REMEDIAL INVESTIGATION/ ALTERNATIVES ANALYSIS REPORT

GATEWAY LOFTS SUPPORTIVE APARTMENTS
31 WATER STREET
JAMESTOWN, NEW YORK
NYSDEC SITE # C907046

Prepared for:

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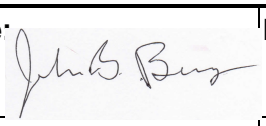
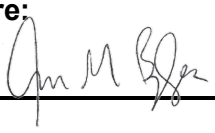
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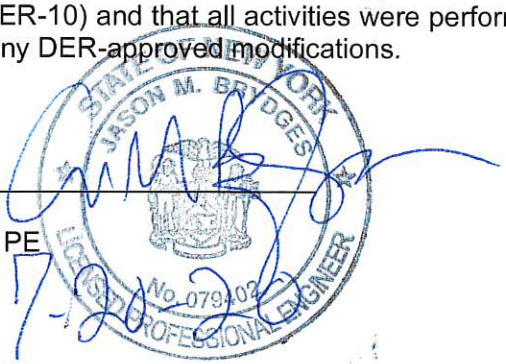
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CERTIFICATION

I, Jason Brydges, certify that I am currently a New York State registered professional engineer as defined in 6 NYCRR Part 375 and that this Remedial Investigation/Alternative Analysis Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Department of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.



Jason Brydges, PE

7/10/2020

1.0 INTRODUCTION

Southern Tier Environments for Living, Inc. (STEL) owner of the Gateway Lofts Supportive Apartments (New York State Department of Environmental Conservation [NYSDEC] Site # C907046) located at 31 Water Street, Jamestown, New York (refer to **Figure 1**) has entered into a Brownfield Cleanup Program (BCP) Agreement with the NYSDEC under the Voluntary section of the "Brownfield Cleanup Program Act". STEL has contracted BE3 Corp. (BE3) to conduct a Remedial Investigation (RI) and prepare an Alternatives Analysis Report (AAR) as required by the BCP Agreement and complete remedial measures as necessary. This document presents a RI/AAR for the site.

The RI/AAR program is being completed in accordance with BCP requirements as defined in section 375-3.8 of the NYSDEC 6 NYCRR Part 375 Environmental Remediation Program Regulations. It is anticipated that the remedial measure selected will lead to a site remedy as defined in Part 375-1.8(g)(2)(ii); achieve soil cleanup objectives (SCOs) as defined in Part 375-6.8(b); and mitigate any environmental impacted media issues at the site.

The contemplated future use of the site includes the construction of a multifamily affordable housing project to compliment onsite community support services and commercial uses

1.1 SITE BACKGROUND

The Site and surrounding area have been predominantly used for manufacturing. Historically the Site was used by two different manufacturing companies. In 1888 the Jamestown Woolen Spinning Company built a brick factory on the Site to produce yarns and cloth. The company changed to the Empire Worsted Mills in 1896 that operated at the Site until approximately the late 1940s. By 1963 the Chautauqua Hardware Corporation was located on the Site. This company was involved with furniture trimmings and hardware manufacturing and fabrication including metal household furniture. Operations included electroplating, nonferrous die-casting, polishing, anodizing and coloring, brass and zinc castings and zinc, lead, magnesium, tin, brass, bronze, steel and iron tubing; as well as cement, plastic and rubber tubing. This operation used various hazardous and petroleum compounds. In 2005, the Chautauqua Hardware Corporation c/o FKI Industries sold the Site to the Community Development Association, LLC, which has subsequently merged with Lynn Development, Inc. The site is currently used as a community service center with a soup kitchen, and provides youth activities such as archery ranges, roller park, laser tag and computer and other academic related youth and community services. A few small businesses also operate or store equipment and materials at the site. Some of the former adjacent industrial buildings have been converted to commercial and community service operations. The Site and surrounding parcels are all zoned M – Manufacturing.

The Site is comprised of 12 individual parcels that total 6.12 acres. Within the Site are eight interconnected buildings varying between one and four stories in height that encompass approximately 2.24 acres of the Site. The site is generally located in the center of the City of Jamestown in Chautauqua County. In general, the Site is situated in a mostly industrial section of the City that contains some residential structures. The Site is located along Water Street in Jamestown east of the intersection of Water Street and Foote Avenue. The northern portion of the Site is bordered by the Chadakoin River that flows through the middle of Jamestown going west to east. Historically, this area of Jamestown was a major industrial and manufacturing hub and has now been identified as part of the Chadakoin River Central/Eastern Brownfield Opportunity Area (BOA). The Site is found in the Downtown District of this BOA. Being in the city's center and on the river, the site has redevelopment potential and is easily accessible to Interstate 86. The site includes a large sprawling former manufacturing facility with multiple sections containing one; two and four-story areas. The building is surrounded by asphalt parking and

drive areas. See **Figure 3** for details of major infrastructure, surface waterbodies, and buildings that currently exist at the Site.

There are no major changes of topography on the Site, which is generally flat with a gentle slope towards the north to the river. Site soil can be classified as urban land, which are typically identified as highly impacted from commercial, industrial or residential use. Much of the site is covered by impervious features such as buildings, streets, and paved parking lots. Fill was discovered in soil borings across the Site with thicknesses ranging from 3 feet below ground surface (bgs) in the middle of the Site down to 8 feet bgs along the Chadakoin River. Various industrial material and contaminants were noted within the fill layer, which consists mostly of sand and gravel. Native layers of silty clay, sand, clayey silt, and gravel are located below the fill. Hydrogeology on site was not investigated, but most likely flows towards the Chadakoin River to the north, although could be nonuniform due to impervious structures in the subsurface. The River is the only surface waterbody or wetland area of significance near the Site, although the Site does appear to be within the 500-year floodplain. No known drinking water wells exist in the vicinity. The following is the contact information for the BCP property owners:

Southern Tier Environments for Living, Inc.
715 Central Ave
Dunkirk, New York, 14048

Community Helping Hands, Inc.
31 Water Street
Jamestown, NY 14701

1.2 Previous Investigations

Phase I ESA prepared for: Community Helping Hands; 31 Water Street, City of Jamestown, New York; prepared by: Panamerican Environmental, Inc.; Dated February 2017

The Phase I did not identify any significant current use or storage of hazardous waste, hazardous materials or petroleum at the Site. However, the Site and surrounding area has a long history of industrial/manufacturing including chemical and petroleum storage. No fuel oil tanks were observed during the Site reconnaissance, but there is a history of tanks being present and it is unknown if these were removed. Onsite transformers were noted as a potential PCB concern, and the building was noted as potentially including asbestos, mold and lead-based paint. Various forms of fluorescent light fixtures and other lights were also observed that may contain PCB containing fluids or mercury.

The Phase I deemed the Site as a medium risk in terms of environmental impairment primarily based on past storage of chemicals, wastes, and petroleum noted from numerous database findings. The small quantities of paints and cleaning solvents were considered de minimis concern. The report assessed the need for a vapor intrusion assessment (VIA) for potential chemicals of concern that can migrate as vapors into existing or planned structures due to impacted soil and groundwater. Although no environmental liens or activity and use limitations were identified, the following potential recognized environmental conditions (RECs) were identified:

- The prior use history of the Site as a textile manufacture for over 50 years and as furniture metal parts manufacturer for over 40 years included the use and storage of hazardous wastes, acids, bases and other compounds including xylene, acetone, halogenated and non-halogenated solvents, and electroplating wastes.
- Numerous environmental database reports are associated with the facility including air and water permits and spills.

- Historical information indicates a 4,000-gallon tank of trichloroethene (TCE) was closed in 1999 and a 4,000-gallon fuel oil tank was closed in 1989. There are no records indicating proper closure or closure sampling.
- There was a report of two buried cement tanks used to store wastes. There is no record of these tanks or records of any closure.
- The Site is within an area of industrial operations and manufacturing that may have impacted surface and subsurface media.
- The transformers should be checked for polychlorinated biphenyl (PCB) containing lubricants.

Phase II ESA prepared for: Southern Tier Environments for Living; 31 Water Street; City of Jamestown, New York; prepared by: Empire Geo-Services, Inc.; Dated June 2017

The Phase II investigation revealed that the primary contaminants of concern are heavy metals (e.g., arsenic, chromium, and lead), PCBs, semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs). Ten subsurface samples and one surface sample were submitted for laboratory analysis, and exceedances of Regulatory SCOs were found in multiple subsurface samples. A mixture of subsurface fill and native soil was the primary location for the contaminants listed. An unregistered underground storage tank (UST) was encountered in the subsurface at Boring B-4, and petroleum odors were noted, but lab results were below applicable cleanup levels. The existence of other possible USTs is unknown.

The investigation focused on soil impacts, and arsenic and chromium were found at varying soil depths from 0.5 to 9 feet bgs primarily along the northeastern area of the Site. Lead was also discovered at 0.5 to 4 feet bgs in the southwestern portion of the Site. In summary for the metals:

- Arsenic concentrations (18 to 94 parts per million [ppm]) exceeded the Residential SCO of 16 ppm.
- Chromium concentrations (23 to 770 ppm) exceeded the Residential SCO of 22 ppm.
- Lead concentrations (1,300 ppm) exceeded the Residential SCO of 400 ppm.

PCBs were found in surface and subsurface samples near the center of the Site and the former transformer location. Total PCB concentrations (237 ppm) from a surface soil sample exceeded the Residential SCO of 1 ppm. Because the PCB level in the soil exceeds 50 ppm, the contaminated soil could be considered hazardous. This will be investigation further.

PAHs were found predominantly on the west and northern sides of the Site at 0.5 to 5 feet bgs. PAHs concentrations ranged from 1 to 10 ppm and exceeded the Residential SCO of 1 ppm. TCE was found in soil at a boring taken within a building (B-1) at a depth of 12 to 16 feet bgs and at a concentration of 56 ppm, which the Residential SCO of 10 ppm. TCE in the subsurface increases the possibility of a vapor encroachment concern within buildings in this area. See **Figure 2** for Phase II results exceeding Part 375 Restricted Residential SCOs.

Hazardous Materials Inspection Report prepared for: Southern Tier Environments for Living; The Gateway Center, 31 Water Street; City of Jamestown, New York; prepared by: AMD Environmental Services; Dated June 2018

Asbestos, lead-based paint, visual mold, PCB light ballasts, PCB caulk, and mercury switches were sampled or inventoried during this investigation. Each suspect asbestos containing building material (ACBM) was assigned a homogenous area, which consist of materials of like composition, texture and appearance. Based on the homogeneous areas, samples of suspect materials were collected and

analyzed using PLM (Polarized Light Microscopy) and indefinite results, additional analyses were performed under Transmission Electron Microscopy (TEM). The results of these analyses confirmed the following materials contained asbestos:

- Linoleum flooring,
- Sink insulation,
- Window and door caulk,
- Significant quantities of roofing material, including tars and flashing, and
- Paint.

An x-ray fluorescence (XRF) Spectrum Analyzer was used to test suspect painted surfaces in the building. Progression through the structure followed a clockwise direction around the floor plan and each component tested was identified by its location. The lead-based paint inspection was conducted on painted components throughout the interior of the building and were identified and tested based on component groups and paint history. Surfaces tested included walls, ceilings, doors, structural members, window components and exterior components. The XRF analysis indicated that the following painted surfaces have a lead content at greater than 1.0 milligram per square centimeter (mg/cm^2) and are therefore classified as lead-based paint:

- All painted ceilings, beams and support columns throughout the building
- All original window components (window sills, casings, and sashes) throughout the building
- All painted wood stair components (tread, stringer, and risers) throughout the building
- All painted wood walls on the second, third and fourth floors
- All original painted wood doors and components (interior)
- A-side exterior painted door casings

Light ballasts containing PCBs that may be impacted by future renovations were inspected as well. Visual inspection of the areas revealed that there are approximately 423 PCB containing light ballasts on the 1st Floor, approximately 200 PCB containing light ballasts on the 2nd Floor, approximately 150 PCB containing light ballasts on the 3rd Floor, approximately 80 PCB containing light ballasts on the 4th Floor, and all ballasts should be considered PCB containing unless “NO PCB” is clearly marked on the ballast. These ballasts are also associated with approximately 823 round fluorescent bulbs that could contain mercury.

Lastly, a visual assessment of the building on-Site revealed that there exist multiple areas of moisture intrusion due to roof leaks, and minor to severe component deterioration of interior finishes, mostly on the 3rd and 4th floors. These findings can be indicative of the presence of mold.

Phase II ESA prepared for: Southern Tier Environments for Living; 53/55 Water Street Properties; City of Jamestown, New York; prepared by: BE3/Panamerican.; Dated March 2019

The purpose of the Phase II environmental site assessment (ESA) was to identify potential environmental impacts in the soil at 53 and 55 Water Street in Jamestown, New York. The Phase I ESA for these properties and other previous investigations of adjacent properties have identified RECs from historical uses of adjacent properties. The concerns/RECs related to the adjacent property (31 Water St.) include: documented onsite use, storage, and releases of both petroleum and chlorinated solvents to support metal plating work as well as possible USTs located adjacent/upgradient to the 53 and 55 properties.

Field observations and laboratory results indicate that there are environmental impacts in the soils of both the 53 and 55 properties. Restricted Residential SCO exceedances of metals, SVOCs, and pesticides all

are indicative of impacts from the use of urban fill and possible impacts from the adjacent 31 Water Street property.

1.3 CONSTITUENTS OF CONCERN

Based on the previous environmental investigations, the primary contaminants of concern in Site soils are heavy metals (e.g., arsenic, chromium, and lead), PCBs, PAHs, and TCE. These contaminants were detected above pertinent SCOs (Part 375 RR) down to approximately 9 feet bgs throughout the Site including: northeast and southwest areas (i.e., metals); center of property near transformer area (i.e., PCBs); northwestern area of the Site (i.e., PAHs); and, within the large building footprint (i.e., TCE).

Site buildings were also investigated, and results indicated additional contaminants of concern such as ACBM in floors/caulk/roofing/insulation, lead-based paint in ceilings/structures/windows/walls/doors, PCBs in light ballasts and caulk throughout the building, and mercury in fluorescent bulbs. It is important to note that groundwater was not sampled during the previous sampling events.

1.4 IDENTIFICATION OF STANDARDS, CRITERIA, AND GUIDANCE

SCGs are promulgated requirements ("standards" and "criteria") and non-promulgated guidance ("guidance") that govern activities that may affect the environment and are used by the NYSDEC at various stages in the investigation and remediation of a site. The following are the primary SCGs for this project:

- NYSDEC 6 NYCRR Part 375 – Environmental Remediation Programs December 2006;
- NYSDEC DER-10 – Technical Guidance for Site Investigations and Remediation May 2010;
- NYSDEC - Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations June 1998;
- NYSDEC Policy – CP-51- Soil Cleanup Guidance; Date Issued: October 21, 2010; and,
- New York State Department of Health October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York and its May 2017 amendment

2.0 REMEDIAL INVESTIGATION

All RI activities were carried out in accordance with the requirements of the approved RI work plan *(Remedial Investigation Work Plan, Gateway Lofts Supportive Apartments 31 Water Street Jamestown, New York 14701, prepared for*; *Southern Tier Environments for Living, Inc., prepared by: BE3/Panamerican, July 2018)*. The work plan was approved by NYSDEC Region 9 as part of the BCP process. The RI activities were completed in October of 2018 at the Site. Photographs of all investigation work are provided in **Appendix C**.

Subsequent to the completion of the RI two directly abutting properties to the 31 Water BCP property along Water Street to the west (53 and 55 Water Street) were added to the program by amendment to the BCP application and approved by NYSDEC (see **Figure 3** and **Appendix G** Site Boundary Survey Map).

As noted above in Section 1.2, a Phase II ESA was conducted on the 53 & 55 properties in December of 2018 consisting of the collection and analysis of a number of surface soil samples. A discussion of this program is provided in Section 2.7 below. The following sections (2.1 through 2.6) are related to the RI tasks.

2.1 GEOPHYSICAL SURVEY

On November 28, 2019 GPRS Subsurface Scanning Solutions, under subcontract to BE3, completed a geophysical survey of the Site by use of Ground Penetrating Radar (GPR). The area covered by the survey is shown, outlined in red, on the survey map provided in **Appendix J**.

The scope of the survey was to search for underground utilities and USTs in the proposed area (roughly 3 acres). The GPR scan results are provided on the Plan-Aerial provided in **Appendix J**. Four areas east of Building 2 were identified during the survey as possible locations of USTs. It is not known what these areas were used for. The four areas were investigated as part of the soil investigation (see Section 2.2). USTs were not uncovered in three of the four areas. A concrete UST was uncovered during the investigation at Test Pit TP-1 shown in **Figure 5**.

2.2 SOIL INVESTIGATION

The primary purpose of the surface/subsurface assessment was to visually inspect and describe near surface and subsurface conditions across a large area and to assess the fill/soil by collecting and analyzing soil samples. The intent was to add to the data that already exists for the property.

A total of 24 soil borings were completed around the Site including three borings completed at the locations of Monitoring Wells MW-01, MW-04, and BMW-01 (see **Figure 3**). A total of 25 soil boring samples were collected. Soil investigations of both borings and monitoring well locations were completed from the dates of October 3, 2018 to October 11, 2018. Boring locations exterior to site buildings were chosen in an approximate grid pattern focusing on areas where impacted soils were identified during the previous Phase II ESA and the GPR scan discussed above. In addition, two test pits were completed on the east side of the property in areas suspected, based on the GPR scan, of containing buried piping possibly connected to a UST.

The precise location of borings/pits and sampling were based on field observations and also specifically targeted potential contaminant features in an effort to gain representative samples across the property while at the same time ensuring that areas of concern were examined all while gaining geological information of the subsurface that would be useful in remedy selection.

Four of the soil borings were completed within various buildings on the property. Borings advanced indoors were limited based on access, utility location, and current building occupation. Borings were able to be completed within Buildings 2 (BH-18),3 (BH-17), 8 (BH-19), and the hallway at the south end of Building 4 (BH-16).

In addition, seven surface soil samples were collected by hand shovel including between buildings not accessible by boring equipment.

Test pits were completed on the eastern side of Building 2 based on the geophysics survey of possible of USTs in this location. Test pits were approximately 4 feet wide by 10 feet long with depths ranging from 4 to 8 feet bgs. Each test pit was backfilled in the order in which the fill was removed prior to moving to the next test pit location. A 6 by 8-foot concrete walled UST was uncovered adjacent to Test Pit TP-

01. A soil sample was collected at the 6 to 8 feet level in this test pit. Analytical results are discussed in Section 4.

Based on previous investigations, the main areas of concern were located along the eastern and north eastern sides of the property. These areas have been called out to be the former locations of Chautauqua Hardware. Historic uses and operations associated with the company have been linked to the impacts called out in the Phase II ESA.

Soil borings were advanced to depths ranging from 12 to 20 feet bgs using Geoprobe® direct push technology. Continuous soil sampling was conducted using the Geoprobe® with a two-inch diameter sampler. The three monitoring wells (MW-01, MW-04, and BMW-01) were sampled to bedrock using a hallow stem auger with a 2-inch split spoon.

The following was completed during each boring and test pit excavation:

- A description of the soil stratigraphy was made (refer to boring test trench logs in Appendix A);
- Visual observations (staining, odors, etc.) were recorded if noted;
- Total organic vapor monitoring was completed as each boring was installed using a MiniRAE 3000, 11.7 eV photoionization detector (PID); and
- Cleaning of equipment between each boring/test pit location.

All soil samples were collected for analysis for NYSDEC Part 375 brownfield constituents. Soil samples were collected based on PID readings, visual observations and to obtain representative soils across the site. Surface soil samples were collected from the upper two inches below the sod prior to advancing a test pit or from the top of the borehole core and were not analyzed for volatile compounds. Subsurface soil samples were collected generally from fill materials, however, samples of what was believed to be native soil were also collected to ascertain if the native soil has been impacted.

The samples were submitted to a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory and a full Contract Laboratory Program (CLP). Samples were analyzed in accordance with NYSDEC Category B, with full CLP-type analytical data package deliverables. Analytical results for all soil samples are discussed in Section 4.0.

2.3 Sediment Investigation

Sediment sampling was completed at two locations along the Chadakoin riverbank. Sediment samples were collected using a hand shovel and were collected from approximately the upper-3 inches of sediment deposits at discrete locations along the riverbank (see **Figure 3**).

All sediment samples were collected for analysis for NYSDEC Part 375 brownfield constituents. Samples were also analyzed for NYSDEC PFSA compounds. Analytical results for all sediment samples are discussed in Section 4.0.

2.4 Groundwater Investigation

2.4.1 Monitoring Well Construction & Development

A total of five flush-mount overburden monitoring wells were installed using a conventional truck drill rig with hollow stem auger drilling techniques. An eight-inch hollow stem auger was used to drill to depths of up to 15 to 32 feet bgs to allow the well screen to be adequately submerged within the water table.

Locations of the wells are shown on **Figure 3.** All monitoring wells were constructed using 2-inch inside diameter (ID), flush joint, Schedule 40 polyvinyl chloride (PVC), with 0.010-inch slotted screen at 10 feet in length. A two-inch PVC riser was installed atop the screen to bring the well to just below ground surface. Each well was constructed with an eight-inch road-box cemented in place at grade. The average groundwater depth was approximately 6 feet bgs.

One Bedrock monitoring well was also installed onsite (BMW-01) using hollow stem auger and rock coring techniques. A 6.75-inch diameter auger was used to drill to a depth of approximately 25 feet bgs until bedrock was encountered. A 3.76-inch diameter rock core was then used to drill into bedrock a total length of 10 feet to ensure adequate water would enter the well.

Well construction diagrams are provided in **Appendix A**. Monitoring wells were installed on October 4th, 5th, 9th, 10th,11th, and 12th 2018. Well development was completed on October 15 & 16th, 2018.

2.4.2 Monitoring Well Hydraulic Assessment

The hydraulic assessment was completed on October 30, 2018. Hydraulic conductivity tests were conducted on each of the five monitoring wells (Wells MW-1 to MW-5) to accurately assess the hydraulic conductivity in the subsurface across the Site. Hydraulic conductivity analysis was completed through slug tests on the property using a Level TROLL 700 pressure transducer and In-Situ data logging software to measure the change in head with respect to time during a falling and rising head test (slug in and slug out, respectively) conducted at each well. A PVC slug was used with a total volume or displacement of 0.5 gallons. Data analysis for the hydraulic conductivity tests was conducted in accordance with *The Bouwer and Rice Slug Test - An Update,* Bouwer, H., Groundwater Journal, Vol. 27, No. 3, May-June 1989 and is presented in Section 3.2.2.

One deviation from the RIWP should be noted. The slug test transducer data from Well MW-01 was not able to be recovered upon return of the field equipment. Due to the well-being the most upgradient well and outside of the area of concern, remobilization was not deemed necessary to reenact the testing.

2.4.3 Groundwater Sampling

Groundwater sampling was completed over the course of two days from October 18th and 19th, 2018. Well sampling was conducted in accordance with the RIWP. One groundwater sample was collected from each of the six monitoring wells. In addition, a brick lined pit filled with water was discovered in an open area between Buildings 4, 5, and 6. The pit is believed to represent groundwater elevation in this area and was an old cooling water tank used for former operations. Tank water was also sampled (Sample Tank WS-01). All samples were analyzed for TCL VOCs, SVOCs, pesticides, and PCBs, as well as TAL metals. Sample's MW-01, BMW-01 and WS-01 were also laboratory analyzed for dissolved metals. All monitoring wells and the brick lined pit were also required to be sampled for the NYSDEC Emerging Contaminants of polyfluoroalkyl substances (PFAS) and for 1,4-dioxane at lower laboratory detection limits.

The samples were submitted to a NYSDOH ELAP certified laboratory and a full CLP. Samples were analyzed in accordance with NYSDEC Category B, with full CLP-type analytical data package deliverables. Analytical results for all groundwater samples are discussed in Section 4.0.

The following are the measured well depths and water levels from the top of casing at the time of sampling (see **Table 8** Groundwater Elevations):

- MW-01: 16.5 feet to bottom of well – 7.6 feet to standing water

- MW-02: 14.71 feet to bottom of well – 5.05 feet to standing water
- MW-03: 14.5 feet to bottom of well – 4.9 feet to standing water
- MW-04: 32 feet to bottom of well – 6.60 feet to standing water
- MW-05: 14.5 feet to bottom of well – 8.9 feet to standing water
- BMW-01: 30.1 feet to bottom of well – 8.4 feet to standing water

2.5 Building Environmental Condition Assessment

AMD Environmental Consultants, Inc. (AMD), under subcontract to BE3, conducted a Hazardous Materials Inspection of the buildings at the 31 Water street Site on June 19 through June 26, 2018. Asbestos, Lead-Based Paint, Visual Mold, PCB Light Ballasts, PCB Caulk and Mercury Switches were sampled and or inventoried. A more detailed description of the program is provided in Section 1.2 – Previous Investigations.

A New York State licensed asbestos firm, AMD, conducted the asbestos survey including the lead-based paint assessment and PCB inventory which they are also licensed to perform.

The results of the ACM survey indicated the presence of ACM in the buildings in a number of materials such as window caulking, linoleum, roofing materials, etc. A review of the XRF instrument results indicates that LBP is present and shows deterioration on interior and exterior building components in the buildings. Numerous PCB light ballasts were noted throughout the buildings and are noted in the AMD report.

The complete ADM report is provided in **Appendix E**.

2.6 Soil Vapor Intrusion Investigation

The primary structure that contains many, multi-story buildings is to remain on site and will be used in the proposed development. These buildings may be subject to contaminant vapors from solvents or petroleum products in the soil from historic site operations.

This investigation consisted of sampling vapors that may exist beneath the building slab along with sampling indoor air. A total of 13 indoor/sub-slab paired samples were collected from 13 locations across the facility's various sub-slab floors. One outdoor air sample was collected on the north and south side of the Site to compare to background levels. Specific sampling locations were selected based upon accessibility as determined by the technician/geologist after mobilization.

To collect sub-slab vapor samples, each floor was drilled to remove a core and collect an air sample from beneath the floor slab using a one-inch probe and a Summa canister. Summa canisters were also used to collect indoor/outdoor air samples. Sample collection follow the procedures described in the RIWP and in accordance with New York State Department of Health *Guidance for Evaluating Soil Vapor Intrusion in the State of New York*. Collection time for the summa canisters was approximately 24 hours. Analytical results for all vapor samples are discussed in Section 4.0.

As a supplement to the SVI, a building inventory assessment was performed on October 2, 2018 within the buildings at the Site. This assessment identified potential volatile contaminant sources originating from within the building that could impact the SVI. The inventory is provided in **Appendix E**. Some of this information was noted in the survey performed for ACM, lead-based paint, etc. as well.

2.7 PHASE II ESA DECEMBER 2018– SOIL INVESTIGATION 53/55 WATER STREET PARCELS

The purpose of the Phase II ESA was to identify potential environmental impacts in the soil at 53 and 55 Water Street in Jamestown, New York. The Phase I ESA for these properties and other previous investigations of adjacent properties have identified RECs from historical uses of adjacent properties. The concerns/RECs related to the adjacent property (31 Water Street) include: documented onsite use, storage, and releases of both petroleum and chlorinated solvents to support metal plating work as well as possible USTs located adjacent/upgradient to the 53 and 55 Water Street properties.

The site investigation included the collection of seven surface soil samples across the property (see **Figure 3**). Soil from each location was visually examined and soil samples collected from soils that appeared to be environmentally impacted. The samples were submitted to a NYS certified laboratory and analyzed for NYSDEC NYCRR Part 375 SVOCs, metals, and PCBs/pesticides.

The 53/55 properties which have been added to the site eastern boundary as part of the BCP site will be further characterized in order to determine full extent of remedial efforts for the BCP site. Several soil borings/samples will be installed along with a temporary monitoring well at the eastern property boundary as an initial task of the selected remedial alternative and details of the investigation will be provided in the RAWP.

3.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

3.1 SURFACE FEATURES

The Site is comprised of 12 individual parcels that total 6.12 acres. Within the Site are eight interconnected buildings varying between one and four stories in height that encompass approximately 2.24 acres of the Site. There are also two houses, one on each of the 53 and 55 Water street properties recently added to the BCP site. There are no major changes of topography on the Site, which is generally flat with a gentle slope towards the north to the river. Site soil can be classified as urban land, which are typically identified as highly impacted from commercial, industrial or residential use. Much of the site is covered by impervious features such as buildings, streets, and paved parking lots.

3.2 GEOLOGY/HYDROGEOLOGY

3.2.1 Site Geology

In general, soils across the Site consisted of gravel and sand fills. Industrial material such as cinders, brick, glass, slag and coal were identified in trace amounts in the gravel and sand fills at various locations. The fill material ranged in thickness from approximately 3 feet to 8 feet across the Site

Below the fill are native sand, gravel, silty clay and clayey silt deposits. Below 10 to 12 feet, in general, is a deposit of moist grey silty clay with a trace of sand/gravel.

3.2.2 Site Hydrogeology

Groundwater levels were measured in the six monitoring wells at the depths noted in Section 2.2.3. Groundwater was found to flow partially through the non-native fill material onsite. The groundwater elevations in **Table 8** suggest groundwater flow direction is to the northeast across the Site following overall site topography toward the Chadakoin River. Approximate groundwater contours are shown on **Figure 6**.

The hydrogeology at the Site was assessed by analyzing hydraulic conductivity values at the five overburden wells on the property. Two slug tests were performed at the wells, a slug in and slug out (falling and rising head tests). Hydraulic conductivity was calculated according to *The Bouwer and Rice Slug Test - An Update,* Bouwer, H., Groundwater Journal, Vol. 27, No. 3, May-June 1989.

Slug test data was analyzed, and hydraulic conductivity values were calculated using AQTESOLV version 4.0. The data analysis and the results of the slug test are presented in **Appendix B**. The table below shows the hydraulic conductivity values calculated in AQTESOLV from the falling and rising head tests done on each well.

Well ID	Hydraulic Conductivity [ft/sec]			
	FH	RH	Tests[a]	Mean[b]
MW-01	NA	NA	0	NA
MW-02	1.18E-04	1.14E-04	2	1.16E-04
MW-03	1.54E-04	1.28E-04	2	1.41E-04
MW-04	1.00E-04	9.23E-05	2	9.62E-05
MW-05	2.16E-06	1.40E-04	2	1.74E-05
BMW-01	NA	NA	0	NA

NA - Not Analyzed - See Section 2.2.2 for details

FH - Falling Head test
RH - Rising Head test
[a] Number of valid tests
[b] Geometric mean

In-field circumstances prohibited the analysis of hydraulic conductivity in MW-01. Based on geology here and in field observations of the slug test, it is assumed this region has a lower rate of hydraulic conductivity in the order of magnitude of 1.0E-6 ft/sec

Hydraulic conductivity is relatively consistent across the site. With rates increasing towards the North end of the property. Hydraulic conductivity around MW-05 is believed to be closer in value to the FH test based on infield observations.

3.3 Demography and Land Use

The Site is comprised of 12 individual parcels that total 6.12 acres. Within the Site are eight interconnected buildings varying between one and four stories in height that encompass approximately 2.24 acres of the Site. The site is located approximately in the center of the City of Jamestown in Chautauqua County. In general, the Site is situated in a mostly industrial section of the City that contains some residential structures. The Site is located along Water Street in Jamestown east of the intersection of Water Street and Foote Avenue. The northern portion of the Site is bordered by the Chadakoin River that flows through the middle of Jamestown going west to east. Historically, this area of Jamestown was a major industrial and manufacturing hub and has now been identified as part of the Chadakoin River Central/Eastern BOA. The Site is found in the Downtown District of this BOA. Being in the city's center and on the River, the site has redevelopment potential and is easily accessible to Interstate 86. The site includes a large sprawling former manufacturing facility with multiple sections containing one; two and four-story areas. The building is surrounded by asphalt parking and drive areas.

The proposed Gateway Lofts project is a multifamily affordable housing project. The project will include 74 units of housing, 25 of which will be specifically set aside for homeless households with various degrees of personal situations (e.g., mental illness, substance abuse, etc.). The project will add housing to complement several essential support services that are currently being provided to the target population and include the development of office space, employee and resident parking, and community facility space. The total square footage per use category and estimated value are unknown currently. An estimated 14 FTE positions are envisioned once the project is constructed, which will be utilized for property management and support service staffing.

4.0 NATURE AND EXTENT OF CONTAMINATION

4.1 INTRODUCTION

This section discusses the results of the RI activities and the nature and extent of contaminants detected in the media investigated. The assessment is based on the RI program combined with the data obtained in previous investigations to provide an overview of the nature and extent of impacts at the site.

All soil and groundwater samples were submitted for analysis to Pace Analytical Laboratory. a New York State certified laboratory. Air samples were submitted for analysis to Centek Laboratory, LLC., also, a New York State certified laboratory. A New York State licensed asbestos firm, AMD Environmental Consultants, Inc. of Buffalo, New York, conducted the asbestos survey including the lead-based paint assessment and PCB inventory which they are also licensed to perform.

All soil, groundwater and air analytical data were validated by Environmental Data Usability (EDU), a certified data validator. Complete laboratory analytical results and DUSRs are provided in **Appendix I.**

4.2 POTENTIAL SOURCES

Historical operations in the buildings and man placed fill that surrounds the building are the most likely sources of any impacts to the site soils and groundwater. Various historic operations in the building as discussed below most likely also led to the impacts of the soil and groundwater on the Site.

- The prior use history of the Site as a textile manufacture for over 50 years and as furniture metal parts manufacturer for over 40 years included the use and storage of hazardous wastes, acids, bases and other compounds including xylene, acetone, halogenated and non-halogenated solvents, and electroplating wastes.
- Historical information indicates a 4,000-gallon tank of TCE was closed in 1999 and a 4,000-gallon fuel oil tank was closed in 1989. There are no records indicating proper closure or closure sampling. Also, the location and exact purpose of the tanks could not be found in historic records.
- The Site is within an area of industrial operations and manufacturing that may have impacted surface and subsurface media.
- PCBs detected in the soils are most likely due to leaking outdoor transformers at the Site.

The findings of the sampling analytical program are further described below.

4.3 SOIL SAMPLE ANALYTICAL RESULTS

The following provides a summary of the results of the RI soil sample analytical program. Also discussed in this section are the results from the previous Phase II ESA programs (31 Water-June 2017 and 53/55 Water - December 2018).

Since the site soils are anticipated to be removed to meet Restricted Residential SCOs the figures referenced in the following sub-sections provide only sample analytical exceedances of Restricted Residential SCOs. However, the analytical sample result tables, also discussed below, provide comparisons to several PART 375 SCOs classifications besides Restricted Residential, including: Unrestricted Use, Residential, Commercial and Protection of Ecological Resources (PER). This will provide context comparing site analytical sample results to other various site cleanup classifications.

4.3.1 Soil Boring Samples

Soil boring sample compounds detected during the RI and June 2017 Phase II ESA are summarized in the following tables/figures:

RI Soil Borings

- **Table 1** – RI Soil Boring Sample Results compared to several SCO classifications
- **Figure 4** - RI Soil Boring Sample Results (exceeding Restricted Residential SCOs).

Phase II ESA (June 2017)

- **Figure 2** – June 2017 Phase 2 Soil Boring Sample Results (exceeding Restricted Residential SCOs).
- **Table 1** – VOC & SVOC Soil Sample Results.
- **Table 2** – Metals & PCBs Soil Sample Results

Semi-Volatile Organic Compounds (SVOCs)

SVOCs consisting primarily of PAHs that exceeded Restricted Residential SCOs were detected in seven of the 25 total RI soil boring samples and in four of the June 2017 Phase II ESA boring samples.

The PAH exceedance levels, in most cases, only slightly exceeded Restricted Residential SCOs and were primarily in samples collected from the top five feet of soil.

PAH exceedance levels of Restricted Residential SCOs are presented on **Figure 4** (RI boring samples) and **Figure 2** (June 2017 Phase 2 boring samples). A summary of RI boring samples with SVOC concentrations exceeding Restricted Residential, Commercial and PER SCOs include the following:

<u>RI Program</u>

<u>BH-2 (1-3')</u>
-Benz(a)anthracene – 10.6 ppm versus 1 ppm Restricted Residential, 5.6 ppm Commercial
-Benzo(a)pyrene – 12 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial, 2.6 ppm PER
-Benzo(b)fluoranthene – 17 ppm versus 1 ppm Restricted Residential, 5.6 ppm Commercial
-Benzo(k)fluoranthene – 6.28 ppm versus 3.9 ppm Restricted Residential
-Chrysene – 12.8 ppm versus 3.9 ppm RR
-Dibenz(a,h)anthracene – 1.47 ppm versus 0.33 ppm Restricted Residential, 0.56 ppm Commercial
-Indeno(1,2,3-cd)pyrene – 6.47 ppm versus 0.5 ppm Restricted Residential, 5.6 ppm Commercial

<u>BH-3 (1-4')</u>
-Benz(a)anthracene – 2.78 ppm versus 1 ppm Restricted Residential
-Benzo(a)pyrene – 2.28 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial
-Benzo(b)fluoranthene – 2.73 ppm versus 1 ppm Restricted Residential

-Indeno(1,2,3-cd)pyrene – 0.984 ppm versus 0.5 ppm Restricted Residential

BH-6 (0-4')
-Benzo(a)pyrene – 1.17 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial
-Benzo(b)fluoranthene – 1.87 ppm versus 1 ppm Restricted Residential

BH-20 (0-4')
-Benzo(a)pyrene – 1.48 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial
-Benzo(b)fluoranthene – 1.5 ppm versus 1 ppm Restricted Residential

BH-21 (0-4')
-Benzo(a)pyrene – 1.41 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial
-Benzo(b)fluoranthene – 1.93 ppm versus 1 ppm Restricted Residential
-Indeno(1,2,3-cd)pyrene – 1.11 ppm versus 0.5 ppm Restricted Residential

BH-22 (0-1')
-Benzo(a)pyrene – 3.68 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial. 2.6 ppm PER
-Benzo(b)fluoranthene – 4.82 ppm versus 1 ppm Restricted Residential
-Dibenz(a,h)anthracene – 0.50 ppm versus 0.33 ppm Restricted Residential
-Indeno(1,2,3-cd)pyrene – 1.88 ppm versus 0.5 ppm Restricted Residential

BH-22 (6-7.2')
-Indeno(1,2,3-cd)pyrene – 0.53 ppm versus 0.5 ppm Restricted Residential

The total PAHs for any of the boring samples was 35 ppm.

Pesticides/PCBs

One pesticide compound was detected in one boring sample (dieldrin in BH-20) that exceeded its Restricted Residential SCO as follows:

BH-20 (0-4')
-Dieldrin – 1.65 ppm versus 0.2 ppm Restricted Residential, 1.4 ppm Commercial, 0.006 ppm PER

PCBs that exceeded Restricted Residential, Commercial and PER SCOs were detected in four RI samples and three of the June 2017 Phase II samples. Five of these total samples were in the vicinity of the outdoor transformers located at the northwest end of Building 4 between Buildings 4 and 6 (see **Figures 2 and 4)**. Samples that contained PCB concentrations greater than 50 ppm are highlighted below and may be considered hazardous. Borehole sample PCB concentrations exceeding Restricted Residential or higher SCOs in this area are as follows:

Outdoor Transformer Area

BH-6 (0-4')
-PCB-Aroclor 1248 – 10.2 ppm versus 1 ppm Restricted Residential, Commercial, PER

RI BH-20 (0-4')
-PCB-Aroclor 1248 – 104 ppm versus 1 ppm Restricted Residential, Commercial, PER

RI BH-21 (0-4')
-PCB-Aroclor 1248 – 4.65 ppm versus 1 ppm Restricted Residential, Commercial, PER

RI BH-22 (0-1')
-PCB-Aroclor 1248 – 1.73 ppm versus 1 ppm Restricted Residential, Commercial, PER

PH2 B-18 (.5 -4')
-PCB-Aroclor 1248 – 39.6 ppm versus 1 ppm Restricted Residential, Commercial, PER
-PCB-Aroclor 1254 – 30.3 ppm versus 1 ppm Restricted Residential, Commercial, PER
-PCB-Aroclor 1260 – 3.06 ppm versus 1 ppm Restricted Residential, Commercial, PER
Total PCBs 73 ppm

PCB concentrations exceeding Restricted Residential or higher SCOs in borehole samples from other areas are as follows

RI BH-09 (4-7')
-PCB-Aroclor 1254 – 1.6 ppm versus 1 ppm Restricted Residential, Commercial, PER

PH2 B-29 (4 -8')
-PCB-Aroclor 1248 – 1.74 ppm versus 1 ppm Restricted Residential, Commercial, PER

Metals

Metals were detected in all soil samples from both the June 2017 Phase II and the RI program. Metal compounds exceeding RR SCOs were detected in 11 of the RI soil samples and in nine (9) of the Phase 2 samples. Refer to **Figures 2** and **4** for Phase II compound RR SCO exceedances and RI sample RR SCO exceedances respectively. Borehole sample metal concentrations exceeding RR or higher SCOs during the RI are follows:

BH-4 (0-4')
-Arsenic – 16.7 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial, 13 ppm PER
-Barium – 620 ppm versus 400 ppm Restricted Residential, 400 ppm Commercial, 433 ppm PER

BH-6 (0-4')
-Arsenic – 28.9 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial, 13 ppm PER
-Copper – 680 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER

BH-8 (8-12')
-Chromium – 195 ppm versus 180 ppm Restricted Residential, 41 ppm PER

BH-11 (0-4')
-Arsenic – 23.3 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial, 13 ppm PER
-Barium – 858 ppm versus 400 ppm Restricted Residential, 400 ppm Commercial, 433 ppm PER
-Copper – 1500 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER

BH-12 (0-4')
-Copper – 533 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER

BH-14 (18-20')
-Arsenic – 16.2 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial, 13 ppm PER

BH-16 (10-11')
-Arsenic – 21.5 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial, 13 ppm PER

BH-20 (0-4')
-Arsenic – 31.1 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial, 13 ppm PER
-Copper – 1480 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER
BH-21 (0-4')
-Arsenic – 17 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial, 13 ppm PER
-Barium – 446 ppm versus 400 ppm Restricted Residential, 400 ppm Commercial, 433 ppm PER
-Cadmium – 4.8 ppm versus 4.3 ppm Restricted Residential, 4 ppm PER
-Copper – 1500 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER

BH-22 (0-1')
-Arsenic – 40.5 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial, 13 ppm PER
-Copper – 1800 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER

BH-22 (0.7-2')
-Copper – 274 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER

Volatile Organic Compounds (VOCs)

VOCs were detected in all 25 soil samples from the RI program and all of the ten samples collected in the June 2017 Phase II ESA program. The only VOC to exceed its Restricted Residential SCO was TCE which exceeded Restricted Residential SCOs in one June 2017 Phase II sample and in two RI soil samples. TCE concentration levels exceeding Restricted Residential and higher SCOs were as follows:

RI BH-09 (13-14')
-TCE - 58.7 ppm versus 21 ppm Restricted Residential, 2 ppm PER

RI BH-18 (14-15')
-TCE - 29.2 ppm versus 21 ppm Restricted Residential, 2 ppm PER

Ph-2 B-1 (12-16')
-TCE - 56 ppm versus 21 ppm Restricted Residential, 2 ppm PER

It should be noted that each if these boring sample exceedances were from samples from below the floor of Building 2 or directly adjacent the building.

4.3.2 Surface Soil Samples

Surface soil sample compounds detected during the RI, the December 2018 Phase II ESA at the 53/55 Water Street parcels and the June 2017 Phase II (one sample PCBs only) are summarized in the following tables/figures:

RI Surface Soils

- **Table 2** – RI Surface Soil Sample Results compared to several SCO classifications
- **Figure 5** – RI Surface Soil-Sediment-Test Pit Sample Results (exceeding Restricted Residnetial SCOs).

Phase II ESA (June 2017)

- **Figure 2** – June 2017 Phase II Soil Sample Results (exceeding Restricted Residential SCOs).
- **Table 2** – Metals & PCBs Surface Soil Sample Result PCB

Phase II ESA (December 2018) 53/55 Water Street Parcels

- **Table 10** – 53-55 Water Street soil Results
- **Figure 5** – RI Surface Soil-Sediment-Test Pit Sample Results (exceeding Restricted Residential SCOs).

Semi-Volatile Organic Compounds (SVOCs)

SVOCs consisting primarily of PAHs that exceeded Restricted Residential SCOs were detected in five of the seven total RI surface soil samples and in five of the seven December 2018 Phase II surface soil samples at 53/55 Water.

In the RI samples PAH concentrations only slightly exceeded Restricted Residential SCOs with the exception of Samples SS-04 and SS-05 located between buildings 4 and 5 where the PAH levels were an order of magnitude above their Restricted Residential SCOs. PAH concentrations are also only slightly exceeded Restricted Residential SCOs in the Phase II samples (refer to **Figure 5**).

A summary of surface samples with SVOC concentrations exceeding Restricted Residential, Commercial and PER SCOs include the following:

RI Samples

SS-01
-Benz(a)anthracene – 1.56 ppm versus 1 ppm Restricted Residential
-Benzo(a)pyrene – 1.61 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial
-Benzo(b)fluoranthene – 1.97 ppm versus 1 ppm Restricted Residential
-Indeno(1,2,3-cd)pyrene – 1.34 ppm versus 0.5 ppm Restricted Residential

SS-02
-Benz(a)anthracene – 2.21 ppm versus 1 ppm Restricted Residential
-Benzo(a)pyrene – 1.96 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial
-Benzo(b)fluoranthene – 2.78 ppm versus 1 ppm Restricted Residential
-Indeno(1,2,3-cd)pyrene – 0.96 ppm versus 0.5 ppm Restricted Residentail

SS-04
-Benz(a)anthracene – 34.9 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial
-Benzo(a)pyrene – 32.4 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial, 2.6 ppm PER
-Benzo(b)fluoranthene – 50.6 ppm versus 1 ppm Restricted Residential, 5.6 ppm Commercial
-Benzo(k)fluoranthene – 23 ppm versus 3.9 ppm Restricted Residential
-Chrysene – 35.5 ppm versus 3.9 ppm Restricted Residential
-Dibenz(a,h)anthracene – 3.66 ppm versus 0.33 ppm Restricted Residential, 0.56 ppm Commercial
-Indeno(1,2,3-cd)pyrene – 14.8 ppm versus 0.5 ppm Restricted Residential, 5.6 ppm Commercial

SS-05
-Benz(a)anthracene – 126 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial
-Benzo(a)pyrene – 103 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial, 2.6 ppm PER
-Benzo(b)fluoranthene – 155 ppm versus 1 ppm Restricted Residential, 5.6 ppm Commercial
-Benzo(k)fluoranthene – 70.6 ppm versus 3.9 ppm Restricted Residential, 56 ppm Commercial
-Chrysene – 112 ppm versus 3.9 ppm Restricted Residential, 56 ppm Commercial
-Fluorathene – 3.66 ppm versus 0.33 Restricted Residential
-Dibenz(a,h)anthracene – 4.18 ppm versus 0.33 ppm Restricted Residential, 0.56 ppm Commercial

-Indeno(1,2,3-cd)pyrene – 43.9 ppm versus 0.5 ppm Restricted Residential, 5.6 ppm Commercial
-Phenanthrene – 249 ppm versus 100 ppm Restricted Residential
-Pyrene – 206 ppm versus 100 ppm Restricted Residential

SS-06
-Benz(a)anthracene – 1.07 ppm versus 1 ppm Restricted Residential
-Benzo(b)fluoranthene – 1.24 ppm versus 1 ppm Restricted Residential
-Indeno(1,2,3-cd)pyrene – 0.57 ppm versus 0.5 ppm Restricted Residential

53/55 Water Phase II ESA Samples

55-S1
-Benz(a)anthracene – 2.01 ppm versus 1 ppm Restricted Residential
-Benzo(a)pyrene – 1.76 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial
-Benzo(b)fluoranthene – 2.04 ppm versus 1 ppm Restricted Residential
-Indeno(1,2,3-cd)pyrene – 1.1 ppm versus 0.5 ppm Restricted Residential

55-S2
-Benz(a)anthracene – 2.04 ppm versus 1 ppm Restricted Residential
-Benzo(a)pyrene – 1.85 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial
-Benzo(b)fluoranthene – 2.25 ppm versus 1 ppm Restricted Residential
-Indeno(1,2,3-cd)pyrene – 1.21 ppm versus 0.5 ppm Restricted Residential

53-S1
-Indeno(1,2,3-cd)pyrene – 0.52 ppm versus 0.5 ppm Restricted Residential

53-S2
-Indeno(1,2,3-cd)pyrene – 0.53 ppm versus 0.5 ppm Restricted Residential

53-S3
-Benz(a)anthracene – 1.49 ppm versus 1 ppm Restricted Residential
-Benzo(a)pyrene – 1.29 ppm versus 1 ppm Restricted Residential, 1 ppm Commercial
-Benzo(b)fluoranthene – 1.59 ppm versus 1 ppm Restricted Residential
-Indeno(1,2,3-cd)pyrene – 0.81 ppm versus 0.5 ppm Restricted Residential

Pesticides/PCBs

One pesticide compound (dieldrin in SS-01) was detected in the RI surface soil samples that slightly exceeded its Restricted Residential SCO. Pesticides were detected in all of the December 2018 Phase II surface soil samples but none exceeded Restricted Residential SCOs.

