2.885 (0.551)		26418	50.0000	57
13 Iodomethane	142	2.982	2.982 (0.570)		85264	50.0000	54
14 Carbon Disulfide	76	3.046	3.046 (0.582)		417190	50.0000	45
15 Acetonitrile	41	3.136	3.136 (0.599)		510374	500.000	500(A)
16 Allyl Chloride	39	3.136	3.136 (0.599)		349056	50.0000	48
17 Methyl Acetate	43	3.146	3.146 (0.601)		269401	50.0000	48
18 Methylene Chloride	84	3.229	3.229 (0.617)		124831	50.0000	44
19 tert-Butanol	59	3.297	3.297 (0.630)		55524	100.000	100
20 Acrylonitrile	53	3.422	3.422 (0.654)		113293	50.0000	48
21 trans-1,2-Dichloroethene	96	3.454	3.454 (0.660)		122766	50.0000	48
22 Methyl tert-butyl ether	73	3.448	3.448 (0.659)		469322	50.0000	47

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
23 1,1-Dichloroethane	63	3.785	3.785	(0.723)	336171		50.0000	47
24 Vinyl acetate	43	3.818	3.818	(0.729)	928041		50.0000	48
25 Diisopropyl Ether	45	3.824	3.824	(0.730)	911616		50.0000	46
26 2-Chloro-1,3-Butadiene	53	3.863	3.863	(0.738)	426466		50.0000	47
27 Ethyl tert-butyl ether	59	4.117	4.117	(0.786)	637565		50.0000	46
29 2,2-Dichloropropane	77	4.258	4.258	(0.813)	286933		50.0000	51
28 cis-1,2-Dichloroethene	96	4.255	4.255	(0.813)	131673		50.0000	47
30 2-Butanone	72	4.255	4.261	(0.813)	17945		50.0000	55
32 Propionitrile	54	4.303	4.303	(0.822)	396973		500.000	530(A)
33 Methacrylonitrile	41	4.435	4.435	(0.847)	361959		100.000	100
34 Bromochloromethane	128	4.457	4.457	(0.851)	59582		50.0000	46
31 Tetrahydrofuran	72	4.499	4.499	(0.859)	36559		100.000	110
35 Chloroform	83	4.509	4.509	(0.861)	308519		50.0000	46
\$ 36 Dibromofluoromethane	113	4.644	4.644	(0.887)	142216		50.0000	48
37 1,1,1-Trichloroethane	97	4.683	4.683	(0.894)	309196		50.0000	46
38 Cyclohexane	56	4.740	4.740	(0.905)	366913		50.0000	48
39 1,1-Dichloropropene	110	4.821	4.821	(0.921)	61595		50.0000	48
40 Carbon Tetrachloride	117	4.830	4.827	(0.923)	276246		50.0000	47
41 Isobutyl Alcohol	43	4.872	4.872	(0.931)	244940		1000.00	1200(A)
\$ 42 1,2-Dichloroethane-d4	102	4.946	4.943	(0.945)	25635		50.0000	49
43 Benzene	78	5.004	5.004	(0.956)	468319		50.0000	47
44 1,2-Dichloroethane	62	5.007	5.007	(0.956)	365370		50.0000	44
45 tert-Amyl methyl ether	73	5.081	5.081	(0.971)	386310		50.0000	47
M 50 1,2-Dichloroethene (Total)	96				254439		100.000	95
* 46 Fluorobenzene	96	5.236	5.236	(1.000)	423329		50.0000	
47 Trichloroethene	130	5.564	5.564	(1.063)	126386		50.0000	48
48 Methylcyclohexane	83	5.753	5.753	(1.099)	201347		50.0000	48
49 1,2-Dichloropropane	63	5.769	5.769	(1.102)	160668		50.0000	46
51 Methyl Methacrylate	69	5.850	5.850	(1.117)	112809		50.0000	52
52 Dibromomethane	93	5.879	5.879	(1.123)	97756		50.0000	45
53 1,4-Dioxane	88	5.882	5.882	(1.123)	34275		1000.00	1100(A)
54 Bromodichloromethane	83	6.014	6.014	(1.149)	227804		50.0000	45
55 2-Chloroethyl vinyl ether	63	6.441	6.441	(1.230)	1443		50.0000	38(T)
56 cis-1,3-Dichloropropene	75	6.444	6.444	(1.231)	205234		50.0000	48
57 4-Methyl-2-pentanone	43	6.583	6.583	(1.257)	276406		50.0000	51
\$ 58 Toluene-d8	98	6.718	6.715	(0.817)	453902		50.0000	51
59 Toluene	91	6.785	6.785	(1.296)	495964		50.0000	46
60 trans-1,3-Dichloropropene	75	6.988	6.988	(1.335)	207271		50.0000	50
61 Ethyl Methacrylate	69	7.071	7.071	(1.351)	127660		50.0000	52
62 1,1,2-Trichloroethane	97	7.178	7.178	(1.371)	113846		50.0000	46
63 Tetrachloroethene	164	7.345	7.345	(0.893)	123616		50.0000	49
64 1,3-Dichloropropane	76	7.354	7.354	(0.894)	204096		50.0000	48
65 2-Hexanone	43	7.435	7.435	(0.904)	189438		50.0000	55
66 Dibromochloromethane	129	7.596	7.596	(0.924)	152596		50.0000	47
67 1,2-Dibromoethane	107	7.727	7.727	(0.940)	124988		50.0000	49
69 1-Chlorohexane	91	8.216	8.216	(0.999)	163125		50.0000	47
* 68 Chlorobenzene-d5	117	8.223	8.223	(1.000)	348723		50.0000	
70 Chlorobenzene	112	8.255	8.252	(1.004)	324102		50.0000	48
71 1,1,1,2-Tetrachloroethane	131	8.335	8.335	(1.014)	138952		50.0000	46
72 Ethylbenzene	106	8.370	8.370	(1.018)	167339		50.0000	50
73 m,p-Xylene	106	8.499	8.499	(1.034)	413006		100.000	100
74 o-Xylene	106	8.943	8.943	(1.088)	196903		50.0000	49
75 Styrene	104	8.959	8.959	(1.090)	306317		50.0000	49
76 Bromoform	173	9.168	9.168	(1.115)	97556		50.0000	49