PCBs were detected in six of the RI surface soil samples with PCB concentrations in two of the samples (SS-01 and SS-04) exceeding Restricted Residential SCOs. The SS-01 sample with the highest PCB concentration was collected in the vicinity of the outdoor transformers located at the northwest end of building 4 between building 4 and 6 (See **Figure 5**). Samples that contained PCB concentrations greater than 50 ppm are highlighted below and may be considered hazardous. PCB concentration levels exceeding Restricted Residential, Commercial and PER SCOs are as follows:

SS-01

- PCB Aroclor 1248 – 78.6 ppm versus 1 ppm Restricted Residential, Commercial and PER SCOs

SS-04

- PCB Aroclor 1248 – 1.16 ppm versus 1 ppm Restricted Residential, Commercial and PER SCOs.

No PCBs were detected in the December 2018 Phase II 53/53 surface samples.

One surface soil sample was collected during the June 2017 Phase II ESA in the transformer area (see **Figure 2**) and analyzed for only PCBs. The result was as follows:

S-1

PCB Aroclor 1248 – 297 ppm versus 1 ppm Restricted Residential, Commercial and PER SCOs

Metals

Metal compounds exceeding Restricted Residential SCOs were detected in four of the seven RI surface soil samples and exceeded Restricted Residential SCOs in five of the seven surface soil samples from the December 2018 Phase II sampling (see **Figure 5**).

A summary of surface samples with metal concentrations exceeding Restricted Residential SCOs along with Commercial and PER SCOs include the following:

RI samples

SS-01

-Arsenic – 40 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial and 13 ppm PER SCOs
-Copper – 6850 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER SCOs

SS-02

-Arsenic – 34.2 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial and 13 ppm PER SCOs
-Copper – 940 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER SCOs

SS-04

-Arsenic – 16.6 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial and 13 ppm PER SCOs
-Cadmium – 5.6 ppm versus 4.3 ppm Restricted Residential, 4 ppm PER SCOs
-Copper – 20100 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER SCOs
-Lead – 1090 ppm versus 400 ppm Restricted Residential, 1000 ppm Commercial, 450 ppm PER SCOs
-Zinc – 19700 ppm versus 10000 ppm Restricted Residential, 10000 ppm Commercial, 109 ppm PER SCOs
-Mercury – 6.4 ppm versus 0.81 ppm Restricted Residential, 2.8 ppm Commercial, 0.81 ppm PER SCOs

SS-05

-Arsenic – 27.7 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial, 13 ppm PER SCOs
-Cadmium – 12.9 ppm versus 4.3 ppm Restricted Residential, 9.3 ppm Commercial, 4 ppm PER SCOs
-Copper – 24000 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER SCOs
-Lead – 1380 ppm versus 400 ppm Restricted Residential, 1000 ppm Commercial, 450 ppm PER SCOs
-Zinc – 43600 ppm versus 10000 ppm Restricted Residential, 10000 ppm Commercial, 109 ppm PER SCOs

53/55 Water Phase II ESA Samples

55-S1
-Arsenic – 18 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial and 13 ppm PER SCOs
-Copper – 1510 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER SCOs
55-S2
-Arsenic – 18.8 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial and 13 ppm PER SCOs
-Copper – 361 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER SCOs

53-S1
-Cadmium – 8.47 ppm versus 4.3 ppm Restricted Residential, 4 ppm PER SCOs

53-S2
-Copper – 2260 ppm versus 270 ppm Restricted Residential, 270 ppm Commercial, 50 ppm PER SCOs

53-S3
-Arsenic – 19.3 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial, 13 ppm PER SCOs.

4.3.3 Test Pit Soil Sample

Test pits were completed as part of the RI on the eastern side of Building 2 based on the geophysics survey of the possibility of USTs in this location. Test pits were approximately 4 feet wide by 10 feet long with depths ranging from 4 to 8 feet bgs. Each test pit was backfilled in the order in which the fill was removed prior to moving to the next location. A 6 by 8-foot concrete walled UST was uncovered adjacent to Test Pit TP-1. One soil sample was collected at the 6 to 8-foot level in this test pit.

Soil sample compounds detected in Sample TP-1 are summarized in the following tables/figures:

- **Table 4** – RI Test Trench Sample Results; and
- **Figure 5** – Surface Soil, Sediment and Test Pit Sample Results.

Semi-Volatile Organic Compounds (SVOC)

SVOCs consisting primarily of PAHs were detected in the TP-1 sample, however, no concentrations exceeded Restricted Residential SCOs.

Metals

Metals were detected in the TP-1 sample with two metal compounds (arsenic and chromium) having concentrations exceeding Restricted Residential and higher SCOs (see **Figure 5**).

A summary of metal concentrations exceeding Restricted Residential SCOs along with Commercial and PER SCOs in TP-1 include the following:

TP-1
-Arsenic – 20.9 ppm versus 16 ppm Restricted Residential, 16 ppm Commercial, 13 ppm PER SCOs
-Chromium – 553 ppm versus 180 ppm Restricted Residential, 41 ppm PER SCOs

Pesticides/PCBs

No pesticides or PCB compounds were detected in TP-1 that exceeded Restricted Residential SCO.

Volatile Organic Compounds (VOCs)

Several petroleum related VOCs were detected in Sample TP-1 but with concentrations less than Restricted Residential SCOs.

4.3.4 Sediment Samples

Sediment sampling was completed at two locations along the Chadakoin river bank during the RI. One Sediment sample was collected from each location (SED-01 and SED-02). Compounds detected during the RI are summarized in the following tables/figures:

- **Table 3** – Sediment Sample Analytical Results;
- **Figure 5** – Surface Soil, Sediment and Test Pit Sample Results.

Semi-Volatile Organic Compounds (SVOCs)

SVOCs consisting primarily of PAHs, were detected in both sediment samples with one PAH exceeding PER SCOs (recommended by NYSDEC as SCO comparison) in sample SED-01 (Benzo(a)pyrene 2.81 ppm versus 2.6 ppm PER) and no exceedances in SED-02.

SED-01
-Benzo(a)pyrene – 2.81 ppm versus 2.6 ppm PER

Metals

Metals were detected in both RI sediment samples (see **Figure 5**) with several metal compound concentrations exceeding Protection of Ecological Resources (PER) SCOs in both samples as follows:

SED-01
-Arsenic – 13.3 ppm versus 13 ppm PER
-Copper – 479 ppm versus 50 ppm PER
-Zinc – 581 ppm versus 109 ppm PER

SED-01
-Arsenic – 15 ppm versus 13 ppm PER
-Copper – 69.9 ppm versus 50 ppm PER
-Zinc – 160 ppm versus 109 ppm PER

Pesticides/PCBs

Pesticides and PCB compounds were not detected in either sediment sample that exceeded PER SCOs.

Volatile Organic Compounds (VOCs)

VOCs were not detected in either sediment sample.

4.3.5 PFAS and 1,4 Dioxane Soil Samples

Soil sampling for PFAS and 1,4 Dioxane compounds were only analyzed for in the sediment samples.

No PFAS compounds or the 1,4 Dioxane compound were detected in either sediment sample (see **Table 6**).

4.3.6 Soil/Sediment Results Summary

The results of the RI and Phase II ESA soils investigations indicate that a number of SVOCs compounds and metal compounds were detected throughout soil/fill material at variable levels above Restricted-residential SCOs.

PCBs that exceeded Restricted Residential SCOs were detected in both RI and Phase II soil samples primarily in the vicinity of the outdoor transformers located at the northwest end of Building 4 between Building 4 and 6.

TCE was detected above the Restricted Residential SCO in samples collected beneath the floor and adjacent Building 2 in both the RI and Phase II soil sampling.

SVOCs, consisting primarily of PAHs, and metal compounds were detected in both sediment samples with one PAH (Benzo(a)pyrene) in sample SED-01 with a concentration exceeding PER SCOs and several metal compounds that exceeded PER SCOs in both sediment samples. No VOCs were detected in either sample nor any pesticide/PCB compounds were detected that had concentrations that exceeded PER SCOs. No PFAS or 1,4 Dioxane compounds were detected in either sediment sample.

4.4 GROUNDWATER SAMPLE ANALYTICAL RESULTS

The following provides a summary of the RI groundwater sample analytical program. Compound concentration levels detected in groundwater samples collected during the RI are compared to Class GA Groundwater Quality Standards (NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations - June 1998) in the following tables and figures.

- **Table 5** – Groundwater Sample Analytical Results
- **Figure 6** – Groundwater Sample Analytical Results and Contours

All groundwater samples were analyzed for TCL VOCs, SVOCs, pesticides, PCBs, and TAL metals. Samples MW-01, BMW-01 and WS-01 were also laboratory analyzed for dissolved metals. All monitoring wells and the brick lined pit were also required to be sampled for PFAS and for 1,4-dioxane.

Groundwater elevations are provided in **Table 8** and groundwater contours are shown on **Figure 6**.

Semi-Volatile Organic Compounds (SVOC)

SVOCs were not detected in the groundwater samples.

Pesticides/PCBs

Pesticides and PCB compounds were not detected in the groundwater samples.

Volatile Organic Compounds (VOCs)

Acetone was detected in each of the groundwater samples at approximately the same concentration level slightly above the TOGS guideline. It should be noted that acetone is found in most laboratory cleaning solutions of their sampling jars. The similar acetone concentrations in each of the groundwater samples may be a result of residual acetone remaining from the container cleaning process prior to sampling.

Vinyl chloride was detected in the MW-04 sample at a level above its TOGS guideline. Vinyl chloride was not detected in any of the other groundwater samples nor in any soil samples in the vicinity of Well MW-04. This may just be an outlier but re-sampling of this well may be warranted to assess its actual presents in the groundwater.

Metals

Metals were detected in all groundwater samples and several Metal compounds exceeded their TOGS guidelines as follows:

MW-01
-Arsenic – 27.6 parts per billion (ppb) versus 25 ppb TOGS value
-Barium – 1090 ppb versus 1000 ppb TOGS value
-Lead – 34.4 ppb versus 25 ppb TOGS value
-Magnesium – 35,600 ppb versus 35000 ppb TOGS value
-Manganese – 3,140 ppb versus 300 ppb TOGS value

MW-02
-Manganese – 2,130 ppb versus 300 ppb TOGS value

MW-03
-Arsenic – 26 ppb versus 25 ppb TOGS value
-Manganese 5130 ppb versus 300 ppb TOGS value

MW-04
-Barium – 1,700 ppb versus 1000 ppb TOGS value

MW-05
-Barium – 2,140 ppb versus 1000 ppb TOGS value
-Manganese 407 ppb versus 300 ppb TOGS value

BMW-01
-Barium – 1,740 ppb versus 1000 ppb TOGS value
-Manganese – 505 ppb versus 300 ppb TOGS value

It should be noted that the MW-01 sample was also laboratory filtered and the results indicated that only manganese exceeded its TOGS (1,880 ppb versus 300 ppb) in the dissolved sample.

4.4.1 PFAS & 1,4 Dioxane Groundwater Samples

One PFAS compound (Perfluorooctanesulfonic Acid [PFOS]) exceeded NYSDEC guidelines (*Guidelines for Sampling and Analysis of PFAS Under NYSDEC's Part 375 Program* Issued January 17, 2020) in two samples (refer to **Table 6**) as follows:

MW-03
-PFOS 15 nanograms per liter (ng/L) versus 10 ng/L NYSDEC Guideline

TANK WS-01
-PFOS 41 ng/L versus 10 ng/L NYSDEC Guideline

4.4.2 Groundwater Results Summary

The groundwater analytical results indicate minor impacts to groundwater. No SVOCS, pesticides or PCBs were detected in any of the groundwater samples. Acetone was detected in each of the groundwater samples at approximately the same concentration levels slightly above the TOGS guideline. It should be noted that acetone is found in most laboratory cleaning solutions of their sampling jars. The similar acetone concentrations in each of the groundwater samples may be a result of residual acetone remaining from the container cleaning process prior to sampling.

Vinyl chloride was detected in the MW-04 sample at a level significantly above its TOGS guideline. Vinyl chloride was not detected in any of the other groundwater samples nor in any soil samples in the vicinity of MW-04. This may just be an outlier but re-sampling of this well may be warranted to assess its actual presents in the groundwater.

Several metal compounds had elevated concentrations above their TOGS value are most likely the result of natural variability in soils and/or from leaching of fill materials present on the Site.

One PFAS compound (PFOS) exceeded NYSDEC guidelines (*Guidelines for Sampling and Analysis of PFAS Under NYSDEC's Part 375 Program Issued January 17, 2020*) in groundwater Samples MW-03 and TANK WS-01.

4.5 Sub-Slab Soil Vapor Analytical Results

A total of 13 sub-slab vapor samples and 13 indoor ambient air and one outside air sample were collected from the building complex and analyzed in accordance with the approved RIWP. Samples were submitted to a NYSDEC certified contract laboratory and analyzed for TCL VOCs by EPA method TO-15. The TO-15 VOC compounds detected in the samples collected are summarized in **Table 7 and Figure 7.** The result details are discussed below.

The goals of collecting sub-slab vapor samples were to identify potential impacts from soil vapor on the indoor building air. New York State currently does not have any standards, criteria or guidance values for concentrations of compounds in sub-slab vapor. Additionally, there are no databases available of background levels of volatile chemicals in subsurface vapors. However, the NYSDOH has developed in their guidance document decision matrices as a risk management tool to provide guidance on a case-by-case basis about actions that should be taken to address current and potential exposures related to soil vapor intrusion. The matrices are intended to be used when evaluating the results from buildings with full slab foundations such as the 31 Water Street complex. The NYSDOH has developed guideline values for acceptable background levels for eight specific VOCs in ambient air. The matrices encapsulate the data evaluation processes and actions recommended to address potential exposures for the eight specific VOCs.

The NYSDOH has developed three matrices (refer to **Appendix F)** to use as tools in making decisions when soil vapor may be entering buildings.

Soil Vapor/Indoor Air Matrix	Volatile Chemical
Matrix A	carbon tetrachloride, 1,1-dichloroethene, *cis*-1,2-dichloroethene, and trichloroethene
Matrix B	methylene chloride, tetrachloroethene, and 1,1,1-trichloroethane
Matrix C	vinyl chloride

Using the Matrix, A, B and C models from the Guidance and provided in **Appendix F**, the concentrations of these VOCs detected at the site were evaluated. The evaluation results are provided on **Table 7** and also **Figure 7** provides the sample locations and analytical results with recommended actions.

The matrix results indicate that the compound TCE was detected at concentrations in all sub-slab vapor samples and corresponding indoor air samples to require mitigation with the exception of SS-11 where the matrix recommends "identify source(s) and resample or mitigate".

The following VOCs on the matrix lists, that, when applied to the matrix models indicate the following actions are required at the sampling points designated:

SS-01	**IA-01**	**Matrix Model**
TCE - 7.4 ug/m3	TCE – 5 ug/m3	A - Mitigate
SS-02	**IA-02**	**Matrix Model**
TCE - 34 ug/m3	TCE – 32 ug/m3	A - Mitigate
cis-1,2-dichloroethene – 2.1 ug/m3	*cis*-1,2-dichloroethene – 3.8 ug/m3	A - Mitigate
SS-02	**IA-3**	**Matrix Model**
TCE – 34 ug/m3	TCE – 13 ug/m3	A - Mitigate
cis-1,2-dichloroethene - 2.1 ug/m3	*cis*-1,2-dichloroethene – 4.3 ug/m3	A - Mitigate
SS-03	**IA-02**	**Matrix Model**
TCE - 23000 ug/m3	TCE – 32 ug/m3	A - Mitigate
cis-1,2-dichloroethene –9000 ug/m3	*cis*-1,2-dichloroethene – 3.8 ug/m3	A - Mitigate
SS-04	**IA-04**	**Matrix Model**
TCE - 21 ug/m3	TCE – 16 ug/m3	A -Mitigate
cis-1,2-dichloroethene –6.3 ug/m3	*cis*-1,2-dichloroethene – 7.1 ug/m3	A - Mitigate
SS-05	**IA-05**	**Matrix Model**
TCE - 15 ug/m3	TCE – 70 ug/m3	A - Mitigate
cis-1,2-dichloroethene –1.6 ug/m3	*cis*-1,2-dichloroethene – 13 ug/m3	A - Mitigate
tetrachloroethene – 1.6 ug/m3	tetrachloroethene – 18 ug/m3	B - Mitigate
SS-06	**IA-06**	**Matrix Model**
TCE - 3300 ug/m3	TCE – 66 ug/m3	A - Mitigate
cis-1,2-dichloroethene –730 ug/m3	*cis*-1,2-dichloroethene – 14 ug/m3	A - Mitigate
tetrachloroethene – 9.5 ug/m3	tetrachloroethene – 12 ug/m3	A - Mitigate

SS-07	IA-07	Matrix Model
TCE - 95 ug/m3	TCE – 51 ug/m3	A - Mitigate
cis-1,2-dichloroethene –11 ug/m3	*cis*-1,2-dichloroethene – 13 ug/m3	A - Mitigate
SS-08	**IA-08**	**Matrix Model**
TCE - 44 ug/m3	TCE – 28 ug/m3	A - Mitigate
SS-09	**IA-09**	**Matrix Model**
TCE – 7.3 ug/m3	TCE – 12 ug/m3	A - Mitigate
SS-10	**IA-10**	**Matrix Model**
TCE – 13 ug/m3	TCE – 26 ug/m3	A - Mitigate
SS-11	**IA-11**	**Matrix Model**
TCE – 5.3 ug/m3	TCE – 4.1 ug/m3	A – Identify Source-Mitigate
SS-12	**IA-12**	**Matrix Model**
TCE – 6.6 ug/m3	TCE – 3.3 ug/m3	A - Mitigate
SS-13	**IA-13**	**Matrix Model**
TCE – 21 ug/m3	TCE – 3.1 ug/m3	A - Mitigate

4.5.1 Assessment of Matrix Results:

Based on the above results it appears that a sub-slab depressurization system (SSDS) will need to be installed across the entire building complex. The SSDS would be designed to remove sub-slab vapors containing the compounds listed above. The SSDS will be installed per the final design and will be initiated as a passive system but will be equipped to be easily modified to an active system as required.

5.0 FATE AND TRANSPORT OF CONTAMINANTS OF CONCERN

The soil, groundwater, and air sample analytical results were incorporated with the physical site conditions to evaluate the fate and transport of constituents of concern (COC) in Site media. COC for the Site include PAHs, PCBs, metals and VOCs (solvent related compounds). The mechanisms by which the COC can migrate to other areas or media are briefly outlined below.

Approximately 35 percent of the site is covered by the property buildings which will be renovated/re-built as part of the new development. Approximately 50 percent of the site will be re-paved with asphalt/concrete for parking, site roads, sidewalks, etc. The remaining approximately 15 percent of the site will be greenspace (see **Figure C-101**).

5.1 FUGITIVE DUST

Chemicals present in soil can be released to ambient air because of fugitive dust generation. Presently, the Site is approximately 80 percent covered with existing buildings and pavement with another 10 to 15 percent grassed/treed areas that limits any fugitive dust generation for most of the property.

Impacted soil/fill will be excavated as part of the remedial work and new development. However, during construction/remedial work fugitive dust maybe generated. A health and safety plan along with a community air monitoring plan will be prepared as required by the Remedial Action Work Plan (RAWP)

and the Site Management Plan (SMP) called for under the BCP, which will minimize fugitive dust concerns during this timeframe.

The fugitive dust migration pathway is not currently relevant. During remedial/redevelopment activities, appropriate dust control measures will be implemented.

5.2 SURFACE WATER

As previously mentioned, building and pavement covers most of the site. The paved area currently drains toward Chadakoin River to the north and northeast. The existing buildings are to remain and be renovated during the new development. Impacted soil will be removed and/or covered with clean fill or hardscape in the open area surrounding the buildings preventing surface water contamination.

Standard stormwater and sediment control will be provided during remedial/development activities to protect the river and its banks. These details are provided in the stormwater pollution prevention plan (SWPPP) a copy of which is provided in **Appendix K**.

5.3 VOLATILIZATION

The only VOC in soil to exceed its Restricted Residential SCO was TCE which exceeded Restricted Residential SCOs in one June 2017 Phase 2 sample and in two RI soil samples. TCE concentration levels exceeding Restricted Residential SCOs were as follows:

- RI BH-09 (13-14') TCE 58.7 ppm versus 21 ppm SCO;
- RI BH-18 (14-15') TCE 29.2 ppm versus 21 ppm SCO; and
- June 2017 Ph-2 B-1 (12-16') TCE 56 ppm versus 21 ppm SCO.

It should be noted that each if these exceedances were from soil samples from below the floor of Building 2 or directly adjacent the building. Elevated TCE concentrations were also detected in all of the sub-slab vapor samples during the Sub-slab vapor intrusion investigation. The 2017 Phase I conducted at the site noted from historical records that a 4,000-gallon TCE storage tank was located in Building 2, but no details of where or if removed were found. If this tank had leaked this could be the source of the TCE found in the soil samples from within and adjacent the building.

TCE was detected in two of the six groundwater monitoring well samples. The concentrations of TCE in the two samples were significantly below the TOGS value for this compound.

There may be a volatilization pathway from the ground water through the soils to the sub-slab bedding material beneath the buildings but based on the very low concentrations of TCE in the groundwater this pathway is very minor. Elevated TCE concentrations in the sub-slab vapors is most likely due to chemical spillage from building operations that have migrated through floor cracks over time. To mitigate possible vapor intrusion in the building, a SSDS will be installed as part of the building renovation prior to building occupancy. The mitigation system will exhaust collected sub slab soil vapors above the building roof level. The SSDS will be installed per the final design and will be initiated as a passive system but will be equipped to be easily modified to an active system as required.

5.4 LEACHING

As noted above, the only VOC in soil to exceed its Restricted Residential SCO was TCE which exceeded Restricted Residential SCOs in one (1) June 2017 Phase II sample and in two RI soil samples. Both

SVOCs (PAHs) and metals were detected in the site soils; however, these compounds are not very mobile in soils.

Based on the results of the RI and Phase II some leaching of VOCs in the soils to the groundwater maybe occurring, however, at very low concentrations that do not exceed TOGs. VOC concentrations are most likely attributable to direct movement of chemicals from historic building operation, spills etc. through cracks in the floors and/or trenches within the building and infiltrated soils beneath the building and migrating to the groundwater.

5.5 GROUNDWATER TRANSPORT

Groundwater underlying this property migrates basically to the north-northeast across the Site toward the Chadakoin River (see **Figure 6**).

Chemicals present in groundwater may be transported beneath the property via this pathway. The contaminant concentrations of metals and minimal solvents in the groundwater are potentially migrating within groundwater towards the Chadakoin River.

Since the Site and surrounding area are serviced by municipal water and the City prohibits the use of groundwater for drinking or process use, local receptors are greatly reduced. Therefore, significant potential exposure to any chemicals in the groundwater is minimal with the exception of the river.

5.6 EXPOSURE PATHWAY SUMMARY

Based on the above assessment and a review of the data, site COCs have several pathways at which receptors may be potentially exposed. These pathways include direct contact/accidental content ingestion of surface soils, direct contact/accidental ingestion of river sediments and inhalation of site related contaminants in indoor air that has been impacted by soil vapor intrusion.

6.0 QUALITATIVE EXPOSURE ASSESSMENT

6.1 HUMAN EXPOSURE

The property in its present condition provides minimum human exposure risks as related to COCs in the Site soils and groundwater. Some of the following buildings are partially occupied and present human exposure during time of occupancy (refer to **Figure 3**):

- ....Building 1 – East Half – Soup Kitchen - Sporatically Occupied.
- ....Building 1 – West Half – Consignment Shop - Sporatically Occupied.
- ....Building 2 – Furniture Warehouse - Sporatically Occupied.
- ....Building 6 – Counseling Center - Sporatically Occupied.

The remaining buildings are not occupied therefore there is limited to no current exposure.

Presently, any soil vapors possibly entering the site building present no human exposure risk since the building is not occupied and will be mitigated under the final remedy prior to or as part of the renovation of the buildings.

The elevated COCs in soils are primarily PAHs and metals detected primarily in the fill material from the surface to approximately 8 feet bgs across most of the site. PAHs and metals are not very mobile in soils,

in that they have low solubility with water and tend to adsorb to the soil grains. Their moving to possibly effect the human population off property is considered minimal.

Elevated concentrations of the solvent TCE were detected at depth (12 to 16 feet bgs.) in the soils beneath and directely east of Building 2. Elevated concentrations of PCBs were detected in the surface soils in the location of old transformers between Buildings 4 and 6. Refer to **Figures 2, 4** and **5** for locations and values.

SVOCs, consisting primarily of PAHs, and metal compounds were detected in both sediment samples with one PAH (Benzo(a)pyrene) in sample SED-01 with a concentration exceeding PER SCOs and several metal compounds that exceeded PER SCOs in both sediment samples. No VOCs were detected in either sample nor any pesticide/PCB compounds were detected that had concentrations that exceeded PER SCOs. No PFAS or 1,4 Dioxane compounds were detected in either sediment sample.

Elevated metals detected in the groundwater at present have no human exposure since the entire area is on municipal water supply and groundwater is not used for human consumption or use.

The proposed property remediation will include: removing and/or covering impacted soils to meet Restriced Residential SCOs; installing a vapor mitigation system in all of the buildings and an IC/SMP will restricts the use of Groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH. Buried piping uncovered during remediation will be assessed and removed and, as agreed to, no disturbance of the river bank will be undertaken.

The primary population at-risk would-be construction workers performing remedial activities. However, contractor health and safety plans will be in effect as required by a RAWP during all remediation activities to minimize any human exposure. CAMP equipment will be described in detail in the RAWP. Monitoring will include location of a dust monitor upgradient and one downgradient of the work area. Also, a PID will be located downgradient of the work area and a second PID at the working face. Preferably the upgradient and downgradient locations will be at the property limits.

Municipal water supply will be used for all water requirements of the new development thereby eliminating any future human exposure.

6.2 Ecological Exposure Risks

The Gateway Lofts site is located within a highly urbanized area, consisting of commercial and industrial land uses, and dense urban residential areas interspersed with a few less developed open spaces. The existing site is almost entirely developed, consisting of buildings and associated paved access and parking areas. The only areas of potential habitat are along the immediate shoreline of the Chadakoin River, which abuts the property along the northern and eastern boundaries. Along the river are scattered trees and woody shrubs, which provide some habitat for wildlife species likely to be encountered along an urban riverine corridor. With the exception of the Chadakoin River, there are no federal or state regulated wetlands located on or near the site.

Water quality in the Chadakoin River has been assessed as “impaired due to aquatic life support and recreational uses that are known or thought to be impaired by nutrients and other toxic substances thought to be from industrial discharges and urban/storm runoff” (NYSDEC Waterbody Inventory/Priority Waterbody List- Allegheny River WI/PWL, Revised 12/18/2014). Macroinvertebrate assessments of the river were conducted in 2006, 2011 and 2012 near the mouth of the river in Falconer, and sampling was

also performed upstream at Dow Street in 2011. Both areas indicated slightly to moderately impaired water quality conditions, and elevated levels of some metals and PAHs have been documented.

Reptiles and amphibians (herps) known to occur in the general vicinity of the project site were identified from the New York Herp Atlas completed between 1990 and 1999. One species known to be present on the site, the eastern spiny softshell turtle, is a species of special concern in New York.

Threatened, Endangered and Special Concern Species of Fish and Wildlife

To identify any threatened, endangered or special concern fish or wildlife species in the general vicinity of the Gateway Lofts site, several on-line data bases were queried. These included the New York State Natural Heritage Program, the NYSDEC Environmental Resource (ER) Mapper, the NYSDEC Environmental Assessment Form (EAF) Mapper, and the U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) website. The New York Natural Heritage Program indicated in a letter dated May 26, 2020 that no records of rare or state-listed plants or animals, or significant natural communities, were known from the project site. However, within 0.25 mile, the eastern spiny softshell turtle, a state listed species of special concern, was recorded.

A review of the area within approximately 0.5 mile of the project site was conducted through the NYSDEC ER Mapper. No state-regulated wetlands, significant fish and wildlife habitats, state forests, forest preserves, parks or other designated green space were identified within 0.5 mile of the site. However, there was an indication that a rare plant or animal was known to be present in the immediate vicinity of the site. A query to the NYSDEC EAF Mapper website revealed the species of concern near the site is the eastern spiny softshell turtle, a state Species of Special Concern. A more encompassing review of the ER Mapper indicated that additional rare plants or animals existed further downstream from the project site, and thus might be affected by contaminants from the site. A further query to the EAF Mapper for this larger area revealed that in addition to the eastern spiny softshell turtle, two fish species of special concern, the Black Redhorse and the Redfin Shiner, were known to exist several miles downstream from the project site. In addition, a federally listed endangered species, the rayed bean (a mussel), was also known to be present, as well as a New York State endangered plant, the tall ironweed.

A query made to the U.S. Fish and Wildlife Service's IPaC website for the project site and the area within approximately 0.5 mile around the site identified one mammal, the federally threatened northern long-eared bat, and three federally endangered mussels: the clubshell, the rayed bean, and the northern riffleshell.

The northern long eared bat is distributed widely throughout New York state, but no critical habitat has been designated, and there are no known hibernacula or nursery trees anywhere near the site. Northern long eared bats reportedly prefer forested habitats, and typically forage beneath the canopy. However, they are known to utilize riverine sites as well (S. Doran, USFWS, personal communication May 14,2020). Provided the existing trees along the Chadakoin River are left undisturbed, no impacts are anticipated, and no additional surveys are required.

Of the state or federally listed threatened, endangered or special concern species identified above that may occur in the general vicinity of the project site, only one, the eastern spiny softshell turtle, is known to use the project site. The Chadakoin River in the immediate vicinity of the project site is home to numerous spiny softshell turtles, and the project site itself is thought to be the primary nesting site for the turtles in this portion of the river (personal communication, T. Leenders, Roger Tory Peterson Institute, May 12, 2020). At any one time, as many as 30 turtles can be seen attempting to nest, and evidence of over 100 nests has been observed. It is not known what the success rate is for these nests, but young hatchling turtles have been seen indicating that at least some of the nests are successful.

Potential Impacts of Proposed Project

The extent to which existing contamination of the Gateway Lofts site is affecting fish or wildlife resources is unknown. No analytical results of contaminant levels in biological tissues were located. As detailed in the RI AAR, possible pathways for exposure of fish and wildlife to contamination include primarily fugitive dust and groundwater migration. Sediment samples from the Chadakoin River likely reflect to some extent the contamination from groundwater from the site, and thus potential exposure to fish and wildlife resources. Two sediment samples from the Chadakoin River were analyzed. Four metals (arsenic, copper, lead and zinc) and one SVOC (Benzo[a]pyrene) were found at levels that exceeded Restricted Use SCOs for PER. For arsenic, lead and Benzo(a)pyrene, the levels in sediment exceeded SCOs by small amounts (15 vs 13 ppm for arsenic; 82 vs 63 ppm for lead; and 2.81 vs 2.6 for Benzo(a)pyrene). Sediment Sample 1 exceeded the standard for copper and zinc, but was within an order of magnitude (479 vs 50ppm for copper; 681 vs 109ppm for zinc).

Although there may be some exposure of aquatic resources to groundwater contamination from the Gateway Lofts site under existing conditions, the completion of the project will serve to reduce that exposure over time. Specifically, the project will remove some overburden from the site and replace it with clean fill material removing a source of potential contamination; the majority of the site will be repaved minimizing movement of any remaining contamination into the groundwater; and a permanent barrier groundwater wall will be installed to minimize migration of contaminants to the river. As such, the project itself is not expected to cause any significant exposure to fish and wildlife resources, and in fact should reduce the extent of any exposure that is present under existing conditions. See **Appendix D** for additional information regarding ecological exposure risks.

The DER-10 Appendix 3C Fish and Wildlife Resources Impact Analysis (FWRIA) Decision Key is provided in **Appendix D**. No FWRIA is needed based on the completed decision key process. This determination is based on the following:

- The site will be remediated to Restricted Residential status. The site does not have a habitat of an endangered, threatened or special concern species present.

Therefore, no unacceptable ecological risks are anticipated under the current or any anticipated future site use scenario.

Under the BCP the property is to be remediated to meet Part 375 Restricted Residential SCOs. The remediation for the open property areas will include removal and/or covering impacted site soils. The cover system east, north, west and between the buildings will be primarily hardscape including new asphalt parking areas, driveways, sidewalks, etc. (refer to new development **Figures C-101, C-104 and C-105**)

7.0 REMEDIAL ALTERNATIVES ANALYSIS

7.1 REMEDIAL ACTION OBJECTIVES

The final remedial measures for the Site must satisfy Remedial Action Objectives (RAOs). RAOs are site-specific statements that convey the goals for minimizing or eliminating substantial risks to public health and the environment. The primary RAOs identified for the Site are the following:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater containing contaminant levels exceeding drinking water standards.
- Prevent contact with or inhalation of volatiles emanating from contaminated groundwater.

RAOs for Environmental Protection

- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

The groundwater monitoring wells installed during the RI were sampled once. Three new monitoring wells will be installed during the remedial construction directly down gradient of the proposed groundwater treatment points/permeable barrier wall (see **Figure 8**) to be installed for groundwater treatment. These wells will be sampled prior to treatment as a baseline and after treatment. Additional sampling of these wells and others on site will be determined Depending on the results of the post treatment sampling.

7.2 Alternatives Selection Factors

In addition to achieving RAOs, NYSDEC's Brownfield Cleanup Program calls for an evaluation of remedial alternatives in accordance with 6 NYCRR Part 375-3 and DER-10 Technical Guidance for Site Investigation and Remediation. This alternatives analysis section evaluates the remedial alternative developed for the site using the following selection factors:

- **Overall Protection of Public Health and the Environment**. This criterion is an evaluation of the remedy's ability to achieve each of the RAOs, and protect public health and the environment, assessing how each existing or potential pathway of exposure is eliminated, reduced, or controlled through removal, treatment, engineering controls, or institutional controls.
- **Compliance with Standards, Criteria, and Guidance (SCGs)**. Compliance with SCGs addresses whether a remedy will meet applicable environmental laws, regulations, standards, and guidance. The SCGs applicable to this site are listed in section 1.4
- **Long-Term Effectiveness and Permanence**. This criterion is an evaluation of the long-term effectiveness and permanence of an alternative or remedy after implementation.

- **Reduction of Toxicity, Mobility or Volume with Treatment**. This criterion evaluates the remedy's ability to reduce the toxicity, mobility, or volume of Site contamination. Preference is given to remedies that permanently and significantly reduce the toxicity, mobility, or volume of the contamination at the Site.
- **Short-Term Effectiveness**. Short-term effectiveness is an evaluation of the potential short-term adverse impacts and human exposures, and nuisance conditions during construction and/or implementation. This includes a discussion of how the identified adverse conditions will be controlled, and the effectiveness of the controls. This criterion also includes a discussion of engineering controls that will be used to mitigate short term impacts (i.e., dust control measures), and an estimate of the length of time needed to achieve the remedial objectives. Sustainability is also evaluated.
- **Implementability**. The implementability criterion evaluates the technical and administrative feasibility of implementing the remedy. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.
- **Cost**. This criterion evaluates the overall cost effectiveness of an alternative or remedy.
- **Community Acceptance**. This criterion evaluates the public's comments, concerns, and overall perception of the remedy.

7.3 LAND USE EVALUATION

In developing and screening remedial alternatives, NYSDEC's Part 375 regulations require that the reasonableness of the anticipated future land use be factored into the evaluation. The future land use will meet Part 375 Restricted-residential site use category.

The rear of the property, north of Water Street, is bordered by the Chadakoin River that runs through the middle of Jamestown. Historically, this area of Jamestown was a major industrial and manufacturing hub and has now been identified as part of the Chadakoin River Central/Eastern BOA. The property is found in the Downtown District of this BOA. Being in the city's center and on the river, the site has redevelopment potential and is easily accessible to Interstate 86. The property is in an En-Zone.

The site is currently used by Community Helping Hands as a community service center with a soup kitchen, and provides youth activities such as archery ranges, roller park, laser tag and computer and other academic related youth and community services. A few small businesses also operate or store equipment and materials at the site. Some of the former adjacent industrial buildings have been converted to commercial and community service operations. The property and surrounding parcels are all zoned M – Manufacturing. Residential and some commercial zoning surround the site.

The proposed Gateway Lofts project is a multifamily affordable housing project. The project will include 74 units of housing, 25 of which will be specifically set aside for homeless households who are also persons with a serious mental illness and/or substance use disorder who have a history of criminal offending or are at risk of offending. The project will add housing to a building in which several essential support services are currently being provided to the target population and include the development of office space, employee and resident parking, and community facility space. The total square footage per use category and estimated value are unknown currently. An estimated 14 FTE positions are envisioned, once the project is constructed which will be utilized for property management and support service staffing.

7.4 Selection of Alternatives for Evaluation

The results of the RI and a previous Phase II environmental assessments indicate the following.

- Soils (mostly fill) in the open area and below old asphalt surrounding the somewhat interconnected buildings were found to have elevated PAHs and metal compounds both in the near surface and subsurface soils above Part 375 Restricted Residential SCOs along with three soil samples having TCE above Part 375 RR SCOs.

- Soil samples collected from Borings through the floor of Building 2 indicated the presents of TCE at depth (12 to 16 feet) and at concentrations above Part 375 RR SCOs.

- The results of the RI vapor intrusion study indicated that TCE exists in the indoor air and soil vapor in the sub-slab soils beneath the various buildings at concentrations that requires mitigation.

- The building environmental condition assessment indicated the presence of asbestos, LBP and PCB containing material in the building which will be handled during the building renovation as part of the redevelopment.

- The building environmental condition assessment indicated the presence of asbestos, LBP and PCB containing material in the building.

- Several metal compounds had elevated concentrations above their TOGS value are most likely the result of natural variability in soils and/or from leaching of fill materials present on the Site.

- The 53/55 properties which have been added to the site eastern boundary as part of the BCP site will be further characterized in order to determine full extent of remedial efforts for the BCP site. Several soil borings/samples will be installed along with a temporary monitoring well at the eastern property boundary as an initial task of the selected remedial alternative and details of the investigation will be provided in the RAWP.

Based on the completion of the RI program the following two remedial alternatives have been selected for evaluation:

- **Alternative 1 – Track 4 - Restricted Residential Remediation**

  Remove impacted soils from open areas (1 to 2 feet) and backfill with clean fill/hardscape to meet Part 375-3.8 Track 4 - Part 375-6.8 Restricted-residential SCOs; install a SSDS below the existing sub-slabs of all buildings to be constructed/renovated as part of the new development; remove and dispose of a 6 feet by 8 feet concrete walled buried tank at the location of TP-1; and mitigate hazardous materials in building sections to be demolished and/ or renovated. Institutional and Engineering controls (IC/EC) will be required. Any new structures would require a soil vapor intrusion assessment to determine if soil vapor mitigation is required. (see **Figure 8**).

- **Alternative 2 – Unrestricted Use Alternative** (see below)

The following sections discusses the evaluation of these alternatives.

7.4.1 Alternative 1 – Track 4 - Restricted Residential Remediation

The details of this alternative include:

1 – Remove the top 2 feet and/or to the depth of new development hardscape of impacted soil. from the open areas external to the building and dispose material offsite at an approved landfill. Backfill area with 2 feet of clean fill or hardscape. A demarcation layer or similar will be placed on top of the existing soil prior to backfill. All to meet Track 4 – Restricted Residential SCOs (refer to **Figure 8**).

2 – Conduct a supplemental boring investigation of the sub-slab soils in the south half Building 2 to further assess the possible source (USTs) of elevated TCE found in the soils beneath the building during the RI. Five additional borings are proposed through the floor slab to a depth where TCE was detected in the soil during the RI. USTs that are uncovered will be removed along with impacted soil that is above the water table that exceeds Restricted Residential SCOs.

3 – Install a SSDS in all of the existing buildings (Buildings 1 – 8 **Figure 7**) to mitigate sub-surface TCE containing vapors from entering into the building interiors. A vacuum will be created at a number of below slab locations (field testing and design will determine number and locations) by piping from these locations to roof mounted fans where sub-slab vapors will be discharged. Because of the potential SVI concerns, any new structures would require a soil vapor intrusion assessment to determine if soil vapor mitigation is required. A preliminary design of the system is provided in **Appendix L**. testing the system for efficacy will occur after installation with subsurface pressure testing. Testing its efficacy with indoor air sampling as a passive system will occur first, and then an active system, if sample analyses come back with exceedances. More than 10 sampling locations were identified to ensure all portions of the site were accounted for.

4 – Remove buried 6 by 8-foot concrete tank from the vicinity of TP-1 and dispose off-site at an approved landfill. Pump and liquid in the tank to a tanker truck for off-site disposal/recycling. Excavate impacted soil around tank for off-site disposal and collect confirmation samples to confirm all impacted soil has been removed to meet Restricted Residential SCOs.

5 – Remove PCB grossly contaminated media (GCM) from the transformer area between Buildings 6 and 4 and the PCB GCM from the area at RI sample BH-6 outside the north end of Building 6 (see **Figure 8**).

6 – Elevated TCE concentrations above Restricted Residential SCOs were found at depth below the groundwater table in soil borings within Building 2 and directly to the east of building 2. To intercept/treat future leaching of TCE from the soils to the groundwater and subsequently to the Chadakoin River an in-situ groundwater treatment system such as a permeable barrier wall, injection points or equivalent will be installed between Building 2 and the river (see **Figure 8**).

7 – Remove and properly dispose of any sediment from building trenches/drains.

8 – Mitigate hazardous materials in building sections to be demolished and/ or renovated as part of the new development.

9 – All imported fill materials to backfill excavations or to establish site grades shall be obtained from “virgin” sources and be tested to ensure they meet imported soil requirements of DER-10 Appendix 5 “Allowable Constituent Levels for Imported Fill for Restricted Residential requirements and Soil Subdivision 5.4(e)”. Imported fill will be approved by NYSDEC after submission of the NYSDEC “Request to Import/Reuse Fill or Soil” Form.

10 – This alternative also includes provisions for managing the Site upon completion of remediation with implementation, through an Environmental Easement (EE) of Institutional Controls (ICs) and Engineering Controls (ECs) as follows:

Imposition of an IC in the form of an environmental easement for the controlled property that:

- Requires the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of IC/EC in accordance with NYSDEC Part 375-1.8(h)(3);
- Allows the use and development of the controlled property for Restricted-residential, commercial, and industrial uses as defined by Part 375-1.8(g)., although land use is subject to local zoning laws;
- Restricts the use of Groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
- Requires monitoring of sub-slab vapor extraction for a set period of time; and
- Requires compliance with the approved Site Management Plan.

A SMP is required that includes the following:

- An IC/EC plan that identifies all use restrictions and ECs for the Site and details the steps and media specific requirements necessary to ensure the IC and/or ECs remain in place and effective. The IC's are as discussed above, and the EC's include developed soil cover system and groundwater monitoring;
- An Excavation Plan which details provisions for management of future excavations in areas of remaining contamination;
- SSDS in any building must be monitored to ensure it is operational and effective;
- Descriptions of the provisions of the environmental easement including any land use or groundwater use restrictions;
- Inspection, maintenance and certification of a composite site wide cover system will be required;
- Operation, maintenance, monitoring inspection repairs and reporting of any mechanical or physical components of the remedy shall be conducted as defined within the SMP;
- Vegetable gardens and farming on the site will be prohibited with the anticipated track;
- Provisions for the management and inspection of the identified ECs;
- Maintaining site access controls and NYSDEC notifications; and,
- The steps necessary for the periodic reviews and certifications of the IC/ECs.

Overall Protection of Public Health and the Environment – Alternative 1 is protective of human health and the environment with the removal of impacted soil and source areas from open areas external to the building (2 feet deep from greenspace and 1 foot deep from hardscape) and backfilling with two feet of clean soil or hardscape. The installation of an SSDS in the buildings will mitigate impacted soil vapors from entering the buildings and groundwater treatment preventing impacts to the river.

The clean soil and hardscape covered areas will be incorporated into the SMP as an engineering control for the Site and Institutional and engineering controls will be implemented to prevent more restrictive forms of future site use (e.g., unrestricted and residential) and restrict any use of the groundwater at the Site. Under ICs/ECs, the SSDS and groundwater will be monitored and the cover system will be inspected, monitored and maintained. The SMP Excavation Work Plan will apply to any future disturbance of soils beneath the cover system. The SMP also requires the implementation of an approved health and safety plan for all future work.

Compliance with SCGs – Alternative 1 is a Part 375 track 4 remedy with some soils exceeding the Restricted Residential SCOs remaining below an approved cover system. The installation of an SSDS in the buildings will mitigate impacted soil vapors from entering the building. Groundwater monitoring will be compared to TOGS for attenuation of impacts over time.

Long-Term Effectiveness and Permanence – The removal of the open area impacted fill soils to meet Restricted residential SCOs and backfilling with clean fill and hardscape meets the RAOs for soil in this area. The installation SSDS in the buildings with ongoing monitoring through the SMP will meet the RAOs for soil vapor. There will be a restriction on the use of groundwater at the Site.

The SMP requires periodic inspection and monitoring of the cover system for the Site to assure its integrity and the SMP excavation work plan will apply to any future disturbance of the remaining impacted soils including the requirement to prepare an approved health and safety plan for all work. Attenuation of remaining impacts to the groundwater will be monitored over time through a mandated SMP monitoring well sampling program.

Reduction of Toxicity, Mobility, or Volume with Treatment – The remedial measure will either permanently or significantly reduce the mobility of contamination in the soils at the Site through the cover systems. The volume of impacted soil will be reduced at the property by excavation and offsite disposal of the top 2 feet of impacted soils across open areas and 1 foot in areas to be hardscaped. The volume of impacted groundwater will be reduced through treatment. Leaching or volatilization from impacted soils remaining below the building will be treated by the groundwater treatment system and the SSDS respectively.

The site Management Plan will include: an excavation work plan to address any impacted soil/fill encountered during future development and/or maintenance activities and include a site-wide Inspection program to assure that the ICs/ECs placed on the Site have not been altered and remain effective. This alternative will not, however, reduce the toxicity of the soil contaminants left in place upon completion of the remedial measure. Therefore, this alternative partially satisfies this criterion.

Short-Term Effectiveness – Potential short-term adverse impacts and human exposures may occur during construction (remediation and new development). However, any adverse impacts should be minimal. A RAWP will be implemented prior to remediation which will require the contractor to prepare and implement a site-specific health and Safety plan to cover all workers. The SSDS to be installed in the building adheres to the remedial objective for this media of protection of public health by eliminating the potential for soil vapor intrusion into the renovated buildings and will also be installed in any new buildings. Periodic inspections of the cover system per the SMP requirements will prevent ingestion/direct contact with contaminated soil and prevent inhalation of contaminants in soil that may remain below the cover system. This alternative is sustainable through the environmental easement and the implementation of the SMP.

Implementability – There are no implementation issues related to the proposed remediation or related to the Institutional and Engineering Controls placed on the Site under this alternative.

Community Acceptance – Community acceptance will be evaluated based on comments to be received from the public in response to Fact Sheets, public comment periods on documents and other planned Citizen Participation activities. To-date there have been no public comments during any of the public comment periods.

Cost – The values used in estimating alternatives are order-of-magnitude estimates for comparing alternatives and are not meant to be a specific remedial criterion. The estimated cost for this Alternative is $2.2 million The cost summaries for this alternative is provided in **Appendix H.**

7.4.2 Alternative 2 - Unrestricted Use

The details of this alternative are depicted in **Figure 9** and include:

An Unrestricted Use alternative would necessitate remediation of all soil/fill exterior and interior to the buildings where concentrations exceed the Unrestricted SCOs or to bedrock. Based on RI data It is estimated that this would require soil removal to approximately 8 to 10 feet bgs across the entire open area just described with some GCM areas as deep as 16 to 18 feet bgs. Actual removal depth would be based on confirmation soil samples meeting Part 375 Unrestricted-Use SCOs. The area would be backfilled with clean soil meeting Unrestricted-Use SCOs and hardscape to meet new development grades and requirements.

Remove buried 6 by 8-foot concrete tank from the vicinity of TP-1 and dispose off-site at an approved landfill. Pump and liquid in the tank to a tanker truck for off-site disposal/recycling. Excavate impacted soil around tank for off-site disposal and collect confirmation samples to confirm all impacted soil has been removed to meet Unrestricted SCOs. Any USTs discovered under building floor slabs would be removed as above.

To meet NYSDOH guidance for soil vapor intrusion in all of the buildings a sub-slab depressurization system or equivalent will be installed that would be monitored over a five year timespan to assess reliability.

With all impact sources removed a groundwater monitoring program will be established (EC) to assess attenuation of impacts to the groundwater over a five-year time frame. No EE or SMP will be required for this alternative except for an EC of monitoring groundwater and indoor vapor for five years.

Overall Protection of Public Health and the Environment – The Unrestricted Use alternative would achieve the corresponding Part 375 SCOs, which are designed to be protective of human health under any reuse scenario. With impact sources removed TOGS groundwater standards should be attainable through natural attenuation.

Compliance with SCGs –Unrestricted Use alternative would comply with SCOs and groundwater cleanup guidelines as specified in the TOGS.

Long-Term Effectiveness and Permanence – The Unrestricted Use alternative would achieve removal of all contaminant sources and residual impacted fill/soil; therefore, no fill/soil exceeding the Unrestricted SCOs would remain on the Site. As such, the Unrestricted Use alternative would provide long-term effectiveness and permanence. Post-remedial monitoring and certifications would not be required other than groundwater monitoring for assessing natural attenuation of groundwater quality for the five-year monitoring period.

Reduction of Toxicity, Mobility, or Volume with Treatment – Through removal of contaminate sources and impacted fill/soil, the Unrestricted Use alternative would permanently and/or significantly reduce the toxicity, mobility, and volume of Site contamination along with the cleanup of groundwater through natural attenuation.

Short-Term Effectiveness – The short-term adverse impacts and risks to the community, workers, and environment during implementation of the Unrestricted Use alternative would increase. The duration of time community, workers, and the environment is exposed to possible fugitive dust would increase.

Implement ability – Technical implement ability of the Unrestricted Use alternative would be more difficult compared to the Alternative 1. Sheet piling may need to be installed along the river to remove impacted soils up to the property boundary and removal of soil within buildings may endanger the structures and be more time consuming.

Community Acceptance – Community acceptance will be evaluated based on comments to be received from the public in response to Fact Sheets, public comment periods on documents and other planned Citizen Participation activities.

Cost - The capital cost of implementing an Unrestricted Use alternative is estimated at approximately $8.6 million. (see **Appendix H**).

7.5 Recommended Remedial Alternative

Based on the alternative's analysis evaluation, Alternative 1 satisfies the remedial action objectives and is fully protective of human health and the environment. Therefore, Alternative 1 is the recommended final remedy for the Site.

8.0 FINDINGS AND CONCLUSIONS

8.1 Remedial Investigation

The RI tasks were completed in accordance with a defined scope of work and approved RIWP. The following provides a summary of the investigation activities:

- Assessment of fill soil materials across the property by installing 24 soil borings, two test pits and seven shovel pits across the property. A total of 24 subsurface soil samples were collected from the soil borings. One subsurface soil sample were collected from the test pits. One surface sample was collected from each of the seven shovel pits;
- Assessment of groundwater conditions by installing five on-site overburden groundwater monitoring wells and one bedrock well. A total of six groundwater samples were collected;
- Performed laboratory analysis on all soil/water samples. Analysis included Part 375 metals, TCL VOCs (no surface soil samples), TCL SVOCs, PCBs/pesticides and emerging contaminants;
- Performed a building materials assessment (asbestos, lead based paint and PCBs) in all four site buildings;
- A sub-slab vapor intrusion investigation was conducted through the floors of all eight buildings;

Summary of Results by Medium

Soil/Sediment

The results of the RI and Phase II ESA soils investigations indicate that a number of SVOCs compounds and metal compounds were detected throughout soil/fill material at variable levels above Restricted Residential SCOs.

PCBs that exceeded Restricted Residential SCOs were detected in both RI and Phase II soil samples primarily in the vicinity of the outdoor transformers located at the northwest end of Building 4 between Building 4 and 6.

TCE was detected above its Restricted Residential SCO in samples collected beneath the floor and adjacent Building 2 in both the RI and Phase II soil sampling.

SVOCs consisting primarily of PAHs and metal compounds were detected in both sediment samples with only one PAH (Benzo(a)pyrene) in sample SE-01 with a concentration exceeding PER SCOs and several metal compounds that exceeded PER SCOs in both sediment samples. No VOCs were detected in either sample nor any pesticide/PCB compounds were detected that had concentrations that exceeded PER SCOs. No PFAS or 1,4 Dioxane compounds were detected in either sediment sample.

Groundwater

The groundwater analytical results indicate minor impacts to groundwater. No SVOCS, pesticides or PCBs were detected in any of the groundwater samples. No PFAS and 1.4 Dioxane compounds in any groundwater sample exceeded NYSDEC established criteria. Acetone was detected in each of the groundwater samples at approximately the same concentration levels slightly above the TOGS guideline. It should be noted that acetone is found in most laboratory cleaning solutions of their sampling jars. The similar acetone concentrations in each of the groundwater samples may be a result of residual acetone remaining from the container cleaning process prior to sampling.

The VOC vinyl chloride was detected in the MW-04 sample at a level significantly above its TOGS guideline. Vinyl chloride was not detected in any of the other groundwater samples nor in any soil samples in the vicinity of MW-04. This may just be an outlier but re-sampling of this well may be warranted to assess its actual presents in the groundwater.

Several metal compounds had elevated concentrations above their TOGS value are most likely the result of natural variability in soils and/or from leaching of fill materials present on the Site.

Sub-Slab Vapors

The matrix results indicate that the compound TCE was detected at concentrations in all sub-slab vapor samples and corresponding indoor air samples to require mitigation with the exception of SS-11 where the matrix recommends “identify source(s) and resample or mitigate”. Other VOCs on the matrix list, that, when applied to the matrix models indicate mitigation is required are as follows:

cis-1,2-dichloroethene – SS-02 through SS-07
tetrachloroethene – SS-05 and SS-06

Based on the above results it appears that a SSDS will need to be installed across the entire building complex. The SSDS would be designed to remove sub-slab vapors containing the compounds listed above. The SSDS will be installed per the final design and will be initiated as a passive system but will be equipped to be easily modified to an active system as required.

Building Environmental Condition Assessment

The results of the ACM survey indicated the presence of ACM in the buildings in a number of materials such as window caulking, linoleum, roofing materials, etc. A review of the XRF instrument results indicates that LBP is present and shows deterioration on interior and exterior building components in the

buildings. Numerous PCB light ballasts were noted throughout the buildings and are noted in the AMD report.

The complete ADM report is provided in **Appendix E**.

8.2 ALTERNATIVES ASSESSMENT

An Alternatives Analysis was completed to evaluate potential remedial alternatives that satisfy site-specific remedial action objectives. Based on that analysis, the selected remedy Alternative 1 which includes:
1 – Remove the top 2 feet and/or to the depth of new development hardscape of impacted soil. from the open areas external to the building and dispose material offsite at an approved landfill. Backfill area with 2 feet of clean fill or hardscape. All to meet Track 4 – Restricted Residential SCOs (refer to **Figure 8**).

2 – Conduct a supplemental boring investigation of the sub-slab soils in the south half Building 2 to further assess the possible source (USTs) of elevated TCE found in the soils beneath the building during the RI. Five additional borings are proposed through the floor slab to a depth where TCE was detected in the soil during the RI. USTs that are uncovered will be removed along with impacted soil that is above the water table that exceeds Restricted Residential SCOs.

3 – Install a SSDS in all of the existing buildings (Buildings 1 – 8 **Figure 7**) to mitigate sub-surface TCE containing vapors from entering into the building interiors. A vacuum will be created at a number of below slab locations (field testing and design will determine number and locations) by piping from these locations to roof mounted fans where sub-slab vapors will be discharged. The proposed system design will be provided in the RAWP. Because of the potential SVI concerns, any new structures would require a soil vapor intrusion assessment to determine if soil vapor mitigation is required.

4 – Remove buried 6 by 8-foot concrete tank from the vicinity of TP-1 and dispose off-site at an approved landfill. Pump and liquid in the tank to a tanker truck for off-site disposal/recycling. Excavate impacted soil around tank for off-site disposal and collect confirmation samples to confirm all impacted soil has been removed to meet Restricted Residential SCOs.

5 – Remove PCB GCM from the transformer area between Buildings 6 and 4 and the PCB GCM from the area at RI sample BH-6 outside the north end of Building 6 (see **Figure 8**).

6 – Elevated TCE concentrations above Restricted Residential SCOs were found at depth below the groundwater table in soil borings within Building 2 and directly to the east of Building 2. To intercept/treat future leaching of TCE from the soils to the groundwater and subsequently to the Chadakoin River an in-situ groundwater treatment system such as a permeable barrier wall, injection points or equivalent will be installed between Building 2 and the river. (see **Figure 8**)

7 – Remove and properly dispose of any sediment from building trenches/drains.

8 – Mitigate hazardous materials in building sections to be demolished and/ or renovated as part of the new development.

9 – This alternative also includes provisions for managing the Site upon completion of remediation with implementation, through an EE of ICs and ECs as follows:

Imposition of an IC in the form of an environmental easement for the controlled property that:

- Requires the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of IC/EC in accordance with NYSDEC Part 375-1.8(h)(3);
- Allows the use and development of the controlled property for Restricted Residential, commercial, and industrial uses as defined by Part 375-1.8(g)., although land use is subject to local zoning laws;
- Restricts the use of Groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
- Requires monitoring of sub-slab vapor extraction for a set period of time; and
- Requires compliance with the approved Site Management Plan.

A SMP is required that includes the following:

- An IC/EC plan that identifies all use restrictions and ECs for the Site and details the steps and media specific requirements necessary to ensure the IC and/or ECs remain in place and effective. The IC's are as discussed above, and the EC's include developed soil cover system and groundwater monitoring;
- An Excavation Plan which details provisions for management of future excavations in areas of remaining contamination;
- A monitoring plan for the vapor mitigation systems;
- Descriptions of the provisions of the environmental easement including any land use or groundwater use restrictions;
- Provisions for the management and inspection of the identified ECs;
- Maintaining site access controls and NYSDEC notifications; and,
- The steps necessary for the periodic reviews and certifications of the IC/ECs.

The selected remedial alternative fully satisfies the remedial action objectives and is protective of human health and the environment. Therefore, this alternative is the recommended final remedial approach for the Site.

REMEDIAL INVESTIGATION TABLES

TABLE 1
31 WATER STREET - RI SOIL BORING SAMPLE ANALYTICAL RESULTS SUMMARY

Sample Date	10/3/2018	10/3/2018	10/3/2018	10/3/2018	10/3/2018	10/3/2018	10/3/2018	10/3/2018	10/3/2018	10/3/2018	10/3/2018	10/3/2018	PART 375 Soil Cleanup Objectives				
Contaminants	BH-1 (7-8')	BH-2 (1-3')	BH-3 (1-4')	BH-4 (0-4')	BH-5 (8-12')	BH-6 (0-4')	BH-7 (0-4')	BH-8 (8-12')	BH-9 (4-7')	BH-9 (13-14')	BH-11 (0-4')	BH-12 (0-4')	Unrestricted Use	Residential	Restricted Residential	Commercial	Protection Eco Resources
METALS																	
Arsenic	10	10.5	7.6	**16.7 (1)(2)**	6.2	**28.9 (1)(2)**	10.3	9	**14.6 (1)**	**13.4 (1)**	**23.3 (1)(2)**	6.9	13	16	16	16	13
Barium	204	102	102	**520 (1)(2)**	81.2	165	84.7	73.5	133	81.7	**858 (1)(2)**	45.7	350	350	400	400	433
Beryllium	0.39	0.32	0.46	0.76	0.26 J	0.58	0.26 J	0.074 J	0.33	0.82	0.58	0.65	7.2	14	72	590	10
Cadmium	0.12	0.075	0.11 J	0.5	0.084 J	1.5	0.097 J	0.36	0.24	0.21	1.8	0.71	2.5	2.5	4.3	9.3	4.0
Chromium, trivalent	12.8	12.9	9.1	14.4	9	16.1	11.8	**195 (1)**	**48.3 (1)**	23.6	**30.7**	8.1	30	36	180	1,500	41
Copper	7.5 J	32.2	21.2	**150 (1)**	48.2	**660 (1)(2)**	21.4	**51.5 (1)**	33.7	21.4	**1500 (1)(2)**	**533 (1)(2)**	50	270	270	270	50
Lead	12.2	**96.3**	30.8	**192**	9.2	**81.2**	21	**67**	33.3	16.3	132	9.9	63	400	400	1,000	450
Manganese	754	400	676	175	179	292	532	322	321	457	346	107	1600	2,000	2,000	10,000	1,600
Nickel	16.4	16.8	14.5	14.9	17.4	21.4	16.6	11.5	19.4	**37 (1)**	**38.1 (1)**	22	30	140	310	310	30
Selenium	0.84 J	0.99 J	0.48 J	1.6 J	0.88 J	1.3 J	0.79 J	ND	0.93 J	0.72 J	1.1 J	ND	3.9	36	180	1,500	4
Zinc	48.2	66.8	65.4	**142 (1)**	46.4	**423 (1)**	57.4	68.3	108	75	**997 (1)**	94.6	109	2200	10,000	10,000	109
Total Cyanide	0.27 J	ND	0.17	0.24	ND	ND	0.32	ND	0.3	0.3	0.67	2.9	27	27	27	27	NS
Total Mercury	ND	0.13	ND	0.14	ND	0.99	ND	0.15	0.037	ND	0.15	ND	0.18	0.81	0.81	2.8	0.18
PCBs/PESTICIDES																	
4,4'-DDE	ND	ND	ND	ND	ND	**0.152 (1)**	ND	ND	**0.0448 (1)**	ND	ND	ND	0.0033	1.8	8.9	62	0.0033
beta-BHC	ND	ND	ND	ND	ND	0.0025	ND	0.006	0.0048	ND	ND	ND	0.036	0.072	0.36	3	0.60
Chlordane (alpha)	ND	ND	ND	ND	ND	0.0067	ND	ND	0.0022	ND	ND	ND	0.094	0.91	4.2	24	1.3
Dieldrin	ND	ND	ND	ND	ND	**0.0183J (1)**	ND	ND	**0.0329J (1)**	ND	ND	ND	0.005	0.039	0.2	1.4	0.006
Endosulfan II [c]	ND	ND	ND	ND	ND	ND	ND	ND	0.0084	ND	ND	ND	2.4	4.8	24	200	NS
Lindane	ND	ND	ND	ND	ND	0.0045	ND	ND	ND	ND	ND	ND	0.1	0.28	1.3	9.2	0.1
PCB Aroclor-1248	ND	ND	ND	ND	ND	**10.2 (1)(2)**	ND	0.0519 J	ND	ND	0.0467	ND	0.1	1	1	1	1
PCP Aroclor-1254	ND	ND	ND	ND	ND	ND	ND	ND	**1.6 J (1)(2)**	ND	ND	ND	0.1	1	1	1	1
Total PCBs	0	0	0	0	0	**10.2 (1)(2)**	0	0.0519 J	**1.6 J (1)(2)**	0	0.0467	0	0.1	1	1	1	1
SEMIVOLATILE ORGANIC COMPOUNDS																	
Acenaphthene	ND	0.579	0.329	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	100	100	500	20
Anthracene	ND	1.53	1.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	100	100	500	NS
Benz(a)anthracene	ND	**10.6 (2)**	**2.78**	ND	ND	0.902	ND	ND	0.325	ND	0.223	ND	1	1	1	5.6	NS
Benzo(a)pyrene	ND	**12 (1)(2)**	**2.28 (2)**	ND	ND	**1.17 (2)**	ND	ND	0.385	ND	ND	ND	1	1	1	1	2.6
Benzo(b)fluoranthene	ND	**17 (2)**	**2.73**	ND	ND	**1.87**	ND	ND	0.503	ND	0.264	ND	1	1	1	5.6	NS
Benzo(g,h,i)perylene	ND	5.75	0.85	ND	ND	0.599	ND	ND	0.306	ND	ND	ND	100	100	100	500	NS
Benzo(k)fluoranthene	ND	**6.28**	**1.25**	ND	ND	0.809	ND	ND	0.233	ND	ND	ND	0.8	1	3.9	56	NS
Chrysene	ND	**12.8**	**2.72**	0.461	ND	ND	ND	ND	0.353	ND	0.309	ND	1	1	3.9	56	NS
Dibenz(a,h)anthracene	ND	**1.47 (2)**	ND	ND	ND	**1.25 (2)**	ND	ND	ND	ND	ND	ND	0.33	0.33	0.33	0.56	NS
Fluoranthene	ND	30.6	5.64	ND	ND	2.15	ND	0.209	0.604	ND	ND	ND	100	100	100	500	NS
Fluorene	ND	0.488	0.408	ND	ND	ND	ND	ND	ND	ND	ND	ND	30	100	100	500	30
Indeno(1,2,3-cd)pyrene	ND	**6.47 (2)**	**0.984**	ND	ND	**0.599**	ND	ND	0.298	ND	ND	ND	0.5	0.5	0.5	5.6	NS
Naphthalene	ND	0.478	0.434	0.627	ND	ND	ND	ND	ND	ND	0.227	ND	12	100	100	500	NS
Phenanthrene	ND	9.98	4.66	0.721	ND	1.03	ND	0.19	0.32	ND	0.472	ND	100	100	100	500	NS
Pyrene	ND	24.2	4.79	0.438	ND	1.7	ND	ND	0.579	ND	0.293	ND	100	100	100	500	30
Total PAHs	0	92.685	28.685	2.247	0	9.659	0	0.399	3.906	0	1.788	0	NA	NA	NA	NA	NA
TICs [d]	ND	8.86 J	3.06 J	5.77 J	2.43 J	2.25 J	ND	40.3 J	1.92 J	1.76 J	3.82 J	3.26 J	NA	NA	NA	NA	NA
VOLATILE ORGANIC COMPOUNDS																	
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02	2.3	3.1	30	10
cis-1,2-Dichloroethene	ND	ND	0.0013	ND	ND	ND	0.0015	ND	0.007	**3.15**	ND	0.006	0.25	59	100	500	NS
Acetone	ND	ND	ND	ND	0.0223 J	ND	ND	**0.197 J**	0.0324 J	ND	ND	ND	0.05	100	100	500	2.2
MEK (2-butanone)	ND	ND	ND	ND	0.0047 J	ND	ND	0.0446 J	ND	ND	ND	ND	0.12	100	100	500	100
Methylene chloride	0.0014	0.0022	0.0022	0.0253	ND	0.0039	ND	ND	ND	ND	ND	0.0156	0.05	51	100	500	12
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0805 J	ND	0.0192 J	1.3	5.5	19	150	2
Trichloroethene	ND	0.0017J	0.0035	ND	ND	0.0026	0.0145	ND	0.0041	**58.7 (1)**	0.137	0.385	0.47	10	21	200	2
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	0.0031 J	ND	ND	ND	ND	3.6	47	52	190	NS
1,3,5- Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	0.002 J	ND	ND	ND	ND	8.4	47	52	190	NS
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	0.0035	ND	ND	ND	0.02	0.21	0.9	13	NS
Xylene (mixed)	ND	ND	0.0024	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.26	100	100	500	0.26
TICs [d]	ND	ND	ND	ND	ND	ND	ND	ND	0.7372	0.25	ND	ND	NA	NA	NA	NA	NA

Results and SCOs are in parts per million (ppm).

ND - Non-Detect

NA - Not Applicable

NS - Not Specified, and may be required to calculate the ERSCO

[d] Results shown are the sum of all reported TICs

J - The analyte was positively identified; the associated numerica value is the approximate concentration of the analyte in the sample

(1) - Also exceeds Protection of Ecological Resouces SCOs

(2) - Also exceeds Commercial SCOs

>/= to Residential/Restricted-Residential SCO and Unrestricted Use SCO

>Unrestricted Use SCO but <Residential/Restricted-Residential SCO

>Unrestricted Use & Residential SCO but <Restricted-Residential SCO

TABLE 1

31 WATER STREET - RI SOIL BORING SAMPLE ANALYTICAL RESULTS SUMMARY

Sample Date	10/4/2018	10/4/2018	10/4/2018	10/4/2018	10/4/2018	10/4/2018	10/4/2018	10/4/2018	10/4/2018	10/4/2018	10/5/2018	10/5/2018	10/4/2018	PART 375 Soil Cleanup Objectives				
Contaminants	**BH-14 (15-16')**	**BH-14 (18-20')**	**BH-15 (12-16')**	**BH-16 (10-11')**	**BH-18 (0-4')**	**BH-18 (14-15')**	**BH-19 (0-9')**	**BH-20 (0-4')**	**BH-20 (6-7')**	**BH-21 (0-4')**	**BH-22 (0-1')**	**BH-22 (6-7.2')**	**BMW-01 (24-25')**	**Unrestricted Use**	**Residential**	**Restricted Residential**	**Commercial**	**Protection Eco Resources**
METALS																		
Arsenic	7	16.2 (1)(2)	8.7	21.5 (1)(2)	7.1	10	8.7	31.1 (1)(2)	6.5	17 (1)(2)	40.5 (1)(2)	6.5	7.2	13	16	16	16	13
Barium	103	64	68.3	0.17	50.3	37.6	130	157	150	446 (1)(2)	186	112	88.5	350	350	400	400	433
Beryllium	0.71	0.42	0.23 J	0.55	0.28	0.29 J	0.21 J	0.24 J	0.43	0.81	0.83	0.4	0.27 J	7.2	14	72	590	10
Cadmium	0.93	0.53	0.27	0.51	0.31	0.26	0.29	1.4	0.26	4.8 (1)	2.5	0.76	0.24	2.5	2.5	4.3	93.0	4.0
Chromium, trivalent	23.1	22.3	15.2	17.1	11.4	12	10.2	20.5	35.6	35.3	58.4 (1)	20.8	12.1	30	36	180	1500	41
Copper	39.1	23	65.4 (1)	27.9	105 (1)	14.7	31.5	1480 (1)(2)	22.4	7090 (1)(2)	1800 (1)(2)	274 (1)(2)	13.2	50	270	270	270	50
Lead	12.2	10.7	14.5	15	26	8.3	14.8	108	23	328	181	34.3	9.2	63	400	400	1000	450
Manganese	469	534	172	816	539	489	729	355	217	306	512	376	388	1600	2,000	2,000	10,000	1,600
Nickel	32.5 (1)	30.3 (1)	16.7	28	36.8 (1)	18.8	14.7	38.1 (1)	21	53.5 (1)	50.8 (1)	19	18.7	30	140	310	310	30
Selenium	ND	ND	4.7 (1)	ND	1.8	ND	0.4 J	0.84	0.72 J	2	2	0.58 J	ND	3.9	36	180	1500	4
Silver	ND	ND	ND	ND	ND	ND	ND	0.85	ND	2.7 (1)	0.67	0.13 J	ND	2	36	180	1500	2
Zinc	76.1	63.4	67.6	66.3	62.8	47.6	46.5	2520 (1)	77.9	3240 (1)	3810 (1)	669 (1)	46.9	109	2200	10,000	10,000	109
Total Cyanide	ND	ND	ND	ND	1.9 J	ND	ND	ND	ND	ND	ND	1.2 J	ND	27	27	27	27	NS
Total Mercury	ND	ND	ND	ND	0.053	ND	0.03 J	0.093	0.71 (1)	1.2 (1)	0.14	0.04 J	ND	0.18	0.81	0.81	2.8	0.18
PCBs/PESTICIDES																		
4,4'-DDE	ND	ND	0.008 (1)	ND	ND	ND	ND	4.25 (1)	0.008 (1)	0.04 (1)	0.032 J (1)	0.016 (1)	ND	0.0033	1.8	8.9	62	0.0033
4,4'-DDT	ND	ND	0.015 J (1)	ND	ND	ND	ND	ND	0.003 J	0.008 (1)	0.004 (1)	ND	ND	0.0033	1.7	7.9	47.0	0.0033
beta-BHC	ND	ND	ND	ND	ND	ND	ND	0.004 J	ND	ND	ND	0.009	ND	0.036	0.072	0.36	3.00	0.60
Chlordane (alpha)	ND	ND	ND	ND	ND	ND	ND	0.35 J	ND	0.002 J	ND	ND	ND	0.094	0.91	4.2	24.0	1.3
Dieldrin	ND	ND	ND	ND	ND	ND	ND	1.65 J (1)(2)	ND	0.012 (1)	0.007 (1)	ND	ND	0.005	0.039	0.2	1.4	0.006
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	0.046 J	0.005	ND	0.003 J	ND	ND	2.4	4.8	24	200	NS
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	0.007 J	ND	ND	0.006 J	ND	ND	2.4	4.8	24	200	NS
Endrin	ND	ND	ND	ND	ND	ND	ND	0.043 J	ND	ND	ND	ND	ND	0.014	2.2	11	89	0.014
Heptachlor	ND	ND	ND	ND	ND	ND	ND	0.57 J (1)	0.003	0.018	0.007	ND	ND	0.042	0.42	2.1	15.0	0.1
Lindane	ND	ND	ND	ND	ND	ND	ND	0.31 J	ND	0.002 J	ND	ND	ND	0.1	0.28	1.3	9.2	6.0
PCB Aroclor 1248	ND	ND	ND	0.021 J	ND	ND	ND	104 (1)(2)	0.13	4.65 (1)(2)	1.73 (1)(2)	0.7	ND	0.1	1	1	1	1
PCB Aroclor 1254	ND	ND	0.224	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1	1	1	1	1
Total PCBs	ND	ND	0.224	0.021 J	ND	ND	ND	104 (1)(2)	0.13	4.65 (1)(2)	1.73 (1)(2)	0.7	ND	0.1	1	1	1	1
SEMIVOLATILE ORGANIC COMPOUNDS																		
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	0.4 J	ND	ND	ND	ND	ND	20	100	100	500	20
Anthracene	ND	ND	ND	ND	ND	ND	ND	0.66	ND	0.37 J	0.836	ND	ND	100	100	100	500	NS
Benz(a)anthracene	ND	ND	ND	ND	ND	ND	ND	1.18	0.67	1.45	3.81	0.54 J	ND	1	1	1	5.6	NS
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	ND	1.48 (2)	0.44 J	1.41 (2)	3.68 (1)(2)	0.67 J	ND	1	1	1	1	2.6
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	ND	1.5	0.42 J	1.93	4.82	0.9 J	ND	1	1	1	5.6	NS
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	ND	1.01	ND	1.1	1.63	0.51 J	ND	100	100	100	500	NS
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	ND	0.72	0.25 J	0.73	1.97	0.46 J	ND	0.8	1	3.9	56.0	NS
Chrysene	ND	ND	ND	ND	ND	ND	ND	1.41	0.62	1.63	3.87	0.75 J	ND	1	1	3.9	56.0	NS
Dibenz(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND	0.26 J	0.5	ND	ND	0.33	0.33	0.33	0.56	NS
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	3.54 J	0.92 J	2.98 J	7.14	1.53	ND	100	100	100	500	NS
Fluorene	ND	ND	ND	ND	ND	ND	ND	0.22	ND	ND	ND	ND	ND	30	100	100	500	30
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.11	1.88	0.53	ND	0.5	0.5	0.5	5.6	NS
Naphthalene	ND	ND	ND	ND	ND	ND	ND	0.64	ND	0.35 J	ND	ND	ND	12	100	100	500	NS
Phenanthrene	ND	0.0908	ND	ND	0.06	ND	ND	2.94	0.34 J	1.64	3.15	0.73 J	ND	100	100	100	500	NS
Pyrene	ND	0.052 J	ND	ND	ND	ND	ND	2.72	0.85	2.45	5.45	1.1	ND	100	100	100	500	30
Total PAHs	0	0.143	0	0	0.06	0	0	17	4.51	15.96	35.056	6.62	0	NA	NA	NA	NA	NA
m-Cresol (3-Methylphenol)	ND	ND	ND	ND	ND	ND	ND	1.03	ND	ND	ND	ND	ND	0.33	100	100	500	NS
TICs [d]	5.6 J	0.53 J	10.1 J	49.2 J	32.7 J	25.4 J	0.63 J	158.5 J	92.9 J	77 J	4.5 J	11.9	13.1 J	NA	NA	NA	NA	NA
VOLATILE ORGANIC COMPOUNDS																		
cis-1,2-Dichloroethene	3.338	0.789	0.042	0.06 J	ND	5.02	ND	0.006	ND	0.009	0.007	NA	0.055	0.25	59	100	500	NS
Acetone	ND	ND	0.062 J	ND	ND	ND	ND	0.12 J	0.23 J	ND	0.044 J	NA	ND	0.05	100	100	500	2.2
Butylbenzene (n)	ND	ND	0.263	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	12	100	100	44	70
Ethylbenzene	ND	ND	0.02	ND	ND	ND	ND	ND	ND	ND	0.006	NA	ND	1	30	41	390	NS
MEK (2-butanone)	ND	ND	ND	ND	ND	ND	ND	0.02 J	0.085 J	ND	ND	NA	ND	0.12	100	100	500	100
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	0.013	0.008	0.012	0.036 J	NA	ND	0.05	51	100	500	12
n-Propylbenzene	ND	ND	0.073	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	3.9	100	100	500	NS
sec-Butylbenzene	ND	ND	0.122	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	11	100	100	500	NS
Tetrachloroethene	ND	ND	0.008J	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	1.3	5.5	19	150	2
Toluene	0.138	ND	0.006 J	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	0.7	100	100	500	36
Trichloroethene	ND	0.325 J	0.164	0.18 J	0.021	29.2 (1)	ND	ND	ND	0.37	0.23 J	NA	0.06	0.47	10	21	200	2
1,2,4-Trimethylbenzene	ND	ND	0.412	ND	ND	ND	ND	ND	ND	0.004	ND	NA	ND	3.6	47	52	190	NS
1,3,5- Trimethylbenzene	ND	ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	8.4	47	52	190	NS
Vinyl chloride	ND	ND	0.041	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	0.02	0.21	0.9	13.0	NS
Xylene (mixed)	ND	ND	0.052	ND	ND	ND	ND	ND	ND	ND	0.043 J	NA	ND	0.26	100	100	500	0.26
TICs [d]	ND	ND	8.204 J	57.8	ND	ND	ND	ND	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA

Results and SCOs are in parts per million (ppm).

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[d] Results shown are the sum of all reported TICs

J - The analyte was positively identified; the associated numerica value is the approximate concentration of the analyte in the sample

(1) - Also exceeds Protection of Ecological Resouces SCOs

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>Unrestricted Use SCO but <Residential/Restricted-Residential SCO

>Unrestricted Use & Residential SCO but <Restricted-Residential SCO

TABLE 2
31 WATER STREET - RI SURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY

Sample Date	10/5/2018	10/5/2018	10/5/2018	10/5/2018	10/5/2018	10/5/2018	10/5/2018	PART 375 Soil Cleanup Objectives				
Contaminants	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	Unrestricted Use	Residential	Restricted Residential	Commercial	Protection Eco Resources
METALS												
Arsenic	40 (1)(2)	34.2 (1)(2)	12.4	16.6 (1)(2)	27.7 (1)(2)	11.3	7.4	13	16	16	16	13
Barium	212	202	154	125	27.1	93.5	65.9	350	350	400	400	433
Beryllium	0.75	0.84	0.85	0.6	1.1	1	0.31	7.2	14	72	590	10
Cadmium	1.5	1.5	0.29	5.6 (1)	12.9 (1)(2)	0.64	0.7	2.5	2.5	4.3	9.3	4.0
Chromium, trivalent	27.7	59.6 (1)	9	40.2	35	18.1	23.6	30	36	180	1,500	41
Copper	6850 (1)(2)	940 (1)(2)	77.8 (1)	20100 (1)(2)	24000 (1)(2)	173 (1)	124 (1)	50	270	270	270	50
Lead	284	338	88.8	1090 (1)(2)	1390 (1)(2)	86.3	38.5	63	400	400	1,000	450
Manganese	718	721	350	456	624	799	488	1600	2,000	2,000	10,000	1,600
Nickel	94 (1)	63.1 (1)	10.8	145 (1)	220 (1)	18.6	19.4	30	140	310	310	30
Selenium	2.7	1.8	1.2	5 (1)	3.2	ND	ND	3.9	36	180	1,500	4
Silver	2.2 (1)	0.39 J	0.75 J	5.1 (1)	6.3 (1)	0.077 J	ND	2	36	180	1500	2
Zinc	5080 (1)	1880 (1)	47	19700 (1)(2)	43600 (1)(2)	397 (1)	214 (1)	109	2200	10,000	10,000	109
Total Cyanide	ND	ND	ND	ND	1.3 J	ND	6.8 J	27	27	27	27	NS
Total Mercury	0.14	0.59 (1)	ND	6.4 (1)(2)	0.33 (1)	0.049	ND	0.18	0.81	0.81	2.8	0.18
PCBs/PESTICIDES												
4,4'-DDE	3.53 J (1)	0.06 J (1)	ND	0.028 J (1)	ND	0.025 J (1)	0.005 J (1)	0.0033	1.8	8.9	62	0.0033
4,4'-DDT	ND	ND	ND	0.034 J (1)	0.01 J (1)	ND	0.006 J (1)	0.0033	1.7	7.9	47	0.0033
Chlordane (alpha)	0.33 J	ND	ND	0.072 J	ND	ND	ND	0.094	0.91	4.2	24	1.3
Dieldrin	1.31 J (1)	ND	ND	ND	ND	ND	ND	0.005	0.039	0.2	1.4	0.006
Endosulfan I	ND	ND	ND	0.002 J	0.003 J	ND	0.005 J	2.4	4.8	24	200	NS
Endosulfan II	0.03 J	ND	ND	0.006 J	ND	ND	ND	2.4	4.8	24	9.2	0.1
Endosulfan sulfate	0.016 J	ND	ND	0.007 J	0.02 J	ND	ND	2.4	4.8	24	200.0	NS
Endrin	0.036 J (1)	ND	ND	ND	ND	ND	ND	0.014	2.2	11	89.0	0.014
Heptachlor	0.5 J (1)	ND	ND	ND	ND	0.003 J	ND	0.042	0.42	2.1	15.0	0.014
PCB Aroclor-1248	78.6 J (1)(2)	0.16J	ND	1.16 (1)(2)	0.074 J	0.67	0.068 J	0.1	1	1	1	1
PCP Aroclor-1254	ND	ND	ND	ND	ND	ND	0.062J	0.1	1	1	1	1
Total PCBs	78.6 J (1)(2)	0.16J	ND	1.16 (1)(2)	0.074 J	0.67	0.13	0.1	1	1	1	1
SEMIVOLATILE ORGANIC COMPOUNDS												
Acenaphthene	ND	ND	ND	8.45	27.9 (1)	ND	ND	20	100	100	500	20
Anthracene	0.63 J	ND	ND	17.7	61.4	0.39 J	ND	100	100	100	500	NS
Benz(a)anthracene	1.56	2.21	ND	34.9 (2)	126 (2)	1.07	ND	1	1	1	5.6	NS
Benzo(a)pyrene	1.61 (2)	1.96 (2)	ND	32.4 (1)(2)	103 (1)(2)	0.95	ND	1	1	1	1	2.6
Benzo(b)fluoranthene	1.97	2.78	0.37 J	50.6 (2)	155 (2)	1.24	0.39 J	1	1	1	5.6	NS
Benzo(g,h,i)perylene	1.22	0.89 J	ND	11.8	34.6	0.51 J	ND	100	100	100	500	NS
Benzo(k)fluoranthene	0.94	1.46	ND	23	70.6 (2)	0.61 J	ND	0.8	1	3.9	56	NS
Chrysene	1.74	2.33	0.48 J	35.5	112 (2)	1.18	0.42 J	1	1	3.9	56	NS
Dibenz(a,h)anthracene	ND	ND	ND	3.66 (2)	4.18 J (2)	ND	ND	0.33	0.33	0.33	0.56	NS
Fluoranthene	3.93	4.95	ND	87.9	292	2.51	ND	100	100	100	500	NS
Fluorene	ND	ND	ND	8.97	32 (1)	ND	ND	30	100	100	500	30
Indeno(1,2,3-cd)pyrene	1.24	0.96 J	ND	14.8 (2)	43.9 (2)	0.57 J	ND	0.5	0.5	0.5	5.6	NS
Naphthalene	0.43 J	ND	0.59 J	3.12	28	ND	0.42 J	12	100	100	500	NS
Phenanthrene	2.99	2.8	0.88	78	249	1.72	0.73 J	100	100	100	500	NS
Pyrene	2.93	3.74	0.39 J	56.3	206	1.87	ND	100	100	100	500	NS
Total PAHs	21.19	24.08	2.71	469.81	1545.58	12.62	1.96	NA	NA	NA	NA	NA
TICs [d]	ND	8.86 J	3.06 J	5.77 J	2.43 J	2.25 J	ND	NA	NA	NA	NA	NA

Results and SCOs are in parts per million (ppm).

ND - Non-Detect

NA - Not Applicable

NS - Not Specified, and may be required to calculate the ERSCO

[d] Results shown are the sum of all reported TICs

J - The analyte was positively identified; the associated numerica value is the approximate concentration of the analyte in the sample

(1) - Also exceeds Protection of Ecological Resouces SCOs

(2) - Also exceeds Commercial SCOs

>/= to Residential/Restricted-Residential SCO and Unrestricted Use SCO

>Unrestricted Use SCO but <Residential/Restricted-Residential SCO

>Unrestricted Use & Residential SCO but <Restricted-Residential SCO

TABLE 3
31 WATER STREET - RI SEDIMENT SAMPLE ANALYTICAL RESULTS SUMMARY

	Sample Identification and Depth		Soil Cleanup Objectives
Sample Date	**10/19/2018**	**10/19/2018**	**NYCRR PART 375**
Contaminants	**Sed-01**	**Sed-02**	**Protection Ecological Resources**
METALS			
Arsenic	**13.3**	**15**	13
Barium	85.6	95.2	433
Beryllium	0.27 J	0.21 J	10
Cadmium	0.29	ND	4.0
Chromium, trivalent	15.3	28.5	41
Copper	**479**	**69.9**	50
Lead	45.9	82.3	450
Manganese	719	608	1,600
Nickel	20	15.2	30
Selenium	1.3	0.69	4
Silver	ND	ND	2
Zinc	**681**	**160**	109
Total Cyanide	ND	ND	NS
Total Mercury	0.025 J	0.048	0.18
PCBs/PESTICIDES			
Aldrin	0.004 J	ND	0.14
PCB Aroclor 1248	0.33 J	0.15 J	1
Total PCBs	0.33 J	0.15 J	1
SEMIVOLATILE ORGANIC COMPOUNDS			
Acenaphthene	0.37 J	ND	20
Anthracene	1.08	ND	NS
Benz(a)anthracene	3.18	0.37 J	NS
Benzo(a)pyrene	**2.81**	0.37 J	2.6
Benzo(b)fluoranthene	4.29	0.66	NS
Benzo(g,h,i)perylene	1.46	0.22 J	NS
Benzo(k)fluoranthene	2.09	0.24 J	NS
Chrysene	3.81	0.503	NS
Dibenz(a,h)anthracene	0.38 J	ND	NS
Fluoranthene	8.87	0.9	NS
Fluorene	0.47	ND	30
Indeno(1,2,3-cd)pyrene	1.59	0.21 J	NS
Phenanthrene	5.72	0.37 J	NS
Pyrene	7.19	0.81	30
Total PAHs	7.82	3.75	NA
TICs [d]	4.95 J	2.67 J	NA
VOLATILE ORGANIC COMPOUNDS			
VOCs	ND	ND	NA

Results and SCOs are in parts per million (ppm).

ND - Non-Detect

NA - Not Applicable

NS - Not Specified, and may be required to calculate the ERSCO

[d] Results shown are the sum of all reported TICs

J - The analyte was positively identified; the associated numerica value is the approximate concentration of the analyte in the sample

(1) - Also exceeds Protection of Ecological Resouces SCOs

(2) - Also exceeds Commercial SCOs

Exceeds Protection of Ecological Resources SCOs

TABLE 4
31 WATER STREET - RI TEST PIT SAMPLE ANALYTICAL RESULTS SUMMARY

Sample Date	10/31/2018	PART 375 Soil Cleanup Objectives				
Contaminants	**TP-01 (6-8')**	**Unrestricted Use**	**Residential**	**Restricted Residential**	**Commercial**	**Protection Eco Resources**
METALS						
Arsenic	**20.9 (1)(2)**	13	16	16	16	13
Barium	217	350	350	400	400	433
Beryllium	0.54	7.2	14	72	590	10
Cadmium	0.53	2.5	2.5	4.3	93.0	4.0
Chromium, trivalent	**553 (1)**	30	36	180	1500	41
Copper	**196 (1)**	50	270	270	270	50
Lead	**231**	63	400	400	1000	450
Manganese	313	1600	2,000	2,000	10,000	1,600
Nickel	22.5	30	140	310	310	30
Selenium	3.2	3.9	36	180	1500	4
Silver	0.24 J	2	36	180	1500	2
Zinc	**267 (1)**	109	2200	10,000	10,000	109
Total Cyanide	0.27 J	27	27	27	27	NS
Total Mercury	0.34 J	0.18	0.81	0.81	2.8	0.18
PCBs/PESTICIDES						
beta-BHC	0.006 J	0.036	0.072	0.36	3.00	0.60
SEMIVOLATILE ORGANIC COMPOUNDS						
Acenaphthene	0.52 J	20	100	100	500	20
Anthracene	ND	100	100	100	500	NS
Benz(a)anthracene	0.4 J	1	1	1	5.6	NS
Benzo(a)pyrene	0.38 J	1	1	1	1	2.6
Benzo(b)fluoranthene	0.45 J	1	1	1	5.6	NS
Benzo(g,h,i)perylene	ND	100	100	100	500	NS
Benzo(k)fluoranthene	ND	0.8	1	3.9	56.0	NS
Chrysene	0.52 J	1	1	3.9	56.0	NS
Dibenz(a,h)anthracene	ND	0.33	0.33	0.33	0.56	NS
Fluoranthene	0.85	100	100	100	500	NS
Fluorene	0.34 J	30	100	100	500	30
Indeno(1,2,3-cd)pyrene	ND	0.5	0.5	0.5	5.6	NS
Naphthalene	ND	12	100	100	500	NS
Phenanthrene	0.59 J	100	100	100	500	NS
Pyrene	0.79	100	100	100	500	30
Total PAHs	4.85	NA	NA	NA	NA	NA
TICs [d]	4.95 J	NA	NA	NA	NA	NA
VOLATILE ORGANIC COMPOUNDS						
cis-1,2-Dichloroethene	0.017	0.25	59	100	500	NS
Acetone	**0.45 J**	0.05	100	100	500	2.2
Ethylbenzene	0.006 J	1	30	41	390	NS
MEK (2-butanone)	0.085	0.12	100	100	500	100
sec-Butylbenzene	0.006 J	11	100	100	500	NS
Toluene	0.04	0.7	100	100	500	36
Trichloroethene	0.012	0.47	10	21	200	2
Xylene (mixed)	0.013 J	0.26	100	100	500	0.26
TICs [d]	1.75 J	NA	NA	NA	NA	NA

Results and SCOs are in parts per million (ppm).

ND - Non-Detect

NA - Not Applicable

NS - Not Specified, and may be required to calculate the ERSCO

[d] Results shown are the sum of all reported TICs

J - The analyte was positively identified; the associated numerica value is the approximate concentration of the analyte in the sample

(1) - Also exceeds Protection of Ecological Resouces SCOs

(2) - Also exceeds Commercial SCOs

>/= to Residential/Restricted-Residential SCO and Unrestricted Use SCO

>Unrestricted Use SCO but <Residential/Restricted-Residential SCO

>Unrestricted Use & Residential SCO but <Restricted-Residential SCO

Table 5
31 WATER STREET - GROUNDWATER SAMPLE ANALYTICAL RESULTS

	Sample Identification							NYSDEC Guidance
Sample Date	**10/19/18**	**10/18/18**	**10/18/18**	**10/19/18**	**10/18/18**	**10/19/18**	**10/19/18**	
Contaminants	**MW-01**	**MW-02**	**MW-03**	**MW-04**	**MW-05**	**BMW-01**	**TANK WS-01**	**NYSDEC TOGS Value**
METALS Total								
Arsenic	27.6	ND	26	9.1 J	ND	ND	ND	25
Barium	1090	713	738	1700	2140	1740	76.9 J	1000
Beryllium	1.4 J	ND	ND	ND	ND	ND	ND	3
Copper	33.3	ND	ND	ND	ND	ND	125	200
Lead	34.4	ND	2.6 J	ND	ND	ND	16.8	25
Magnesium	35600	12900	14900	16500	34200	19300	2930	35000
Manganese	3140	2130	5130	173	407	505	86.9	300
Nickel	68.6	2.6 J	12.1 J	ND	ND	1.4 J	1.4 J	100
Zinc	172	ND	514	ND	ND	ND	112	2,000
Mercury	ND	ND	ND	ND	ND	ND	ND	0.7
Chromium	39.6	ND	ND	ND	ND	ND	ND	50
Total Cyanide	ND	ND	ND	ND	ND	ND	ND	200
METALS Dissolved								
Arsenic	ND	NA	NA	NA	NA	ND	ND	25
Barium	787	NA	NA	NA	NA	1700	71.9 J	1000
Chromium	2.4 J	NA	NA	NA	NA	ND	ND	50
Copper	4.4 J	NA	NA	NA	NA	ND	21.2 J	200
Lead	5.7	NA	NA	NA	NA	ND	ND	25
Manganese	1880	NA	NA	NA	NA	402	31.8	300
Nickel	12.8 J	NA	NA	NA	NA	4.2 J	4.5 J	100
Zinc	19 J	NA	NA	NA	NA	ND	39.2	2,000
Total Cyanide	ND	NA	NA	NA	NA	ND	ND	200
Mercury	ND	NA	NA	NA	NA	ND	ND	0.7
PCBs/PESTICIDES								
Pesticides	ND	ND	ND	ND	ND	ND	ND	NA
Polychlorinated biphenyls	ND	ND	ND	ND	ND	ND	ND	NA
SEMIVOLATILE ORGANIC COMPOUNDS								
SVOCs	ND	ND	ND	ND	ND	ND	ND	NA
TICs [a]	2 J	19 J	20.5 J	21 J	19.4 J	13.1 J	8.8 J	NA
VOLATILE ORGANIC COMPOUNDS								
cis-1,2-Dichloroethene	4	ND	ND	74.3	ND	4	ND	5
Acetone	67.8 J	81.9	71.2 J	121 J	78.4	85.1 J	64.2 J	50
Trichloroethene	ND	ND	ND	ND	2.9	0.93 J	ND	5
Vinyl chloride	ND	ND	ND	81	ND	ND	ND	2
TICs [a]	ND	ND	ND	ND	ND	ND	ND	NA
FIELD PARAMETERS								
Turbidity (NTU)	0	10	10	39.2	7.2	47	NA	NA
pH	7,75	5.91	5.92	9.58	6.86	10.99	NA	NA
Dissolved Oxygen	0	0	0	0	3.06	0.32	NA	NA
Temp (degrees C)	17.2	15	14.05	13.37	16.05	14.42	NA	NA
Conductivity	1.18	2.61	1.36	1	2.19	1	NA	NA

Results and SCOs are in parts per billion (ppb).