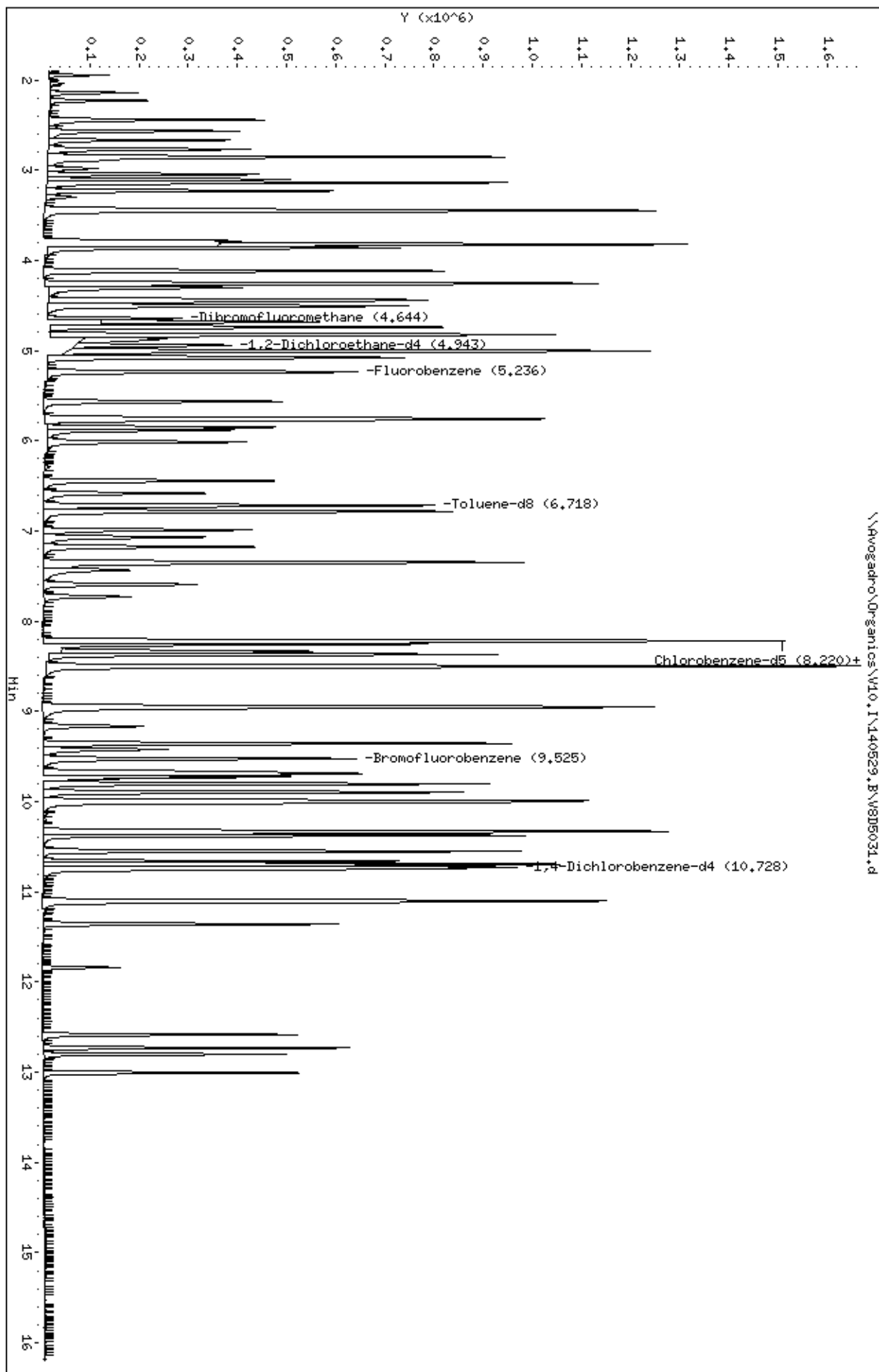
Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
77 Isopropylbenzene	105	9.358	9.358	(1.138)	570085		50.0000	51
78 trans-1,4-Dichloro-2-butene	75	9.419	9.419	(1.145)	37061		50.0000	53
\$ 79 Bromofluorobenzene	95	9.528	9.525	(1.159)	204712		50.0000	50
80 1,1,2,2-Tetrachloroethane	83	9.669	9.669	(0.901)	161321		50.0000	46
81 Bromobenzene	156	9.689	9.689	(0.903)	139219		50.0000	46
82 1,2,3-Trichloropropane	75	9.721	9.721	(0.906)	203743		50.0000	49
83 n-Propylbenzene	120	9.801	9.801	(0.914)	134980		50.0000	50
84 2-Chlorotoluene	126	9.895	9.895	(0.922)	125633		50.0000	49
85 1,3,5-Trimethylbenzene	105	9.988	9.988	(0.931)	491532		50.0000	49
86 4-Chlorotoluene	126	10.010	10.010	(0.933)	125206		50.0000	48
M 94 Xylene (Total)	106				609909		150.000	150
87 tert-Butylbenzene	119	10.325	10.325	(0.963)	477564		50.0000	45
88 1,2,4-Trimethylbenzene	105	10.377	10.377	(0.967)	486702		50.0000	49
89 sec-Butylbenzene	105	10.550	10.550	(0.984)	566163		50.0000	48
90 1,3-Dichlorobenzene	146	10.663	10.663	(0.994)	235339		50.0000	46
91 4-Isopropyltoluene	119	10.695	10.695	(0.997)	477000		50.0000	50
* 92 1,4-Dichlorobenzene-d4	152	10.727	10.724	(1.000)	184467		50.0000	
93 1,4-Dichlorobenzene	146	10.747	10.747	(1.002)	240461		50.0000	44
95 n-Butylbenzene	91	11.097	11.097	(1.034)	445425		50.0000	51
96 1,2-Dichlorobenzene	146	11.113	11.113	(1.036)	229541		50.0000	46
97 Hexachloroethane	117	11.357	11.357	(1.059)	92039		50.0000	48
98 1,2-Dibromo-3-chloropropane	75	11.840	11.840	(1.104)	35295		50.0000	53
141 1,3,5-Trichlorobenzene	182	12.583	12.583	(2.403)	121917		50.0000	(a)
99 1,2,4-Trichlorobenzene	180	12.586	12.586	(1.173)	126898		50.0000	49
100 Hexachlorobutadiene	225	12.730	12.730	(1.187)	98059		50.0000	44
101 Naphthalene	128	12.801	12.801	(1.193)	292217		50.0000	55
102 1,2,3-Trichlorobenzene	180	13.010	13.010	(1.213)	129490		50.0000	50

QC Flag Legend

- T - Target compound detected outside RT window.
- a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
- A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\Avogadro\Organics\W10.I\140529.B\W8D5031.d
Date : 29-May-2014 13:49
Client ID: LCS-77312
Sample Info: 5ML,LCS-77312,LCS-77312,77312
Purge Volume: 5.0
Column phase: DB-624

Instrument: W10.i
Operator: ML SRC: LIMS
Column diameter: 0.25



Spectrum Analytical, Inc. RI Division V10 Injection Log

INJECTION LOG

VOLATILES LABORATORY

BATCH: 140529.B

Start: 29-MAY-14 09:29

End: 29-MAY-14 22:27

ANALYST: MAMETHOD: STANDARD MSICAL DATE: 5-29-14

Comments:

Standards: BFB VM140228A 2.5 UL
SMS VM140548B ALPO UL
STD VM140544A 2.0 UL
UL

Reviewed By: MA Manual Integration: MA MI Review: MA ICV: _____

FILE	TIME	LAB ID	CLIENT ID	PREP	MT	BN	INTERNAL STDS				SURROGATES				DILN	FLG	COMMENTS	pH
				BATCH			FBZ	CBZ	DCB	DFM	DCE	TOL	BFB					
V8D5022	09:29	BFB10A	BFB10A		AQ													
V8D5023	09:56	VSTD02010A	VSTD02010A		AQ		103	106	103						1		OK	
V8D5024	10:24	VSTD00510A	VSTD00510A		AQ		101	101	88						1		OK	
V8D5025	10:51	VSTD00110A	VSTD00110A		AQ		99	99	84						1		OK UNK	
V8D5026	11:19	VSTD00110A	VSTD00110A		AQ		98	99	85						1		OK	
V8D5027	11:46	VSTD20010A	VSTD20010A		AQ		104	114	119						1		OK	
V8D5028	12:14	VSTD10010A	VSTD10010A		AQ		107	113	117						1		OK	
V8D5029	12:40	VSTD05010A	VSTD05010A		AQ		100	100	100						1		OK	
V8D5030	13:21	VICV05010A	VICV05010A		AQ		107	106	107	97	96	100	102		1	E	OK	
V8D5031	13:49	LCS-77312	LCS-77312	77312	AQ		101	101	101	96	98	102	99		1	E	OK	
V8D5032	14:16	LCS-77313	LCS-77313	77313	SL		107	109	107	99	101	100	101		1	E	OK UNK	
V8D5033	14:44	MB-77313	MB-77313	77313	SL		103	104	86	100	103	102	93		1		OK UNK	
V8D5034	15:12	MB-77313	MB-77313	77313	SL		101	100	83	102	101	102	93		1		OK	
V8D5035	15:39	MB-77312	MB-77312	77312	AQ		99	99	80	102	98	102	92		1		OK	
V8D5036	16:07	N0888-01B	WW-80987-052214	77312	AQ	I	96	100	88	103	102	100	97		50		OK-FAKING	
V8D5037	16:34	N0888-01B	WX-80987-052214	77312	AQ	I	26*	15*	5*	70*	33*	153*	60*		20		OK UNK	
V8D5038	17:02	VBLK	VBLK		AQ		97	99	83	102	101	100	92		1		OK UNK	
V8D5039	17:29	N0644-09A	D086-924	77313	SL	I	91	97	101	99	103	97	106		1	E	800ML 240ML 2ND 2X	
V8D5040	17:57	VBLK	VBLK		AQ		97	99	83	103	102	100	93		1		OK UNK	
V8D5041	18:24	MB-77614	VBLK10A	77312	AQ	I	96	97	80	100	103	101	92		1		OK	
V8D5042	18:51	N0889-01B	WGGM-14-BSOB-CH	77312	AQ	I	96	97	79	98	101	100	94		1		OK	
V8D5043	19:19	N0882-22A	FB-5/21/14	77312	AQ	I	95	96	78	103	99	102	94		1		OK	
V8D5044	19:46	N0882-23A	TB-5/21/2014	77312	AQ	I	95	96	77	101	102	99	93		1		OK	
V8D5045	20:13	N0895-13B	TW-57 (14.8-15)	77313	SL	I	80	82	63	99	94	101	92		1		OK	
V8D5046	20:40	N0895-12B	TW-57 (10.8-11)	77313	SL	I	88	92	74	101	103	98	95		1		OK	
V8D5047	21:07	N0889-01BMS	WGGM-14-BSOB-CH	77312	AQ	I	98	104	107	102	100	97	105		1		OK	
V8D5048	21:33	VBLK	VBLK		AQ		96	98	83	103	101	101	94		1	T	OK UNK	
V8D5049	22:00	VBLK	VBLK		AQ		96	97	77	102	105	100	94		1	T	OK UNK	
V8D5050	22:27	VBLK	VBLK		AQ		90	88	68	99	95	104	90		1	T	OK	

- Internal Standard or Surrogate outside of control limits

- One or more target compounds are above the calibration range

- Sample was injected outside of the 12 hour sequence

R - One or more spike compounds are outside of control limits

D - Surrogates are diluted

Spectrum Analytical, Inc. RI Division : VOLATILE SAMPLES RECEIVING LOGBOOK

VOA Log-In Date	Workorder	Client ID	Sample Numbers	Relinquished by:	Received by:	Pres. Used	F/R	Returned to R23
5/22/14	N0872	Sevenson	03-07	VERB	WL	Σ	F10	
	N0876	VERC	01-08	↓		F	R10	
	N0876	R1VRC	01-08	↓		M	R10	
5/22/14	N0870	R1VRC	21-22	VERB		H	R10	
	N0879	R1VRC	01	WJL		H	R10	
	S010623	R1VRC	01	WJL		H	R10	
	N0881	R1VRC	01	WJL		H	R10	
5/22/14	N0882	ARCADIS	01-18	WJL		US	R10	
5/23/14	N0889	Sevenson	01	VERB		US	R9	
	N0888	CLA	01	↓		US	R9	
	N0893	EnSafe	01-08	↓		T	R4	
	N0894	EnSafe	01-06	↓		H	R10	
	N0880	ARCADIS	19, 20, 21	↓		US	R10	
5/23/14	N0882	ARCADIS	22, 23	VERB	WL	H	R10	

Logbook ID 90.0191-10/13

Reviewed By: WL 5/22/14

"Preservative Used" Key

UA = Unpreserved Aqueous

M = MeOH E = Encore

H = HCL A = Air

US = Unpreserved Soil

F = Freeze

T = Trace, HCL



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

*** Wet Chemistry ***

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Conestoga-Rovers & Associates

Project: Friedrichsohn Cooperage Site

Laboratory Workorder / SDG #: N0888

SM 4500 H+ B, SW846 7.3.3.2, SW846 7.3.4.2

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SM 4500 H+ B, SW846 7.3.3.2, SW846 7.3.4.2

IV. PREPARATION

Samples were prepared following procedures in laboratory test code: SM 4500 H+ B, SW846 7.3.3.2, SW846 7.3.4.2

V. INSTRUMENTATION

The following instrumentation was used:

Instrument Code: LACHAT1

Instrument Type: WC

Description: Flow Injection Analyzer
Manufacturer: Zellweger Analytics
Model: Quik-Chem 8000

Instrument Code: SPEC2
Instrument Type: SP
Description: Spectronic 20 Genesys
Manufacturer: Spectronic Instruments
Model: 4004-000

Instrument Code: WC03
Instrument Type: Probe
Description: pH Meter
Manufacturer: Oakton Instruments
Model: Bench 2700 Series

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

No client-requested MS/MSD analyses were included in this SDG.

D. Duplicate sample:

Duplicate analyses were performed on samples: WW-80987-052214-BP-110 (N0888-01ADUP) and WW-80987-052214-BP-110 (N0888-01CDUP1).

Relative percent differences were within the QC limits.

E. Dilutions:

No sample required dilution in this SDG.

F. Samples:

No unusual occurrences were noted during sample analysis.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:  _____

Date: 06/05/2014



SPECTRUM ANALYTICAL, INC.

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HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

- U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).
- J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
 - estimated concentration for Tentatively Identified Compound
- B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a “trace” concentration below the reporting limit and equal to or above the detection limit.
- D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis
- E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.
- P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.
- A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.



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HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 2 of 2):

- N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.
- * For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.
- L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



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HANIBAL TECHNOLOGY

Sample ID Suffixes

- DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution
- RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.
- RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.
- RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.
- MS Matrix Spike.
- MSD Matrix Spike Duplicate
- DUP Duplicate analysis
- SD Serial Dilution
- PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

06/05/2014

Client: Conestoga-Rovers & Associates

Client Sample ID: WW-80987-052214-BP-110

Lab ID: N0888-01

Project: Friedrichsohn Cooperage Site

Collection Date: 05/22/14 14:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 4500 H+ B -- pH VALUE							SM4500_H+
pH	10		1.0	S.U.		1 06/04/2014 14:04	R81911
SW846 7.3.3.2 -- Reactive Cyanide Released from Wastes							SW7.3.3.2_W
Reactive Cyanide	ND		0.020	mg/L		1 05/29/2014 14:22	77283
SW846 7.3.4.2 -- Reactive Sulfide Released from Wastes							SW7.3.4.2_W
Reactive Sulfide	ND		0.030	mg/L		1 05/28/2014 15:51	77284

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

CLIENT: Conestoga-Rovers & Associates
Work Order: N0888
Project: Friedrichsohn Cooperage Site

ANALYTICAL QC SUMMARY REPORT
SW7.3.3.2_W
SW846 7.3.3.2 -- Reactive Cyanide Released from Wastes

Sample ID: MB-77283	SampType: MBLK	TestCode: SW7.3.3.2_W	Prep Date: 05/28/14 14:45	Run ID: LACHAT1_140529B
Client ID: MB-77283	Batch ID: 77283	Units: mg/L	Analysis Date: 05/29/14 14:15	SeqNo: 2092627
Analyte	Result	MDL	SPK value	SPK Ref Val
Reactive Cyanide	ND	0.020	0.1000	RPD Ref Val
				%RPD RPDLimit

Sample ID: LCS-77283	SampType: LCS	TestCode: SW7.3.3.2_W	Prep Date: 05/28/14 14:45	Run ID: LACHAT1_140529B
Client ID: LCS-77283	Batch ID: 77283	Units: mg/L	Analysis Date: 05/29/14 14:17	SeqNo: 2092628
Analyte	Result	MDL	SPK value	SPK Ref Val
Reactive Cyanide	ND	0.020	0.1000	RPD Ref Val
				%RPD RPDLimit

Sample ID: LCSD-77283	SampType: LCSD	TestCode: SW7.3.3.2_W	Prep Date: 05/28/14 14:45	Run ID: LACHAT1_140529B
Client ID: LCSD-77283	Batch ID: 77283	Units: mg/L	Analysis Date: 05/29/14 14:20	SeqNo: 2092629
Analyte	Result	MDL	SPK value	SPK Ref Val
Reactive Cyanide	ND	0.020	0.1000	RPD Ref Val
				%RPD RPDLimit

CLIENT: Conestoga-Rovers & Associates ANALYTICAL QC SUMMARY REPORT

Work Order: N0888

SW7.3.4.2_W

Project: Friedrichsohn Cooperage Site

SW846 7.3.4.2 -- Reactive Sulfide Released from Wastes

Sample ID: MB-77284	SampType: MBLK	TestCode: SW7.3.4.2_W	Prep Date: 05/28/14 14:47	Run ID: SPEC2_140528C
Client ID: MB-77284	Batch ID: 77284	Units: mg/L	Analysis Date: 05/28/14 15:39	SeqNo: 2092453
Analyte	Result	MDL	SPK value	SPK Ref Val
Reactive Sulfide	ND	0.030	0.030	RPD Ref Val
				%RPD RPDLimit
				Qual

Sample ID: LCS-77284	SampType: LCS	TestCode: SW7.3.4.2_W	Prep Date: 05/28/14 14:47	Run ID: SPEC2_140528C
Client ID: LCS-77284	Batch ID: 77284	Units: mg/L	Analysis Date: 05/28/14 15:43	SeqNo: 2092454
Analyte	Result	MDL	SPK value	SPK Ref Val
Reactive Sulfide	0.3090	0.030	0.5000	RPD Ref Val
			0	%RPD RPDLimit
			61.8	Qual
			22.6	
			114	

Sample ID: LCSD-77284	SampType: LCSD	TestCode: SW7.3.4.2_W	Prep Date: 05/28/14 14:47	Run ID: SPEC2_140528C
Client ID: LCSD-77284	Batch ID: 77284	Units: mg/L	Analysis Date: 05/28/14 15:47	SeqNo: 2092455
Analyte	Result	MDL	SPK value	SPK Ref Val
Reactive Sulfide	0.3150	0.030	0.5000	RPD Ref Val
			0	%RPD RPDLimit
			63.0	Qual
			22.6	
			114	
			1.92	
			20	

pH Determination Logbook

Analyst: JKD

Temp: 21°C

pH Meter ID: 66-03

Date: 06/04/14

SM4500-H B / SW-846 9040C, 9045C (circle one)

[illegible]

pH LCS₅ (Buffer 7.00) Acceptance Criteria: 7.00 $\pm$ 0.05 S.U.

Calibration Check Criteria:

Frequency: at least every 10 samples

pH Buffer: 4.00±0.05 S.U.

10.00+0.05 S.U.

7.00+0.05 S.U.