ND - Non-Detect Data Validation has been completed

NA - Not Applicable

J - The analyte was positively identified; the associated numerica value is the approximate concentration of the analyte in the sample

[a] Results shown are the sum of all reported TICs

1 = laboratory value exceeds TOGS GA Guidance Value

TABLE 6
31 WATER STREET - PFAS AND 1,4 DIOXANE - GROUNDWATER/SEDIMENT SAMPLES ANALYTICAL RESULTS SUMMARY

Sample Number	MW-01	MW-02	MW-03	MW-04	MW-05	BMW-01	TANK WS-01	SED-1	SED-2	NYSDEC Guideline Value - January 2020	
Sample Date	10/19/18	10/18/18	10/18/18	10/19/18	10/18/18	10/19/18	10/19/18	10/19/18	10/19/18		
Constituent	Water	Water	Water	Water	Water	Water	Water	Soil	Soil	Water	Soil
1,4 Dioxane by 8270D											
1,4 Dioxane ppb	ND	ND	0.16 J H	ND	ND	ND	ND	ND	ND	0.35 ppb	100 ppb
Perfluorinated Alkyl Acids by Isotope Dilution EPA 537											
Perfluorobutanoic Acid (PFBA)	1.6 J	6.8	2.5	ND	2	ND	6.5	ND	ND	100.00	
Perfluoropentanoic Acid (PFPeA)	1.6 J	3.4	0.8 J	ND	2	ND	1.9	ND	ND	100.00	
Perfluorobutanesulfonic Acid (PFBS)	0.25 J	12	1.4J	ND	0.6 J	ND	1.1 J	ND	ND	100.00	
Perfluorohexanoic Acid (PFHxA)	1.8 J	4.3	1.6 J	ND	1.9 J	ND	2	ND	ND	100.00	
Perfluoroheptanoic Acid (PFHpA)	0.9 J	2.4	0.9 J	ND	0.4 J	ND	1.9	ND	ND	100.00	
Perfluorohexanesulfonic Acid (PFHxS)	ND	2.3	3.3	ND	ND	ND	ND	ND	ND	100.00	
Perfluorooctanoic Acid (PFOA)	2.3	7.2	4.8	ND	1.2 J	ND	6.4	ND	ND	10.00	
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ND	ND	ND	ND	ND	ND	ND	100.00	
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	0.6 J	ND	ND	ND	0.3 J	ND	ND	100.00	
Perfluorononanoic Acid (PFNA)	0.62 J	0.4 J	ND	ND	0.3 J	ND	1.1 J	ND	ND	100.00	
Perfluorooctanesulfonic Acid (PFOS)	1.1 J	9.4	15	ND	5.6	ND	41	ND	ND	10.00	
Perfluorodecanoic Acid (PFDA)	ND	ND	ND	ND	ND	ND	0.6 J	ND	ND	100.00	
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ND	ND	ND	ND	ND	ND	ND	100.00	
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	100.00	
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	100.00	
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ND	ND	ND	ND	ND	ND	ND	100.00	
Perfluorooctanesulfonamide (FOSA)	ND	ND	ND	ND	ND	ND	0.3 J	ND	ND	100.00	
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	100.00	
Perfluorododecanoic Acid (PFDoA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	100.00	
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	100.00	
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	100.00	
PFOA/PFOS Total	10.17	48.20	30.90	0.0	14.0	0.0	63.1	NA	NA	500.00	

All Values in ng/L accept where noted

Exceeds Guidance from NYSDEC Guidance for Sampling and Analysis for PFAS - January 2020

NA - Not Applicable ND - Non-detect

Table 7
31 Water Street Site
Sub Slab Vapor Indoor Air Analytical Results
EPA Air Method Toxic Organics -15 (TO-15)
Pg 1 of 2

	Sample Identification																	NYSDOH Minimum Action Levels[a]		
Sample Date	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/11/18			
TO-15 Contaminants	**SS-01 Sub Slab**	**IA-01 Indoor**	**SS-02 Sub Slab**	**SS-03 Sub Slab**	**IA-02 Indoor**	**IA-03 Indoor**	**SS-04 Sub Slab**	**IA-04 Indoor**	**SS-05 Sub Slab**	**IA-05 Indoor**	**SS-06 Sub Slab**	**IA-06 Indoor**	**SS-07 Sub Slab**	**IA-07 Indoor**	**OA-01 Outdoor**	**Air Guideline Value**	**Sub Slab Vapor Concentration**	**Indoor Air Concentration**
VOLATILE ORGANIC COMPOUNDS[b]																		
1,1,1-Trichloroethane	0.6 J	ND	ND	1	ND	ND	ND	ND	ND	ND	2.8	ND	ND	ND	ND		100	3
1,1-Dichloroethene	ND	ND	ND	16	ND	ND	ND	ND	ND	ND	5.8	ND	ND	ND	ND		6	0.2
1,2,4-Trimethylbenzene	6.8 J	0.84 J	7.2 J	5.9 J	1.1 J	0.59 J	5.5 J	1.4 J	5.4 J	2.2 J	5.1 J	1.3 J	4.7 J	1.8 J	0.74			
1,3,5-Trimethylbenzene	3.6 J	ND	3.8 J	3.4 J	ND	ND	2.9 J	0.98 J	2.8 J	1.5 J	2.7 J	ND	2.5 J	0.88 J	ND			
1,2 Dichloroethane	ND	ND	ND	ND	ND	0.97	ND	ND	ND	ND	ND	1.3 J	ND	1.3 J	ND			
1,4-Dichlorobenzene	ND	ND	ND	ND	1.7 J	ND	ND	12 J	ND	11 J	ND	1.6	ND	1.7	ND			
2,2,4-Trimethylpentane	ND	ND	ND	ND	ND	ND	ND	1.4	ND	1.5	0.84	3.7	1.3	3.9	ND			
4-Ethyltoluene	1.6 J	ND	ND	ND	ND	ND	ND	ND	ND	0.54 J	1.3 J	ND	1.2 J	ND	17			
Acetone	85	23	110	46	25	32	35	44	61	60	190	33	120	37	ND			
Benzene	0.86	ND	1.7	4.8	0.83	0.64	0.99	0.67	0.93	0.93	2.1	1.6	2.6	1.8	ND			
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Carbon disulfide	ND	ND	ND	5.1	ND	ND	ND	ND	ND	2.8	9.2	ND	3.4	ND	0.63			
Carbon tetrachloride	ND	ND	ND	ND	0.44	ND	1.3	0.5	ND	0.5	1.4	0.44	ND	0.44	ND		6	0.2
Chloroethane	ND	ND	0.32 J	0.58	ND	ND	ND	ND	ND	ND	5.5	ND	1.3	ND	ND			
Chloroform	ND	ND	3.3	21	ND	ND	0.88	ND	1.2	ND	240	ND	18	ND	0.87			
Chloromethane	0.66	0.85	2.9	0.62	1.1	1	0.85	1.5	ND	1.5	ND	1.2	1.2	0.85	0.34 J			
cis-1,2-Dichloroethene	0.63	0.83	2.1	9000	3.8	4.3	6.3	7.1	1.6	13	730	14	11	13	ND		6	0.2
Cyclohexane	32	2.7	12	34	2.9	0.62	4.6	0.52	8.9	0.55	30	0.69	37	0.62	2.1			
Ethyl acetate	3.4	1.8	5.5	ND	1.5	1.3	2.5	1.9	2.6	2.1	ND	1.9	2.8	1.8	ND			
Ethylbenzene	0.65	ND	0.65	1.2	0.78	0.52 J	0.56 J	0.69	0.56	0.82	0.56 J	0.82	0.52	0.91	1.6			
Freon 11	1.3	1.7	3.3	1.5	2.8	1.3	2.9	8.5	2.6	4.2	2.5	3	3.7	3	ND			
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.7	ND	0.84	ND	2.6			
Freon 12	2.4	1.9	3.3	2.1	2	2	2.5	2.3	2.1	2.2	2.4	2.4	3	2.1	0.82			
Heptane	4	1.7	11	ND	1.8	6	4	1.5	8.2	1.6	19	1.5	25	1.4	0.63			
Hexane	3.2	0.88	20	13	1.4	0.99	3.1	1.6	14	1.7	43	2.2	55	2.6	3.5			
Isopropyl alcohol	ND	ND	7.9	6.6	9.3	27	5	9.3	9.3	17	11	7.4	7.9	5	0.78 J			
m&p-Xylene	1.8	1.0 J	1.7	3.9	2.6	1.2 J	1.4	2.3	1.4	3.3	1.6	2.7	1.4	3	1.8			
Methyl Ethyl Ketone	8.3 J	1.8	6.5	5 J	2.9	1.9	4.3	2.4	4.6	2.6 J	6.1	2.9	5.6	3.1	0.57 J			
Methyl Isobutyl Ketone	0.66 J	ND	ND	2.4	ND	ND	ND	ND	ND	2.5	ND	ND	ND	ND	ND			
Methyl Tert-butyl Ether	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Methylene chloride	12	2.4	13	10	1.7	1.5	11	2.2	10	1.8	14	1.1	9.7	1	0.43 J	60	100	3
o-Xylene	0.96	ND	1	1.6	0.91	0.43 J	0.78	0.82	0.82	1.2	0.82	0.96	0.74	1	ND			
Styrene	1.3	ND	1.3	1.4	ND	ND	1.1	0.47	1.1	0.6 J	1.1	0.47 J	0.98	0.47 J	ND			
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	76	ND	4.9	ND	ND			
Tetrachloroethylene	1	ND	1.4	38	1.9	ND	3.6	5.9	1.6	18	9.5	12	1.6	9.1	2.6	30	100	3
Toluene	3.6	3.4	3	8.5	7.5	3.5	3.5	5.7	2.9	6.9	3.1	6.8	2.9	7.8	ND			
Trichloroethene	7.4	5	34	23000	32	13	21	16	15	70	3300	66	95	51	ND	2	6	0.2
Vinyl chloride	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	1.6	ND	1.1	ND	ND		6	0.2

Results and Action levels are presented in micrograms per meters cubed (ug/m^3).
N/A - Not Applicable ND - Non-detect
J - Analyte detected below quantitation limit Data Validation has been completed
[a]New York State Department of Health (NYSDOH), Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006 and subsequent updates (select matrix coumpounds).
[b]Compounds with detected concentrations
NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, May 2017 Decision Matrices Notes:
NO FURTHER ACTION:
Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures
IDENTIFY SOURCE(S) AND RESAMPLE OR MITIGATE:
The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor int rusion given the concentration detected in the sub slab vapor sample.
Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers capped or by storing VOC containing products in places where people do not spend much time, such as a garage or shed).
Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.
MONITOR:
Monitoring, including sub slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concen trations in the indoor air or sub slab vapor have changed.
Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed.
The type and frequency of monitoring is determined on a site specific and building specific basis, taking into account applicable environmental data and building operating conditions.
Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.
MITIGATE:
Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub slab depressurization system,
and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building specific basis, taking into account building construction and operating conditions.

Table 7
31 Water Street Site
Sub Slab Vapor Indoor Air Analytical Results
EPA Air Method Toxic Organics -15 (TO-15)
Pg 2 of 2

	Sample Identification												NYSDOH Minimum Action Levels[a]		
Sample Date		10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/1/18	10/11/18			
TO-15 Contaminants	**SS-08 Sub Slab**	**IA-08 Indoor**	**SS-09 Sub Slab**	**IA-09 Indoor**	**SS-10 Sub Slab**	**IA-10 Indoor**	**SS-11 Sub Slab**	**IA-11 Indoor**	**SS-12 Sub Slab**	**IA-12 Indoor**	**SS-13 Sub Slab**	**IA-13 Indoor**	**OA-01 Outdoor**	**Air Guidline Value**	**Sub Slab Vapor Concentration**	**Indoor Air Concentration**
VOLATILE ORGANIC COMPOUNDS[b]																
1,1,1-Trichloroethane	ND	ND	ND	1.7	0.55 J	1.2	ND	ND	ND	ND	6.4	ND	ND		100	3
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		6	0.2
1,2,4-Trimethylbenzene	4 J	1.5 J	4.3 J	4 J	5.8 J	3.1 J	4.7 J	8.2 J	5.5 J	6.6 J	6.1 J	0.69 J	0.74			
1,3,5-Trimethylbenzene	2.4 J	ND	2.6 J	2 J	3 J	1.6 J	2.7 J	2.5 J	2.9 J	2.9 J	3.2 J	ND	ND			
1,4-Dichlorobenzene	ND	2.5 J	ND	4.3 J	ND	4.1 J	ND	0.84 J	ND	0.6 J	ND	ND	ND			
2,2,4-Trimethylpentane	0.98	2.1	ND	1.6	ND	1.4	1.2	1.3	0.75	2	ND	1.4	ND			
4-Ethyltoluene	0.98 J	ND	1.3 J	1.1 J	1.4 J	0.88 J	1.3 J	2.9 J	1.3 J	1.8 J	1.6 J	ND	ND			
Acetone	180	46	120	33	56	39	64	34	160	31	250	56	17			
Benzene	2.3	0.61	0.51	0.89	0.61	0.83	2.1	2	2	2.5	3.2	0.61	ND			
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Carbon disulfide	2.5	ND	ND	ND	ND	ND	1.8	ND	4.7	ND	17	ND	ND			
Carbon tetrachloride	6.5	0.44	0.69 J	0.44	1	0.44	ND	0.44	ND	0.38	4.2	0.44	0.63		6	0.2
Chloroethane	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.42	ND	ND			
Chloroform	1.4	ND	0.63 J	ND	0.73	ND	ND	ND	0.73	ND	1.3	ND	ND			
Chloromethane	2.3	0.99	2.6	1.2	ND	7.1	ND	ND	2.5	0.89	2.7	0.93	0.87			
cis-1,2-Dichloroethene	3.8	12	0.91	8	0.99	7.1	0.59	0.75	0.79	0.44	0.83	ND	0.34 J		6	0.2
Cyclohexane	58	0.45 J	1.7	0.79	5.1	2.6	21	1.5	37	2.1	37	0.55	ND			
Ethyl acetate	3.6	1	2.7	3.2	2.6	3.6	2.4	3.4	2.7	3.6	2.9	1.1	2.1			
Ethylbenzene	0.61 J	0.52 J	0.61 J	1.8	0.61 J	1.6	1.4	4.5	0.65	3.5	0.65	ND	ND			
Freon 11	1.8	5.1	6.9	17	15	11	53	70	8.6	57	8.4	4	1.6			
Freon 114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND			
Freon 12	2.4	2.3	2.4	2.2	2.6	2.4	2.5	2.4	2.4	2.3	2.6	2.3	2.6			
Heptane	16	0.94	2	2.8	2.8	2.3	15	4.1	30	5	33	1.7	0.82			
Hexane	34	1.1	2.4	2.3	5.7	2.7	42	6.2	77	7.8	77	0.74	0.63			
Isopropyl alcohol	140	4.8	32	10	6.9	12	7.4	9.3	23	17	78	45	3.5			
m&p-Xylene	1.5	1.9	1.6	6.4	1.6	5.1	4.3	17	1.7	13	1.7	1.3 J	0.78 J			
Methyl Ethyl Ketone	5.7 J	2 J	4.3 J	5 J	4.6 J	5.3	5.5	4.4	5 J	3 J	4.2 J	7.7 J	1.8			
Methyl Isobutyl Ketone	1.1 J	ND	0.57 J	0.57 J	0.53 J	0.82 J	ND	0.53 J	ND	0.57 J	ND	ND	0.57 J			
Methyl Tert-butyl Ether	ND	ND	ND	ND	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND			
Methylene chloride	11	1.3	14	9.7	10	16	9	3.5	14	4.2	16	0.73	ND	60	100	3
o-Xylene	0.74	0.74	0.82	1.8	0.87	1.5	1.4	4.8	0.82	4	0.91	ND	0.43 J			
Styrene	ND	ND	0.94	ND	1.1	ND	1.1	0.51 J	1	0.43 J	1.1	ND	ND			
Tetrachloroethylene	3.1	1.9	0.95 J	2.9	0.88 J	2.8	1.6	ND	0.88 J	ND	1	ND	ND	30	100	3
Tetrahydrofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12	ND			
Toluene	8.3	4.2	7.8	9.8	3.5	11	7.8	13	3.9	15	3.6	3.4	2.6			
Trichloroethene	44	28	7.3	12	13	26	5.3	4.1	6.6	3.3	21	3.1	ND	2	6	0.2
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.9	ND	ND			
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		6	0.2

Results and Action levels are presented in micrograms per meters cubed (ug/m^3).
N/A - Not Applicable ND - Non-detect
J - Analyte detected below quantitation limit Data Validation has been Completed

[a]New York State Department of Health (NYSDOH), Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006 and subsequent updates (select matrix coumpounds).

[b]Compounds with detected concentrations

NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, May 2017 Decision Matrices Notes:

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Table 8
31 Water Street Site
Groundwater Elevations
Date Measured: 10/18/2018 to 10/19/2018

Well Number	T of R Elevation (ft)	Depth to Water 10/18/18 to 10/19/18	Groundwater Elevation (ft)
MW-1	1303.74	7.60	1296.14
MW-2	1298.21	5.05	1293.16
MW-3	1298.13	4.90	1293.23
MW-4	1298.12	6.60	1291.52
MW-5	1304.44	8.90	1295.54
BMW-01	1300.07	8.40	1291.67

Table 9
31 Water Street Site
Gateway Lofts RI Location Coordinates
NAD 1983

Investigative Location	Coordinates-North American Datum 1983	
	Latitude	Longitude
Soil Borings		
BH-01	42.09312047	-79.23186909
BH-02	42.09291552	-79.23181776
BH-03	42.0929568	-79.23219367
BH-04	42.09347978	-79.23245972
BH-05	42.09389914	-79.23221451
BH-06	42.09416134	-79.23190647
BH-07	42.09310694	-79.23072265
BH-08	42.09377464	-79.23091118
BH-09	42.09348889	-79.23093261
BH-10	42.09387895	-79.23114342
BH-11	42.09395609	-79.23130394
BH-12	42.09402621	-79.23106539
BH-13	42.09413791	-79.23128387
BH-14	42.09360872	-79.23092155
BH-15	42.09340211	-79.23082821
BH-21	42.09412427	-79.23141632
BH-22	42.0942366	-79.23149767
Monitoring Wells		
MW-1	42.09282841	-79.23231678
MW-2	42.09387394	-79.23202593
MW-3	42.0940909	-79.231659
MW-4	42.09392343	-79.23110864
MW-5	42.09302148	-79.23076583
BMW-01	42.09349715	-79.23090127
Surface Samples		
S-02	42.09400713	-79.23216261
S-03	42.09323683	-79.23240822
S-07	42.09372867	-79.23082228
Sediment Samples		
Sed-01	42.09429794	-79.23155478
Sed-02	42.09395206	-79.23075166

TABLE 10
53-55 WATER STREET - SOIL SAMPLE ANALYTICAL RESULTS SUMMARY

Sample Date	12/4/2018	12/4/2018	12/4/2018	12/4/2018	12/4/2018	12/4/2018	12/4/2018	PART 375 Soil Cleanup Objectives				
Contaminants	**55-S1**	**55-S2**	**55-S3**	**53-S1**	**53-S2**	**53-S3**	**53-S4**	**Unrestricted Use**	**Residential**	**Restricted Residential**	**Commercial**	**Protection Eco Resources**
METALS												
Arsenic	18 (1)(2)	18.8 (1)(2)	10.9	10.7	11.8	19.3 (1)(2)	12.9	13	16	16	16	13
Barium	152	181	147	156	154	149	137	350	350	400	400	433
Beryllium	0.75	0.65	0.41	0.49	0.62	0.66	0.57	7.2	14	72	590	10
Cadmium	1.96	1.55	0.65	8.47 (1)	1.74	1.32	1.62	2.5	2.5	4.3	9.3	4.0
Chromium, trivalent	49.4 (1)	37.7	16.1	18.1	39.4	25.7	21.5	30	36	180	1,500	41
Copper	1510 (1)(2)	361 (1)(2)	47	57.4 (1)	2260 (1)(2)	151 (1)	260 (1)	50	270	270	270	50
Lead	347	291	112	18.5	95.6	431	203	63	400	400	1,000	450
Manganese	544	516	380	963	564	423	561	1600	2,000	2,000	10,000	1,600
Nickel	33.4 (1)	21.7	15.1	21.9	42.1 (1)	19.4	20.4	30	140	310	310	30
Selenium	3.2	2.1	1.5	2	2.46	2.34	1.85	3.9	36	180	1,500	4
Silver	5.3 (1)	4.29 (1)	3.36 (1)	3.42 (1)	4.62 (1)	3.75 (1)	3.27 (1)	2	36	180	1500	2
Zinc	1070 (1)	432 (1)	146 (1)	93.5	1610 (1)	240 (1)	316 (1)	109	2200	10,000	10,000	109
Total Mercury	0.37 (1)	0.2 (1)	0.23 (1)	0.06	0.09	0.36 (1)	0.25 (1)	0.18	0.81	0.81	2.8	0.18
PCBs/PESTICIDES												
4,4'-DDE	0.007 (1)	0.13 (1)	ND	ND	ND	ND	0.006 (1)	0.0033	1.8	8.9	62	0.0033
4,4'-DDT	0.025 (1)	0.17 (1)	ND	ND	ND	0.004 (1)	0.013 (1)	0.0033	1.7	7.9	47	0.0033
4,4'-DDD	0.011 (1)	ND	ND	ND	ND	ND	0.006 (1)	0.0033	2.6	13	92	0.0033
Chlordane (alpha)	0.025	0.17	ND	ND	ND	0.004	0.013	0.094	0.91	4.2	24	1.3
delta-BHC	ND	ND	ND	ND	0.006	ND	ND	0.04	100	100	500	0.04
Dieldrin	0.009 (1)	0.019 (1)	0.004	0.004	0.004	0.006 (1)	0.004	0.005	0.039	0.2	1.4	0.006
Endosulfan II	0.012	ND	ND	ND	0.005	ND	0.004	2.4	4.8	24	9.2	NS
Endosulfan sulfate	0.033	0.055	0.011	0.02	ND	0.013	0.012	2.4	4.8	24	200.0	NS
Total PCBs	ND	ND	ND	ND	ND	ND	ND	0.1	1	1	1	1
SEMIVOLATILE ORGANIC COMPOUNDS												
Acenaphthene	ND	ND	ND	ND	0.71	ND	ND	20	100	100	500	20
Anthracene	0.68	0.65	ND	ND	ND	ND	ND	100	100	100	500	NS
Benz(a)anthracene	2.01	2.04	0.76	0.69	0.77	1.49	0.56	1	1	1	5.6	NS
Benzo(a)pyrene	1.75 (2)	1.85 (2)	0.69	0.63	0.72	1.29 (2)	0.55	1	1	1	1	2.6
Benzo(b)fluoranthene	2.04	2.25	0.85	0.63	0.89	1.59	0.64	1	1	1	5.6	NS
Benzo(g,h,i)perylene	1.1	1.24	0.48	0.37	0.53	0.82	0.38	100	100	100	500	NS
Benzo(k)fluoranthene	1.34	1.35	0.63	0.49	0.5	0.95	0.41	0.8	1	3.9	56	NS
Chrysene	2.15	2.28	0.85	0.63	0.85	1.57	0.61	1	1	3.9	56	NS
Dibenz(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	0.33	0.33	0.33	0.56	NS
Fluoranthene	4.29	4.48	1.65	1.26	1.98	3.28	1.25	100	100	100	500	NS
Fluorene	ND	ND	ND	ND	ND	ND	ND	30	100	100	500	30
Indeno(1,2,3-cd)pyrene	1.1	1.21	0.47	0.52	0.53	0.81	0.4	0.5	0.5	0.5	5.6	NS
Naphthalene	ND	ND	ND	ND	ND	0.47	ND	12	100	100	500	NS
Phenanthrene	2.86	3.15	0.96	0.83	1.85	2.16	0.76	100	100	100	500	NS
Pyrene	3.22	3.58	1.29	1.03	1.5	2.52	0.98	100	100	100	500	NS
Total PAHs	20.79	24.85	8.63	7.08	10.83	16.95	6.54	NA	NA	NA	NA	NA

Results and SCOs are in parts per million (ppm).

ND - Non-Detect

NA - Not Applicable

NS - Not Specified, and may be required to calculate the ERSCO

[d] Results shown are the sum of all reported TICs

J - The analyte was positively identified; the associated numerica value is the approximate concentration of the analyte in the sample

(1) - Also exceeds Protection of Ecological Resouces SCOs

(2) - Also exceeds Commercial SCOs

>/= to Residential/Restricted-Residential SCO and Unrestricted Use SCO

>Unrestricted Use SCO but <Residential/Restricted-Residential SCO

>Unrestricted Use & Residential SCO but <Restricted-Residential SCO

PHASE 2 ESA - JUNE 2017
TABLES

TABLE 1
SUMMARY OF DETECTED VOLATILE and SEMI VOLATILE ORGANIC COMPOUNDS IN SOIL
31 Water Street
Jamestown, New York

Volatile Organic Compound	Boring Location / Sample Depth Interval (Feet)						
	B-1 12-16 feet	B-4 6-9 feet	B-7 4-8 feet	B-11 2-6 feet	B-18 0.5-4 feet	Residential Soil Cleanup Objectives	Restricted Residential Soil Cleanup Objectives
Tetrachloroethene	ND	0.0032	ND	ND	ND	5.5	19
Benzene	ND	0.00031	0.00087	ND	ND	2.9	5
Toluene	ND	ND	0.0011	ND	ND	100	100
Ethylbenzene	ND	ND	0.00045	ND	ND	30	41
1,3,5-Trimethylbenzene	ND	0.00020	0.00079	ND	ND	47	52
1,2,4-Trimethylbenzene	ND	0.00078	0.0014	ND	ND	47	52
Vinyl chloride	ND	ND	ND	ND	0.41	0.21	0.9
Trichloroethene	**56**	ND	0.0065	ND	0.0026	10	21
cis-1,2-Dichloroethene	ND	ND	0.0012	ND	0.010	59	100
Acetone	ND	ND	0.34	0.053	ND	100	100
Carbon disulfide	1.9	ND	0.0042	ND	ND	NS	NS
2-Butanone	ND	ND	0.066	0.011	ND	NS	NS
Naphthalene	0.06	ND	0.0063	0.00022	ND	100	100
Cyclohexane	ND	ND	ND	ND	ND	NS	NS
Methyl cyclohexane	ND	ND	0.0006	ND	ND	NS	NS
Semi Volatile Organic Compounds							
Acenaphthene	ND	0.034	0.027	ND	ND	100	100
Fluoranthene	ND	0.46	0.36	0.54	0.19	100	100
Naphthalene	ND	ND	0.071	ND	0.20	100	100
NDPA/DPA	ND	ND	0.035	ND	ND	NS	NS
Bis(2-ethylhexyl)phthalate	ND	1.3	ND	ND	ND	NS	NS
Benzo(a)anthracene	ND	0.27	0.18	0.35	0.089	1	1
Benzo(a)pyrene	ND	0.29	0.18	0.28	0.11	1	1
Benzo(b)fluoranthene	ND	0.33	0.21	0.32	0.17	1	1
Benzo(k)fluoranthene	ND	0.11	0.072	0.12	0.057	1	3.9
Chrysene	ND	0.27	0.18	0.29	0.12	1	3.9
Anthracene	ND	0.066	0.059	0.10	ND	100	100
Benzo(ghi)perylene	ND	0.18	0.10	0.11	0.082	100	100
Fluorene	ND	0.026	0.033	ND	ND	100	100
Phenanthrene	ND	0.180	0.23	0.16	0.180	100	100
Dibenzo(a,h)anthracene	ND	0.043	ND	0.042	ND	0.33	0.33
Indeno(1,2,3-cd)pyrene	ND	0.19	0.11	0.14	0.086	0.5	0.5
Pyrene	ND	0.44	0.32	0.45	0.17	100	100
Dibenzofuran	ND	ND	ND	ND	0.05	NS	NS
2-Methylnaphthalene	ND	ND	ND	ND	0.22	NS	NS

NOTES:

1) All concentrations are presented in mg/kg or parts per million (ppm).
2) ND denotes analyte not detected above the laboratory detection limit.
3) NS denotes no cleanup objective available.
4) Residential and Restricted Residential Soil Cleanup Objectives referenced from 6NYCRR Part 375, Environmental Remediation Programs, Subpart 375-1 to 375-4 & 375-6, Effective 12/14/2006.
5) Indicates Residential Soil Cleanup Objective Exceedance
6) Indicates Restricted Residential Soil Cleanup Objective Exceedance

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	B-20 2-6 feet	B-22 0.5-4 feet	B-28 0.5-4 feet	B-29 4-8 feet	B-34 2-5 feet	Residential Soil Cleanup Objectives	Restricted Residential Soil Cleanup Objectives
Tetrachloroethene	ND	ND	ND	ND	ND	5.5	19
Benzene	ND	ND	ND	ND	ND	2.9	5
Toluene	0.00031	ND	0.00035	0.00077	ND	100	100
Ethylbenzene	ND	ND	0.0011	ND	ND	30	41
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	47	52
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	47	52
Vinyl chloride	ND	ND	0.077	ND	0.0078	0.21	0.9
Trichloroethene	0.023	0.00054	0.00087	0.010	0.0058	10	21
trans-1,2-Dichloroethene	ND	ND	0.0015	0.00057	ND	100	100
cis-1,2-Dichloroethene	0.0018	ND	ND	0.022	0.0044	59	100
Xylenes, Mixed	ND	ND	0.0086	ND	ND	100	100
Acetone	0.18	0.039	0.0044	0.038	0.11	100	100
Carbon disulfide	0.0037	ND	ND	ND	ND	NS	NS
2-Butanone	ND	ND	ND	0.0059	0.018	NS	NS
p-Isopropyltoluene	ND	ND	ND	ND	0.00061	NS	NS
Naphthalene	ND	ND	ND	ND	ND	100	100
Cyclohexane	0.0095	ND	ND	ND	ND	NS	NS
Methyl cyclohexane	ND	ND	ND	ND	ND	NS	NS
Semi Volatile Organic Compounds							
Acenaphthene	ND	0.43	0.15	0.84	0.36	100	100
Fluoranthene	0.039	19	2.2	7.4	5.7	100	100
Naphthalene	ND	0.29	0.12	0.26	0.085	100	100
Di-n-butylphthalate	ND	ND	0.29	ND	ND	NS	NS
Benzo(a)anthracene	0.03	**7.8**	**1.3**	**3.4**	**2.8**	1	1
Benzo(a)pyrene	ND	**9**	**1.1**	**3.1**	**2.6**	1	1
Benzo(b)fluoranthene	ND	**11**	**1.4**	**3.8**	**3.1**	1	1
Benzo(k)fluoranthene	ND	3.7	0.47	1.3	1	1	3.9
Chrysene	0.03	**8.8**	1.3	3.2	2.5	1	3.9
Acenaphthylene	ND	0.64	ND	0.11	0.1	100	100
Anthracene	ND	1.3	0.44	1.8	1.2	100	100
Benzo(ghi)perylene	ND	4.6	0.57	1.4	1.2	100	100
Fluorene	ND	0.5	0.15	0.97	0.43	100	100
Phenanthrene	ND	11	2.0	6.8	3.7	100	100
Dibenzo(a,h)anthracene	ND	**1**	0.16	**0.43**	0.32	0.33	0.33
Indeno(1,2,3-cd)pyrene	ND	**5.3**	**0.64**	**1.7**	**1.4**	0.5	0.5
Pyrene	0.036	17	2.0	5.8	5.0	100	100
Biphenyl	ND	0.059	ND	ND	ND	NS	NS
Dibenzofuran	ND	0.34	0.08	0.53	0.16	NS	NS
2-Methylnaphthalene	ND	0.17	0.16	0.13	0.08	NS	NS
3-Methylphenol/4-Methylphenol	ND	0.066	ND	ND	ND	NS	NS
Carbazole	ND	0.95	0.12	ND	0.28	NS	NS

NOTES:

1) All concentrations are presented in mg/kg or parts per million (ppm).

2) ND denotes analyte not detected above the laboratory detection limit.

3) NS denotes no cleanup objective available.

4) Residential and Restricted Residential Soil Cleanup Objectives referenced from 6NYCRR Part 375, Environmental Remediation Programs, Subpart 375-1 to 375-4 & 375-6, Effective 12/14/2006.

5) Indicates Residential Soil Cleanup Objective Exceedance

6) Indicates Restricted Residential Soil Cleanup Objective Exceedance

TABLE 2
SUMMARY OF DETECTED METALS AND PCBS IN SOIL
31 Water Street
Jamestown, New York

Metals	Boring Location / Sample Depth Interval (Feet)						
	B-1 12-16 feet	B-4 6-9 feet	B-7 4-8 feet	B-11 2-6 feet	B-18 0.5-4 feet	Residential Soil Cleanup Objectives	Restricted Residential Soil Cleanup Objectives
Aluminum, Total	14,000	7,900	4,700	6,100	5,000	NS	NS
Antimony, Total	ND	200	16	ND	ND	NS	NS
Arsenic, Total	12	**76**	**94**	**22**	**62**	16	16
Barium, Total	72	240	70	120	190	350	400
Beryllium, Total	0.55	1.3	0.21	0.20	0.49	14	72
Cadmium, Total	0.19	**19**	0.55	ND	1.3	2.5	4.3
Calcium, Total	8,500	17,000	3,600	1,200	4,400	NS	NS
Chromium, Total	19	**770**	**550**	14	28	22	110
Cobalt, Total	13	7.9	3.0	4.9	6.8	NS	NS
Copper, Total	20	**3,100**	230	16	**2,000**	270	270
Iron, Total	29,000	34,000	12,000	15,000	30,000	NS	NS
Lead, Total	10	390	73	38	170	400	400
Magnesium, Total	8,800	2,300	1,800	2,000	920	NS	NS
Manganese, Total	510	400	110	74	300	2,000	2,000
Mercury, Total	ND	0.31	0.37	0.06	0.05	0.81	0.81
Nickel, Total	28	**420**	7.4	15	74	140	310
Potassium, Total	1,100	390	1,100	600	500	NS	NS
Selenium, Total	1.2	2.6	0.46	1.4	2.9	36	180
Silver, Total	ND	0.87	ND	ND	0.67	36	180
Sodium, Total	160	200	330	250	97	NS	NS
Thallium, Total	0.53	0.52	ND	ND	ND	NS	NS
Vanadium, Total	18	12	18	11	21	NS	NS
Zinc, Total	65	1,100	120	46	2,200	2,200	10,000
Polychlorinated Biphenyls							
Aroclor 1016	ND	ND	ND	ND	ND	1	1
Aroclor 1221	ND	ND	ND	ND	ND	1	1
Aroclor 1232	ND	ND	ND	ND	ND	1	1
Aroclor 1242	ND	0.133	ND	ND	ND	1	1
Aroclor 1248	ND	ND	ND	ND	**39.6**	1	1
Aroclor 1254	ND	0.260	ND	ND	**30.3**	1	1
Aroclor 1260	ND	0.0194	ND	ND	**3.06**	1	1
Aroclor 1262	ND	ND	ND	ND	ND	1	1
Aroclor 1268	ND	ND	ND	ND	ND	1	1
PCBs, Total	ND	0.484	ND	ND	**73**	1	1

NOTES:

1) All concentrations are presented in mg/kg or parts per million (ppm).

2) ND denotes analyte not detected above the laboratory detection limit.

3) NS denotes no cleanup objective available.

4) Residential and Restricted Residential Soil Cleanup Objectives referenced from 6NYCRR Part 375, Environmental Remediation Programs, Subpart 375-1 to 375-4 & 375-6, Effective 12/14/2006.

5) Indicates Residential Soil Cleanup Objective Exceedance

6) Indicates Restricted Residential Soil Cleanup Objective Exceedance

TABLE 2
SUMMARY OF DETECTED METALS AND PCBS IN SOIL
31 Water Street
Jamestown, New York

Metals	Boring Location / Sample Depth Interval (Feet)							
	B-20 2-6 feet	B-22 0.5-4 feet	B-28 0.5-4 feet	B-29 4-8 feet	B-34 2-5 feet	S-1 surface sample	Residential Soil Cleanup Objectives	Restricted Residential Soil Cleanup Objectives
Aluminum, Total	7,300	3,600	6,400	5,500	8,100		NS	NS
Antimony, Total	30	ND	25	ND	ND		NS	NS
Arsenic, Total	16	6.1	10	8.8	**18**		16	16
Barium, Total	340	**760**	220	200	110		350	400
Beryllium, Total	0.79	0.34	0.70	0.37	0.55		14	72
Cadmium, Total	0.46	0.26	0.42	2.2	3.0		2.5	4.3
Calcium, Total	1,900	14,000	3,000	3,500	8,000		NS	NS
Chromium, Total	72	10	41	23	23		22	110
Cobalt, Total	4.9	4.7	5.5	5.2	9.0		NS	NS
Copper, Total	82	30	**320**	270	**410**		270	270
Iron, Total	36,000	20,000	27,000	21,000	28,000		NS	NS
Lead, Total	49	**1,300**	170	190	120		400	400
Magnesium, Total	1,100	1,500	1,000	2,100	2,400		NS	NS
Manganese, Total	100	280	250	320	550		2,000	2,000
Mercury, Total	0.30	0.03	0.11	0.11	0.15		0.81	0.81
Nickel, Total	18	12	14	27	31		140	310
Potassium, Total	340	700	630	350	550		NS	NS
Selenium, Total	3.6	0.99	1.6	0.75	1.6		36	180
Silver, Total	ND	ND	ND	ND	ND		36	180
Sodium, Total	160	2,200	410	74	110		NS	NS
Thallium, Total	ND	ND	ND	ND	0.56		NS	NS
Vanadium, Total	21	15	15	10	14		NS	NS
Zinc, Total	100	36	200	600	920		2,200	10,000
Polychlorinated Biphenyls								
Aroclor 1016	ND	ND	ND	ND	ND	ND	1	1
Aroclor 1221	ND	ND	ND	ND	ND	ND	1	1
Aroclor 1232	ND	ND	ND	ND	ND	ND	1	1
Aroclor 1242	ND	ND	ND	ND	ND	ND	1	1
Aroclor 1248	0.0307	ND	ND	**1.740**	0.464	**297**	1	1
Aroclor 1254	0.0111	ND	ND	ND	0.372	ND	1	1
Aroclor 1260	ND	ND	ND	ND	0.0381	ND	1	1
Aroclor 1262	ND	ND	ND	ND	ND	ND	1	1
Aroclor 1268	ND	ND	ND	ND	ND	ND	1	1
PCBs, Total	0.0418	ND	ND	**1.740**	0.874	**297**	1	1

NOTES:

1) All concentrations are presented in mg/kg or parts per million (ppm).

2) ND denotes analyte not detected above the laboratory detection limit.

3) NS denotes no cleanup objective available.

4) Residential and Restricted Residential Soil Cleanup Objectives referenced from 6NYCRR Part 375, Environmental Remediation Programs, Subpart 375-1 to 375-4 & 375-6, Effective 12/14/2006.

5) Indicates Residential Soil Cleanup Objective Exceedance

6) Indicates Restricted Residential Soil Cleanup Objective Exceedance

FIGURES/DRAWINGS

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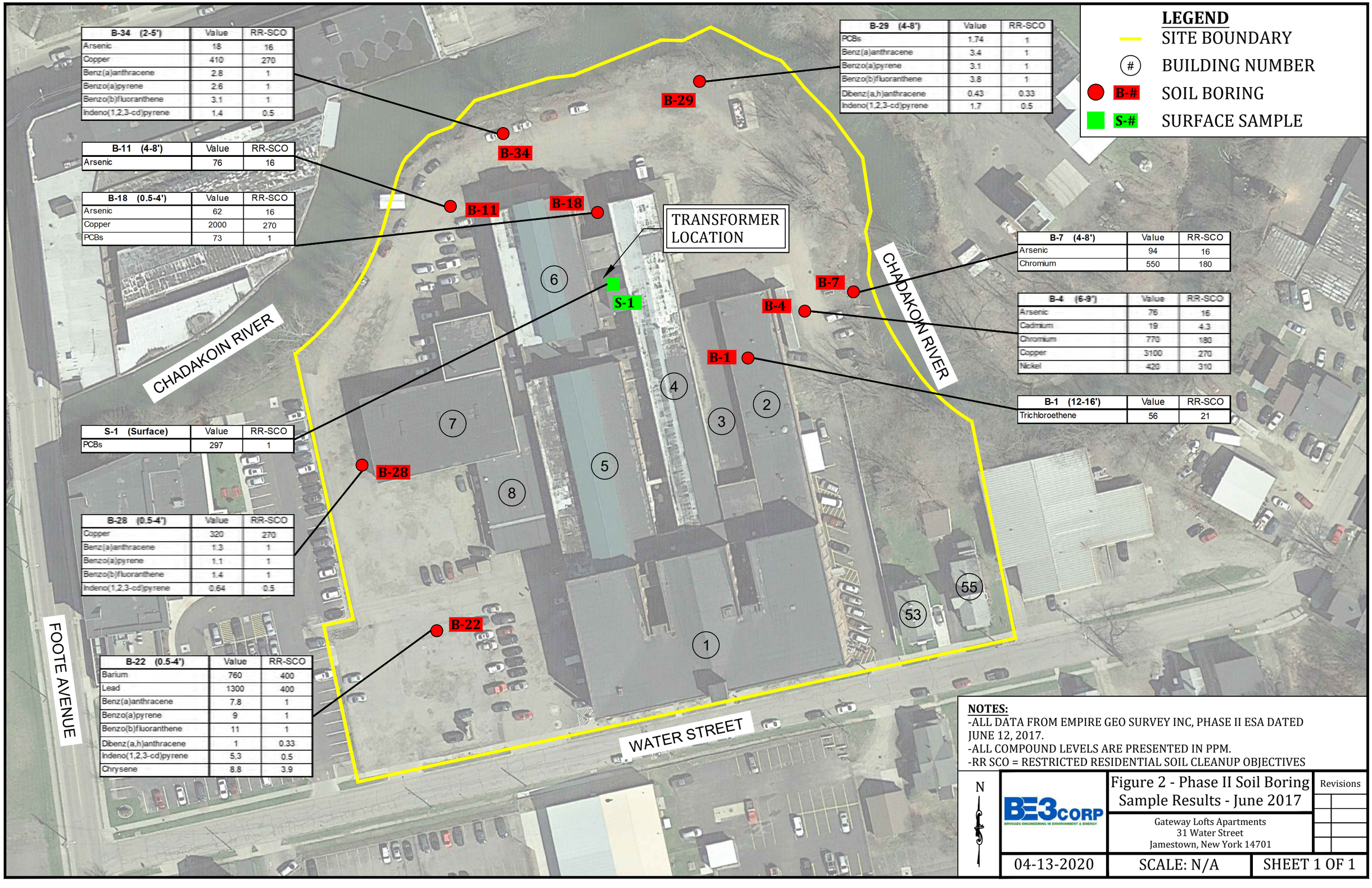


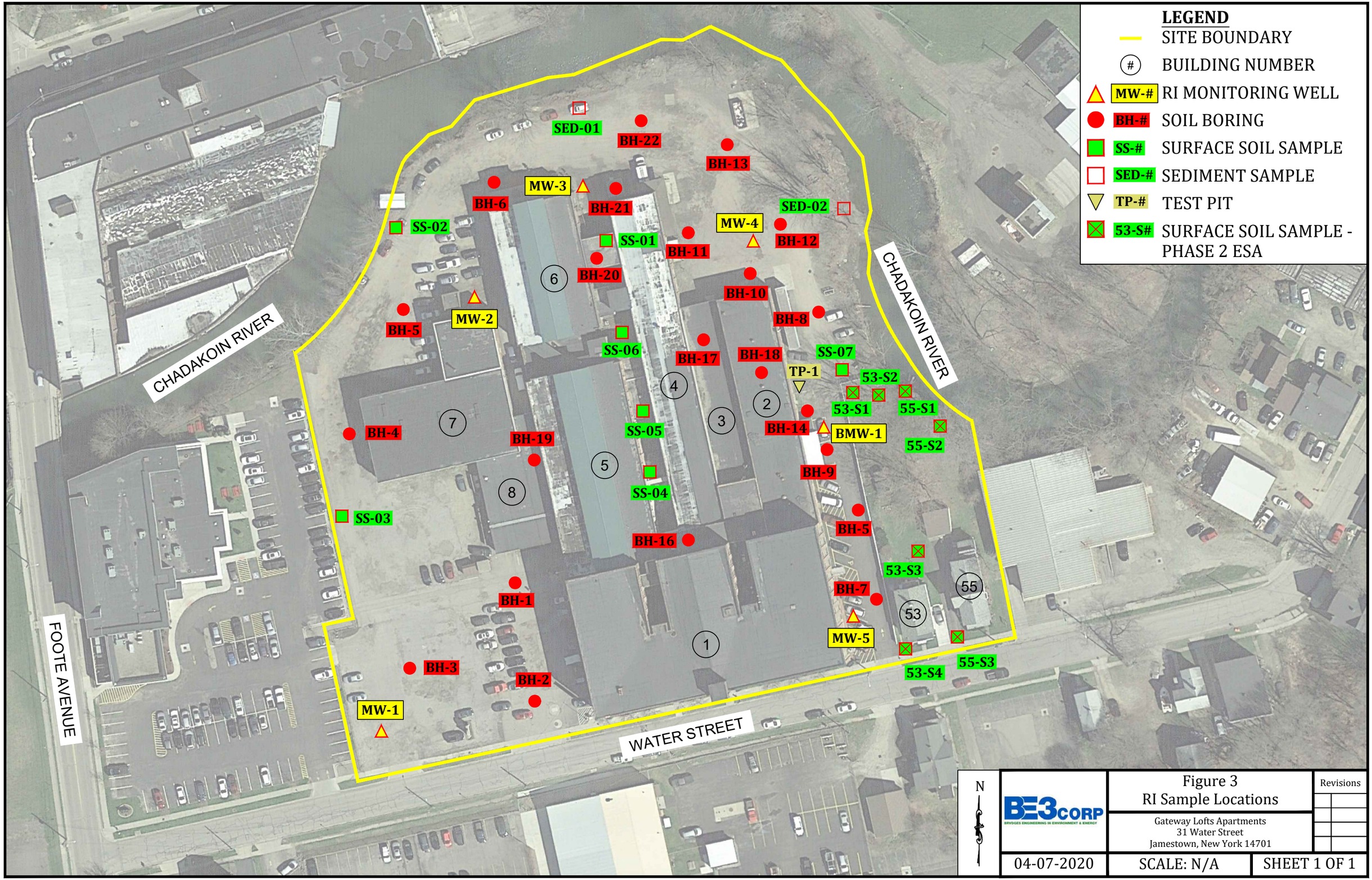
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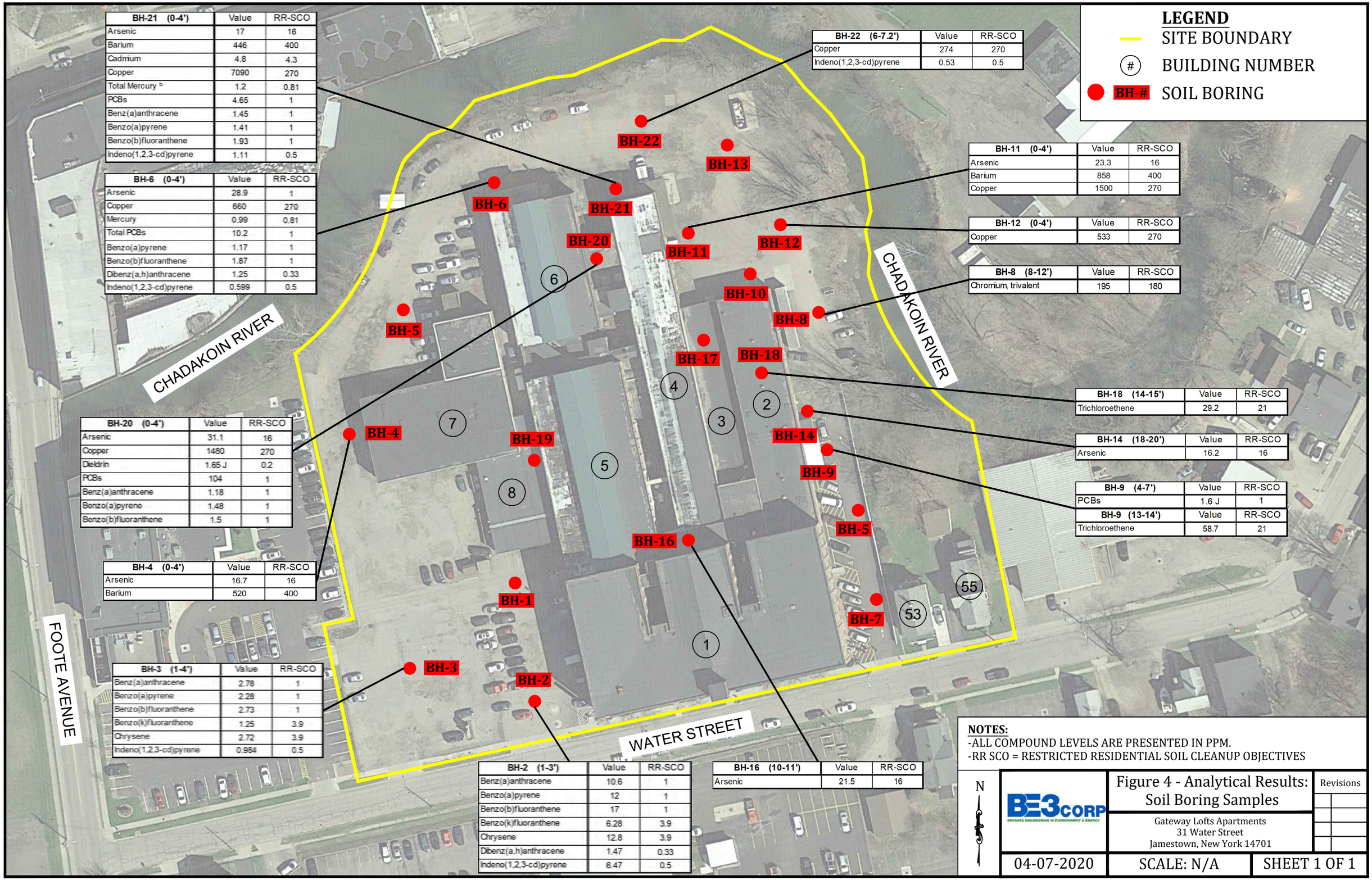
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BRYDGES ENGINEERING IN ENVIRONMENT & ENERGY

Figure 1 - Property Location Map

Gateway Lofts Apartments - 31 Water St.	3/11/2019
Jamestown, NY	STEL, Inc.