Logbook ID: 100.0135 - 12/13

Level 1 Review by JKD

Data Entry to LIMS

Level 2 QA Review

Spectrum Analytical, Inc. RI Division REACTIVITY (RCN & RS) LOGBOOK

Methods: ~~SW 7.3.3.2 / SW 7.3.4.2~~

Balance ID: TL-9

Logbook ID: 100.0134-05/14

Reviewed By: SEA 5/09/14

27501-1405280

Method # SW. 7, 3, 4, 2

5/28/14	Jr-1

SPEC 2

$$m = 0.9966$$
$$b = 0.0016$$
$$r = 0.9996$$

31/14/14

Level 2 QA Review

5/29/14

Narrative Notes on Reverse Side

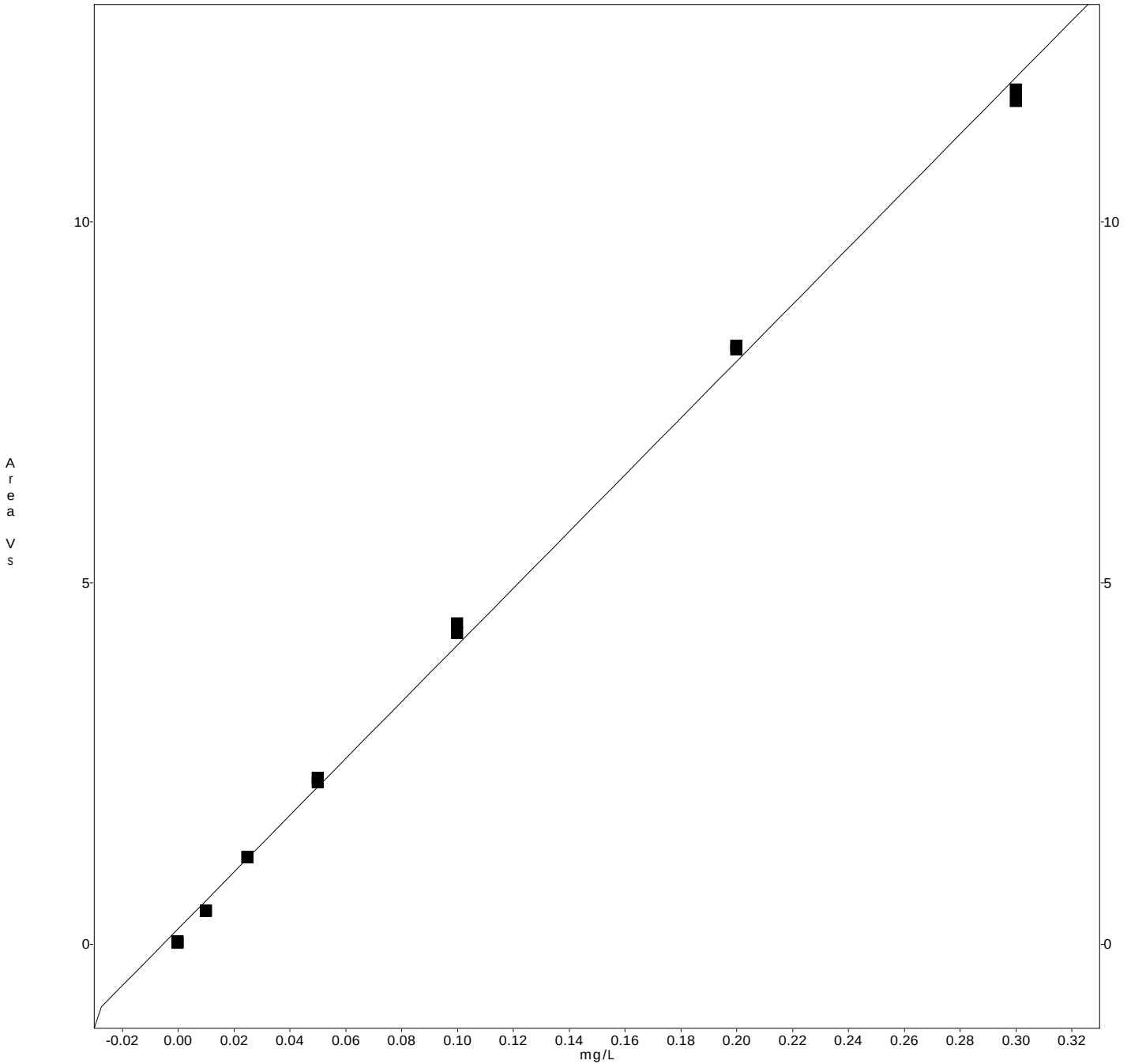
Yes / No

CN

Lvl	Area	mg/L	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Replic STD	Replic % RSD	Residual 1st Poly
1	38117	0.000	48708	27526				14977.8	39.3	
2	470223	0.010	466852	473593				4766.7	1.0	34.5
3	1210340	0.025	1214320	1206361				5627.9	0.5	-1.5
4	2281070	0.050	2309859	2252281				40714.3	1.8	-5.3
5	4380251	0.100	4445238	4315264				91905.5	2.1	-6.1
6	8264920	0.200	8240986	8288854				33847.8	0.4	-2.5
7	11757359	0.300	11836343	11678375				111700.2	1.0	2.0

1st Order Poly
Conc = 2.545e-008 Area - 5.424e-003
r = 0.9991

Scaling: None - Weighting: None



OPERATOR: jwhiteley
 ACQ. TIME: May 29, 2014 13:03:32
 DATA FILENAME: D:\WETCHE~1\LACHAT1\2014\TRAYS\C140529A.FDT
 METHOD FILENAME: D:\WETCHE~1\LACHAT1\2014\METHODS\C140529A.MET
 TRAY FILENAME: D:\WETCHE~1\LACHAT1\2014\TRAYS\C140529A.TRA

TRAY DESCRIPTION:
 Created: May 29, 2014 13:02:04
 Modified: May 29, 2014 13:02:04
 ANALYSIS: CN ANALYST: RJF
 DATA DESCRIPTION:
 Created: May 29, 2014 13:03:32
 Modified: May 29, 2014 13:03:32

Multi-Channel Table
 Type: Calibration Standards
 Channel Range: 1 to 8 -- Cup Range: 1 to 30

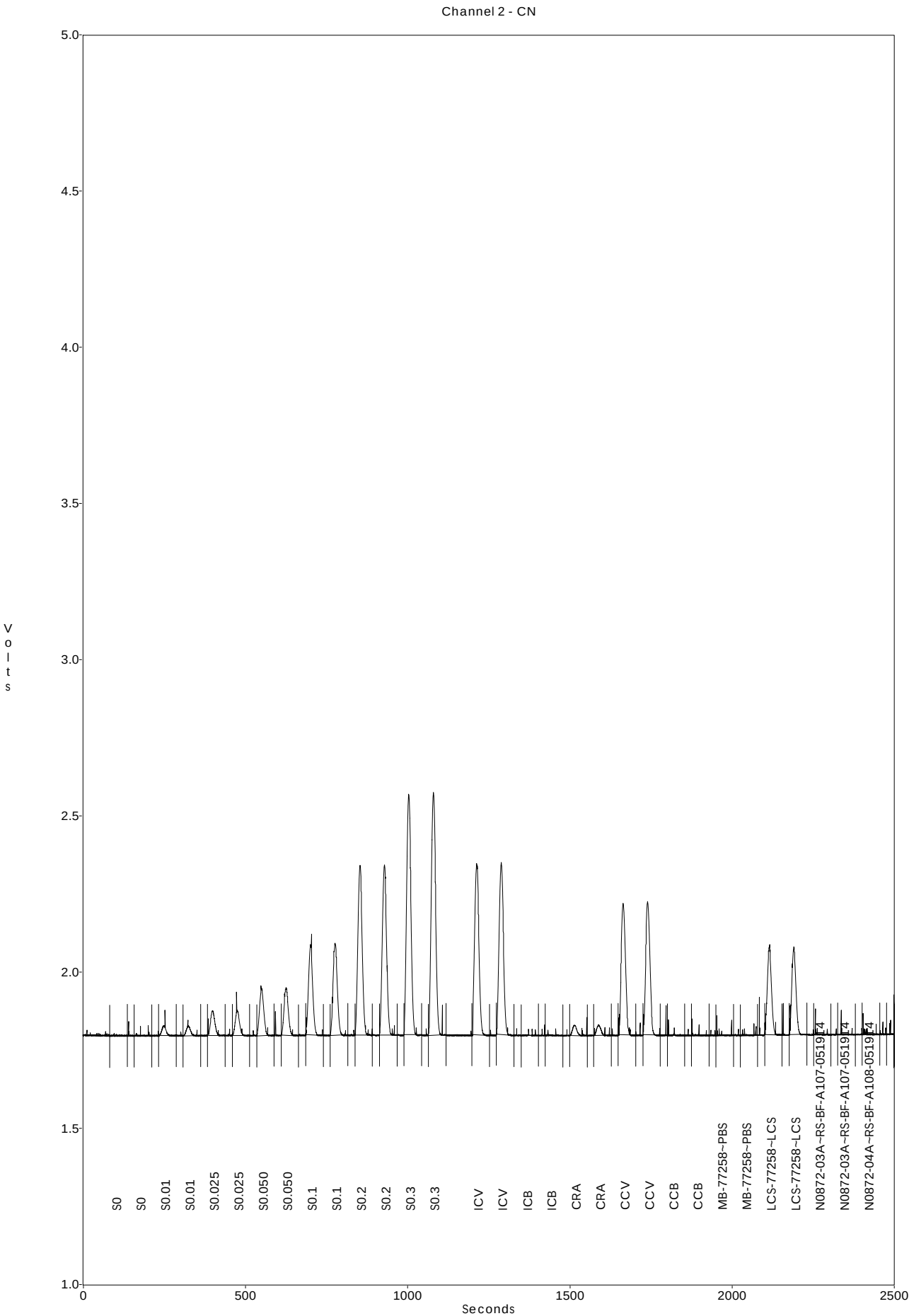
Cup	Sample ID	Sampling Date	Sampling Time	# of Reps	CN (uv-s)	Man Dil Factor	Weight	Unit
1	S0	29 May 2014	13:03:49	2	38116.83	1.0	1.00000	g
2	S0.01	29 May 2014	13:06:20	2	470222.70	1.0	1.00000	g
3	S0.025	29 May 2014	13:08:51	2	1210340.38	1.0	1.00000	g
4	S0.050	29 May 2014	13:11:22	2	2281069.88	1.0	1.00000	g
5	S0.1	29 May 2014	13:13:53	2	4380250.50	1.0	1.00000	g
6	S0.2	29 May 2014	13:16:25	2	8264919.50	1.0	1.00000	g
7	S0.3	29 May 2014	13:18:56	2	11757359.00	1.0	1.00000	g