B-34 (2-5') | Value | RR-SCO
Arsenic | 18 | 16
Copper | 410 | 270
Benz(a)anthracene | 2.8 | 1
Benzo(a)pyrene | 2.6 | 1
Benzo(b)fluoranthene | 3.1 | 1
Indeno(1,2,3-cd)pyrene | 1.4 | 0.5
B-11 (4-8') | Value | RR-SCO
Arsenic | 76 | 16
B-18 (0.5-4') | Value | RR-SCO
Arsenic | 62 | 16
Copper | 2000 | 270
PCBs | 73 | 1
S-1 (Surface) | Value | RR-SCO
PCBs | 297 | 1
B-28 (0.5-4') | Value | RR-SCO
Copper | 320 | 270
Benz(a)anthracene | 1.3 | 1
Benzo(a)pyrene | 1.1 | 1
Benzo(b)fluoranthene | 1.4 | 1
Indeno(1,2,3-cd)pyrene | 0.64 | 0.5
B-22 (0.5-4') | Value | RR-SCO
Barium | 760 | 400
Lead | 1300 | 400
Benz(a)anthracene | 7.8 | 1
Benzo(a)pyrene | 9 | 1
Benzo(b)fluoranthene | 11 | 1
Dibenz(a,h)anthracene | 1 | 0.33
Indeno(1,2,3-cd)pyrene | 5.3 | 0.5
Chrysene | 8.8 | 3.9
B-29 (4-8') | Value | RR-SCO
PCBs | 1.74 | 1
Benz(a)anthracene | 3.4 | 1
Benzo(a)pyrene | 3.1 | 1
Benzo(b)fluoranthene | 3.8 | 1
Dibenz(a,h)anthracene | 0.43 | 0.33
Indeno(1,2,3-cd)pyrene | 1.7 | 0.5
B-7 (4-8') | Value | RR-SCO
Arsenic | 94 | 16
Chromium | 550 | 180
B-4 (6-9') | Value | RR-SCO
Arsenic | 76 | 16
Cadmium | 19 | 4.3
Chromium | 770 | 180
Copper | 3100 | 270
Nickel | 420 | 310
B-1 (12-16') | Value | RR-SCO
Trichloroethene | 56 | 21
B-34
B-11
B-18
B-29
B-7
B-4
B-1
S-1
B-28
B-22
TRANSFORMER LOCATION
CHADAKOIN RIVER
CHADAKOIN RIVER
FOOTE AVENUE
WATER STREET
1
2
3
4
5
6
7
8
53
55
LEGEND
SITE BOUNDARY
BUILDING NUMBER
B-# SOIL BORING
S-# SURFACE SAMPLE
NOTES:
-ALL DATA FROM EMPIRE GEO SURVEY INC, PHASE II ESA DATED JUNE 12, 2017.
-ALL COMPOUND LEVELS ARE PRESENTED IN PPM.
-RR SCO = RESTRICTED RESIDENTIAL SOIL CLEANUP OBJECTIVES
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BRYDGES ENGINEERING IN ENVIRONMENT & ENERGY
Figure 2 - Phase II Soil Boring Sample Results - June 2017
Gateway Lofts Apartments
31 Water Street
Jamestown, New York 14701
Revisions
04-13-2020
SCALE: N/A
SHEET 1 OF 1


LEGEND
SITE BOUNDARY
BUILDING NUMBER
MW-# RI MONITORING WELL
BH-# SOIL BORING
SS-# SURFACE SOIL SAMPLE
SED-# SEDIMENT SAMPLE
TP-# TEST PIT
53-S# SURFACE SOIL SAMPLE - PHASE 2 ESA
SED-01
BH-22
BH-13
MW-3
BH-6
BH-21
SED-02
SS-02
MW-4
SS-01
BH-12
BH-11
6
BH-20
BH-10
MW-2
BH-8
BH-5
SS-06
BH-17
BH-18
SS-07
TP-1
53-S2
4
2
53-S1
55-S1
BH-14
BMW-1
55-S2
BH-4
7
3
BH-19
SS-05
5
BH-9
8
SS-04
SS-03
BH-5
BH-16
53-S3
55
BH-7
53
BH-1
MW-5
1
55-S3
BH-3
53-S4
BH-2
MW-1
CHADAKOIN RIVER
CHADAKOIN RIVER
FOOTE AVENUE
WATER STREET
N
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BRIDGES ENGINEERING IN ENVIRONMENT & ENERGY
Figure 3
RI Sample Locations
Gateway Lofts Apartments
31 Water Street
Jamestown, New York 14701
Revisions
04-07-2020
SCALE: N/A
SHEET 1 OF 1



BH-21 (0-4')	Value	RR-SCO
Arsenic	17	16
Barium	446	400
Cadmium	4.8	4.3
Copper	7090	270
Total Mercury [b]	1.2	0.81
PCBs	4.65	1
Benz(a)anthracene	1.45	1
Benzo(a)pyrene	1.41	1
Benzo(b)fluoranthene	1.93	1
Indeno(1,2,3-cd)pyrene	1.11	0.5

BH-6 (0-4')	Value	RR-SCO
Arsenic	28.9	1
Copper	660	270
Mercury	0.99	0.81
Total PCBs	10.2	1
Benzo(a)pyrene	1.17	1
Benzo(b)fluoranthene	1.87	1
Dibenz(a,h)anthracene	1.25	0.33
Indeno(1,2,3-cd)pyrene	0.599	0.5

BH-20 (0-4')	Value	RR-SCO
Arsenic	31.1	16
Copper	1480	270
Dieldrin	1.65 J	0.2
PCBs	104	1
Benz(a)anthracene	1.18	1
Benzo(a)pyrene	1.48	1
Benzo(b)fluoranthene	1.5	1

BH-4 (0-4')	Value	RR-SCO
Arsenic	16.7	16
Barium	520	400

BH-3 (1-4')	Value	RR-SCO
Benz(a)anthracene	2.78	1
Benzo(a)pyrene	2.28	1
Benzo(b)fluoranthene	2.73	1
Benzo(k)fluoranthene	1.25	3.9
Chrysene	2.72	3.9
Indeno(1,2,3-cd)pyrene	0.984	0.5

BH-2 (1-3')	Value	RR-SCO
Benz(a)anthracene	10.6	1
Benzo(a)pyrene	12	1
Benzo(b)fluoranthene	17	1
Benzo(k)fluoranthene	6.28	3.9
Chrysene	12.8	3.9
Dibenz(a,h)anthracene	1.47	0.33
Indeno(1,2,3-cd)pyrene	6.47	0.5

BH-16 (10-11')	Value	RR-SCO
Arsenic	21.5	16

BH-22 (6-7.2')	Value	RR-SCO
Copper	274	270
Indeno(1,2,3-cd)pyrene	0.53	0.5

BH-11 (0-4')	Value	RR-SCO
Arsenic	23.3	16
Barium	858	400
Copper	1500	270

BH-12 (0-4')	Value	RR-SCO
Copper	533	270

BH-8 (8-12')	Value	RR-SCO
Chromium, trivalent	195	180

BH-18 (14-15')	Value	RR-SCO
Trichloroethene	29.2	21

BH-14 (18-20')	Value	RR-SCO
Arsenic	16.2	16

BH-9 (4-7')	Value	RR-SCO
PCBs	1.6 J	1
BH-9 (13-14')	**Value**	**RR-SCO**
Trichloroethene	58.7	21

NOTES:
-ALL COMPOUND LEVELS ARE PRESENTED IN PPM.
-RR SCO = RESTRICTED RESIDENTIAL SOIL CLEANUP OBJECTIVES

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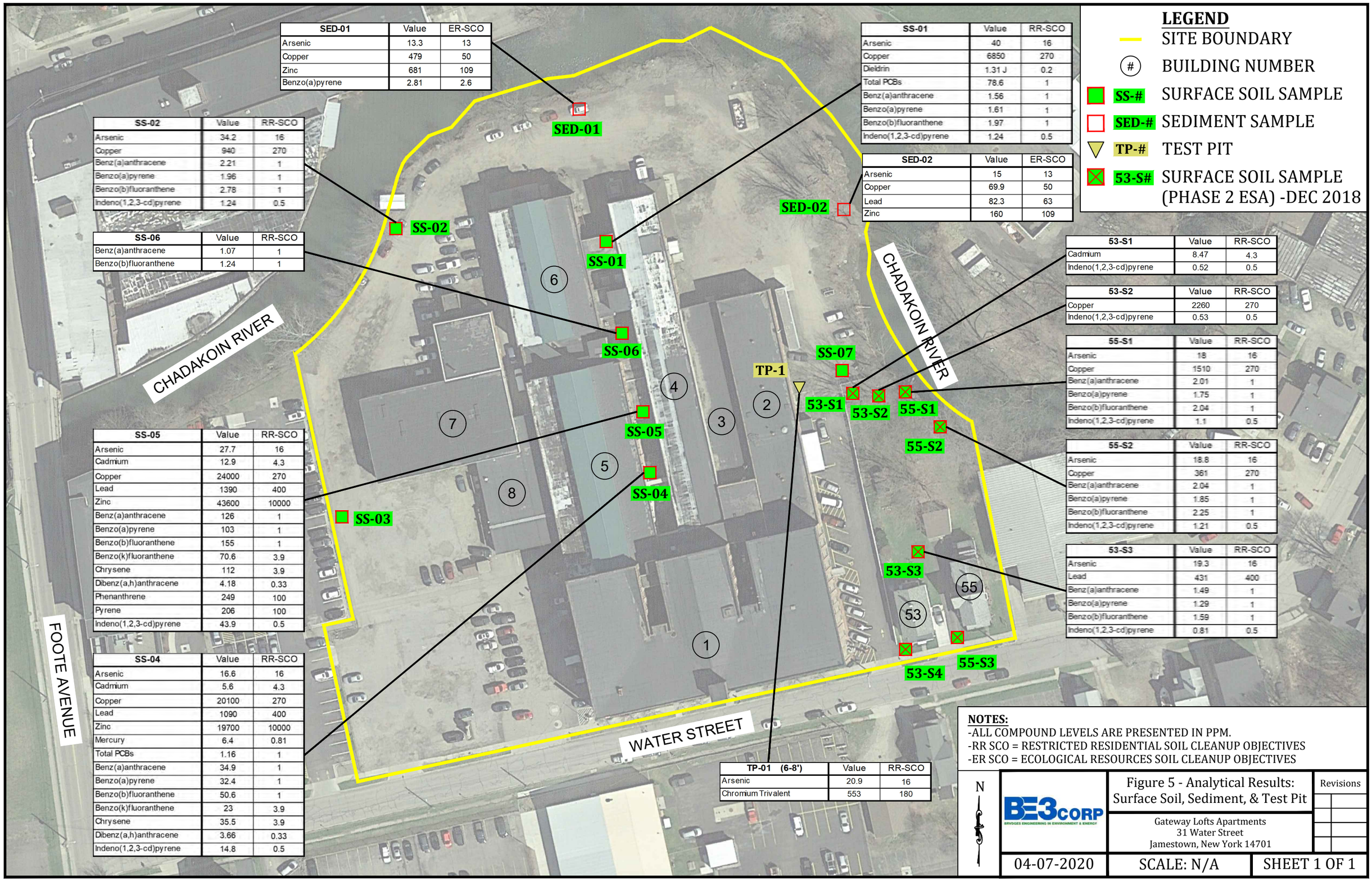
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Figure 4 - Analytical Results: Soil Boring Samples

Gateway Lofts Apartments
31 Water Street
Jamestown, New York 14701

Revisions

04-07-2020 | SCALE: N/A | SHEET 1 OF 1



SED-01	Value	ER-SCO
Arsenic	13.3	13
Copper	479	50
Zinc	681	109
Benzo(a)pyrene	2.81	2.6

SS-01	Value	RR-SCO
Arsenic	40	16
Copper	6850	270
Dieldrin	1.31 J	0.2
Total PCBs	78.6	1
Benz(a)anthracene	1.56	1
Benzo(a)pyrene	1.61	1
Benzo(b)fluoranthene	1.97	1
Indeno(1,2,3-cd)pyrene	1.24	0.5

SED-02	Value	ER-SCO
Arsenic	15	13
Copper	69.9	50
Lead	82.3	63
Zinc	160	109

SS-02	Value	RR-SCO
Arsenic	34.2	16
Copper	940	270
Benz(a)anthracene	2.21	1
Benzo(a)pyrene	1.96	1
Benzo(b)fluoranthene	2.78	1
Indeno(1,2,3-cd)pyrene	1.24	0.5

SS-06	Value	RR-SCO
Benz(a)anthracene	1.07	1
Benzo(b)fluoranthene	1.24	1

SS-05	Value	RR-SCO
Arsenic	27.7	16
Cadmium	12.9	4.3
Copper	24000	270
Lead	1390	400
Zinc	43600	10000
Benz(a)anthracene	126	1
Benzo(a)pyrene	103	1
Benzo(b)fluoranthene	155	1
Benzo(k)fluoranthene	70.6	3.9
Chrysene	112	3.9
Dibenz(a,h)anthracene	4.18	0.33
Phenanthrene	249	100
Pyrene	206	100
Indeno(1,2,3-cd)pyrene	43.9	0.5

SS-04	Value	RR-SCO
Arsenic	16.6	16
Cadmium	5.6	4.3
Copper	20100	270
Lead	1090	400
Zinc	19700	10000
Mercury	6.4	0.81
Total PCBs	1.16	1
Benz(a)anthracene	34.9	1
Benzo(a)pyrene	32.4	1
Benzo(b)fluoranthene	50.6	1
Benzo(k)fluoranthene	23	3.9
Chrysene	35.5	3.9
Dibenz(a,h)anthracene	3.66	0.33
Indeno(1,2,3-cd)pyrene	14.8	0.5

TP-01 (6-8')	Value	RR-SCO
Arsenic	20.9	16
Chromium Trivalent	553	180

53-S1	Value	RR-SCO
Cadmium	8.47	4.3
Indeno(1,2,3-cd)pyrene	0.52	0.5

53-S2	Value	RR-SCO
Copper	2260	270
Indeno(1,2,3-cd)pyrene	0.53	0.5

55-S1	Value	RR-SCO
Arsenic	18	16
Copper	1510	270
Benz(a)anthracene	2.01	1
Benzo(a)pyrene	1.75	1
Benzo(b)fluoranthene	2.04	1
Indeno(1,2,3-cd)pyrene	1.1	0.5

55-S2	Value	RR-SCO
Arsenic	18.8	16
Copper	361	270
Benz(a)anthracene	2.04	1
Benzo(a)pyrene	1.85	1
Benzo(b)fluoranthene	2.25	1
Indeno(1,2,3-cd)pyrene	1.21	0.5

53-S3	Value	RR-SCO
Arsenic	19.3	16
Lead	431	400
Benz(a)anthracene	1.49	1
Benzo(a)pyrene	1.29	1
Benzo(b)fluoranthene	1.59	1
Indeno(1,2,3-cd)pyrene	0.81	0.5

LEGEND

- SITE BOUNDARY
- (#) BUILDING NUMBER
- SS-# SURFACE SOIL SAMPLE
- SED-# SEDIMENT SAMPLE
- TP-# TEST PIT
- 53-S# SURFACE SOIL SAMPLE (PHASE 2 ESA) -DEC 2018

NOTES:

-ALL COMPOUND LEVELS ARE PRESENTED IN PPM.
-RR SCO = RESTRICTED RESIDENTIAL SOIL CLEANUP OBJECTIVES
-ER SCO = ECOLOGICAL RESOURCES SOIL CLEANUP OBJECTIVES

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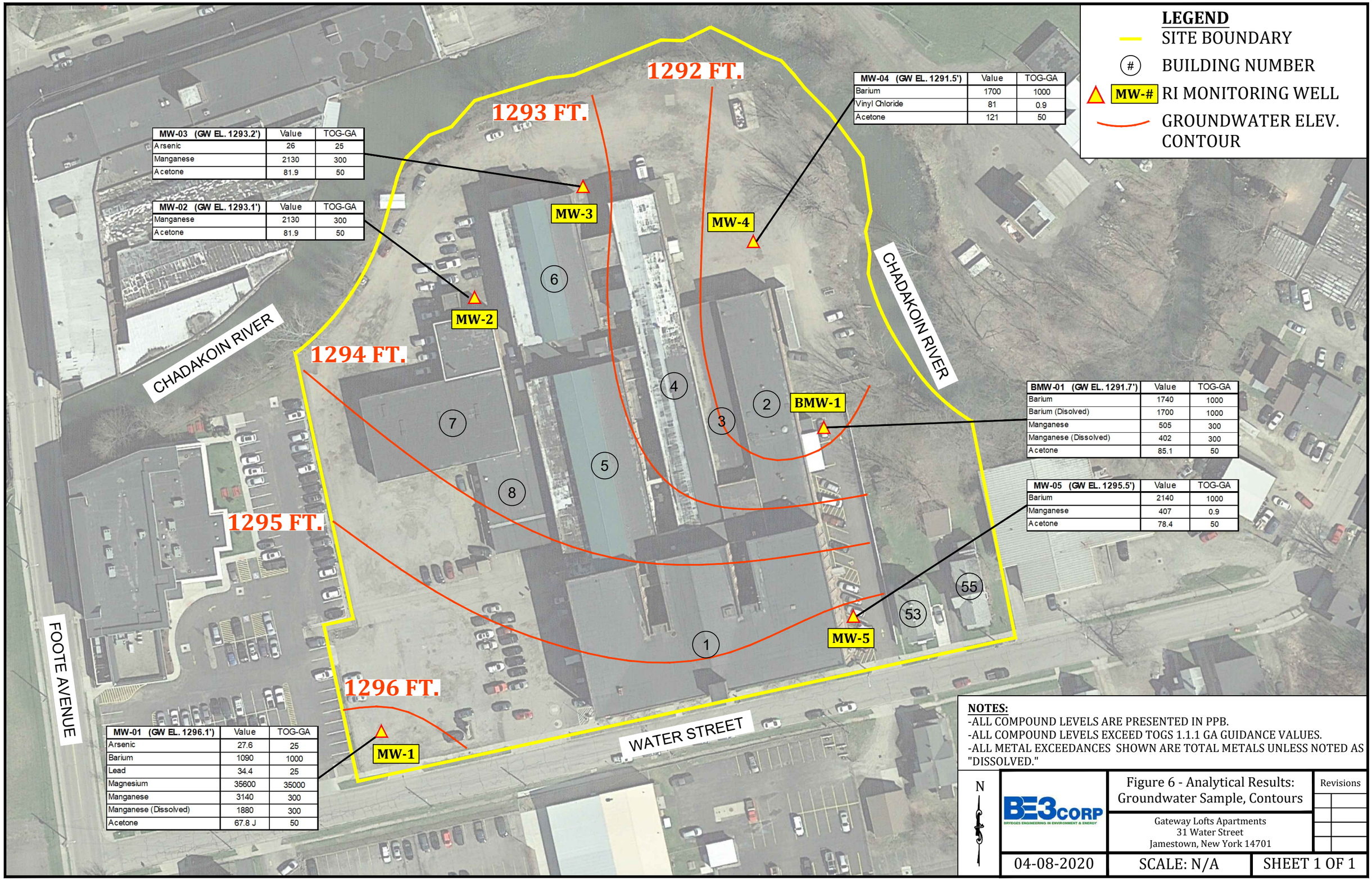
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Figure 5 - Analytical Results: Surface Soil, Sediment, & Test Pit

Gateway Lofts Apartments
31 Water Street
Jamestown, New York 14701

Revisions

04-07-2020 | SCALE: N/A | SHEET 1 OF 1



MW-03 (GW EL. 1293.2')	Value	TOG-GA
Arsenic	26	25
Manganese	2130	300
Acetone	81.9	50

MW-02 (GW EL. 1293.1')	Value	TOG-GA
Manganese	2130	300
Acetone	81.9	50

MW-04 (GW EL. 1291.5')	Value	TOG-GA
Barium	1700	1000
Vinyl Chloride	81	0.9
Acetone	121	50

BMW-01 (GW EL. 1291.7')	Value	TOG-GA
Barium	1740	1000
Barium (Disolved)	1700	1000
Manganese	505	300
Manganese (Dissolved)	402	300
Acetone	85.1	50

MW-05 (GW EL. 1295.5')	Value	TOG-GA
Barium	2140	1000
Manganese	407	0.9
Acetone	78.4	50

MW-01 (GW EL. 1296.1')	Value	TOG-GA
Arsenic	27.6	25
Barium	1090	1000
Lead	34.4	25
Magnesium	35600	35000
Manganese	3140	300
Manganese (Dissolved)	1880	300
Acetone	67.8 J	50

NOTES:
-ALL COMPOUND LEVELS ARE PRESENTED IN PPB.
-ALL COMPOUND LEVELS EXCEED TOGS 1.1.1 GA GUIDANCE VALUES.
-ALL METAL EXCEEDANCES SHOWN ARE TOTAL METALS UNLESS NOTED AS "DISSOLVED."

N

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Figure 6 - Analytical Results: Groundwater Sample, Contours

Gateway Lofts Apartments
31 Water Street
Jamestown, New York 14701

Revisions

04-08-2020 | SCALE: N/A | SHEET 1 OF 1

LEGEND

- SITE BOUNDARY
- (#) BUILDING NUMBER
- SS-# SUB-SLAB VAPOR POINT
- IA-# INDOOR AIR SAMPLE
- OA-# OUTDOOR AIR SAMPLE
- SS-# / IA-# SUB-SLAB & INDOOR AIR PAIR

SAMPLE ID: SS-09
c1,2-DCE 0.91
TCE 7.3
SAMPLE ID: IA-09
c1,2-DCE 8
TCE 12

NYSDOH Recommendation: MITIGATE

SAMPLE ID: SS-13
TCE 21
SAMPLE ID: IA-13
TCE 3.1

NYSDOH Recommendation: MITIGATE

SAMPLE ID: SS-08
CCl_4 6.5
c1,2-DCE 3.8
TCE 44
SAMPLE ID: IA-08
CCl_4 0.44
c1,2-DCE 12
TCE 28

NYSDOH Recommendation: MITIGATE

SAMPLE ID: SS-07
c1,2-DCE 11
TCE 95
SAMPLE ID: IA-07
c1,2-DCE 13
TCE 51

NYSDOH Recommendation: MITIGATE

SAMPLE ID: SS-12
TCE 6.6
SAMPLE ID: IA-12
TCE 3.3

NYSDOH Recommendation: MITIGATE

SAMPLE ID: SS-05
c1,2-DCE 1.6
PCE 1.6
TCE 15
SAMPLE ID: IA-05
c1,2-DCE 13
PCE 18
TCE 70

NYSDOH Recommendation: MITIGATE

SAMPLE ID: SS-06
c1,2-DCE 730
PCE 9.5
TCE 3300
SAMPLE ID: IA-06
c1,2-DCE 14
PCE 12
TCE 66

NYSDOH Recommendation: MITIGATE

SAMPLE ID: SS-11
TCE 5.3
SAMPLE ID: IA-11
TCE 4.1

NYSDOH Recommendation: IDENTIFY RESOURCES/ MITIGATE

SAMPLE ID: SS-04
c1,2-DCE 6.3
TCE 21
SAMPLE ID: IA-04
c1,2-DCE 7.1
TCE 16

NYSDOH Recommendation: MITIGATE

SAMPLE ID: SS-10
c1,2-DCE 0.99
CH_2Cl_2 10
TCE 13
SAMPLE ID: IA-10
c1,2-DCE 7.1
CH_2Cl_2 16
TCE 26

NYSDOH Recommendation: MITIGATE

SAMPLE ID: SS-02
c1,2-DCE 2.1
TCE 34
SAMPLE ID: IA-02
c1,2-DCE 3.8
TCE 32
SAMPLE ID: IA-03
c1,2-DCE 4.3
TCE 13

NYSDOH Recommendation: MITIGATE

SAMPLE ID: SS-01
TCE 7.4
SAMPLE ID: IA-01
TCE 5

NYSDOH Recommendation: MITIGATE

SAMPLE ID: SS-03
c1,2-DCE 9000
TCE 23000
SAMPLE ID: IA-02
c1,2-DCE 3.8
TCE 32

NYSDOH Recommendation: MITIGATE

CHADAKOIN RIVER

CHADAKOIN RIVER

FOOTE AVENUE

WATER STREET

NOTES:
-ALL COMPOUND LEVELS ARE PRESENTED IN ug/m^3.
-ALL COMPOUND LEVELS SHOWN REQUIRE ACTION BASED ON NYSDOH GUIDANCE FOR EVALUATING SOIL VAPOR INTRUSION DECISION MATRICES MAY 2017.

N

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Figure 7
Vapor Intrusion Sample Results

Gateway Lofts Apartments
31 Water Street
Jamestown, New York 14701

Revisions

04-08-2020 | SCALE: N/A | SHEET 1 OF 1



NOTE: FIGURE BASED ON NEW DEVELOPMENT DRAWING C-101 SITE PLAN.

GRAPHIC SCALE

(IN FEET)

N

LEGEND

- SITE BOUNDARY
- BUILDINGS - SSDS UNDER ALL BUILDING FLOOR SLABS
- EXISTING ASPHALT PAVEMENT TO REMAIN AND TO BE SEALED
- NEW HARDSCAPE - REMOVE TOP 1' OF EXISTING ASPHALT OR SOIL AND REPLACE WITH ASPHALT/CONCRETE AS PER NEW DEVELOPMENT
- NEW GREEN SPACE - REMOVE TOP 2' OF SOIL/ASPHALT AND REPLACE WITH 2' OF CLEAN SOIL/STONE PER LANDSCAPING FOR NEW DEVELOPMENT
- PCB GROSSLY CONTAMINATED MEDIA (GCM) - EXCAVATE 4'+ AND BACKFILL WITH CLEAN SOIL/HARDSCAPE
- REMOVE 6' x 8' BURIED CONCRETE TANK AND IMPACTED SOILS. BACKFILL WITH SOIL AND HARDSCAPE.
- GROUNDWATER TREATMENT INJECTION POINTS/ PERMEABLE BARRIER WALL
- NEW MONITORING WELLS
- TP-1 RI TEST PIT
- SUPPLEMENT SUB-SLAB BORINGS TO ASSESS POSSIBLE LOCATIONS OF UNDER-SLAB USTs

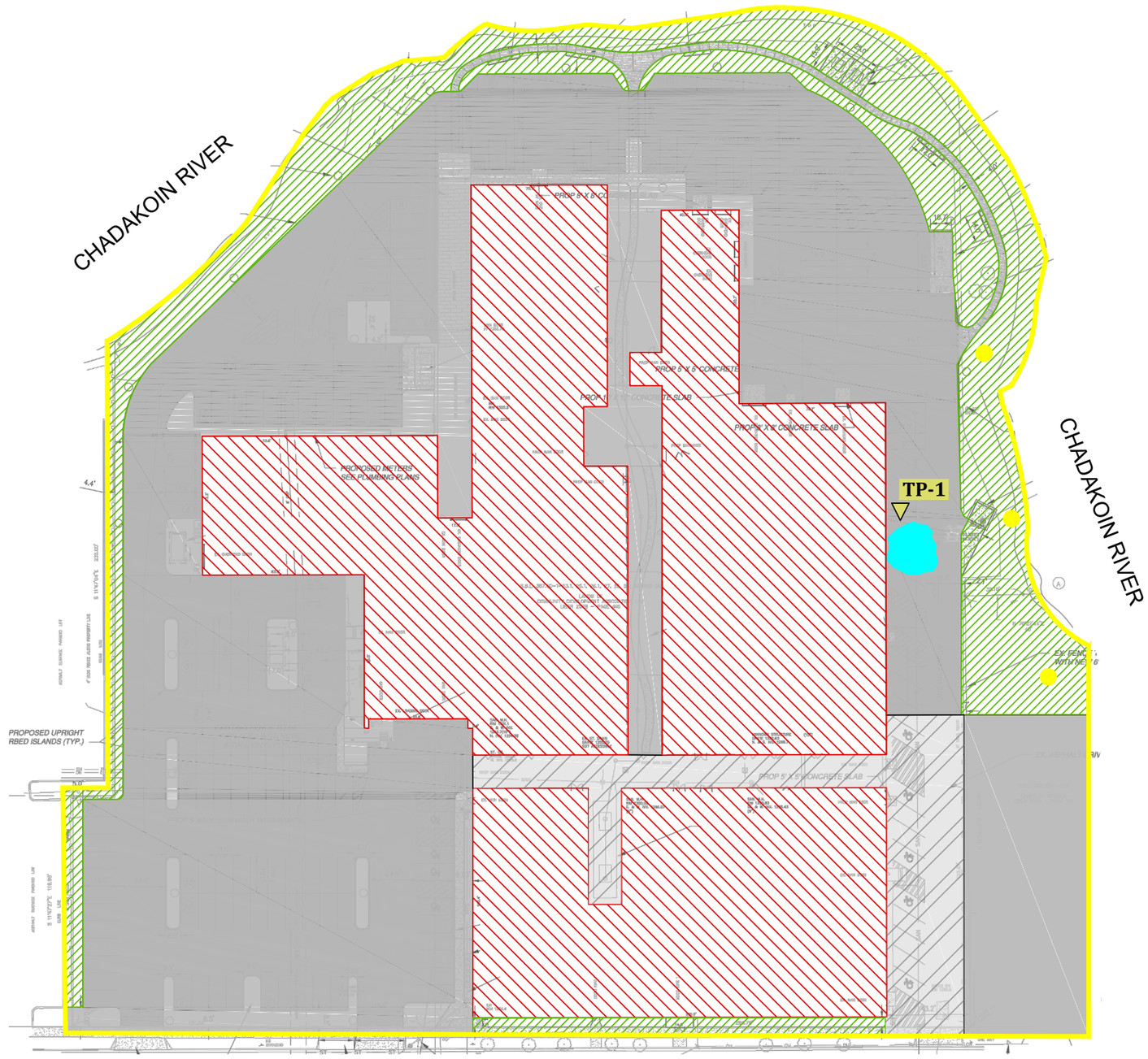
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Figure 8 - Alternative 1 - Track 4
Restricted Residential SCO

Gateway Lofts Apartments
31 Water Street
Jamestown, New York 14701

Revisions

04-22-2020 | SCALE: N/A | SHEET 1 OF 1



LEGEND

- SITE BOUNDARY
- BUILDINGS - REMOVE SOIL BENEATH BUILDING FLOOR SLABS TO MEET UNRESTRICTED-USE SCOs. REPLACE WITH CLEAN SOIL AND HARDSCAPE AFTER INSTALLING SSDS.
- EXISTING ASPHALT PAVEMENT TO BE REMOVED ALONG WITH SOIL BENEATH TO MEET UNRESTRICTED-USE SCOs. REPLACE WITH SOIL AND ASPHALT AS PER NEW DEVELOPMENT.
- NEW HARDSCAPE AREA - REMOVE EXISTING ASPHALT AND SOIL TO MEET UNRESTRICTED-USE SCOs AND REPLACE WITH ASPHALT/CONCRETE AS PER NEW DEVELOPMENT
- NEW GREEN SPACE - REMOVE SOIL/ASPHALT TO MEET UNRESTRICTED-USE SCOs AND REPLACE WITH CLEAN SOIL/STONE PER LANDSCAPING FOR NEW DEVELOPMENT
- REMOVE 6' x 8' BURIED CONCRETE TANK AND IMPACTED SOILS TO UNRESTRICTED-USE SCOs. BACKFILL WITH SOIL AND HARDSCAPE.
- NEW MONITORING WELLS
- TP-1 RI TEST PIT

NOTE: FIGURE BASED ON NEW DEVELOPMENT DRAWING C-101 SITE PLAN.

GRAPHIC SCALE

(IN FEET)

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BRIDGES ENGINEERING IN ENVIRONMENT & ENERGY

Figure 9 - Alternative 2 - Unrestricted-Use SCOs

Gateway Lofts Apartments
31 Water Street
Jamestown, New York 14701

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04-23-2020 | SCALE: N/A | SHEET 1 OF 1

SITE DATA TABLE:

LOT AREA PROVIDED: 5.18 ACRES +/- (225,829 SF +/-)

LOT WIDTH PROVIDED: 466 FT

CURRENT ZONING: M (MANUFACTURING)
WD-D (DOWNTOWN SUB-DISTRICT)

BUILDING INFORMATION:
BUILDING FOOTPRINT = 90,883 SF
(EXCLUDES COURTYARD/PLAYGROUND AREA)

	REQUIRED	EXISTING	PROVIDED
MIN FRONT YARD SETBACK	10 FT	4.5 FT	4.5 FT
MIN SIDE YARD SETBACK	10 FT	38.4 FT	38.4 FT
MIN REAR YARD SETBACK	NA	NA	NA

PARKING REQUIREMENTS
REQUIRED PER CODE:
MIXED USE WITH 79 RESIDENTIAL UNITS
1.5 SPACES PER UNIT = 1.5 x 79 UNITS = 119 SPACES
FF OFFICE SPACE = 26,260 SF; 1 SPACE/350 SF = 76 SPACES
WAREHOUSE SPACE = 26,140 SF; 1 SPACE/2,500 SF = 11 SPACES
OTHER AREAS- COURTYARDS, SOUP KITCHEN, SKATE PARK, CAFE
10 EMPLOYEES & 15 CUSTOMERS = 25 SPACES

TOTAL REQUIRED = 231 SPACES

FUTURE OFFICE SPACE = 11,100 SF; 1 SPACE/350 SF = 32 SPACES

ANTICIPATED REQUIRED PARKING:
MIXED USE WITH 79 RESIDENTIAL UNITS
1.5 SPACES PER UNIT = 1.5 x 79 UNITS = 119 SPACES PER CODE
NO PARKING IS ANTICIPATED FOR 40 UNITS
AND ONLY 50% ANTICIPATED FOR 39 UNITS
TOTAL ANTICIPATED RESIDENTIAL PARKING REQUIRED = 30 SPACES
FF OFFICE SPACE = 26,260 SF; 1 SPACE/350 SF = 76 SPACES
WAREHOUSE SPACE = 26,140 SF; 1 SPACE/2,500 SF = 11 SPACES
OTHER AREAS- COURTYARDS, SOUP KITCHEN, SKATE PARK, CAFE = 12 SPACES

TOTAL REQUIRED = 129 SPACES

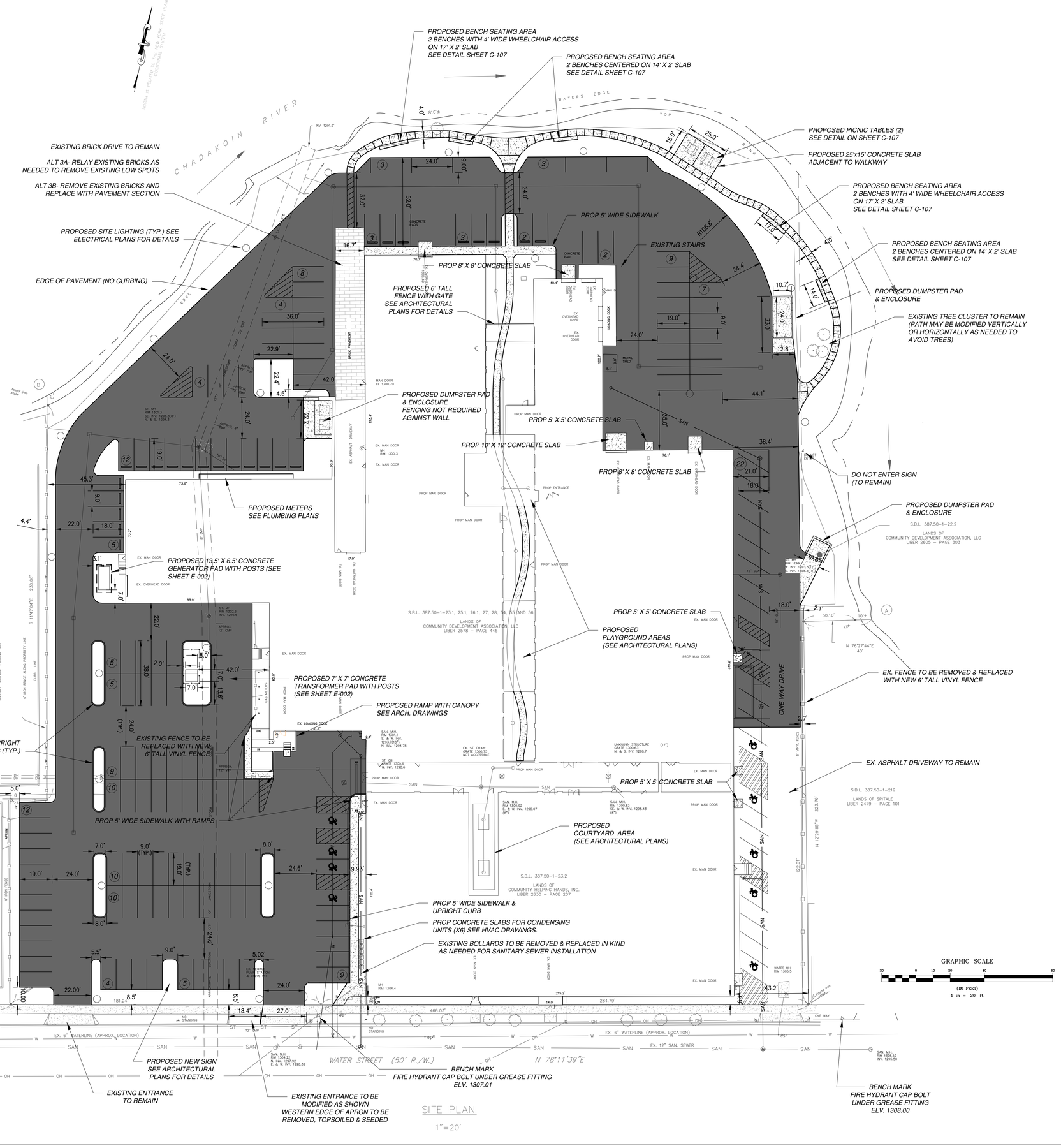
FUTURE OFFICE SPACE = 11,100 SF; 1 SPACE/350 SF = 32 SPACES

= 161 SPACES

PARKING PROVIDED = 9 ACCESSIBLE SPACES
157 STANDARD SPACES
166 TOTAL SPACES PROVIDED

PARKING OFFSET:

	REQUIRED	EXISTING	PROVIDED
MIN FRONT YARD OFFSET	5 FT	0.0 FT	8.5 FT
MIN SIDE YARD OFFSET	5 FT	0.0 FT	2.1 FT



SITE PLAN
1"=20'

SWBR
387 East Main Street Rochester NY 14604
585.232.8300 | rochester@swbr.com
GPI
Greenman-Pedersen, Inc.
Engineering and Construction Services
Surveying Services Performed by
GPI Engineering, Landscape Architecture and Surveying, LLP
4950 Genesee Street, Buffalo, NY 14225
Tel. (716) 633-4844 Fax: (716) 633-4940

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Drawn By:	JLB
Checked By:	DFP
Project Manager:	JLB

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Revisions

STEL - Gateway Lofts
31 Water St
Jamestown, NY 14701
SWBR Project Number 17445.00

Southern Tier Enviroments For Living (STEL), INC.
715 Central Avenue
Dunkirk, NY 14048

C-101
Site Plan

Construction Documents
6/18/2018

N:\2018\BUF-20180120 Gateway Lofts\CAD\Design Plans\BUF-20180120 Gateway Lofts-site plan.dwg, Model, 2018/06/18 04:39 pm

APPENDIX A

LOGS
BORING/MONITORING WELLS

Geoprobe
Bore Hole Log

BE3CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY
1270 Niagara Street
Buffalo, NY 14213
716.249.6880 be3corp.com

Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-1	Ground Water:	8 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			4.00	0.0	0 to 2': Black/grey sands, F - C gravel, trace brick
1					
2					2.0 to 4': Grey sand/silt, F - C gravel, rock pieces
3					
4			3.50	0.0	4.0 to 6': Brown silty clay, moist
5					
6					6.0 to 8': Same as above, very moist
7	BH-1	Grab			
8			4.00	0.0	8.0 to 11': Brown sand, F-C gravel, wet
9					
10					
11					11.0 to 12':: Grey stiff clay, wet
12			4.00	0.0	12 TO 16': SAA
13					
14					
15					
16					

Comments: Native at 4' bgs.
Sample BH-1 (7-8')

Geoprobe
Bore Hole Log

BE3 CORP PANAMERICAN
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1270 Niagara Street
Buffalo, NY 14213
716.249.6880 be3corp.com

Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-2	Ground Water:	Approx. 6 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			4.00	0.0	0 to 1.2': F-C gravel and sand, trace silt and clay, moist
1	BH-2	Grab			
					1.2 to 2.2': brown silt, F-C sand, moist
2					
					2.2 to 4.0': Brown silt, some F gravel and F sand, moist
3	S				
4			2.90	0.0	4.0 to 4.4': dark brown peat
					4.4 to 6.0': Grey/Brown silt & clay, trace F gravel, very moist
5					
6					6.0 to 10.2': Grey silt, F-C sand & gravel, wet
7					
8			4.00	0.0	
9					
10					
					10.2 to 12': Brown silty clay, trace F gravel, C sand, very moist
11					
12			4.00	0.0	12 to 16': Grey silty clay, trace F gravel, F sand, moist
13					
14					
15					
16					

Comments: Native at 4' bgs.
Sample BH-2 (1-3')

Geoprobe
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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-3	Ground Water:	Approx. 8.5 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			2.90	0.0	0 to 2.2': Brown F-C gravel & sand, trace silt, moist
1	BH-3	Grab			
2					
					2.2 to 2.9': Brown silt, trace F gravel, very moist
3					2.9 to 5.0': brown F-C sand, some F-C gravel, trace silt, very moist
4			3.00	0.0	
5					5 to 6.5': brown silt, some F-C sand & gravel, very moist
6					
					6.5 to 11': brown F-C gravel, some F-C sand, trace silt, very moist
7					
8			2.30	0.0	
					Wet at 8.5'
9					
10					
11					11-12': Grey silty clay, trace F gravel, very moist
12					
13					
14					
15					
16					

Comments: Native at 5' bgs.
Sample BH-3 (1-4')

Geoprobe
Bore Hole Log

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-4	Ground Water:	Approx. 3.5 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0	BH-4	Grab	2.70	0.0	0 to 2.9': Black F-C gravel & sand, trace silt, trace peat (2.6-2.9')
1					
2					
					2.9 to 3.5': Fractured rock
3					
					3.5 to 4.5': Brown silt, trace clay, some F-C sand & F gravel, wet
4			2.10	0.0	
					4.5 to 8.6': Gray silt, some clay, trace C sand & F gravel, wet
5					
6					
7					
8			3.60	0.0	
					8.6 to 9.6': Brown F-C gravel & sand
9					
					9.6 to 12' Gray silt, some clay, wet
10					
11					
12			3.20	0.0	12 to 16': SAA
13					
14					
15					
16					

Comments: Native at 4.5' bgs.
Sample BH-4 (0-4')

Geoprobe
Bore Hole Log

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-5	Ground Water:	Approx. 6 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			2.50	0.0	0 to 4.1': Brown F-C sand & gravel, trace silt, moist loose
1					
2					
3					
4			2.20	0.0	4.1 to 7.5': Brown silt, some F-C gravel & sand, trace concrete
5					
6					Wet at 6'
7					7.5 to 8': dark brown silt, some peat and wood
8	BH-5	Grab	2.10	0.0	8 to 12': Gray F-C sand & gravel some silt
9					
10					
11					
12					
13					
14					
15					
16					

Comments: Native at 7.5' bgs.
Sample BH-5 (8-12')

Geoprobe
Bore Hole Log

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-6	Ground Water:	Approx. 4.0 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0	BH-6		2.70	0.0	0 to 3.5': Dark brown F-C Gravel & sand, trace silt, some brick and concrete, moist
1					
2					
3					
					3.5 to 6': dark brown silt, moist
4			2.50	0.0	Wet at 4'
5					
6					6 to 8.1': Brown silt, trace F-M sand, trace wood, wet, wood in tip
7					
8			2.60	0.0	
					8.1 to 11': Grey silt, soft, wet
9					
10					
11					11 to 12.4': F-C gravel and sand, trace silt, wet
12			2.60	0.0	
					12.4' to 14.0': Grey silt, trace clay, wet
13					
14					14 to 16': silty gray clay, wet
15					
16					

Comments: Native at 8.1' bgs.
Sample BH-6 (0-4')

Geoprobe
Bore Hole Log

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-7	Ground Water:	Approx. 6.5 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0	BH-7	Grab	2.20	0.0	0 to 1.3': Brown loose F-C sand & gravel, trace silt
1					
					1.3 to 4': Brown silt, some F-C grave, trace F-C sand, very moist
2					
3					
4			2.00	0.0	4 to 7': Brown silt, some F-C gravel & sand, trace fractured rock & concrete
5					
6					
					Wet at 6.5'
7					7 to 8': wet brown silt, some F-C gravel & C sand, wet
8			4.00	0.0	8 to 9': SAA
9					9 to 12': Hard gray silty clay, trace F gravel & C sand, moist
10					
11					
12			4.00	0.0	12 to 14': SAA
13					
14					14 to 16': Gray silt, some clay, trace F gravel & C sand, very moist
15					
16					

Comments: Native at 7' bgs.
Sample BH-7 (0-4')

Geoprobe
Bore Hole Log

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-8	Ground Water:	Approx. 4.5 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			3.10	0.0	0 to 3.5': Brown F-C sand & gravel, some fractured rock & silt,
1					trace brick, moist
2					
3					
					3.5 to 4.3': Brown silt & F-C sand, some F gravel, very moist
4			3.20	0.0	
					4.3 to 7.5': Grey soft silt, trace F gravel and C sand
5					Wet at 4.5'
6					
7					
					7.5 to 8': Black organic material, silt
8	BH-8	Grab	2.30	0.0	8 to 11.5': SAA, slight sheen observed
9					
10					
11					
					11.5 to 12': Brown soft silt, trace C sand, wet
12			0.00	0.0	Attempted to pull sample from 12 -16'
					Material too soft to stay in probe
13					
14					
15					
16					

Comments: Native at 4.3' bgs.
Sample BH-8 (8-12')

Geoprobe
Bore Hole Log

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1270 Niagara Street
Buffalo, NY 14213
716.249.6880 be3corp.com

Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-9	Ground Water:	Approx. 4.5 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			2.30	0.0	0 to 2': Brown F-C sand, some F-C gravel, trace silt, moist
1					
2					2 to 3.8': Brown silt, trace C sand and F gravel, very moist
3					
					3.8 to 4.0': fractured brick, soome brown silt
4	BH-9	Grab	2.40	0.9	4 to 4.5': SAA, slight petro odor
				1.1	4.5 to 5': gray silt, some F-C gravel, wet, slight petro odor
5				0.2	5 to 7': Grey brown silt, trace F gravel
6					7 to 8': Grey/brown silt & peat
7					
8			4.00	2.6	8 to 8.4': SAA
				3.9	8.4 to 10': Grey silt & peat
9					
10				0.9	10 to 11.5': Grey silt & clay, wet, soft
11					
				34.9	11.5 to 12': Gray F-M sand, trace F gravel, wet
12			3.60	32.1	12 to 12.8': SAA
12.5				84.1	12.8 to 16: Silty gray clay, wet, slight chemical odor
13	BH-9	Grab			
13.5'				38.2	
14					
14.5				9.2	
15					
15.5				5.8	
16				1.0	

Comments: Native at 4.5' bgs.
Sample BH-9 (4-7')
Sample BH-9 (13-14')

Geoprobe
Bore Hole Log

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Buffalo, NY 14213
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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-10	Ground Water:	Approx. 5.7 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			2.60	0.0	0 to 2': Dark brown F-C gravel & F-C sand, trace silt, moist
1					
2					2 to 4': Black F-C gravel & cinders, some F-C sand, trace concrete, moist
3					
4			2.50	0.0	4 to 5.7': SAA
5					
				0.0	5.7 to 6': Gray silt, trace F gravel, wet
6				0.7	6 to 6.4': Dark grey silt & organics
				0.0	6.4 to 8': Gray soft silt, trace C sand, wet
7					
8			2.40	0.0	8 to 8.5': SAA
					8.5 to 10': Peat
9					
10					10 to 12:' soft grey silt, trace F gravel & C sand, wet
11					
12			2.80	0.0	12 to 13': Grey F-C gravel & F-C sand, trace silt, wet
13					13 to 16': Gray silt, trace clay, wet
14					
15					
16					

Comments: Native at 5.7' bgs.
No sample taken

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Bore Hole Log

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-11	Ground Water:	Approx. 4.5 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0	BH-11	Grab	2.40	0.0	0 to 4': Dark brown F-C gravel & F-C sand, trace cinders, silt, moist
1					
2					
3					
4			2.60	0.0	4 to 5.3': SAA
					Wet at 4.5'
5					
					5.3 to 7.6': Grey silt, wet, soft
6					
7					
					7.6 to 8': Brown peat, trace gray silt, wet
8			1.20	0.0	8 to 12': Grey F-C gravel & F-C sand, trace silt, wet
9					
10					
11					
12					
13					
14					
15					
16					

Comments: Native at 5.3' bgs.
Sample BH-11 (0-4')

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-12	Ground Water:	Approx. 4 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0	BH-12	Grab	2.10	0.0	0 to 3': Dark brown F-C gravel & F-C sand, trace silt, moist
1					
2					
3					3 to 4': Cinders, trace F-C gravel & F-C sand, moist
4			1.90	0.0	4 to 4.5': SAA, wet
					4.5 to 7': Gray soft silt, wet
5					
6					
7					7 to 8': Brown peat, trace silt, wet
8			1.10	0.0	8 to 9.5': SAA
9					
					9.5 to 12': Gray wet F-C sand, F-C gravel, trace silt
10					
11					
12					
13					
14					
15					
16					

Comments: Native at 4.5' bgs.
Sample BH-12 (0-4')

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/3/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/3/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-13	Ground Water:	Approx. 5 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			1.50	0.0	0 to 4': Dark brown F-C sand & F-C gravel, trace silt
1					Red brick in tip of probe.
2					
3					
4			2.30	0.0	4 to 5': SAA, no brick
5					5 to 7': Gray silt, wet, trace wood
6					
7					7 to 8': Brown peat, trace gray silt
8			2.90	0.0	8 to 10': SAA
9					
10					10 to 11.5': Grey silt, trace C sand, wet
11					
					11.5 to 12': Gray loose F-C sand, trace F gravel, trace silt
12					
13					
14					
15					
16					

Comments: Native at 5' bgs.
No sample taken

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Project:			31 Water Street	
Client:	STEL, Inc.		Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.		Ground Elevation:	NA
Date Started:	10/4/2018		Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/4/2018		Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-14		Ground Water:	Approx. 4 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			2.60	0.0	0 to 3.8': F-C gravel & sand, some silt, dry
1					
2					
3					
					3.8 to 4': Black F-C gravel, F-M cinders, trace silt, loose, moist
4			1.80	0.0	4 to 6': SAA, Wet
5					
6					6 to 6.5': Black Silt & organics
					6.5 to 8': Gray silt & clay, trace F-C gravel
7					
8			1.30	0.0	8 to 10': SAA, wet, soft
9					
10				2.3	10 to 12': Brown silt & peat, some F-C gravel, wet, faint chemical odor
11					
12			2.90	0.3	12 to 12.8': SAA
				0.7	12.8 to 14.5': Brown peat, trace silt
13					
14					
					14.5 to 15.5': Brown F-C sand, some F gravel, trace silt, wet
15	BH-14	Grab			
					15.5 - 16': Gray silt, clay, stiff
16			3.10	0.0	16 to 20': Recovered mostly pea gravel presumed to have fallen in above. Only about 5" of posible new materialcollected at bottom.
17					
18	BH-14	Grab			
19					
20				8.0*	Grey silty clay, wet, stiff

Comments: Native at 4' bgs.
Sample BH-14 (15-16')
Sample BH-14 (18-20')
*PID reading taken after sample was bagged and allowed to warm. Taken from bottom of sampler @ 20 fbgs

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/4/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/4/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-15	Ground Water:	Approx. 6 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			2.20	0.0	0 to 3.2': Brown F-C sand & F-C gravel, some silt, moist
1					
2					
3					3.2 to 3.4': black silt & organics
					3.4 to 4': Brown silt, some F-C gravel, very moist
4			2.20	0.0	4 to 4.4': SAA
				0.8	4.4 to 6': Black cinders, trace brick and silt, very moist
5					
6				0.0	6 to 7.1': Brown silt & VF sand, wet
7				0.3	7.1 to 8': Wood
8			3.00	0.0	8 to 8.5': Wood
					8.5 to 10': Peat
9				0.0	
10					10 to 11': Gray silt, trace clay, soft, wet
11					11 to 12': SAA but stiff
12			1.20	0.0	12 to 16': Recovery mostly runny grey silt, F-C gravel, F-C sand
				11.2 - 14.9	Odd chemical odor
13					
14	BH-15	Grab			
15					
16					

Comments: Native at 6 fbgs
Sample BH-15 (14-16')

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/4/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/4/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-17	Ground Water:	NA

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			1.00	0.0	0 to 0.3': Cored concrete
1					0.3 to 1': Brown F-C gravel, some F-C sand & silt, trace concrete
					Refusal at 1.1' - Abandoned borehole
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Comments: Unsure of utility locations in area. Abandoned borehole.

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/4/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/4/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-16	Ground Water:	Approx. 4.2 to 8 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			2.90	0.0	0 to 0.5': Concrete slab core
1					0.5 to 0.9': Red brick core
					0.9 to 2.8': Brown silt, F-C gravel and sand, moist
2					
					2.8 to 4': Dark brown silt: some F-C gravel, moist
3					
4			3.20	0.0	4 to 4.2': SAA
					4.2 to 4.8': Brown silty clay, soft, wet
5					4.8 to 7': gray silty clay, stiff, very moist
6					
7					7 to 8': Gray silt, some F-C gravel, very moist
8			3.80	0.2	8 to 8.8': SAA but wet
				0.4	8.8 to 10.1': Brown F-C gravel, some F-C sand, silt, wet, loose
9					
10	BH-16	Grab		0.2	10.1 to 12': Gray silt & clay, stiff, wet
11					
12				0.0	

Comments: Native at 4.2' bgs.
Sample BH-16 (10-11')

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/4/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/4/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-18	Ground Water:	Approx. 3 to 4 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0	BH-18	Grab	1.2' Core + 2.2' Soil	0.0	0 to 1.2': Concrete Core
1				0.2	1.2 to 1.8': Brown F-C sand & F-C gravel, trace silt, very moist
					1.8 to 3.0': Brown silt, some F-C gravel, C sand, stiff
2				0.3	
2.4				0.0	
3					3 to 4': SAA but soft and wet
4			2.20	0.0	4 to 8': SAA but very soft and wet
5					
6					
7					
8			1.50	0.0	8 to 11': SAA
9					
10					
11					11-12': Brown F-M sand, some C sand, fine gravel, some silt
12			2.40	3.6	12 to 12.6': SAA with some peat
12.4				3.6	12.6 to 16': Grey silt, soft, wet
13				14.6	
14	BH-18	Grab		65.6	
14.8				68.4	
15				45.1	
15.8				30.5	
16					

Comments: Native depth undetermined.
Sample BH-18 (0-4')
Sample BH-18 (14-15')

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/4/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/4/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-19	Ground Water:	Approx. 4 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0	BH-19	Grab	0.5' Core + 2' Soil	0.0	0 to 0.5': Concrete Core
0.8				0.0	0.5 to 4': Brown F-C sand and F-C gravel, some silt, moist
1				0.7	
1.4				0.4	
1.8				0.0	
2					
3					
4			0.8'	0.0	4 to 4.8': SAA but very wet. Drilled 0.8' then hit refusal.
					Refusal at 4.8'
5					
6					
7					
8					

Comments: Native depth undetermined. Refusal in fill
Sample BH-19 (0-3')

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/4/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/4/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-20	Ground Water:	Approx. 8 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0	BH-20		2.00	0.0	0 to 2': Black F-C Sand, trace cinder, wood
1					
2					2 to 3': Black F to C sand, F-C gravel, moist
3					3 to 4': SAA, trace brick
4			2.50	0.0	4 to 5': Brown silt, trace brick, wet
5					5 to 5.2': Red cinder
				0.7	5.2 to 7': Grey silt clay, trace orgnics, moist
6	BH-20				
7				0.0	7 to 8':Grey Silt, peat/organics
8			3.00	0.0	8 to 9.5': SAA wet
9					
					9.5 to 12': F-C sand & gravel, grey, wet
10					
11					
12			4.00	0.0	12 to 14.2': SAA, Very wet
13					
14					14.2 to 16': Grey clay silt, wet
15					
16					

Comments: Native at 5.2 fbgs
Sample BH-20 (0-4')
Sample BH-20 (6-7')

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	NA
Date Started:	10/4/2018	Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/4/2018	Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-21	Ground Water:	Approx. 8 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0	BH-21		2.50	0.0	0 to 4': black sand, F-C gravel, cinders
1					
2					
3					
4			3.00	0.0	4 to 5.5': SAA, trace brick, wet
5					
					5.5 to 8': Grey silt & organics, moist, soft
6					
7					
8			3.00	0.0	8 to 8.5': Peat, organics, wet
					8.5 to 11': Grey silt, trace organics, wet, soft
9					
10					
11					11-12': Grey F-C Sand & gravel, wet
12					

Comments: Native at 5.5 fbgs
Sample BH-21 (0-4')

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Project:			31 Water Street	
Client:	STEL, Inc.		Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.		Ground Elevation:	NA
Date Started:	10/5/2018		Operator:	Stewart Brodell - Truck Mounted Geoprobe - 4' Probe
Date Completed:	10/5/2018		Geologist/Technician:	John Boyd/Alex Brennen
Bore Hole Number:	BH-22		Ground Water:	Approx. 2.3 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			2.00	0.0	0 to 2.0': Brown F-C sand & gravel, some silt, brick, moist
1					
2			1.50	0.0	2 to 2.3': SAA
					2.3 to 4': Dark clay, wet, soft silt
3					
4			0.70	0.0	4 to 6': SAA
5					
6	BH-22	Grab	1.10	0.0	6 to 6.5': Brown peat, some silt, wet
					6.5 to 6.9': Dark grey silt, some F gravel, treace brick
7					6.9 to 7.2': Brown peat and wood
					7.2': No sample
8			1.90	0.0	8 to 10': gray silt, soft, wet
9					
10			1.00		10 to 10.1': SAA
					10.1 to 10.3': wet brown peat
11					10.3 to 12': Dark gray silt, wet
12					

Comments: Native at 6 fbgs
Sample BH-22 (6-7.2') Not enough for VOC sample.

Split Spoon
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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	1300.07'
Operator:	Steve W.	Equipment Model:	2' Split Spoon Sampler
Date Started:	10/4/2018	Geologist/Technician:	John Boyd/Alex Brennen
Date Completed:	10/4/2018	Ground Water:	Approx. 4.5 fbgs
Bore Hole Number:	BMW-01	Depth to Bedrock:	25 fbgs

Depth (Ft)	Sample		REC	PID	Description
	NO	TYPE		(ppm)	
0					0 to 15': See nearby boring description BH-9
15			1.40	1.7	15 to 16.2': Grey silty clay, moist
16					
16.2				5.1	16.2 to 17': Gray silt, some clay, moist
17			2.00		17 to 17.4': Gray silty clay, slightly soft, wet
				1.6	17.4 to 17.7': Brown F-C sand & F-C gravel, trace silt, v. moist
18				0.0	17.7 to 18.6': Gray silt, some F-C gravel & F-C sand, till, wet
				0.0	18.6 to 19': Gray silt, F-C sand, F gravel, wet
19			1.60	0.0	19 to 20.2': SAA, wet
20					20.2 to 21': Gray silt, trace F gravel, wet
21			1.50	0.0	21 to 21.2': Wood
				0.4	21.2 to 23': Gray silt, trace clay, F gravel, wet
22					
23			1.60	0.1	23 to 24.2': SAA
24					
24.2	BMW-01	Grab		0.1	24.2 to 25': Gray silt, trace F gravel, wet
25			0.00		25 to 25.1': Weathered rock - shale
					Refusal at 25.1'
26					

Comments: Native at 4.5' bgs.
Sample BMW-01 (24.2-25')
Bottom of hole @ 25.1' bgs

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	1296.14'
Operator:	Steve W.	Equipment Model:	2' Split Spoon Sampler
Date Started:	10/5/2018	Geologist/Technician:	John Boyd/Alex Brennen
Date Completed:	10/5/2018	Ground Water:	Approx. 9 fbgs
Bore Hole Number:	MW-1	Depth to Bedrock:	30.7 fbgs

Depth (Ft)	Sample NO	Sample TYPE	REC	PID (ppm)	Description
0			2.00	0.0	0 to 2': Brown F-C sand & F-C gravel, some silt, trace brick
1					
2			2.00	0.0	2 to 4': SAA, moist
3					
4			2.00	0.0	4 to 6': SAA, some concrete
5					
6			2.00	0.0	6 to 8': SAA
7					
8			2.00	0.0	8 to 10': Brown silt, some F-C sand and F-C gravel, v. moist
9					Wet around 9'
10			2.00	0.0	10 to 12': SAA, wet
11					
12			2.00	0.0	12 to 13.5': Gray silty clay, stiff, trace C sand, moist
13					13.5 to 14': Gray silt, trace F-C gravel, wet
14			2.00	0.0	14 to 15.6': SAA, wet
15					15.6 to 16': Gray silt & clay, trace F gravel, wet
16			1.80	0.0	16 to 18': SAA, wet
17					
18			0.60	0.0	18 to 20': SAA, wet, soft
19					
20			2.00	0.0	20 to 21': gray silt, trace F gravel, v. soft, wet
21					21 to 22": SAA, with trace clay, wet
22			0.70	0.0	22 to 24': Soft grey silt, wet, some to trace F gravel & C sand
23					
24			0.90	0.0	24 to 26': SAA
25					
26			1.20	0.0	26 to 28': SAA, med. dense, wet
27					
28			1.60	0.0	28 to 30': SAA with some F sand, dense, moist
29					
30			0.70	0.0	30 to 30.7': Dense grey silt, trace F gravel, rock in tip - Limestone
31					

Comments: Native at 8' bgs
No sample taken.
Bottom of hole @ 30.7' bgs

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Project:		31 Water Street	
Client:	STEL, Inc.	Location:	31 Water St, Jamestown, NY
Contractor:	SJB Inc.	Ground Elevation:	1300.07'
Operator:	Steve W.	Equipment Model:	2' Split Spoon Sampler
Date Started:	10/11/2018	Geologist/Technician:	John Boyd/Alex Brennen
Date Completed:	10/11/2018	Ground Water:	Approx. 4.5 fbgs
Bore Hole Number:	MW-4	Depth to Bedrock:	34 fbgs

Depth (Ft)	Sample		REC	PID	Description
	NO	TYPE		(ppm)	
0					0 to 14': See adjacent boring log BH-12
14				0.0	14 to 14.4': grey F sand & silt, F gravel, moist
15					14.4 to 16': Grey silty clay, wet
16			0.80	0.0	16 to 17': Gray silty clay, trace C gravel, wet
17					17 to 18': SAA, moist
18			1.30	0.0	18-20': Grey stiff clay & silt, moist
19					wet @ 19-19.3'
20			1.30	0.0	20 to 21.2': SAA, wet
21					21.2 to 22': Grey silty clay, moist
22			1.50	0.0	22 to 23': SAA, very moist, trace C grave
23					23 to 24': Grey clay, soft, moist
24			1.20	0.0	24 to 24.3': SAA
25					24.3 to 24.6': Grey silty clay, v. moist
26			1.60	0.0	24.6 to 26': Grey clay, moist
27					26 to 28': SAA, moist
28			1.50	0.0	28 to 30': SAA, moist
29					
30			1.60	0.0	30 to 32': Grey, silty clay, trace F gravel, wet
31					
32			1.70	0.0	32 to 32.7': SAA
33					32.7 to 34': Gray silt, trace F-C gravel & clay
34				0.0	Refusal at 34'

Comments: Native at 4.5' bgs.
No Sample taken
Bottom of hole @ 34' bgs

DRILLING SUMMARY

Geologist: John Boyd

Contractor: SJB Services, Inc.

Operator: Steve Walkowitz

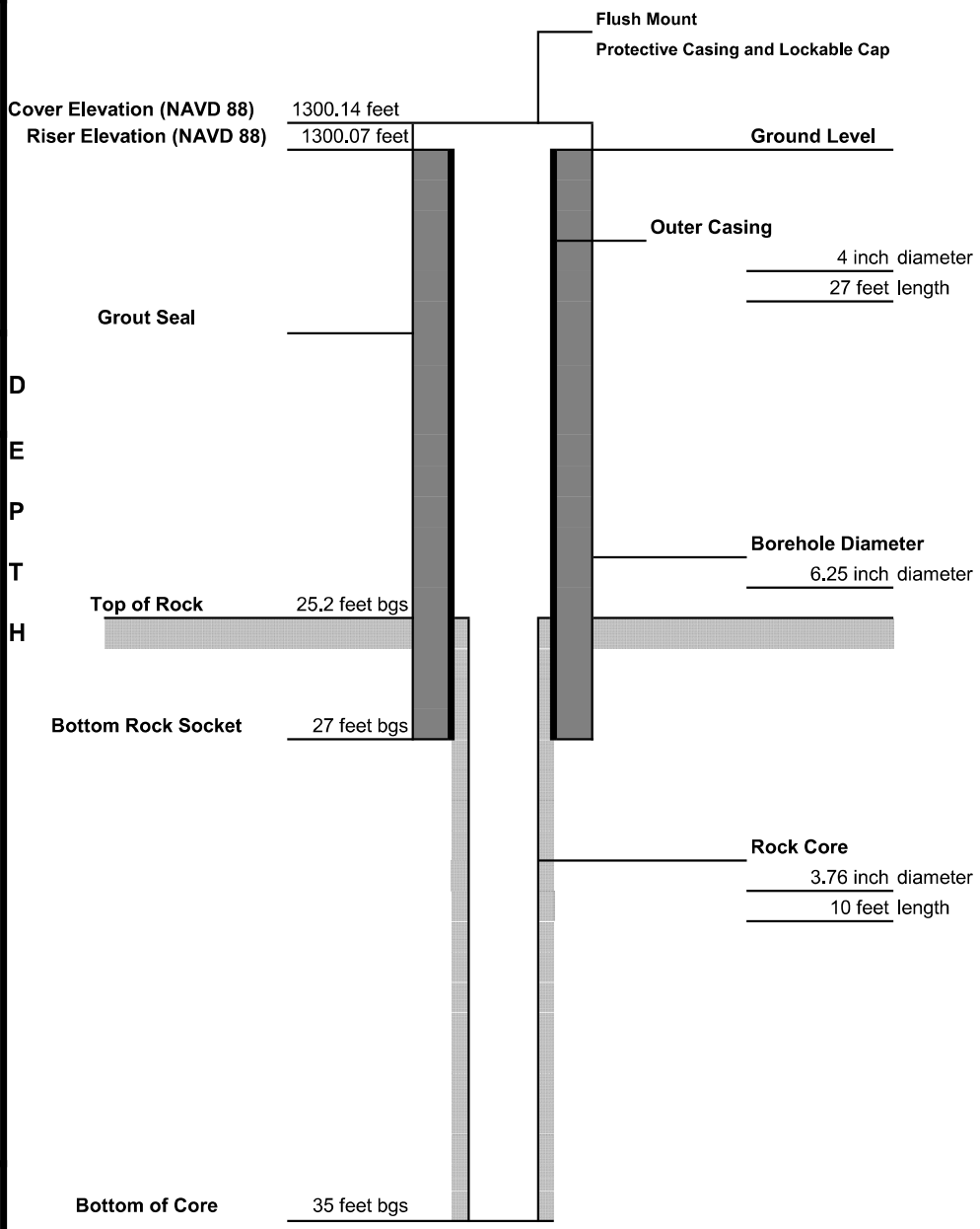
Model: Truck Mounted Drill Rig

Date: 10/12/2018

GEOLOGIC LOG

Depth(ft.)	Description
0 - 15'	See BH-9 Borelog
15-25'	See BMW-01 Overburden Lgo

WELL DESIGN



CASING MATERIAL

Surface: 4" Steel protective cover

Monitor: Open hole in 3.76-inch diameter cored bedrock borehole.

SCREEN MATERIAL

Type: None.

Slot Size:

Setting:

FILTER MATERIAL

Type: None.

Setting:

SEAL MATERIAL

Type 1: Bentonite-cement grout

Setting: Ground level to 27.0 feet bgs

Type 2: N/A

Setting:

COMMENTS:

Overburden log started at 15'. Subsurface data for 0 to 15 feet bgs assumed to be the same as adjacent bore hole log BH-9.

LEGEND

Bentonite-Cement Grout

Client: STEL Inc.	**Location:** 31 Water St	**Project No.:**
BE3 CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: BMW-01**

DRILLING SUMMARY

Geologist/Technician: John Boyd

Drilling Company: SJB Services, Inc.

Driller: Steve Walkowicz

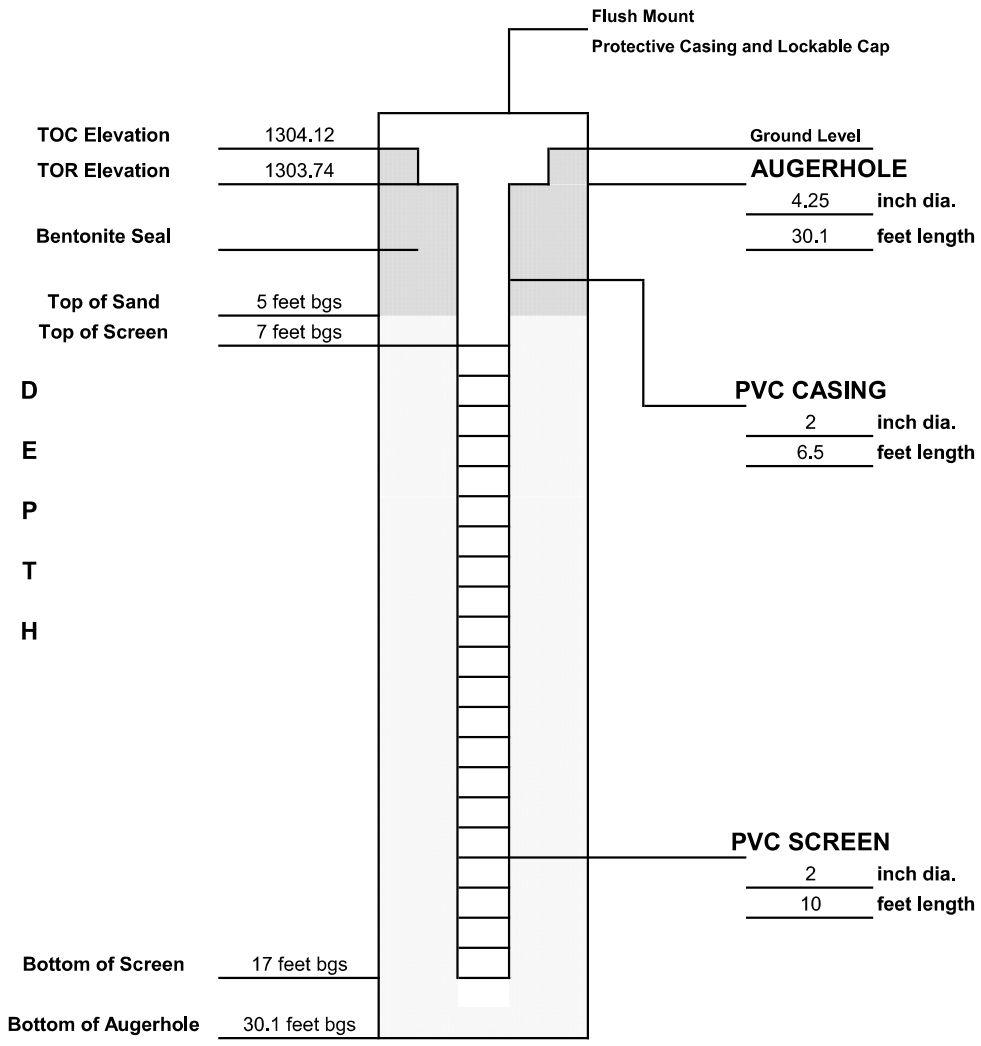
Rig Make/Model: Conventional Hollow Stem Drill Rig

Date: 10/9/2018

GEOLOGIC LOG

Depth(ft.)	Description
	See MW-1 Overburden Log

WELL DESIGN



CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #0 Sand **Setting:** 5 to 17 feet bgs
Monitor: 2" PVC riser	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite Chips
	Setting: 7 to 17 feet bgs	**Setting:** 1 to 5 feet bgs

COMMENTS:

LEGEND

Bentonite Seal

Silica Sandpack

Client: STEL Inc.	**Location:** 31 Water St, Jamestown, NY	**Project No.:**
BE3 CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:** MW-01

DRILLING SUMMARY

Geologist/Technician: Alex Brennen

Drilling Company: SJB Services, Inc.

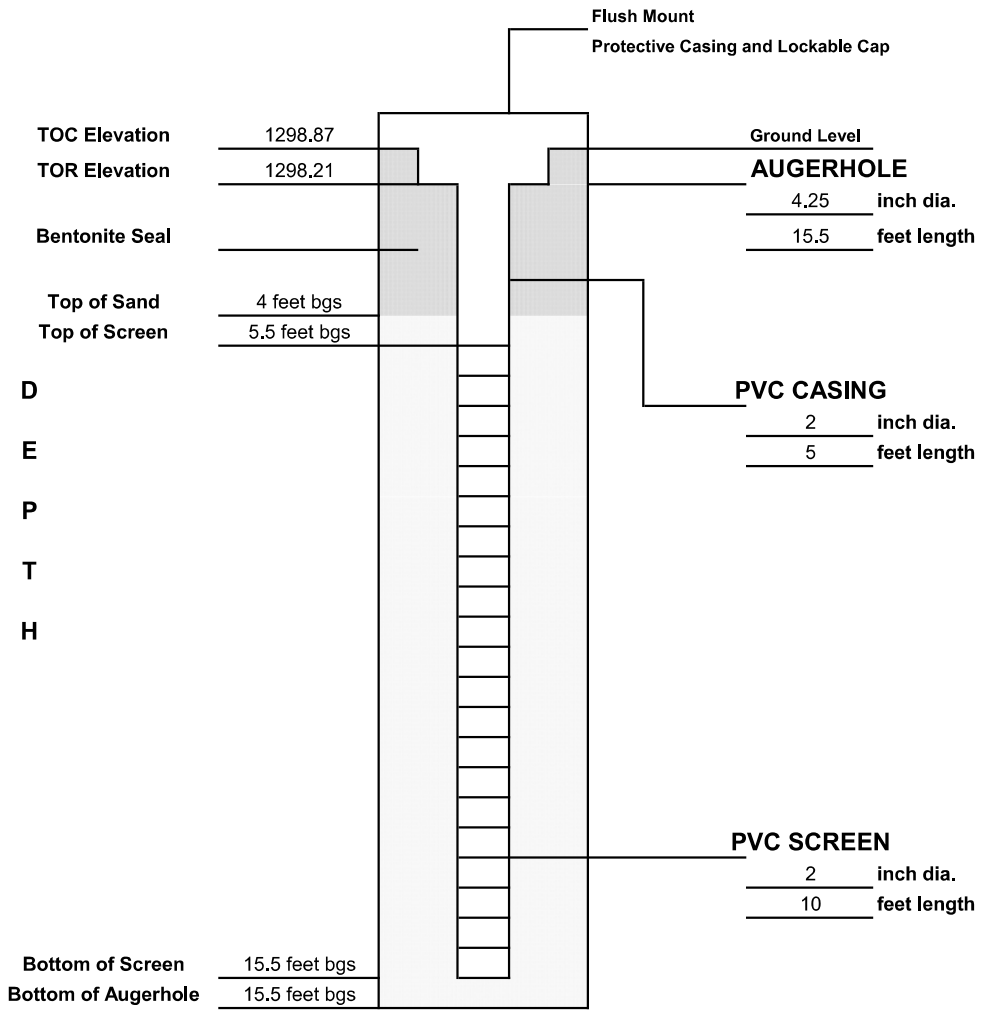
Driller: Steve Walkowicz

Rig Make/Model: Conventional Hollow Stem Drill Rig

Date: 10/11/2018

GEOLOGIC LOG

Depth(ft.)	Description
	See MW-02 Overburden Log



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #0 Sand
	Slot Size: .010"	**Setting:** 4 to 15.5 feet bgs
Monitor: 2" PVC riser	**Setting:** 5.5 to 15.5 feet bgs	***SEAL MATERIAL***
		Type: Bentonite Chips
		Setting: 1 to 4 feet bgs

COMMENTS:

DTW at time of construction was 5.6 feet bgs.

LEGEND

Bentonite Seal

Silica Sandpack

Client: STEL Inc.	**Location:** 31 Water St, Jamestown, NY	**Project No.:**
BE3 CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:** MW-02

DRILLING SUMMARY

Geologist/Technician: Alex Brennen

Drilling Company: SJB Services, Inc.

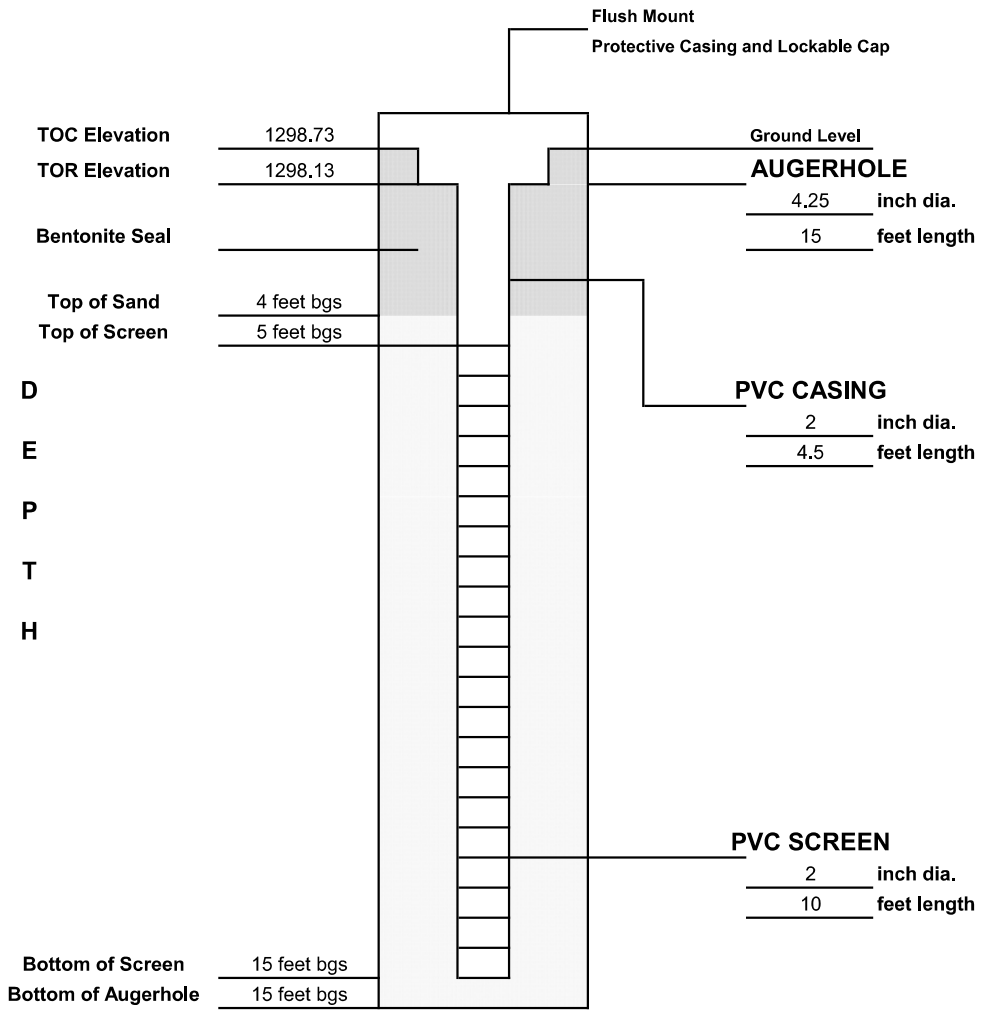
Driller: Steve Walkowicz

Rig Make/Model: Conventional Hollow Stem Drill Rig

Date: 10/11/2018

GEOLOGIC LOG

Depth(ft.)	Description
	See MW-03 Overburden Log



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #0 Sand
	Slot Size: .010"	**Setting:** 4 to 15 feet bgs
Monitor: 2" PVC riser	**Setting:** 5 to 15 feet bgs	***SEAL MATERIAL***
		Type: Bentonite Chips
		Setting: 1 to 4 feet bgs

COMMENTS:

LEGEND

Bentonite Seal

Silica Sandpack

Client: STEL Inc.

Location: 31 Water St, Jamestown, NY

Project No.:

BE3 CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY

MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW-03

DRILLING SUMMARY

Geologist/Technician: John Boyd

Drilling Company: SJB Services, Inc.

Driller: Steve Walkowicz

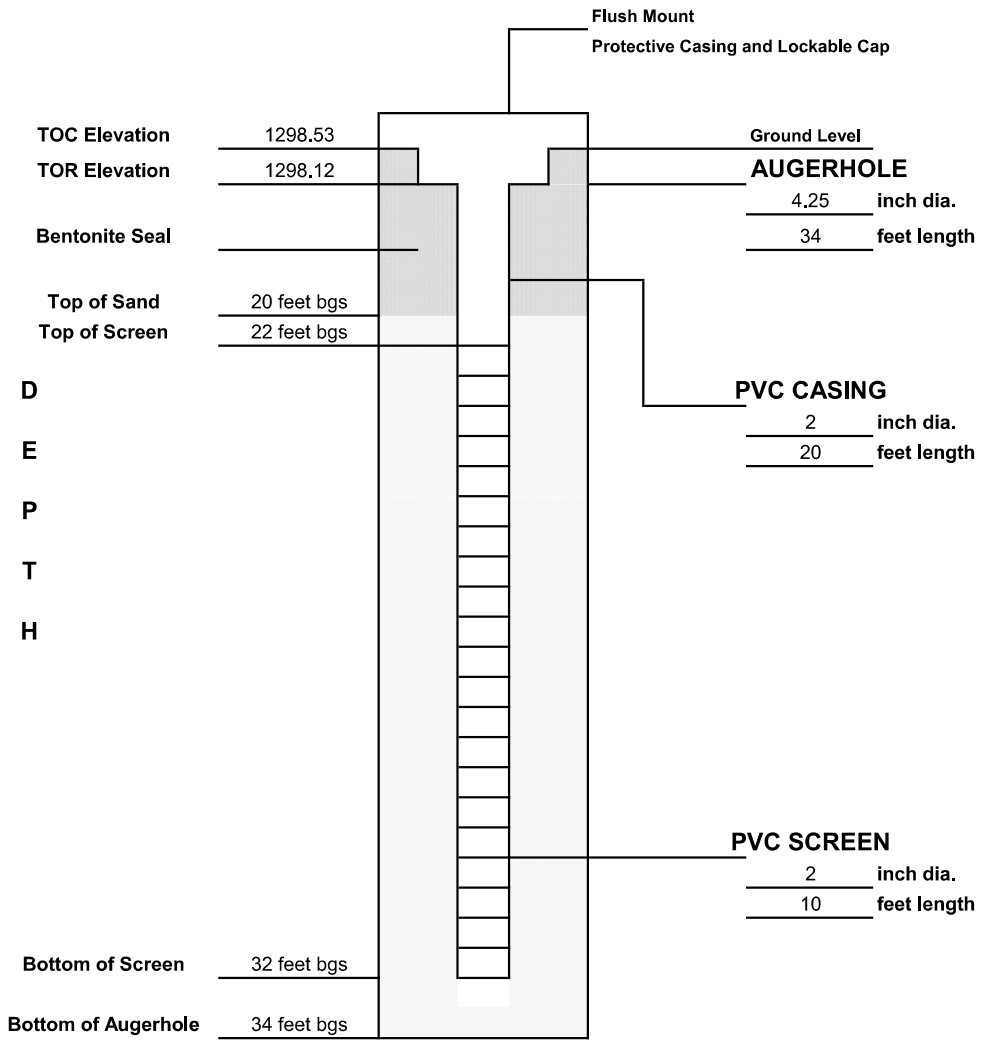
Rig Make/Model: Conventional Hollow Stem Drill Rig

Date: 10/11/2018 to 10/12/2018

GEOLOGIC LOG

Depth(ft.)	Description
0-14'	See BH-10 & BH-12 bore log
14-32'	See MW-04 Overburden Log

WELL DESIGN



CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #0 Sand
	Slot Size: .010"	**Setting:** 20 to 34 feet bgs
Monitor: 2" PVC riser	**Setting:** 22 to 32 feet bgs	***SEAL MATERIAL***
		Type: Bentonite Chips
		Setting: 16 to 20 feet bgs

COMMENTS:

Split spoon samples logged to top of rock at 34 feet bgs.

Split spoon logging began at 14 feet bgs. Subsurface data from 0 to 14 feet bgs assumed to be similar to adjacent bore log BH-10 and BH-12.

LEGEND

- Bentonite Seal
- Silica Sandpack

Client: STEL Inc.	**Location:** 31 Water St, Jamestown, NY	**Project No.:**
BE3 CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:** MW-04

DRILLING SUMMARY

Geologist/Technician: Alex Brennen

Drilling Company: SJB Services, Inc.

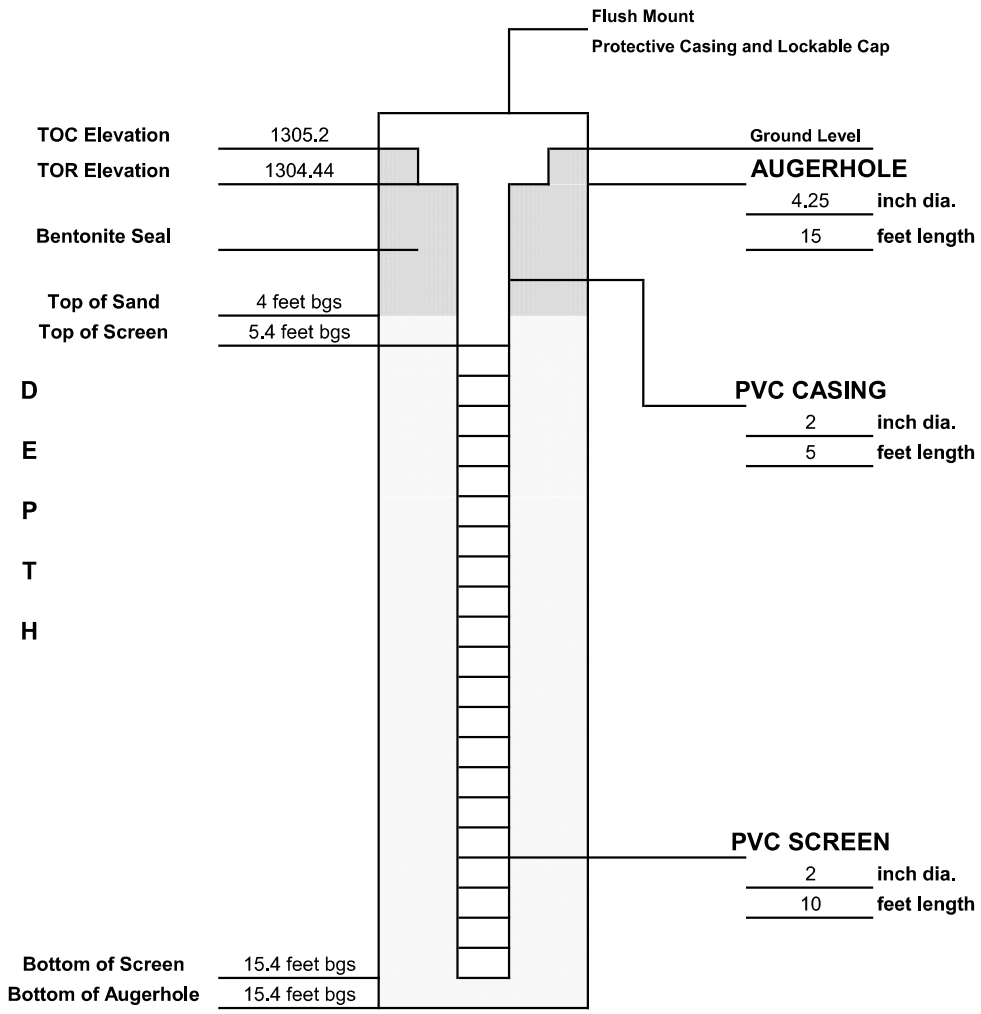
Driller: Steve Walkowicz

Rig Make/Model: Conventional Hollow Stem Drill Rig

Date: 10/11/2018

GEOLOGIC LOG

Depth(ft.)	Description
	See MW-05 Overburden Log



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #0 Sand
	Slot Size: .010"	**Setting:** 4 to 15.4 feet bgs
Monitor: 2" PVC riser	**Setting:** 5.4 to 15.4 feet bgs	***SEAL MATERIAL***
		Type: Bentonite Chips
		Setting: 1 to 4 feet bgs

COMMENTS:

LEGEND

Bentonite Seal

Silica Sandpack

Client: STEL Inc.