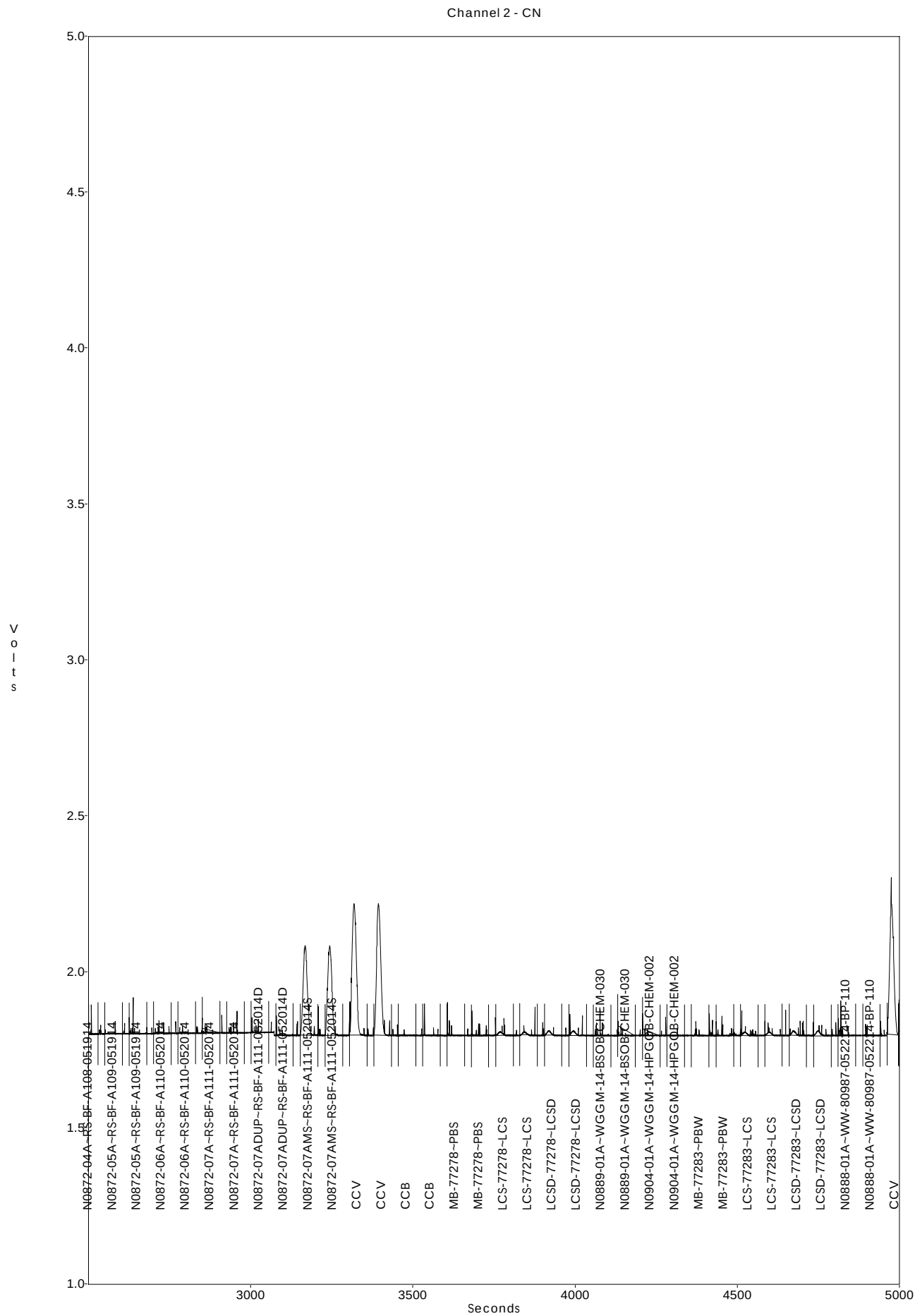
OPERATOR: jwhiteley
 ACQ. TIME: May 29, 2014 13:03:32
 DATA FILENAME: D:\WETCHE~1\LACHAT1\2014\TRAYS\C140529A.FDT
 METHOD FILENAME: D:\WETCHE~1\LACHAT1\2014\METHODS\C140529A.MET
 TRAY FILENAME: D:\WETCHE~1\LACHAT1\2014\TRAYS\C140529A.TRA

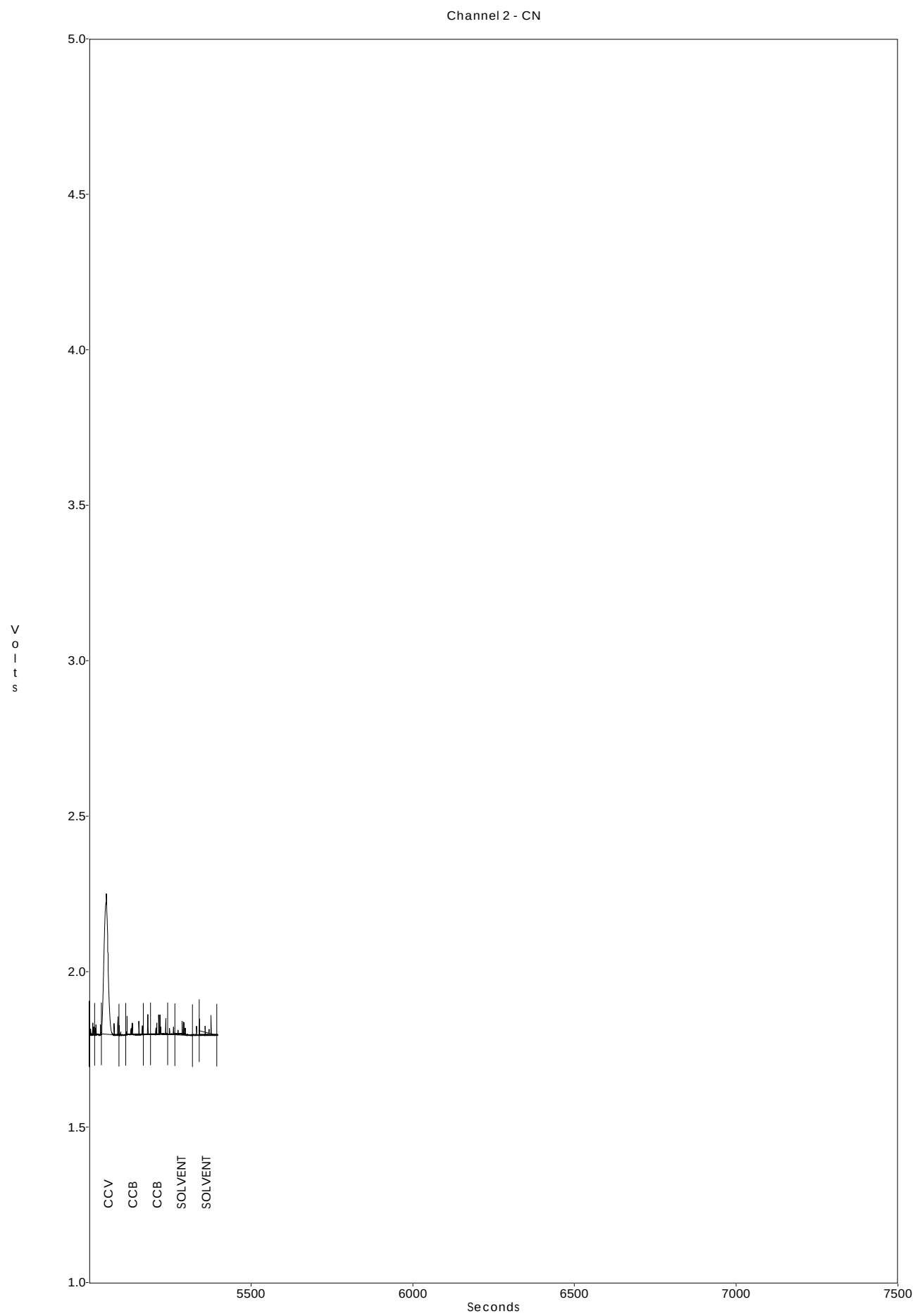
TRAY DESCRIPTION:
 Created: May 29, 2014 13:02:04
 Modified: May 29, 2014 13:02:04
 ANALYSIS: CN ANALYST: RJF
 DATA DESCRIPTION:
 Created: May 29, 2014 13:03:32
 Modified: May 29, 2014 13:03:32

Multi-Channel Table
 Type: Unknowns
 Channel Range: 1 to 8 -- Cup Range: 1 to 30

Cup	Sample ID	Sampling Date	Sampling Time	# of Reps	CN (mg/L)	Man Dil Factor	Weight	Unit
1	ICV	29 May 2014	13:22:25	2	0.20751	1.0	1.00000	g
2	ICB	29 May 2014	13:24:57	2	-0.00489	1.0	1.00000	g
3	CRA	29 May 2014	13:27:26	2	0.00783	1.0	1.00000	g
4	CCV	29 May 2014	13:29:56	2	0.15719	1.0	1.00000	g
5	CCB	29 May 2014	13:32:27	2	-0.00610	1.0	1.00000	g
6	MB-77258~PBS	29 May 2014	13:34:57	2	-0.00237	1.0	1.00000	g
7	LCS-77258~LCS	29 May 2014	13:37:27	2	0.10001	1.0	1.00000	g
8	N0872-03A~RS-BF-A107-051914	29 May 2014	13:39:58	2	-0.00425	1.0	1.00000	g
9	N0872-04A~RS-BF-A108-051914	29 May 2014	13:42:28	2	-0.00523	1.0	1.00000	g
10	N0872-05A~RS-BF-A109-051914	29 May 2014	13:44:58	2	-0.00374	1.0	1.00000	g
11	N0872-06A~RS-BF-A110-052014	29 May 2014	13:47:28	2	-0.00570	1.0	1.00000	g
12	N0872-07A~RS-BF-A111-052014	29 May 2014	13:49:58	2	-0.01036	1.0	1.00000	g
13	N0872-07ADUP~RS-BF-A111-052014	29 May 2014	13:52:29	2	-0.00528	1.0	1.00000	g
14	N0872-07AMS~RS-BF-A111-052014S	29 May 2014	13:55:01	2	0.10293	1.0	1.00000	g
15	CCV	29 May 2014	13:57:32	2	0.15425	1.0	1.00000	g
16	CCB	29 May 2014	14:00:03	2	-0.00626	1.0	1.00000	g
17	MB-77278~PBS	29 May 2014	14:02:32	2	-0.00407	1.0	1.00000	g
18	LCS-77278~LCS	29 May 2014	14:05:02	2	-0.00191	1.0	1.00000	g
19	LCSD-77278~LCSD	29 May 2014	14:07:33	2	-0.00033	1.0	1.00000	g
20	N0889-01A~WGGM-14-BSOB-CHEM-03	29 May 2014	14:10:03	2	-0.01382	1.0	1.00000	g
21	N0904-01A~WGGM-14-HPGOB-CHEM-0	29 May 2014	14:12:35	2	-0.01214	1.0	1.00000	g
22	MB-77283~PBW	29 May 2014	14:15:06	2	-0.00341	1.0	1.00000	g
23	LCS-77283~LCS	29 May 2014	14:17:37	2	-0.00051	1.0	1.00000	g
24	LCSD-77283~LCSD	29 May 2014	14:20:07	2	0.00179	1.0	1.00000	g
25	N0888-01A~WW-80987-052214-BP-1	29 May 2014	14:22:38	2	-0.00548	1.0	1.00000	g
26	CCV	29 May 2014	14:25:09	2	0.15237	1.0	1.00000	g
27	CCB	29 May 2014	14:27:40	2	-0.00563	1.0	1.00000	g
28	SOLVENT	29 May 2014	14:30:11	2	-0.00812	1.0	1.00000	g







Internal Chain of Custody

Client: CRA

Work Order: N0888

Profile Name: CRA_FRIEDRICHSOHN

MATRIX Soil

Samp #	Bottle	Test	Status	Received	Date
01A	001	PMoist	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	001	SM4500_H+	In	LOGIN: vbrizard	5/28/2014 2:44:00 PM
01A	001	SM4500_H+	Out	William J Lafferty	6/4/2014 1:45:25 PM
01A	001	SM4500_H+	In	William J Lafferty	6/4/2014 1:57:57 PM
01A	001	SW6010_W	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	001	SW7.3.3.2_S	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	001	SW7.3.3.2_W	In	LOGIN: vbrizard	5/28/2014 2:44:00 PM
01A	001	SW7.3.4.2_S	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	001	SW7.3.4.2_W	In	LOGIN: vbrizard	5/28/2014 2:44:00 PM
01A	001	SW7470	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	001	SW8270_W	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	001	SW9045_S	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	002	PMoist	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	002	SM4500_H+	In	LOGIN: vbrizard	5/28/2014 2:44:00 PM
01A	002	SW6010_W	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	002	SW7.3.3.2_S	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	002	SW7.3.3.2_W	In	LOGIN: vbrizard	5/28/2014 2:44:00 PM
01A	002	SW7.3.3.2_W	Out	James Kyle Dorsey	5/28/2014 2:44:48 PM
01A	002	SW7.3.3.2_W	In	James Kyle Dorsey	5/28/2014 3:24:39 PM
01A	002	SW7.3.4.2_S	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	002	SW7.3.4.2_W	In	LOGIN: vbrizard	5/28/2014 2:44:00 PM
01A	002	SW7.3.4.2_W	Out	James Kyle Dorsey	5/28/2014 2:44:48 PM
01A	002	SW7.3.4.2_W	In	James Kyle Dorsey	5/28/2014 3:24:39 PM
01A	002	SW7470	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	002	SW8270_W	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01A	002	SW9045_S	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01B	001	SW8260_W	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01C	001	SW1010_S	In	LOGIN: vbrizard	5/23/2014 12:23:00 PM
01C	001	SW1010_W	In	LOGIN: vbrizard	5/28/2014 2:44:00 PM

Last Page of Data Report



SPECTRUM ANALYTICAL, INC.
Featuring
Hanibal Technology

**Quality Assurance/Quality Control Data Deliverable
Level IV**

Prepared for

Spectrum Analytical, Inc. - North Kingstown, RI

Project/Number: Friedrichsohn Cooperage Site / N0888

Work Order: SB90076

SDG# 90076

Submitted on May 23rd, 2014



Table of Contents

Laboratory Name: Spectrum Analytical, Inc. featuring Hanibal Technology

City/State: Agawam, MA

Client Name: Spectrum Analytical, Inc. - North Kingstown, RI

Project Name/Number: Friedrichsohn Cooperage Site / N0888

SDG#: 90076

Associated Work Orders: SB90076

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NY Lab ID #11393/11840
NJ Lab ID#MA011/MA012



SPECTRUM ANALYTICAL, INC.
Featuring
Hanibal Technology

Spectrum Analytical, Inc. - North Kingstown, RI

Client Project: Friedrichsohn Cooperage Site

Project Number: N0888

Spectrum Analytical, Inc. Project ID: SB90076

06/04/2014

Prepared for: Spectrum Analytical, Inc. - North Kingstown, RI
646 Camp Ave.
North Kingstown, RI 02852
Attn: Agnes Huntley

Prepared By: Spectrum Analytical, Inc.
830 Silver Street
Agawam, MA 01001
(800)789-9115

SB90076 General Narrative

Spectrum Analytical, Inc. submits the enclosed data package for the site characterization of Friedrichsohn Cooperage Site. Samples submitted for analysis by Spectrum Analytical, Inc. - North Kingstown, RI. Under this deliverable, analysis results are presented for one Aqueous sample submitted on May 23rd, 2014.

The analyses were performed according to USEPA SW846 method analytical guidelines and other methods. In addition the analyses were performed according to criteria dictated by National Environmental Laboratory Accreditation Conference (NELAC) and in accordance with project contract requirements and chain of custody forms.

Observations and/or deviations observed for specific analyses can be found in the analysis narrative:

1. Overall Observations:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual Integrations are coded to provide the data reviewer justification for such action. The codes are labeled on corresponding raw data for GC/MS and GC analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Scanned copies of logbook pages are included, with the originals are archived within the laboratory.

The pages in this report have been numbered consecutively, starting with the general narrative and ending with the page labeled as "Last Page of data Report".

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this electronic data package, has been authorized by the laboratory director as verified by the following signature.



Nicole Leja
Laboratory Director

Date: 06/04/2014

Sample Identification and Analytical Requirements Summary

Project Name: Friedrichsohn Cooperage Site

SDG:

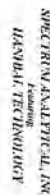
SB90076

Customer Sample ID	Laboratory Sample ID	Analytical Requirements				
		VOC Method #	SVOC Method #	GC Method #	Metals	Other
WW-80987-052214-BP-1	SB90076-01					SW846 1010A



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Sample Transmittal Documentation



CHAIN-OF-CUSTODY RECORD

SB90076 - Jan

WorkOrder : N0888

Project: Friedrichsohn Cooperage Site

Report Type : LEVEL 2

Due Date : 6/4/2014

FAX Due Date :

Report To : Agnes R Huntley

Purchase Order : N0888

EDD Types : Please generate a Little PEL EDD

Requested Test

Subcontractor:

Spectrum Analytical, Inc. - Agawam, MA

11 Almgren Drive

Agawam, Massachusetts 01001

Phone: (413) 789-9018

EQulSFacilityCode: N/A

= number of containers

Client Sample ID

Collection Date

Matrix

DUP/MS/MSD

Mikem Sample ID

WW-80987-052214-BP-110

05/22/2014 14:00

1

Soft Aqueduct

N0888-01C

X

05/28/14

1) SW1010_S_FLASHPOINT BY PENSKEY-MARTENS CLOSED-CUP METHOD

matrix change per client req 5/28/14

Use 'Client Sample IDs' when reporting data. If needed, truncate 'Client Sample IDs' to fit on reports. Use full 'Client Sample ID' when generating EDD.
Comments: Level 2 report not needed, just the Level 4.