Location: 31 Water St, Jamestown, NY

Project No.:

BE3 CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY

MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW-05

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 31 Water St - Gateway Lofts Site: 31 Water St, Jamestown Well I.D.: MW-01

Date: 10/19 Sampling Personnel: Alex Brennen & john Boyd Company: BE3 Corp/Panamerican

Purging/ Sampling Device: Peristaltic Pump Tubing Type: HDPE/Silicon Pump/Tubing Inlet Location: Mid of Screen

Measuring Point: TOR Mark Initial Depth to Water: 7.6 Depth to Well Bottom: 16.5 Well Diameter: 2 in Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): 5.5L Estimated Purge Volume (liters): 10L

Sample ID: MW-01 Sample Time: 1530 QA/QC:

Sample Parameters: Part 375 VOCs & TICs, SVOC & TICs, Metals, Pesticides, PCBs ,PFA's, 1-4 Dioxane, Total Cyanide

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1450	8.10	17.30	1.22	0.40	0.0	-56	250	8.3
1455	8.01	17.52	1.21	0.05	0.0	-57	250	8.9
1500	7.96	17.65	1.20	0.00	0.0	-78	200	10.1
1505	7.88	17.68	1.17	0.0	0.0	-80	200	10.4
1510	7.80	17.19	1.21	0.0	0.0	-84	200	10.7
1515	7.77	17.22	1.18	0.0	0.0	-90	200	11.2
1520	7.75	17.20	1.18	0.0	0.0	-90	200	11.6
Tolerance:	0.1	—	3%	10%	10%	+ or - 10	—	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

Pump on @ 1458

Well dry @ 1600

Pump off @ 1600 1 L of 1-4 Diox

1 L of SVOC - Not sampled

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 31 Water St - Gateway Lofts Site: 31 Water St, Jamestown Well I.D.: MW-02

Date: 10/18/18 Sampling Personnel: Alex Brennen & john Boyd Company: BE3 Corp/Panamerican

Purging/Sampling Device: Peristaltic Pump Tubing Type: HDPE/Silicon Pump/Tubing Inlet Location: MID Screen

Measuring Point: Top of Riser Initial Depth to Water: 5.05 Depth to Well Bottom: 14.71 Well Diameter: 2 in Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): 5.9 Liters (1.6 gals) 966 Estimated Purge Volume (liters): ~~350~~ 3.8 gals

Sample ID: MW-02 Sample Time: 1350 QA/QC: 20181018-FD-1

Sample Parameters: Part 375 VOCs & TICs, SVOC & TICs, Metals, Pesticides, PCBs ,PFA's, 1-4 Dioxane, Total Cyanide

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1307	6.18	13.29	2.50	3.17	0.0	-21	500	—
1310	5.96	14.86	2.55	0.82		-30	500	—
1311	— Pump off to fix leak in flow Cell —						~~485~~	
1320	— Pump back on. —							
1325	5.89	14.52	2.68	0.20	451	-31	385	—
1330	5.89	14.75	2.69	0.13	146	-35	370	—
1335	5.90	14.99	2.65	0.00	35.6	-38	370	—
1340	5.91	14.98	2.62	0.00	15.4	-40	370	—
1345	5.91	14.97	2.61	0.00	11.4	-43	370	—
1350	5.91	15.00	2.61	0.00	10.0	-44	370	—
Tolerance:	0.1	---	3% .03	10%	10% 3	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

1220 Setup at MW-02

1306 - Pump on - NOR water level meter NOT working

1350 collected sample

1430 Sampling completed

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 31 Water St - Gateway Lofts Site: 31 Water St, Jamestown Well I.D.: MW-03

Date: 10/18/18 Sampling Personnel: Alex Brennen & john Boyd Company: BE3 Corp/Panamerican

Purging/Sampling Device: Peristalic Pump Tubing Type: HDPE/Silicon Pump/Tubing Inlet Location: Middle of Screen

Measuring Point: TOR Marking Initial Depth to Water: 4.9 Depth to Well Bottom: 14.5 Well Diameter: 2 in Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): 5.9 L Estimated Purge Volume (liters):

Sample ID: MW-03 Sample Time: 1050 QA/QC: MS, MSD

Sample Parameters: Part 375 VOCs & TICs, SVOC & TICs, Metals, Pesticides, PCBs ,PFA's, 1-4 Dioxane, Total Cyanide

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1000	5.97	13.45	1.36	0.23	120	-81	250	5.0'
1005	5.96	14.01	1.35	0.26	68.3	-80	240	—
1010	5.94	13.97	1.35	0.20	63.2	-79	250	—
1015	5.95	14.05	1.33	0.12	54.4	-77	250	—
1020	5.93	14.01	1.35	0.14	35.8	-78	250	—
1025	5.93	14.02	1.35	0.08	27.7	-78	250	—
1030	5.92	14.05	1.35	0.00	19.8	-75	300	—
1035	5.92	14.05	1.36	0.00	18.6	-79	300	—
1040	5.91	14.05	1.36	0.00	12.3	-80	300	—
1045	5.92	14.05	1.36	0.00	10.0	-81	300	—
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

Pump on @ 0950

1000- Water Level Meter acting up

Pump off @ 1145

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 31 Water St - Gateway Lofts Site: 31 Water St, Jamestown Well I.D.: MW-04

Date: 10/19 Sampling Personnel: Alex Brennen & john Boyd Company: BE3 Corp/Panamerican

Purging/ Sampling Device: Peristalic Pump Tubing Type: HDPE/Silicon Pump/Tubing Inlet Location: Middle of Screen

Measuring Point: TOR Mark Initial Depth to Water: 6.6 Depth to Well Bottom: 32 Well Diameter: 2 in Screen Length: 10' 22-32

Casing Type: PVC Volume in 1 Well Casing (liters): 15.6 L Estimated Purge Volume (liters): 33L

Sample ID: MW-04 Sample Time: 1420 QA/QC: —

Sample Parameters: Part 375 VOCs & TICs, SVOC & TICs, Metals, Pesticides, PCBs ,PFA's, 1-4 Dioxane, Total Cyanide

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1325	9.30	13.52	0.931	0.00	660	-80	700	6.9
1330	9.23	13.54	0.923	0.00	~~1000~~	-112	600	7.0
1335	9.32	13.53	0.911	0.00	~~1000~~	-140	600	7.0
1340	9.40	13.41	0.893	0.00	290	-147	700	7.2
1345	9.49	13.38	0.913	0.00	142	-150	700	7.1
1350	9.55	13.36	0.923	0.00	105	-153	700	7.1
1355	9.65	13.38	0.955	0.00	87.3	-157	700	7.1
1400	9.67	13.37	0.968	0.00	58.9	-166	700	7.1
1405	9.65	13.37	0.992	0.00	42.7	-161	700	7.1
1410	9.60	13.37	0.994	0.00	40.5	-163	700	7.1
1415	9.58	13.37	0.997	0.00	39.2	-164	700	7.1
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	--	

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

Pump on @ 1320

Pump off @ 1430

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 31 Water St - Gateway Lofts Site: 31 Water St, Jamestown Well I.D.: MW-05

Date: _____ Sampling Personnel: Alex Brennen & john Boyd Company: BE3 Corp/Panamerican

Purging/Sampling Device: Peristaltic Pump Tubing Type: HDPE/Silicon Pump/Tubing Inlet Location: middle of Screen

Measuring Point: TOP of Riser Initial Depth to Water: 8.90 Depth to Well Bottom: 14.5 Well Diameter: 2 in Screen Length: 10'

Casing Type: PVC Volume in 1 Well Casing (liters): 3.5L (0.9 gal) 5.6 Estimated Purge Volume (liters): 2.2 gals

Sample ID: MW-05 Sample Time: 1610 QA/QC: None

Sample Parameters: Part 375 VOCs & TICs, SVOC & TICs, Metals, Pesticides, PCBs ,PFA's, 1-4 Dioxane, Total Cyanide

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1536	6.53	14.92	2.17	4.90	378	-10	220	-
1540	6.82	15.99	2.11	3.56	267	-22 -10	250	-
1545	6.84	16.07	2.12	3.56	167	-3	240	-
1550	6.85	16.12	2.13	3.30	72.8	1	210	-
1555	6.85	16.16	2.16	3.24	17.3	6	210	-
1600	6.86	15.93	2.18	3.16	10.0	9	200	-
1605	6.86	15.99	2.19	3.06	7.2	11	200	-
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks: 0.06 (1.7)

Pump on at 1534

Pump off at 1642

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 31 Water St - Gateway Lofts Site: 31 Water St, Jamestown Well I.D.: BMW-01

Date: 10/19 Sampling Personnel: Alex Brennen & john Boyd Company: BE3 Corp/Panamerican

Purging/ Sampling Device: Peristaltic Pump Tubing Type: HDPE/Silicon Pump/Tubing Inlet Location: Middle of Rock ~27'

Measuring Point: TOC Mark Initial Depth to Water: 8.4' Depth to Well Bottom: 30.1' Well Diameter: 4in Screen Length: N/A

Casing Type: PVC Volume in 1 Well Casing (liters): 53.3L ~~13.4~~ Estimated Purge Volume (liters): 35L

Sample ID: BMW-01 Sample Time: 1250 QA/QC:

Sample Parameters: Part 375 VOCs & TICs, SVOC & TICs, Metals, Pesticides, PCBs ,PFA's, 1-4 Dioxane, Total Cyanide

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1130	9.18	14.05	1.01	0.43	50.0	-229	420	9.1
1135	9.10	14.3	0.994	0.51	46.9	-269	420	9.4
1140	9.75	14.46	0.986	0.51	42.9	-288	350	10.1
1145	10.49	14.62	0.981	0.54	44.9	-313	350	10.6
1150	10.66	14.64	0.981	0.55	47.6	-316	350	10.8
1200	10.87	14.62	0.980	0.78	59.0	-328	400	11.3
1205	10.90	14.70	0.978	0.56	62.0	-329	400	11.9
1210	11.06	14.68	0.983	0.51	55.0	-327	450	12.0
1215	11.16	14.52	0.00	0.48	54.8	-325	450	12.5
1220	11.14	14.49	0.993	0.46	56.5	-322	450	12.9
1225	11.02	14.45	1.00	0.43	52.1	-310	450	13.2
1230	11.03	14.38	0.99	0.39	53.5	-303	575	13.5
1235	10.94	14.39	0.987	0.37	48.0	-296	575	14.0
1240	10.99	14.42	0.987	0.32	47.0	-295	575	14.2
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

Pump on @ 1128

Pump off @ 1300

APPENDIX B

HYDRAULIC CONDUCTIVITY RESULTS

Summary of Results
31 Water Street
Slug Tests - Bouer-Rice Analysis

Well ID	Hydraulic Conductivity [cm/sec]			
	FH	RH	Tests[a]	Mean[b]
MW-01	NA	NA	0	NA
MW-02	1.18E-04	1.14E-04	2	1.16E-04
MW-03	1.54E-04	1.28E-04	2	1.41E-04
MW-04	1.00E-04	9.23E-05	2	9.62E-05
MW-05	2.16E-06	1.40E-04	2	1.74E-05
BMW-01	NA	NA	0	NA

NA - Not Analyzed - See Section 2.2.2 for details
FH - Falling Head test
RH - Rising Head test
[a]Number of valid tests
[b]Geometric mean

Note:
-For all graphs, normalized head is defined as H(t)/Ho, where H(t) is the displacement measured at time t and Ho is the initial displacement at time t=0.

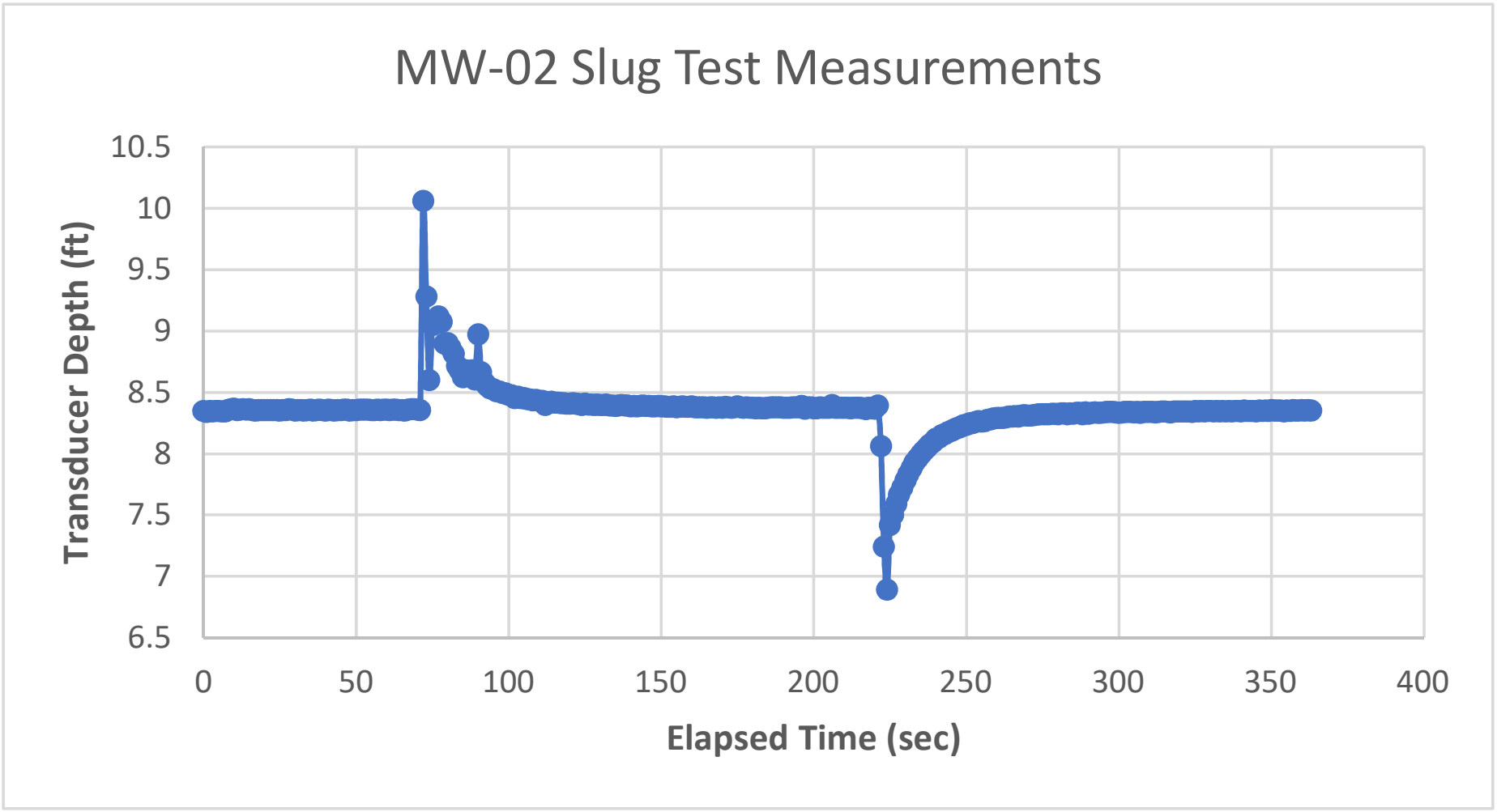
-While the geometric mean for both the falling and rising head tests are given, it is understood that the rising head tests more accurately describe the overall hydraulic characteristics of the aquifer.
(See attached reference, *The Bouwer and Rice Slug Test - An Update*)

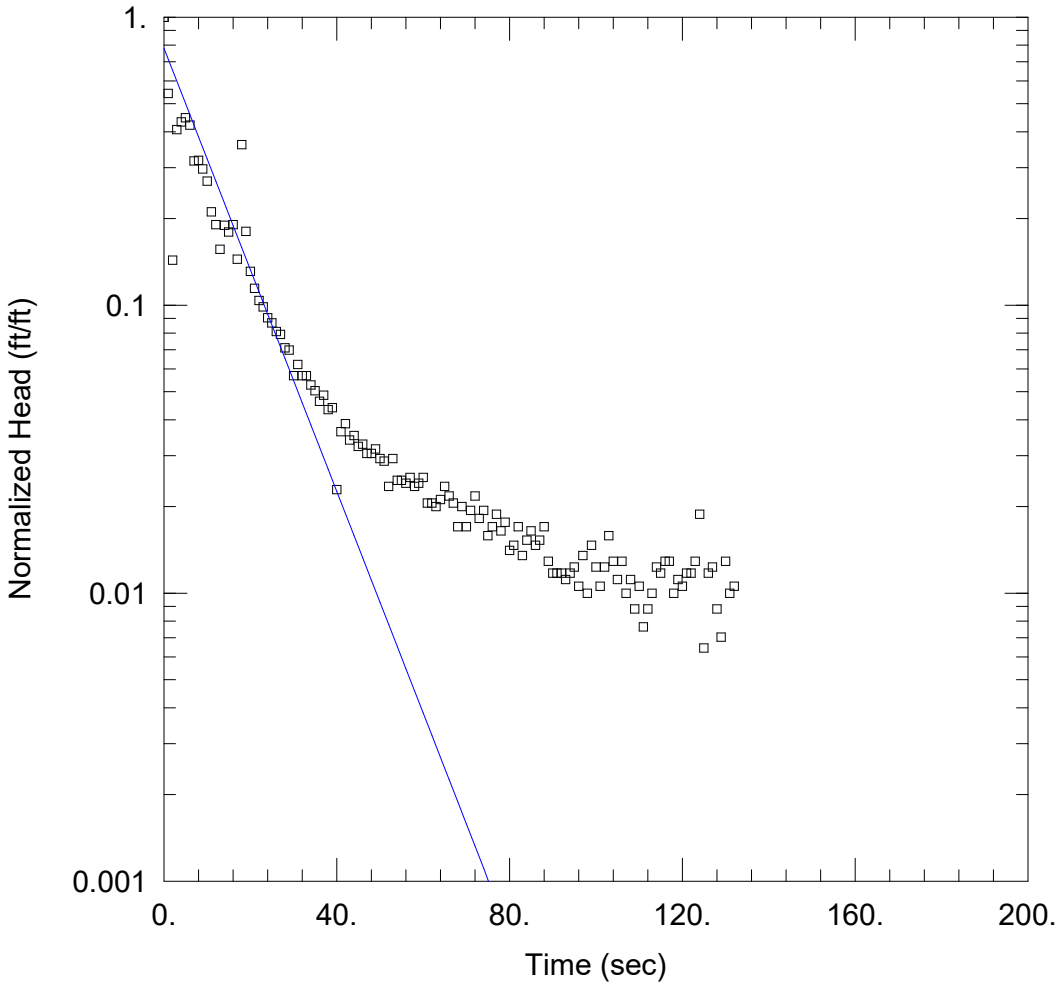
Well Construction Details
31 Water Street
Slug Test - Bouer-Rice Analysis

Well ID	Formation	Screen Length		Radii			Aquifer Thickness	Depth from Aquifer Top	
		Total	Submerged	Screen (*)	Casing			to Top of Screen	to Bottom of Screen
					Actual	Equivalent			
		L_e	$L_{e\text{-}sub}$	r_w	r_c	$r_{c\text{-}eq}$ (**)	H	d	L_w
		[ft]	[ft]	[in]	[in]	[in]	[ft]	[ft]	[ft]
MW-01	Overburden	10.0	9.90	2.13	1.00	1.43	23.00	-0.10	9.90
MW-02	Overburden	10.0	13.30	2.13	1.00	1.00	13.30	3.30	13.30
MW-03	Overburden	10.0	12.80	2.13	1.00	1.00	12.80	2.80	12.80
MW-04	Overburden	10.0	28.60	2.13	1.00	1.00	30.60	18.60	28.60
MW-05	Overburden	10.0	7.60	2.13	1.00	1.44	7.60	-2.40	7.60
BMW-01	Bedrock	9.8	29.90	1.88	1.88	1.88	29.90	20.10	29.90

Notes:
(*) - sand pack (overburden wells)
(**) - $r_{c\text{-}eq} = [(1 - n)\, r_c^2 + n\, r_w^2]^{1/2}$ if $L_{e\text{-}sub} < L_e$
$r_{c\text{-}eq} = r_c$ if $L_{e\text{-}sub} = L_e$
NM - not measured
N/A - not applicable

Assumptions:
(1) AQTESOLV ver. 4.0 was used for slug test analyses.
(2) Sandpack porosity of 0.3 was used for wells that were not fully submerged during testing.
(3) Bouwer and Rice (1976) solution was used for unconfined aquifers.
(4) Formulas and parameters used for this slug test analysis can be found in:
Bouwer, H., 1989. The Bouwer and Rice slug test--an update, Ground Water, vol. 27, no. 3, pp. 304-309.


MW-02 Slug Test Measurements
Transducer Depth (ft)
10.5
10
9.5
9
8.5
8
7.5
7
6.5
0
50
100
150
200
250
300
350
400
Elapsed Time (sec)



MW-02 SLUG IN

Data Set:
Date: 03/14/19 Time: 14:59:54

PROJECT INFORMATION

Company: BE3
Client: STEL, Inc.
Location: Jamestown, NY
Test Well: MW-02
Test Date: 10/30/2018

AQUIFER DATA

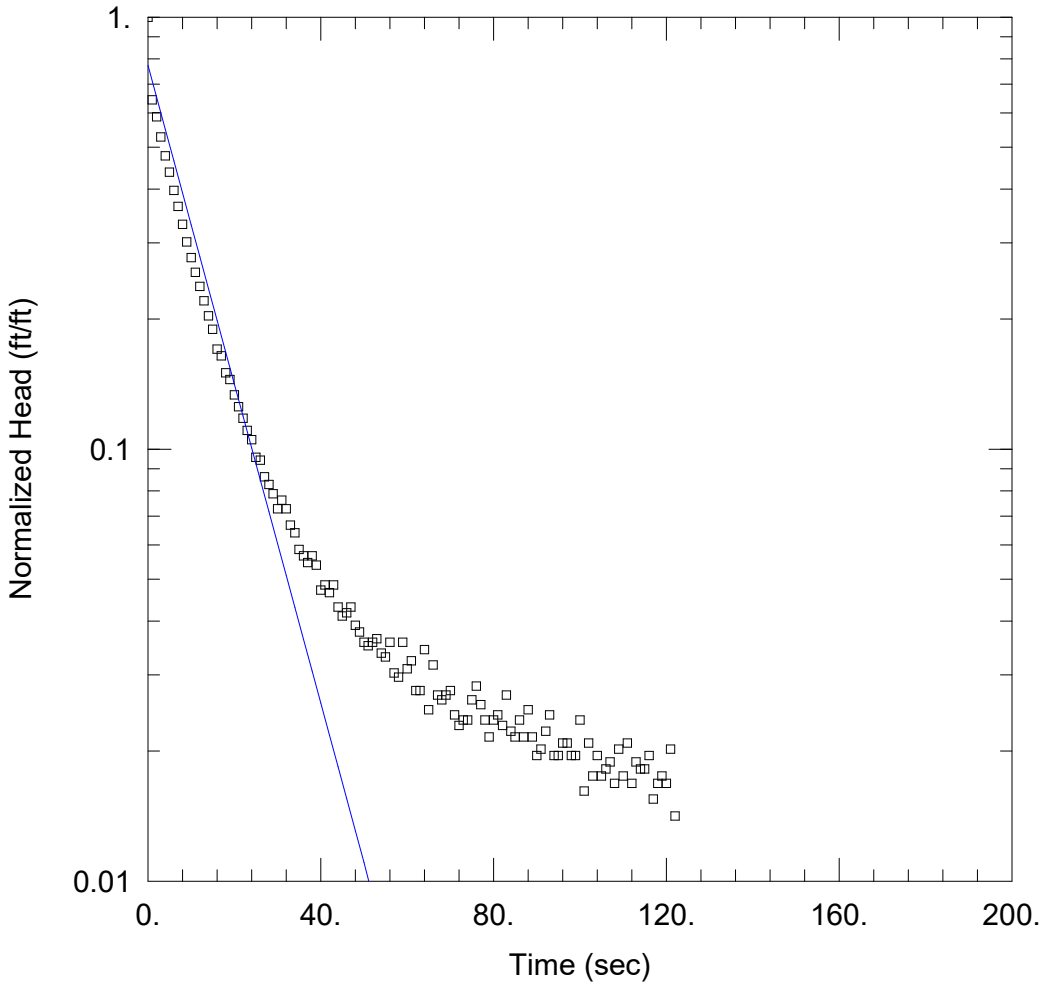
Saturated Thickness: 13.3 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-02)

Initial Displacement: 1.704 ft
Total Well Penetration Depth: 13.3 ft
Casing Radius: 0.083 ft
Static Water Column Height: 13.3 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0001184 ft/sec
y0 = 1.329 ft



MW-02 SLUG OUT

Data Set:
Date: 03/14/19 Time: 15:05:46

PROJECT INFORMATION

Company: BE3
Client: STEL, Inc.
Location: Jamestown, NY
Test Well: MW-02
Test Date: 10/30/2018

AQUIFER DATA

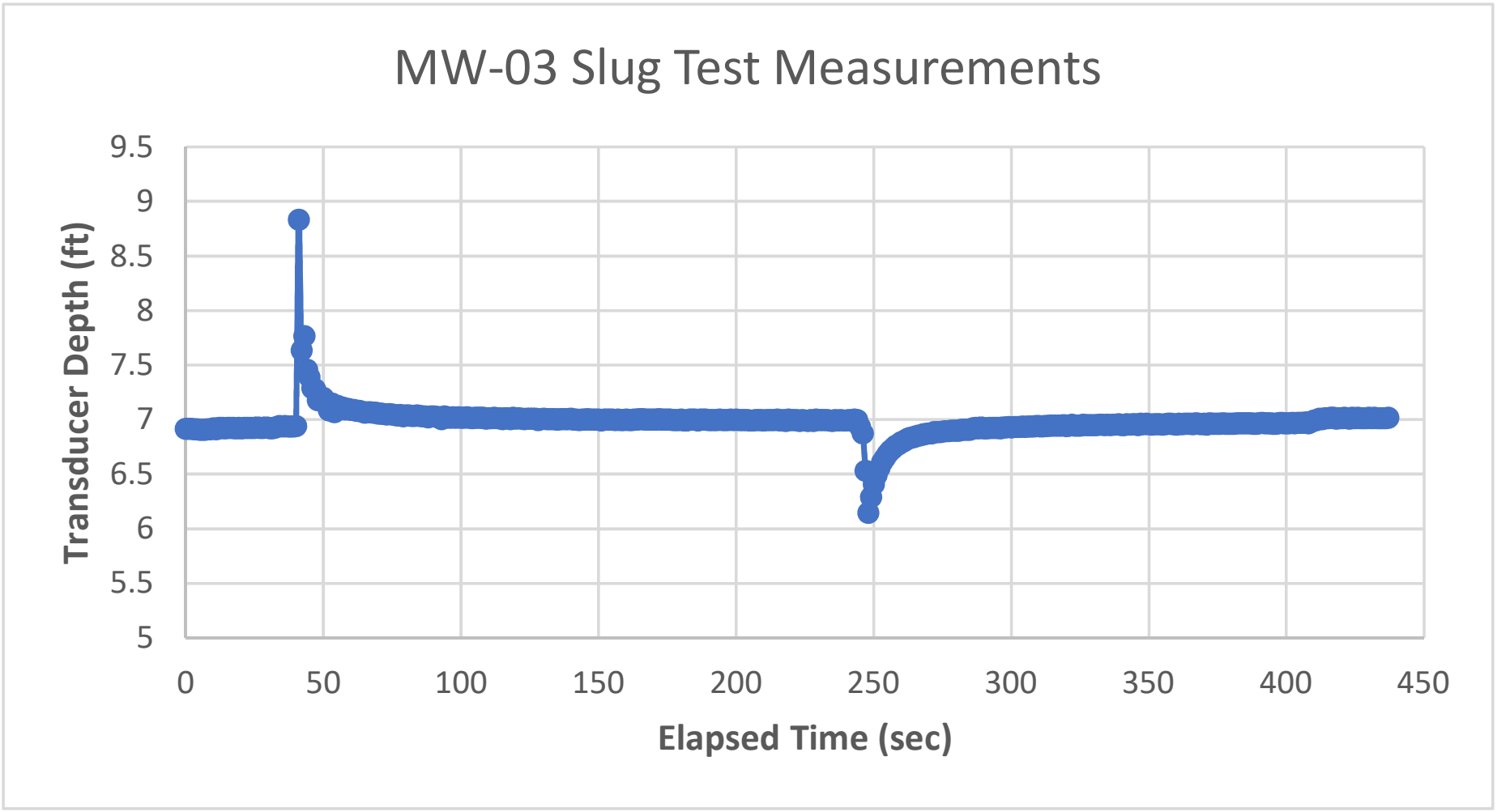
Saturated Thickness: 13.3 ft Anisotropy Ratio (Kz/Kr): 1.

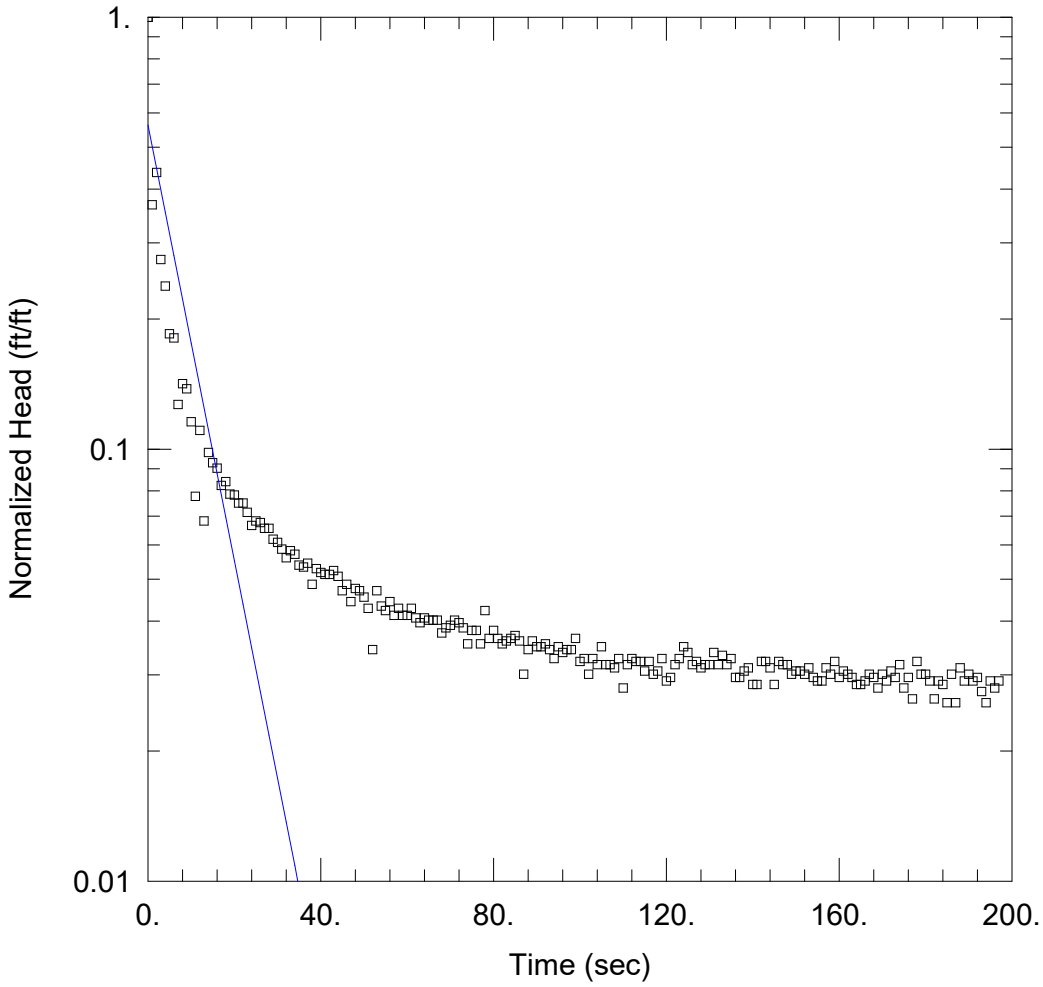
WELL DATA (MW-02)

Initial Displacement: -1.484 ft Static Water Column Height: 13.3 ft
Total Well Penetration Depth: 13.3 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0001135 ft/sec y0 = -1.147 ft


MW-03 Slug Test Measurements
Transducer Depth (ft)
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
0
50
100
150
200
250
300
350
400
450
Elapsed Time (sec)



MW-03 SLUG IN

Data Set:
Date: 03/14/19 Time: 16:21:57

PROJECT INFORMATION

Company: BE3
Client: STEL, Inc.
Location: Jamestown, NY
Test Well: MW-03
Test Date: 10/30/2018

AQUIFER DATA

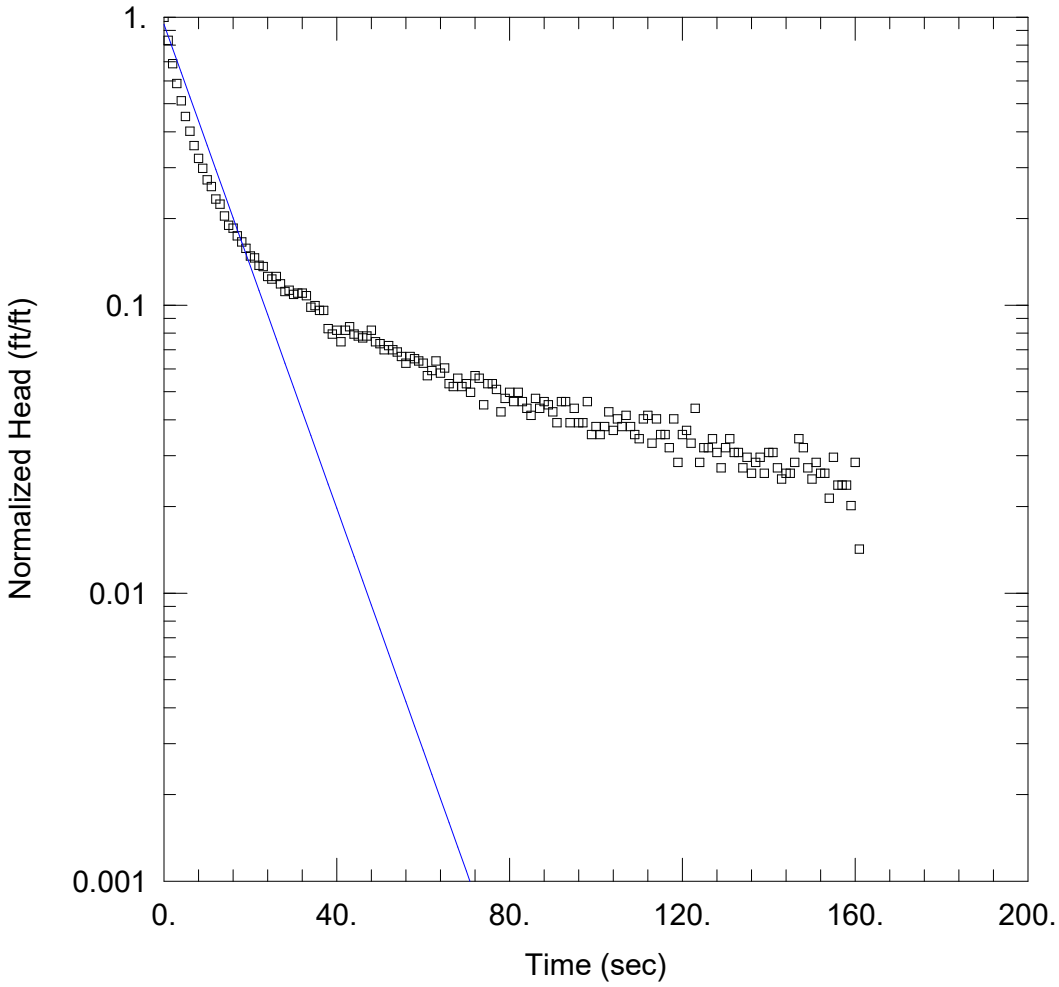
Saturated Thickness: 12.8 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-03)

Initial Displacement: 1.892 ft Static Water Column Height: 12.8 ft
Total Well Penetration Depth: 12.8 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0001542 ft/sec y0 = 1.064 ft



MW-03 SLUG OUT

Data Set:
Date: 03/14/19 Time: 16:26:12

PROJECT INFORMATION

Company: BE3
Client: STEL, Inc.
Location: Jamestown, NY
Test Well: MW-03
Test Date: 10/30/2018

AQUIFER DATA

Saturated Thickness: 12.8 ft Anisotropy Ratio (Kz/Kr): 1.

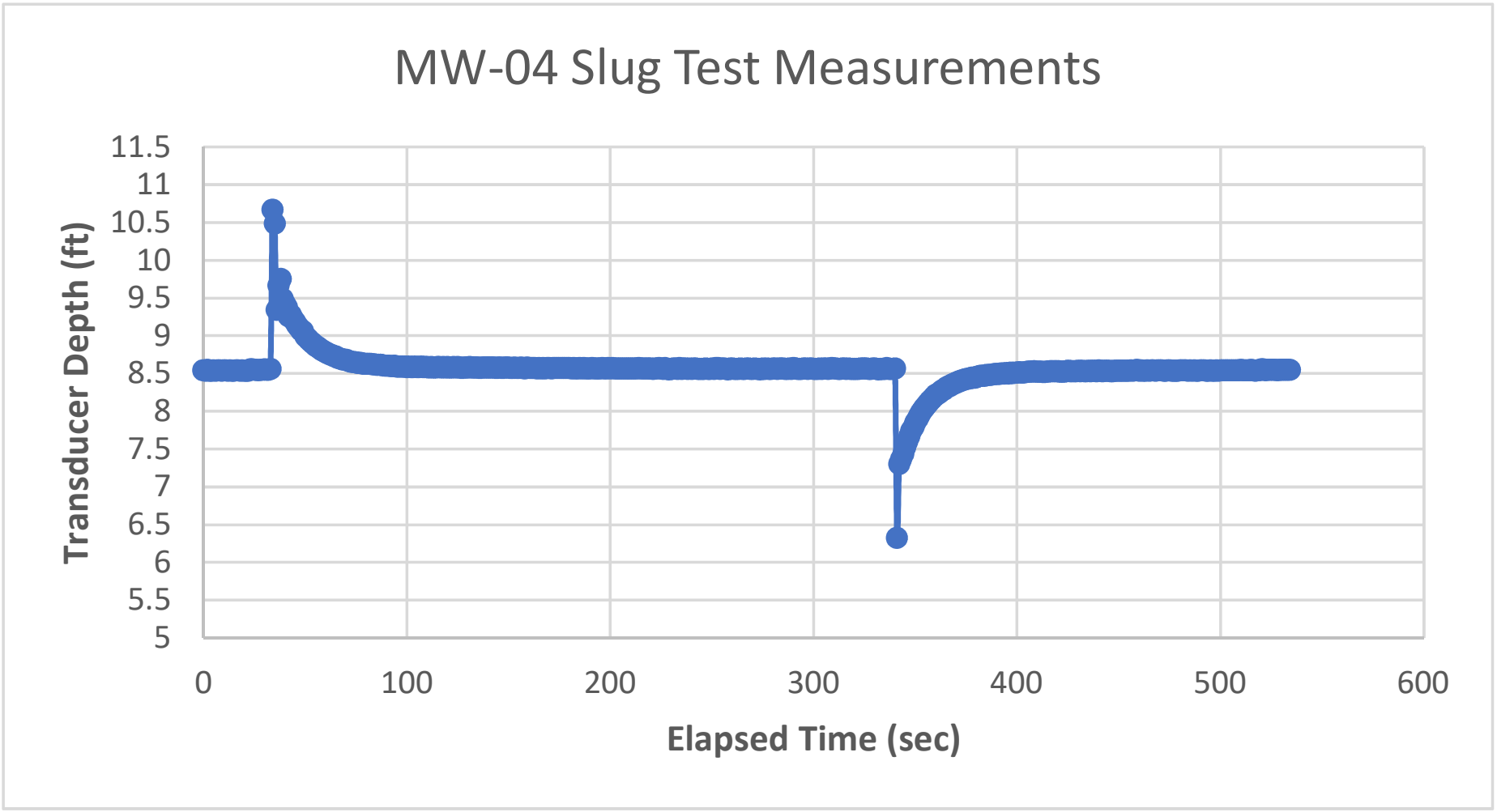
WELL DATA (MW-03)

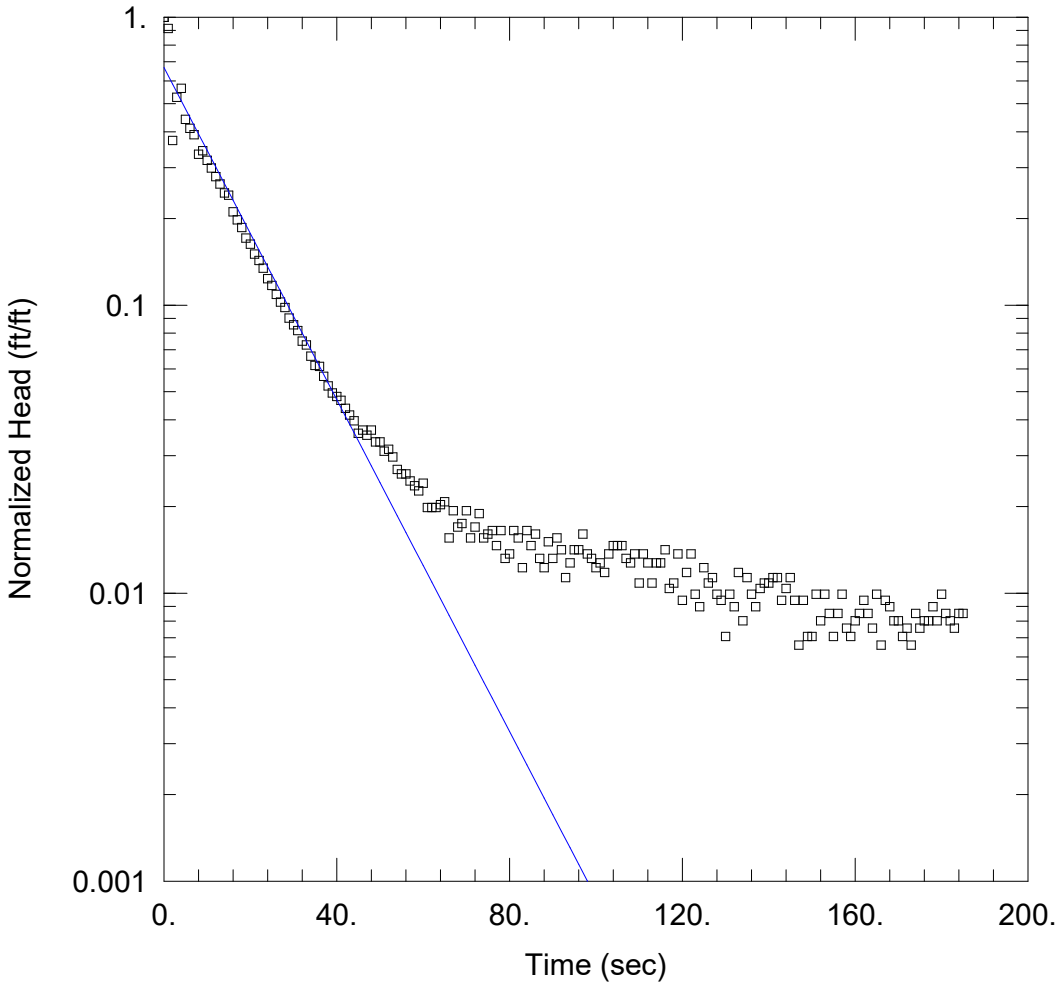
Initial Displacement: -0.844 ft
Total Well Penetration Depth: 12.8 ft
Casing Radius: 0.083 ft
Static Water Column Height: 12.8 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0001284 ft/sec y0 = -0.7968 ft


MW-04 Slug Test Measurements
Transducer Depth (ft)
11.5
11
10.5
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
0
100
200
300
400
500
600
Elapsed Time (sec)



MW-04 SLUG IN

Data Set:
Date: 03/14/19 Time: 11:50:00

PROJECT INFORMATION

Company: BE3
Client: STEL, Inc.
Location: Jamestown, NY
Test Well: MW-04
Test Date: 10/30/2018

AQUIFER DATA

Saturated Thickness: 28.6 ft Anisotropy Ratio (Kz/Kr): 1.

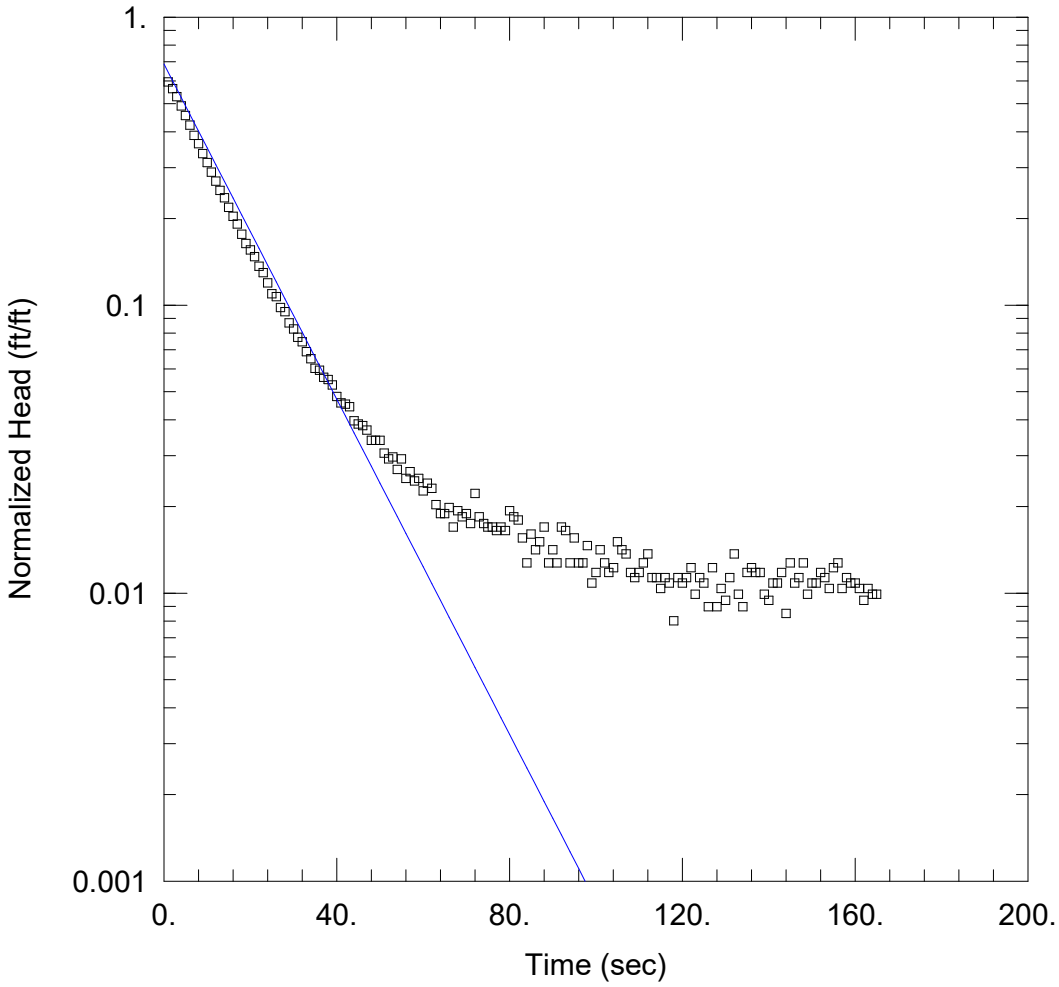
WELL DATA (MW-04)

Initial Displacement: 2.12 ft
Total Well Penetration Depth: 28.6 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 28.6 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0001002 ft/sec y0 = 1.417 ft



MW-04 SLUG OUT

Data Set:
Date: 03/14/19 Time: 12:06:28

PROJECT INFORMATION

Company: BE3
Client: STEL, Inc.
Location: Jamestown, NY
Test Well: MW-04
Test Date: 10/30/2018

AQUIFER DATA

Saturated Thickness: 30.6 ft Anisotropy Ratio (Kz/Kr): 1.