Relinquished by:

Relinquished by:

Date/Time

05/23/14 12:13

Received by:

Received by:

Date/Time

5/23/14 12:20

05/23/2014 Page 1 of 1

646 Camp Ave * North Kingstown * RI * 028524008 * 401-732-3400 * 401-732-3499

www.spectrum-analytical.com

2014/10/10 R02 mu
5232014

CHAIN-OF-CUSTODY RECORD

WorkOrder : N0888

Project: Friedrichsohn Cooperage Site

Report Type : ASP-B

Due Date : 6/4/2014

FAX Due Date :

Report To : Agnes R Huntley

Purchase Order : N0888

EDD Types : **Please generate a Little PEL EDD**

Requested Test

Subcontractor:

Spectrum Analytical, Inc. - Agawam, MA

11 Almgren Drive

Agawam, Massachusetts 01001

Phone: (413) 789-9018

EQUSFacilityCode: N/A

Client Sample ID

Collection Date

Matrix

DUP/MS/MSD

Milkem Sample ID

= number of containers

WW-80987-052214-BP-110

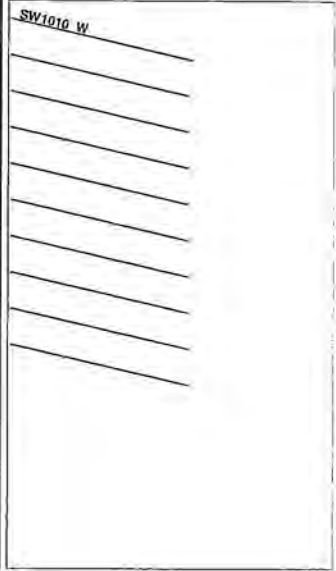
05/22/2014 14:00

1

Aqueous

N0888-01C

X



1) SW1010_W, FLASHPOINT BY PENSKEY-MARTENS CLOSED-CUP METHOD

Use 'Client Sample IDs' when reporting data. If needed, truncate 'Client Sample IDs' to fit on reports. Use full 'Client Sample ID' when generating EDD.

Comments: Level 2 report not needed, just Level 4

Relinquished by:

Agnes R Huntley

Date/Time

05/28/14 10:26

Received by:

Received by:

Date/Time

05/28/2014

Page 1 of 1

646 Camp Ave * North Kingstown * RI * 028524008 * 401-732-3400 * 401-732-3499

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Katy Wilkinson [Agawam]

From: Agnes Huntley [RI]
Sent: Wednesday, May 28, 2014 10:26 AM
To: eServices; Sample Dept
Cc: Yihai Ding [RI]
Subject: RE: SB90076 - Sample confirmation from Spectrum Analytical, Inc. for Project: Friedrichsohn Cooperage Site

Good morning,

Attached is the revised COC...this is an aqueous sample not a soil.

Agnes (Ng) Huntley
 CLP Project Manager
 Spectrum Analytical, featuring Hanibal Technology
 Rhode Island Division
 646 Camp Avenue
 North Kingstown, RI 02852
 (P) 401-732-3400
 (F) 401-732-3499

From: eServices
Sent: Tuesday, May 27, 2014 6:00 PM
To: Agnes Huntley [RI]
Cc: Yihai Ding [RI]
Subject: SB90076 - Sample confirmation from Spectrum Analytical, Inc. for Project: Friedrichsohn Cooperage Site



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

This message is to notify you that your samples have been received by Spectrum Analytical, Inc. The Chain of Custody is attached. Please review the attached Sample Acknowledgment form for sample details. Please respond to this email to resolve any discrepancies or you may contact the Sample Department at (413) 789-9018 to discuss.

Work Order #: SB90076
Project: Friedrichsohn Cooperage Site
Project #: N0888
Received: 05/23/2014 4:52 PM
Estimated completion: 06/04/2014 5:00 PM
Sample temperature: 1.0°C

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

Were cooler custody seals present?	No
Were custody seals intact?	N/A
Were samples received at a temperature of $\leq 6^{\circ}\text{C}$?	Yes
Were samples cooled on ice upon custody transfer to laboratory representative?	No
Were samples refrigerated upon custody transfer to laboratory representative?	Yes
Were sample containers received intact?	Yes
Were samples properly labeled (labels affixed to sample	Yes

5/28/2014

containers and include sample ID, site location, and/or project number and the collection date)?	
Were samples accompanied by a Chain of Custody document?	Yes
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	No
Did sample container labels agree with Chain of Custody document?	Yes
Were samples received within method-specific holding times?	Yes

You may track the status of your samples and view results on Spectrum's eServices website at <http://www.spectrum-analytical.com/eservices/>. If you do not have an online account, you may sign up for one by completing the Internet Access Agreement form located at the bottom of the login page.

If you have any questions or concerns about your samples, please reply to this message.

To ensure delivery of laboratory report notices, please add **online@spectrum-analytical.com** to your address book.

WORK ORDER

Printed: 5/27/2014 3:32:01 PM

SB90076

Spectrum Analytical, Inc. - Agawam, MA

Report To:

Spectrum Analytical, Inc. - North Kingstown, RI
Agnes Huntley
646 Camp Ave.
North Kingstown, RI 02852
Phone: (401) 732-3400
Fax: (401) 732-3499

Project #: N0888
Project: Friedrichsohn Cooperage Site
Date Due: 04-Jun-14 17:00
Received By: Mary Wilson
Date Received: 23-May-14 16:52
Temperature: 1°C
PO #: N0888

✓ Containers Intact	Frozen vials
✓ Properly Labeled	Frozen soil jars
✓ COC/Labels Agree	State EDD
Received On Ice	✓ COC present
✓ Recd within hold time	Custody seal present
Air-tight containers (Encore device)	Custody seal intact
✓ Refrigerated	✓ COC complete
DW Field QC	

Lab ID	Client ID	Sampled	Lab Matrix / Report Matrix	Containers
SB90076-01	WW-80987-052214-BP-11 0	22-May-14 14:00	Soil/Sediment/Soil	A - 2 oz. jar

WORK ORDER

Printed: 5/27/2014 3:32:01PM

SB90076

Spectrum Analytical, Inc. - Agawam, MA

Analysis	Due	TAT	Comments
SB90076-01 WW-80987-052214-BP-110 Flashpoint-1010	04-Jun-14 15:00	7	Level 4

SPECTRUM ANALYTICAL, INC.
SAMPLE INTEGRITY FORM

[illegible]

Notes:

COC login reviewed by: _____

Login Analyst Initials:

Date: 5/27/2014 (Rev. 2/5/2013)



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Form 1 Summary Pack

FORM I - INORGANIC ANALYSIS DATA SHEET**SW846 1010A****WW-80987-052214-BP-110**

Laboratory: Spectrum Analytical, Inc. - Agawam, MA SDG: 90076
Client: Spectrum Analytical, Inc. - North Kingstown, RI Project: Friedrichsohn Cooperage Site
Project Number: N0888 Received: 05/23/14 16:52
Matrix: Aqueous Laboratory ID: SB90076-01 File ID:
Sampled: 05/22/14 14:00 Prepared: 05/28/14 11:00 Analyzed: 05/28/14 14:45
% Solids: Preparation: General Preparation Initial/Final: 1 ml / 1 ml
Batch: 1412176 Sequence: Calibration:
Instrument: Inst
Reported to: MRL

CAS NO.	Analyte	Result (°F)	Dilution Factor	MDL	MRL	Q
NA	Flashpoint	>150	1			



SPECTRUM ANALYTICAL, INC.
Featuring
Hanibal Technology

SW846 1010A

CASE NARRATIVE

Spectrum Analytical, Inc. Lab Reference No. SB90076

Client: Spectrum Analytical, Inc. - North Kingstown, RI

Project: Friedrichsohn Cooperage Site / N0888

SDG #: 90076

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception or a communication form is included in the addendum with this package.

II. HOLDING TIMES

All samples were prepared and analyzed within the method-specific holding time.

III. METHODS

Analyses were performed according to SW846 1010A.

IV. PREPARATION

Aqueous samples were prepared according to General Preparation.

V. INSTRUMENTATION

The following equipment was used to analyze SW846 1010A:

Inst details:

VI. ANALYSIS

A. Calibration:

All quality control samples were within the acceptance criteria.

B. Blanks:

All blanks were within the acceptance criteria.

C. Spikes:

1. Laboratory Control Samples (LCS):

All method criteria were met.

2. Matrix Spike / Matrix Spike Duplicate Samples (MS/MSD):

No matrix spike or matrix spike duplicates were analyzed.

3. Reference:

All method criteria were met.

D. Duplicates:

A duplicate was analyzed.

In batch 1412176 from source sample WW-80987-052214-BP-110 (SB90076-01).

All method criteria were met with the following exceptions:

Flashpoint in batch 1412176, sample 1412176-DUP1 from source sample WW-80987-052214-BP-110 (SB90076-01): >150

E. Samples:

All method criteria were met.

CROSS REFERENCE TABLE

SW846 1010A

Laboratory:	<u>Spectrum Analytical, Inc. - Agawam, MA</u>	SDG:	<u>90076</u>
Client:	<u>Spectrum Analytical, Inc. - North Kingstown, RI</u>	Project:	<u>Friedrichsohn Cooperage Site</u>
Project Number:	<u>N0888</u>		

Client Sample ID:

WW-80987-052214-BP-110

Lab Sample ID:

SB90076-01

FORM I - INORGANIC ANALYSIS DATA SHEET

SW846 1010A

WW-80987-052214-BP-110

Laboratory: Spectrum Analytical, Inc. - Agawam, MA SDG: 90076
 Client: Spectrum Analytical, Inc. - North Kingstown, RI Project: Friedrichsohn Cooperage Site
 Project Number: N0888 Received: 05/23/14 16:52
 Matrix: Aqueous Laboratory ID: SB90076-01 File ID:
 Sampled: 05/22/14 14:00 Prepared: 05/28/14 11:00 Analyzed: 05/28/14 14:45
 % Solids: Preparation: General Preparation Initial/Final: 1 ml / 1 ml
 Batch: 1412176 Sequence: Calibration:
 Instrument: Inst
 Reported to: MRL

CAS NO.	Analyte	Result (°F)	Dilution Factor	MDL	MRL	Q
NA	Flashpoint	>150	1			

FORM I - INORGANIC ANALYSIS DATA SHEET
SW846 1010A

WW-80987-052214-BP-110

Laboratory: Spectrum Analytical, Inc. - Agawam, MA SDG: 90076
Client: Spectrum Analytical, Inc. - North Kingstown, RI Project: Friedrichsohn Cooperage Site
Matrix: Aqueous Laboratory ID: 1412176-DUP1 File ID:
Preparation: General Preparation Initial/Final: 1 ml / 1 ml
Analyzed: 05/28/14 14:45 Instrument: Inst
Batch: 1412176 Sequence: Calibration:

CAS NO.	Analyte	Concentration CONC. (°F)	Dilution Factor	Q	Method
NA	Flashpoint	>150	1	U	SW846 1010A

FORM IIIc - DUPLICATES

WW-80987-052214-BP-110

SW846 1010A

Laboratory: Spectrum Analytical, Inc. - Agawam, MA

SDG: 90076

Client: Spectrum Analytical, Inc. - North Kingstown, RI

Project: Friedrichsohn Cooperage Site

Matrix: Aqueous

Laboratory ID: 1412176-DUP1

Batch: 1412176

Lab Source ID: SB90076-01

Preparation: General Preparation

Initial/Final: 1 ml / 1 ml

Source Sample Name: WW-80987-052214-BP-110

% Solids:

File ID:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (°F)	C	DUPLICATE CONCENTRATION (°F)	C	RPD %	Q	METHOD
Flashpoint	20	0		>150				SW846 1010A

* Values outside of QC limits

Individual peaks for multi-component analytes are indicated by a number in parentheses

FORM VIIb(Inorganics) - STANDARD REFERENCE MATERIAL RECOVERY

SW846 1010A

Laboratory: Spectrum Analytical, Inc. - Agawam, MA

SDG: 90076

Client: Spectrum Analytical, Inc. - North Kingstown, RI

Project: Friedrichsohn Cooperage Site

Matrix: Aqueous

Spike ID: 11H0024

Batch: 1412176

Laboratory ID: 1412176-SRM1

Preparation: General Preparation

Initial/Final: 1 ml / 1 ml

ANALYTE	TRUE (°F)	FOUND (°F)	SRM % REC.	QC LIMITS REC.
Flashpoint	81.0	80	99	95 - 105

* Values outside of QC limits

FORM VIII(Organics)/FORM XIII(Inorganics)
ANALYSIS BATCH (SEQUENCE) SUMMARY
SW846 1010A

Laboratory: Spectrum Analytical, Inc. - Agawam, MA

SDG: 90076

Client: Spectrum Analytical, Inc. - North Kingstown, RI

Project: Friedrichsohn Cooperage Site

Sequence:

Instrument:

Calibration:

Sample Name	Lab Sample ID	Lab File ID	Analyzed
Reference	1412176-SRM1		05/28/14 14:45
WW-80987-052214-BP-110	1412176-DUP1		05/28/14 14:45

SPECTRUM ANALYTICAL, INC. - PREPARATION BENCH SHEET

1412176

Balance ID

N4

Matrix: Aqueous

Prepared using: Wet Chem - General Preparation

(No Surrogate)

Lab Number	Client ID	ID	Analysis	Initial (ml)	Final (ml)	Spike ID	Source ID	Due Date	Collection Date	Sample Comments
1412176-DUP1	Duplicate		QC	1	1		SB90076-01		22-May-14 14:00	
1412176-SRM1	Reference		QC	1	1	11H0024			28-May-14 11:00	
SB89659-01	Grab	A	Flashpoint-1010	1	1			30-May-14 16:00	20-May-14 09:20	
SB89669-01	ISUXO20IDWAO051514	A	Flashpoint-1010	1	1			30-May-14 15:00	15-May-14 17:00	DoD Level 4/ MDL U/ J Code results between MDL and RL
SB89761-01	Wastewater Holding Tank	G	Flashpoint-1010	1	1			30-May-14 16:00	20-May-14 12:30	Report J & U Flags
SB89965-01	DECONDRUM-WC-1	F	Flashpoint-1010	1	1			04-Jun-14 16:00	22-May-14 11:00	UTC/CT RCP
SB89978-01	15702A	C	Flashpoint-1010	1	1			28-May-14 14:00	22-May-14 10:00	
SB90076-01	WW-80987-052214-BP-110	A	Flashpoint-1010	1	1			04-Jun-14 15:00	22-May-14 14:00	Level 4

Flashpoint 5/28/14

Reagents Used:

BD

Analyst Reviewed

5/28/14

Date



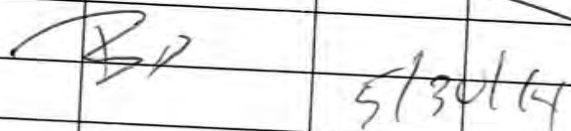
Manager Reviewed

Date

Extracts Received By

Date

Flashpoint

Date	Time	Initials	Time started	Time ended	Matrix	Sample ID	Client ID	Pressure mbar	Pressure C.F.	Temperature Initial Reading °F	Correction Factor	Corrected Final Reading °F
5/28/14	1100	BD	1100	1110		P-Xylene	11H0024	1016		80	0	80
			1111	1121	AG	89659-01	Grab			7150	0	7150
			1125	1135		89669-01	ISUX020NWA15154			7150	0	7150
			1136	1147		896761-01	Wastewater			7150	0	7150
			1148	1200		89965-01	Deccadum 40-1			7150	0	7150
			1202	1215		89978-01	157024			7150	0	7150
			1216	1228		9007601	WW-80487-0522 HBD	10		7150	0	7150
			1230	1240	L	DUP	L			7150	0	7150
			1250	1300	Soil	90058-01	Max-D			7200	0	7200
			1301	1312		90063-01	W66N-14B5Tune 030			7200	0	7200
			1315	1326	L	DUP	L			7200	0	7200
			1201	1209		P-xylene	11H0024	1019		78	0	78
5/30/14	BD	200	1210	1220	Soil	90188-04	Bmw 27.5-10			7200	0	7200
			1222	1234	L	DUP	L			7200	0	7200
												

Peer/Manager Review: _____ Date: _____

Notes & Definitions

BRL Below the reporting limit and also indicates there are no detections between the MDL and MRL

Form I 'Q' column

- B** The analyte was found in the associated blank as well as the sample
- D** All identified compounds in the analysis are at a secondary dilution factor
- E** The identified compound's concentration exceeds the calibration range of the instrument for this specific analysis
- J** Compound detected but below the reporting limit and above the minimum detection limit (MDL); therefore, the result is an estimated concentration
- N** Included for TIC that indicates presumptive evidence of a compound
- P** Used for a Dual Column target analyte when the concentration difference between the two GC columns is greater than 40%.
- U** Compound was analyzed for but not detected

Form IIa 'Method' column

This column refers to the instrument used for analysis

- IR** Iris ICP
- MS** Thermo ICP/MS
- AV** Mercury analyzer

Form VI 'Q' column

- * indicates that:
Mean RF is above the value in the LIMIT column, or
Linear COD is below the value in the LIMIT column, or
Quad COD is below the value in the LIMIT column

Form VII 'Type' column

- A** average of response factor
- L** linear regression
- Q** quadratic equation

Form VIII 'Q' column for Inorganics

- E** The dilution analysis is not within a control limit of 10%, therefore a chemical or physical interference effect must be suspected

Last Page of Data Report