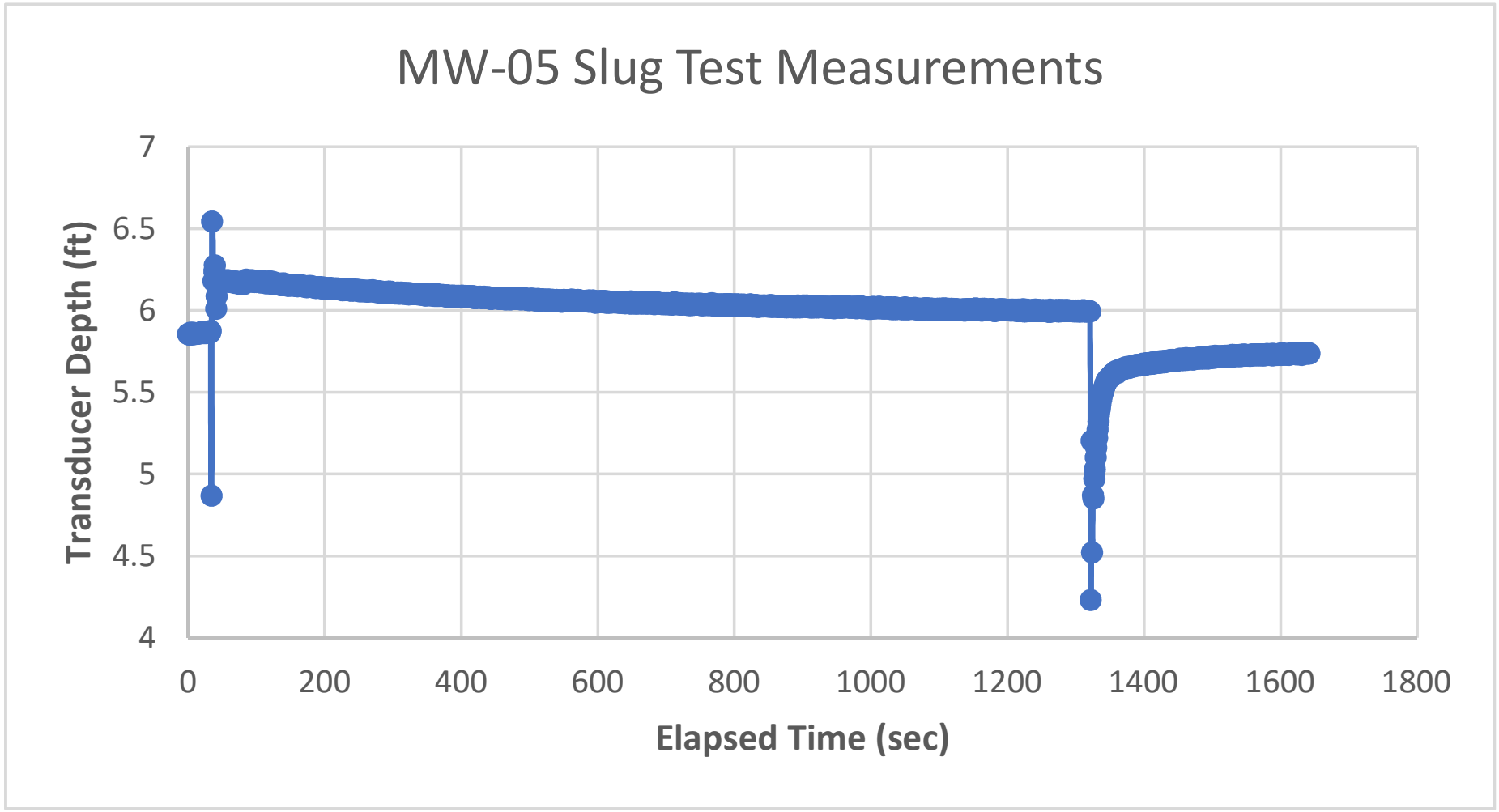
WELL DATA (New Well)

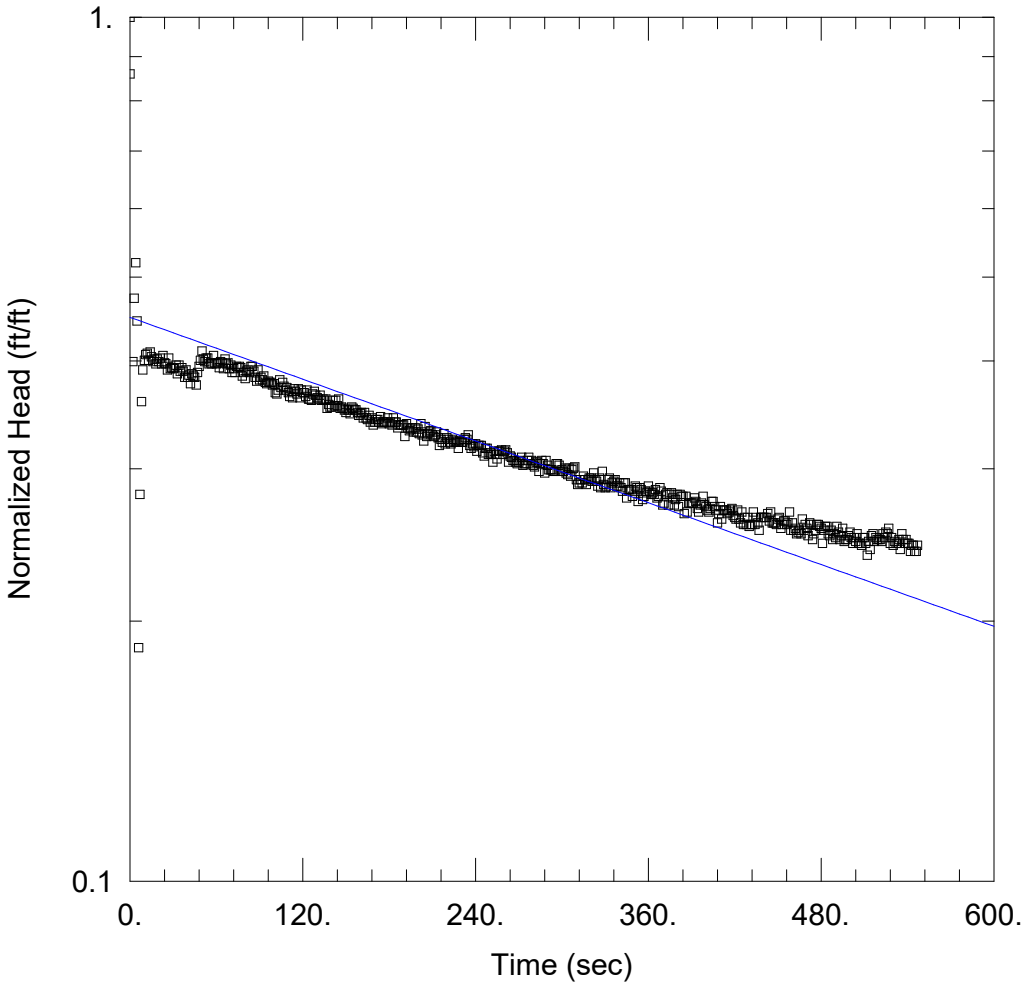
Initial Displacement: -2.12 ft
Total Well Penetration Depth: 28.6 ft
Casing Radius: 0.083 ft
Static Water Column Height: 30.6 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 9.229E-5 ft/sec y0 = -1.456 ft


MW-05 Slug Test Measurements
Transducer Depth (ft)
7
6.5
6
5.5
5
4.5
4
0
200
400
600
800
1000
1200
1400
1600
1800
Elapsed Time (sec)



BMW-01 SLUG IN

Data Set:
Date: 03/14/19 Time: 12:39:28

PROJECT INFORMATION

Company: BE3
Client: STEL, Inc.
Location: Jamestown, NY
Test Well: BMW-01
Test Date: 10/30/2018

AQUIFER DATA

Saturated Thickness: 7.6 ft Anisotropy Ratio (Kz/Kr): 1.

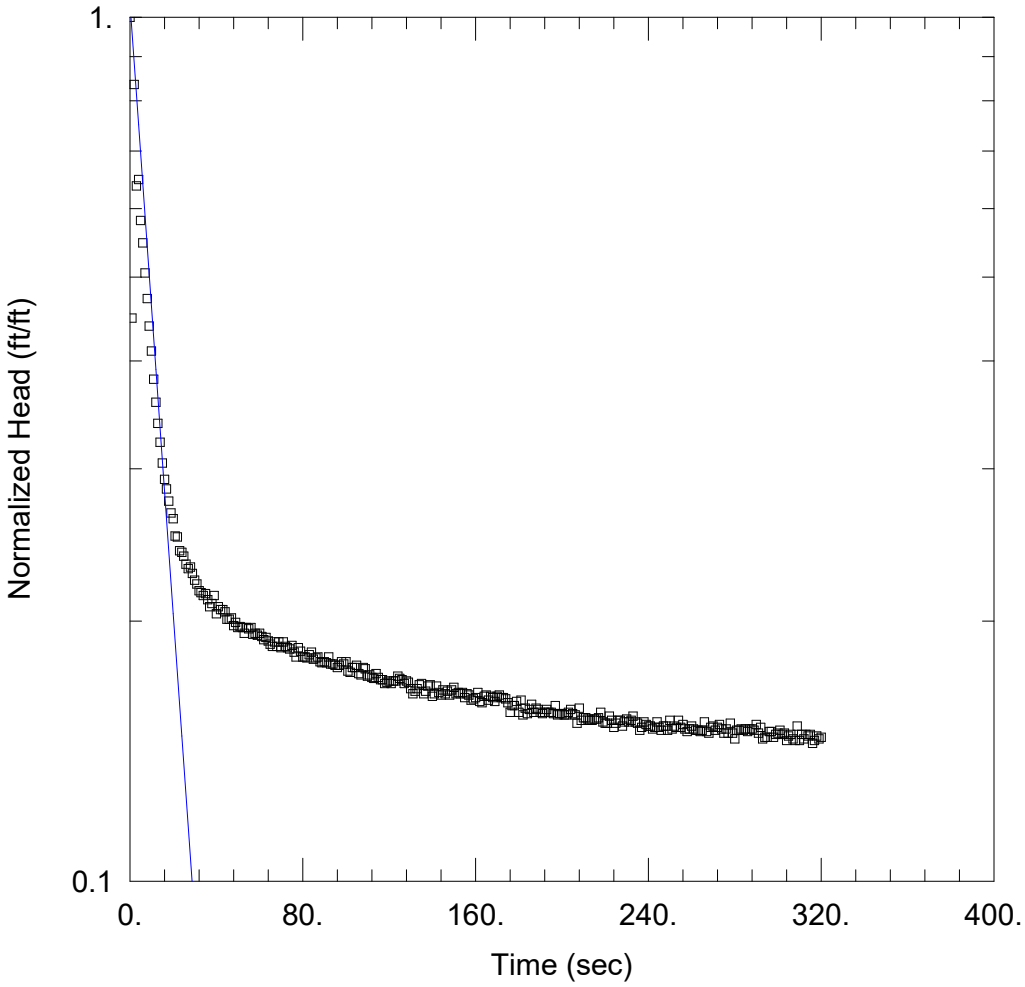
WELL DATA (MW-05)

Initial Displacement: 0.7888 ft
Total Well Penetration Depth: 7.6 ft
Casing Radius: 0.083 ft
Static Water Column Height: 7.6 ft
Screen Length: 7.6 ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 2.161E-6 ft/sec y0 = 0.3544 ft



MW-05 SLUG OUT

Data Set:
Date: 03/14/19 Time: 12:46:26

PROJECT INFORMATION

Company: BE3
Client: STEL, Inc.
Location: Jamestown, NY
Test Well: MW-05
Test Date: 10/30/2018

AQUIFER DATA

Saturated Thickness: 7.7 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-05)

Initial Displacement: -1.766 ft
Total Well Penetration Depth: 7.7 ft
Casing Radius: 0.089 ft
Static Water Column Height: 7.7 ft
Screen Length: 7.7 ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0001403 ft/sec y0 = -1.836 ft

The Bouwer and Rice Slug Test — An Update[a]

by Herman Bouwer[b]

ABSTRACT

The Bouwer and Rice slug test was developed to measure aquifer hydraulic conductivity around boreholes (production, monitoring, or test wells). The wells can be partially penetrating and partially screened, perforated, or otherwise open. The slug test can be based on quickly withdrawing a volume of water from the well and measuring the subsequent rate of rise of the water level in the well, or by adding a slug of water and measuring the subsequent rate of fall of the water level in the well. While originally developed for unconfined aquifers, the method can also be used for confined or stratified aquifers if the top of the screen or perforated section is some distance below the upper confining layer. Anomalies ("double straight line effect") sometimes observed in the measured rate of rise of the water level in the well are attributed to drainage of a gravel pack or developed zone around the well following lowering of the water level. The effect of this drainage can be eliminated by ignoring the early data points and using the second straight line portion in the data plot for calculation of hydraulic conductivity. The method is applicable to any diameter and depth of the borehole, provided that the dimensions of the system are covered by the ranges for which the geometry factor R_e has been worked out. The smaller the diameter of the hole, however, the more vulnerable the results will be to aquifer heterogeneities and to inaccuracies in estimating effective well diameters. Computer programs for rapid processing of the field data have been developed.

INTRODUCTION

The slug test developed by Bouwer and Rice (1976) permits the measurement of saturated hydraulic conductivity (K) of aquifer materials with a single well. The method consists of quickly lowering or raising the water level in a well or borehole from equilibrium and measuring its subsequent rate of rise or fall, respectively. The method was designed to measure K of the aquifer around the screen or otherwise open portion of the well for fully or partially penetrating wells in unconfined aquifers. Because of its simplicity, the Bouwer and Rice slug test has become a frequently used tool in ground-water investigations. This paper addresses some of the experiences obtained with the method, including the validity of falling level tests, use of the method in confined aquifers, effect of draining gravel packs on the rise of the water level, effect of hole diameter, and computer processing of field data.

METHODOLOGY

Geometry and symbols of a slug-tested well are shown in Figure 1. The rate of flow of ground water into the well when the water level in the well is a distance y lower than the static ground-water table around the well is calculated with the Thiem equation as

$$Q = 2\pi K L_e \frac{y}{\ln(R_e/r_w)} \qquad (1)$$

where Q = volume rate of flow into well;
K = hydraulic conductivity of aquifer around well;
L_e = length of screened, perforated, or otherwise open section of well; y = vertical difference between water level inside well and static water table outside

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[a]Contribution of the U.S. Department of Agriculture, Agricultural Research Service.

[b]Laboratory Director, U.S. Water Conservation Laboratory, Phoenix, Arizona 85040.

Received December 1986, revised August 1988, accepted September 1988.

Discussion open until November 1, 1989.

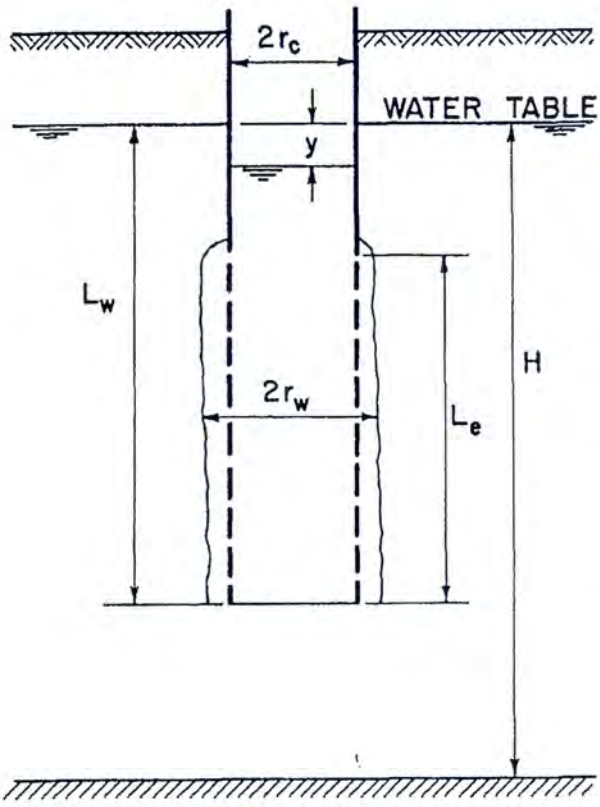


Fig. 1. Geometry and symbols for slug test on partially penetrating, partially screened well in unconfined aquifer with gravel pack and/or developed zone around screen.

well; R_e = effective radial distance over which y is dissipated; and r_w = radial distance of undisturbed portion of aquifer from centerline.

Values of R_e were determined with an electrical resistance network analog for different values of r_w, L_e, L_w, and H (see Figure 1 for meaning of geometry symbols). The value of r_w is the radius of the screened or open section of the well plus the thickness of a sand or gravel pack and/or of the developed zone around the well. Thus, r_w is the radial distance from the center of the well to normal K of the aquifer. Because the thickness of the developed zone is almost never known, the tendency is to ignore it and take only gravel or sand packs into account.

The rate of rise dy/dt of the water level in the well after the water level has been quickly lowered some distance is

$$\frac{dy}{dt} = -\frac{Q}{\pi r_c^2} \qquad (2)$$

where r_c is the radius of the casing or other section of the well where the rise of the water level is measured. If the water level rises in the screened or open section of the well with a gravel pack around it, the thickness and porosity of the gravel envelope should be taken into account when calculating the equivalent value of r_c for the rising water level. This calculation is based on the total free-water surface area in the well and sand or gravel pack, calculated as $\pi r_c^2 + \pi(r_w^2 - r_c^2)n$, where n is the porosity, and $r_w - r_c$ is the thickness of the envelope. The equivalent radius of a circle giving this total area is then calculated as $[(1-n)r_c^2 + nr_w^2]^{1/2}$. For example, if the radius of the screen or perforated casing is 20 cm and there is 8 cm gravel pack with a porosity of 30 percent, r_c should be taken as 25.9 cm, while r_w is 28 cm.

Solving equation (2) for Q, equating the resulting expression to equation (1), integrating, and solving for K yields

$$K = \frac{r_c^2 \ln(R_e/r_w)}{2L_e} \frac{1}{t} \ln \frac{y_0}{y_t} \qquad (3)$$

where y_0 = y at time zero; and y_t = y at time t.

The results of the analog analyses to evaluate R_e for various system geometries were expressed in terms of the dimensionless ratio $\ln(R_e/r_w)$. The data could be fitted into two equations, one for the case where $L_w < H$, and one where $L_w = H$. The resulting equations were, respectively,

$$\ln \frac{R_e}{r_w} = \left[\frac{1.1}{\ln(L_w/r_w)} + \frac{A + B\ln[(H-L_w)/r_w]}{L_e/r_w} \right]^{-1} \qquad (4)$$

and

$$\ln \frac{R_e}{r_w} = \left[\frac{1.1}{\ln(L_w/r_w)} + \frac{C}{L_e/r_w} \right]^{-1} \qquad (5)$$

where A, B, and C are dimensionless numbers plotted in Figure 2 as a function of L_e/r_w.

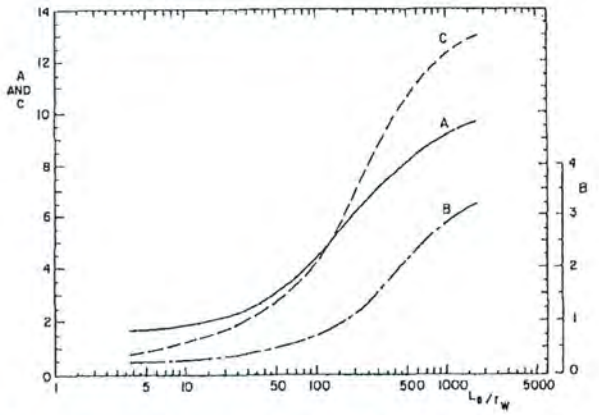


Fig. 2. Dimensionless parameters A, B, and C as a function of L_e/r_w for calculation of $\ln(R_e/r_w)$.

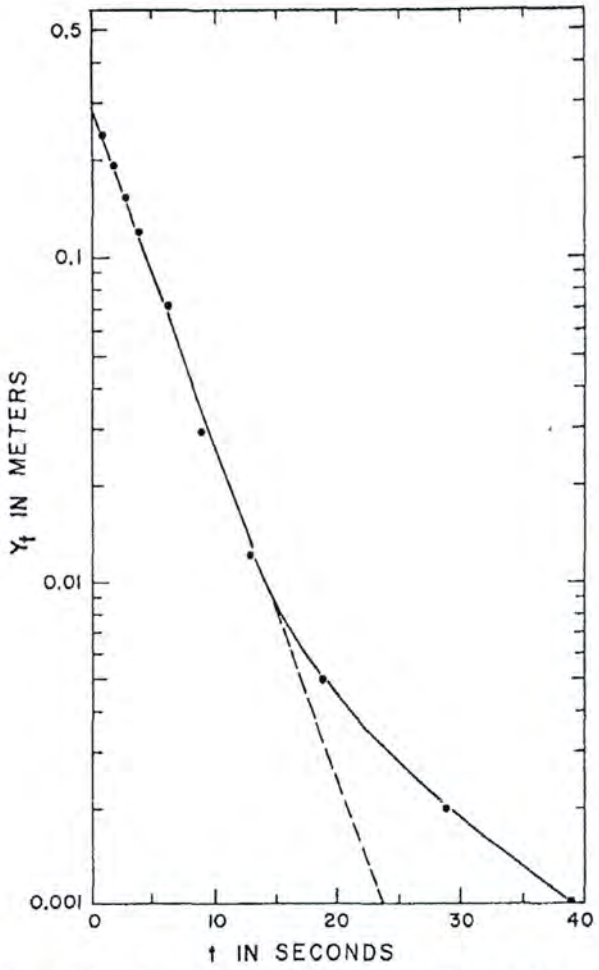


Fig. 3. Graph of log y_t versus t for slug test on well in Salt River Bed, 27th Avenue, Phoenix, Arizona.

Because y and t are the only variables in equation (3), a plot of ln y_t versus t must show a straight line. Thus, instead of calculating K on the basis of two measurements of y and t (y_0 at t = 0 and y_t at t), a number of y and t measurements can be taken and $[\ln(y_0/y_t)]/t$ determined as the slope of the best-fitting line through the y versus t points on semilogarithmic paper (Figure 3). The straight line through the data points can also be used to select two values of y, namely, y_0 and y_t, along with the time interval t between them for substitution into equation (3). Because drawdown of the ground-water table around the well becomes increasingly significant as the test progresses, the points as in Figure 3 begin to deviate from the straight line for large t and small y. Thus, only the straight line portion of the data points should be used to evaluate $[\ln(y_0/y_t)]/t$ for calculation of K with equation (3).

The slug test can be used on production wells, test wells, observation wells, and monitoring wells. Objectives for the measurements include characterization of aquifer hydraulic conductivity for modeling, ground-water recharge studies, and ground-water pollution studies. The method is particularly useful in ground-water contamination studies because the slug test can be carried out on the same wells used for ground-water quality monitoring. Also, combining the resulting values of hydraulic conductivity with the porosity of the aquifer and slopes of the ground-water table or piezometric surface permits the prediction of pore-water velocities and, hence, the rate of movement of pollution plumes and transport of contaminants. The slug test can also be useful in determining vertical distribution of hydraulic conductivities in an aquifer system and other spatial variability of hydraulic conductivity in studies of macrodispersion and movement of contaminants.

Over the years, a number of questions and comments about the slug test have been received. These questions and comments are addressed in the following sections.

DOUBLE STRAIGHT LINE EFFECT

Users of the slug test have observed that when plotting log y_t versus t as in Figure 3, they sometimes get a double straight line as shown schematically in Figure 4. The first part (AB) is straight and steep, whereas the next part (BC) is straight and less steep. Then, at point C, the points begin their expected deviation from the straight line as

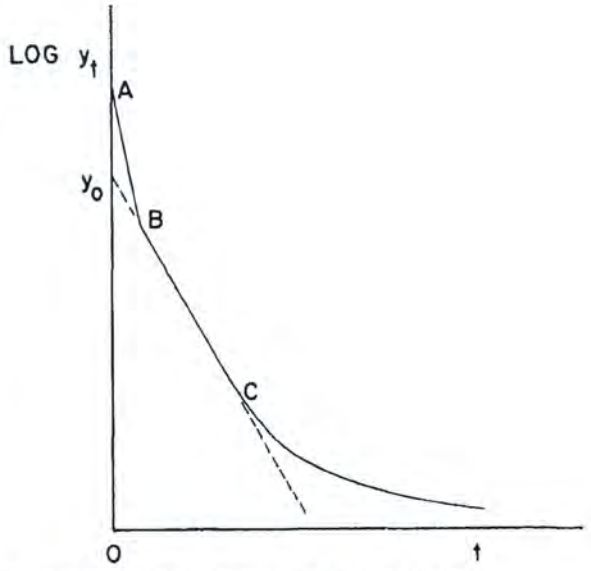


Fig. 4. Schematic of double straight line effect.

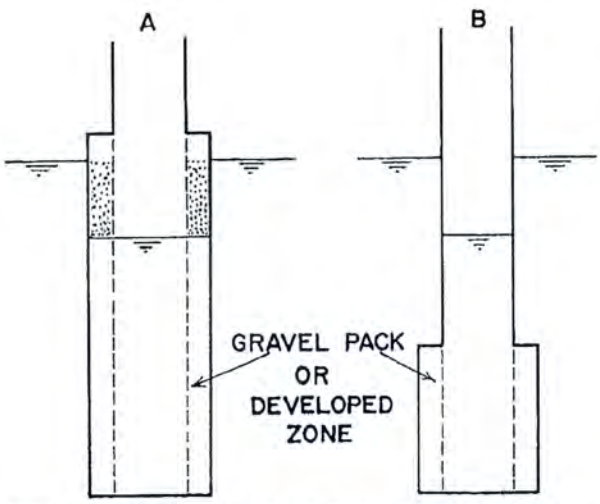


Fig. 5. Slug test for borehole with ground-water level below (A), and above (B) top of screen or perforated section.

the drawdown around the hole becomes significant relative to y_t. The first straight line portion in Figure 4 is probably due to a highly permeable zone around the well (gravel pack or developed zone), which quickly sends water into the well immediately after the water level in the well has been lowered (Figure 5A). Then, when the water level in the permeable zone around the well has drained to the water level in the well itself, the flow into the well slows down and the points begin to form a second, less steep, straight line (BC in Figure 4). This second straight line is more indicative of the flow from the undisturbed aquifer into the well. Hence, segment BC should be used in calculating K of the aquifer with equation (3). In the original 1976 article, gravel envelopes or developed zones were assumed to drain at the same rate as the water level in the borehole when it is lowered for the slug test, i.e., essentially instantaneously. However, some gravel packs or developed zones apparently are not permeable enough to give such instantaneous drainage.

If the ground-water table is above the screened or open section of the borehole, and the water level in the hole is not lowered so far that it drops below the top of the open section (Figure 5B), the gravel envelope or developed zone around the open section cannot drain. The inflow into the hole then is immediately controlled by the aquifer, and the double straight line effect should not occur. If it still occurs, it could indicate leakage around the casing or grouting above the gravel pack.

Where the double straight line is due to a gravel pack around the well, the effective well radius r_w should be taken as the radial distance from the center of the well to the outer surface of the gravel pack. Where the double straight line is due to a naturally developed zone around the well, r_w is harder to evaluate and an "intelligent" estimate must be made. It may also be possible to estimate r_w from the value of y at point B in Figure 4. Considering the volume of water in the well between y_A and y_B in Figure 4 to be due to the drainage of the gravel pack or developed zone, and knowing or estimating the drainable porosity of the gravel pack or developed zone, the radial extent of this zone can be calculated for evaluation of r_w. Capillary fringe effects do not have to be considered, since the capillary fringe was also present in the pack or in the developed zone before the water level was lowered. Because the rising water level in the hole during the slug test will also fill up the drained pore space of the gravel pack or developed zone, the value of r_c in the equation for calculation of K should be adjusted to take this effect into account, as discussed earlier in this article.

Conceivably, a well could have a gravel pack surrounded by a less permeable developed zone before the original aquifer material is reached. This could lead to a triple straight line effect, with an intermediate straight line portion at point B, or a curved transition zone at B if the hydraulic conductivity of the developed zone gradually decreases until K of the original aquifer material is reached. By the same token, portion AB in Figure 4 could also be curved if the hydraulic conductivity of the gravel pack or developed zone immediately around the well decreases with radial distance from the well.

FALLING WATER LEVEL TEST

The slug test was developed for a rising water level in the borehole, as obtained by quick removal of a certain volume or slug of water. This can be achieved by bailing, (quick) pumping, or by immersing a section of pipe filled with sand or other ballast and closed with caps on both ends, or other submersible object, in the borehole, letting the water level in the borehole return to equilibrium, and quickly removing the submerged object. The question is often raised: can the method also be used when a volume of water is quickly added to the hole and the subsequent rate of fall of the water level in the hole is measured for calculation of K? The answer is yes, provided that the equilibrium water level is above the screened or open section of the borehole (Figures 1 and 5B). In this

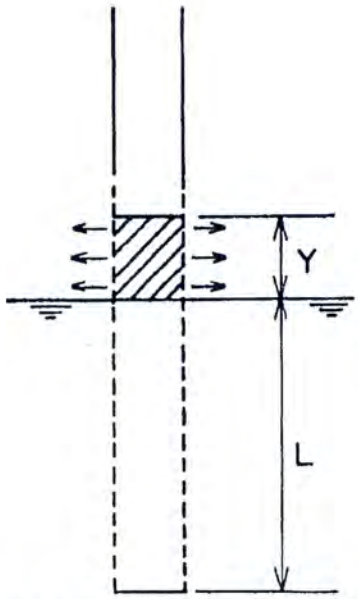


Fig. 6. Schematic of addition of water (hatched section) to borehole with equilibrium water level below top of screen or perforated section, with outflow of water into vadose zone (horizontal arrows).

case, the outflow from the well due to the falling water level occurs only through the screened or open section of the well, and the flow system in the aquifer is a true reverse of the flow system for the rising water level after a slug of water has been removed (ignoring, of course, eventual rises and drawdowns of the ground-water table immediately around the borehole if the aquifer is unconfined). Thus, equations (3), (4), and (5) are also applicable to the addition of a slug of water and measuring the subsequent rate of fall of the water level in the borehole for calculation of K of the aquifer around the hole.

If the equilibrium water level in the borehole is below the top of the screen or open section (Figure 6), and water is added (hatched section in Figure 6), the subsequent flow of water into the aquifer due to the falling water level not only takes place through the screen or perforations below the original water table, but also through the vadose zone above the original water table (arrows in Figure 6). This increases the rate of fall of the water level in the borehole beyond that caused by inflow into the aquifer and leads to an overestimation of K. The greater the ratio of y/L (Figure 6) in this case, the more the slug test will overestimate K if the measurement is based on adding water to the hole and measuring the subsequent rate of fall of the water level.

APPLICATION OF SLUG TEST TO CONFINED AQUIFERS

Theoretically, the slug test (Bouwer and Rice, 1976) applies to aquifers where the upper boundary is a plane source (rising water-level test) or sink (falling water-level test), as in an unconfined aquifer. However, because most of the head difference y between the static water table and the water level in the well is dissipated in the vicinity of the well around the screen or perforated section, the method should also be applicable to situations where the upper boundary of the aquifer is an impermeable or semipermeable plane, i.e., an impermeable or semipermeable upper confining layer. Thus the slug test should also give reasonable values for K in confined, semiconfined, or stratified aquifers. Theoretically, the larger the distance between the top of the screened or open section of the well and the upper confining layer (like $L_w - L_c$ in Figure 1), the more accurate the resulting values of K will be. In actuality, however, source boundaries of ground water flowing into the well in response to lowering the water level are hard to define because of elastic deformation of aquifer material and confining and interbedded fine-textured layers, and because of leakage through semiconfining layers.

EFFECT OF WELL DIAMETER

Theoretically, the Bouwer and Rice slug test applies to any diameter of the borehole. Practically, the hole dimensions should be selected so that the geometry parameters are covered by Figure 2. The larger r_w and L_e (Figure 1), the larger the portion of the aquifer on which K is determined. For layered aquifers, smaller values of L_e may sometimes be preferable because they give more resolution and more information about the vertical distribution of K when the slug test is carried out at different depths. Very small hole diameters (for example 2 in. or 5 cm) should still give accurate values for K, but the values apply to only a small region around the well and, hence, are more sensitive to spatial variability. Also, inaccuracies in the estimates of the thickness of gravel envelopes and developed zones have a greater effect on the calculated values of K where r_c is small than where r_c is large.

PROCESSING OF y VERSUS t MEASUREMENTS

To calculate $1/t \ln(y_0/y_t)$ for the appropriate straight line portion of curves as in Figure 3 or 4, two values of y on the straight line and their

corresponding values of t are read from the graph. The natural logarithm of the ratio y_0/y_t is then taken and divided by the difference between the two values of t. For example, Figure 3 shows that at y is 0.28 m and 0.001 m, t is 0 and 24 seconds, respectively. This yields
$1/t \ln(y_0/y_t) = 1/24 \ln(0.28/0.001) = 0.23$ m/sec.
If $1/t \ln(y_0/y_t)$ is calculated from the slope of the curve, the number of log cycles on the vertical scale between the two points is divided by the time increment and multiplied by 2.3 to convert to natural logarithm. For example, Figure 3 shows that the straight line from $y_0 = 0.28$ m to $y_t = 0.001$ m covers 2.4 log cycles. The time increment between the two points is again 24 seconds, yielding $1/t \ln(y_0/y_t) = 2.3 \times 2.4/24 = 0.23$ m/sec, which is the same as calculated earlier. Because of different coordinate scales in plots of log y versus t, the value of $1/t \ln(y_0/y_t)$ cannot be taken as the actual slope of the straight line portion!

ESTIMATING RATE OF RISE OR FALL OF WATER LEVEL IN WELL

If the water level in a slug-tested well rises or falls at a relatively slow rate, simple water-level measuring devices and a stop watch may be all that is needed to do the test. Fast-moving water levels, however, require the use of a pressure transducer and a fast-acting x-y plotter. To get some idea about the rate of water-level movement that can be expected in a slug-tested well and what equipment to use, equation (3) can be solved for t and $\ln(y_0/y_t)$ can be taken as ln 10 to calculate the time $t_{90\%}$ required for the water level in the well to rise or fall 90% of the initial lowering or raising, respectively, of the water level in the well. This yields the equation

$$t_{90\%} = 1.15 \frac{r_c^2}{KL_e} \ln \frac{R_e}{r_w} \qquad (6)$$

where K must be taken as the estimated or expected value of K of the aquifer. Equation (6) yields values of t that are 22 times greater than the t values calculated by the $t_{90\%}$ equation in the original article (Bouwer and Rice, 1976), where $\ln(y_0/y_t)$ was erroneously taken as ln 0.9, thus yielding the time required for only 10% of the water-level rise or fall to occur.

COMPUTER PROGRAMS

Where the Bouwer and Rice slug test is routinely used, time for calculating K with equation (3) is saved by developing a computer program in which values of L_e/r_w are stored for direct calculation of $\ln(R_e/r_w)$ and K from the field data. Such programs have been developed by several users (see, for example, Pandit and Miner, 1986; and Kemblowski and Klein, 1988). Also, a number of users have designed forms for easy and systematic recording of field data.

REFERENCES

Bouwer, H. and R. C. Rice. 1976. A slug test for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells. Water Resources Research. v. 12, pp. 423-428.

Kemblowski, M. W. and C. L. Klein. 1988. An automated numerical evaluation of slug test data. Ground Water. v. 26, pp. 435-438.

Pandit, N. S. and R. F. Miner. 1986. Interpretation of slug test data. Ground Water. v. 24, pp. 743-749.

* * * * *

Herman Bouwer received B.S. and M.S. degrees in 1949 and 1952 in Drainage, Reclamation, and Irrigation from the National Agricultural University at Wageningen, The Netherlands, and a Ph.D. degree in 1955 in Soil and Water Management from Cornell University, New York. He was associated with the Agricultural Engineering Department of Auburn University, Alabama, from 1955 to 1959, before joining the U.S. Water Conservation Laboratory in Phoenix, Arizona, where he became Director in 1972. In 1970, he also was appointed Adjunct Professor at Arizona State University in Tempe where he taught Ground-Water Hydrology in the Geology and Civil Engineering Departments. He is also an Adjunct Professor at the University of Arizona in Tucson.

APPENDIX C

RI & 53-55 PHASE 2 PHOTOGRAPHS

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling

Date: 10/1/18



SS-13 sample setup and location.



IA-13 Sample setup and location.



IA-12 sample setup and location.



SS-12 sample setup and location.

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling

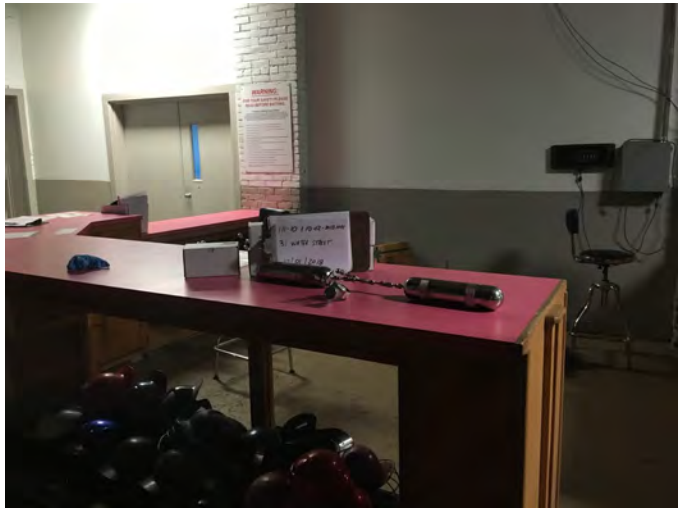
Date: 10/1/18



IA-11 sample setup and location.



SS-11 sample setup and location.



IA-10 and duplicate sample setup and location.



SS-10 sample setup and location.

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling

Date: 10/1/18



IA-09 sample setup and location.



SS-09 sample setup and location.



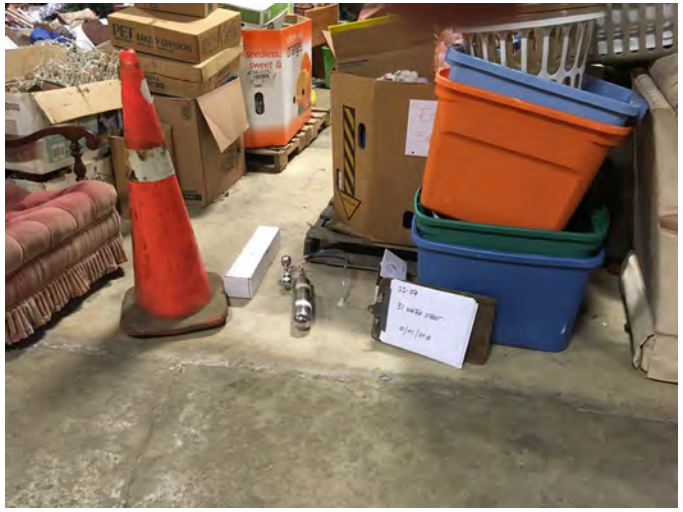
SS-08 sample setup and location.



IA-08 sample setup and location.

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling

Date: 10/1/18



SS-07 sample setup and location.



IA-07 sample setup and location.



SS-06 sample setup and location.



IA-06 sample setup and location.

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling

Date: 10/1/18



IA-05 sample setup and location.



SS-05 sample setup and location.



SS-04 sample setup and location.



IA-04 sample setup and location.

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling

Date: 10/1/18



IA-02 sample setup and location.



SS-02 sample setup and location.



IA-03 sample setup and location.



SS-01 sample setup and location.

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling

Date: 10/1/18



IA-01 sample setup and location.



SS-03 and duplicate sample setup and location.



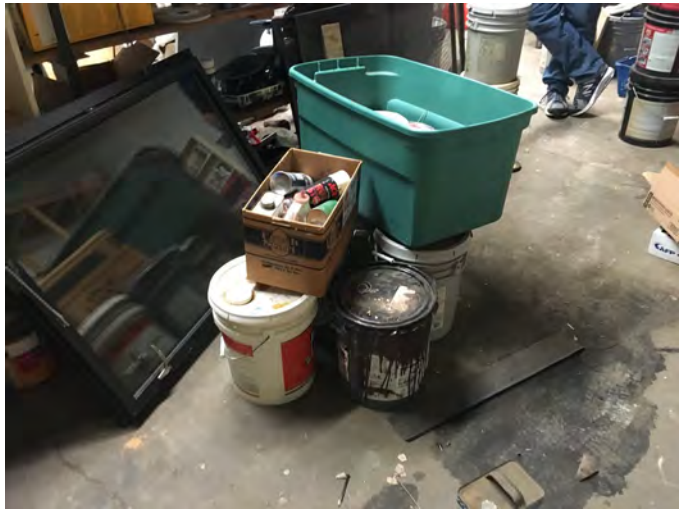
OA-01 sample setup and location.

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling Inventory

Date: 10/2/18



Various latex paints quart to 5 gallon size found in Building 5 storage room.



5-gallon containers of various paints and adhesives in Building 5 storage room.



Open bucket of used oil, Building 5 storage room.



Latex paints and adhesives stored in Building 5 storage room.

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling Inventory

Date: 10/2/18



Adhesives and gasoline container in Buidling 5 storage room.



Various spray paints in Building 5 storage room.



Shelving of various lubricants, and cleaners/solvents. None noted to contain chlorinated organics.



Thinner found in building 5 storage room, noted as containing xylene, ethylbenzene, and cumene.

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling Inventory

Date: 10/2/18



Two palettes of enamel paints and coatings, approx. 15-20 five gallon buckets found in near loading docks in building 8.

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Close up of enamel coating label.



Enamel coating ingredients: xylene, mineral spirits, ethylbenzene.



Two five-gallon gasoline containers – half full, one 55-gallon drum labeled isopropanol found in southwest corner of Building 7.

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling Inventory

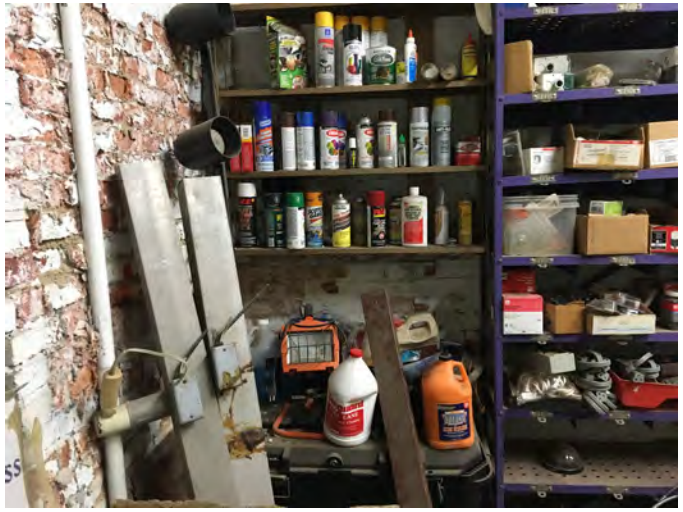
Date: 10/2/18



Location of boat in Building 4 in relation to IA-08 in Building 4.



Interior of building 5 maintenance room at northwest corner of building.



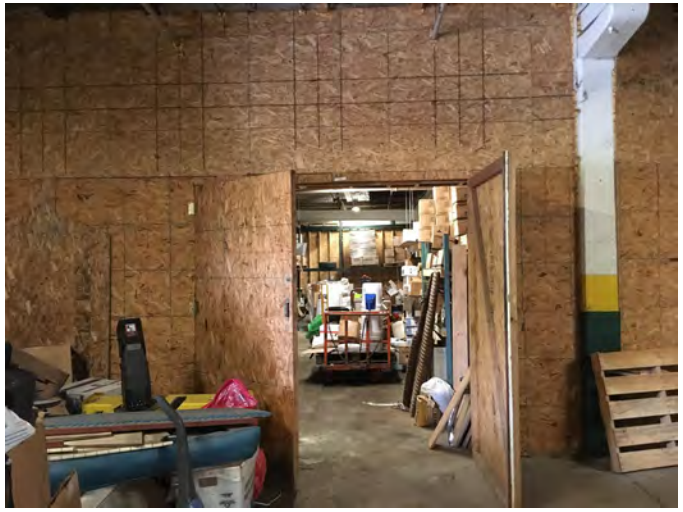
Shelving in maintenance room of various spray paints, solvents, and lubricants.



Engine degreaser spray containing petroleum distillates.

BE3/PANAMERICAN Photolog
Soil Vapor Intrusion Sampling Inventory

Date: 10/2/18



Storage area within Building 4 for owned by Charest Co. A cleaning products distributor. Ambient air PID reading in the middle of the room is 0.3 ppm.



Interior of Charest Co. storage room containing multiple cleaners, floor strippers, solvents, and degreasers. No chlorinated organics noted in inventory and ingredient survey.



Five gallon buckets of floor strippers. Ingredients include various volatiles no chlorinated organics.



Various shelving of cleaning products within Charest storage unit.

BE3/PANAMERICAN Photolog
Soil Boring and Sampling

Date: 10/3/18



Location of BH-1 looking north.



Location of BH-1 looking east.



BH-1 soil cores; 8 – 16 fbgs, top to bottom, left to right.



Location of BH-2 looking east.

BE3/PANAMERICAN Photolog
Soil Boring and Sampling

Date: 10/3/18



Location of BH-2 looking north.



BH-2 soil cores, 0 – 16 fbgs; top to bottom; left to right.



BH-4 soil core 0 – 16 fbgs. Top to bottom; left to right.



BH-5 soil core; 4 – 12 fbgs; top to bottom, left to right.

BE3/PANAMERICAN Photolog
Soil Boring and Sampling

Date: 10/3/18



BH-6 boring location, looking north.



BH-7 boring location looking east.



BH-7 soil core; 0 – 16 fbgs, top to bottom, left to right.



BH-8 boring location, looking north.

BE3/PANAMERICAN Photolog
Soil Boring and Sampling

Date: 10/3/18



BH-8 boring location; looking east.



BH-9 boring location; looking west.



BH-9 boring location; 0 – 16 fbgs; top to bottom, left to right.



BH-10 boring location, looking west.

BE3/PANAMERICAN Photolog
Soil Boring and Sampling

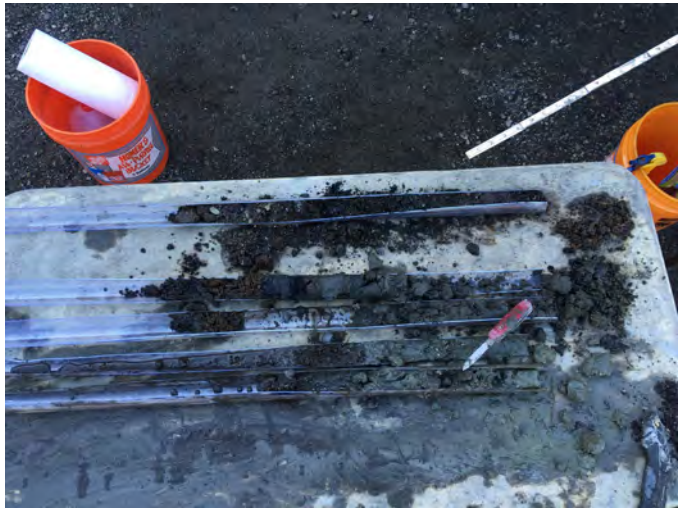
Date: 10/3/18



BH-10 soil boring; 0 – 16 fbgs; top to bottom; left to right.



BH-11 boring location, looking southeast.



BH-11 soil core; 0 – 12 fbgs, top to bottom, left to right.



BH-12 soil core; 0 – 12 fbgs, top to bottom, left to right.

BE3/PANAMERICAN Photolog
Soil Boring and Sampling

Date: 10/4/18



BH-14 soil core; 0 – 16 fbgs, bottom to top, right to left.



BH-16 soil core; 0 – 12 fbgs; top to bottom, left to right.



Floor coring at BH-16, 5.5” concrete over 4” brick.



BH-16 boring location looking west.

BE3/PANAMERICAN Photolog
Soil Boring and Sampling

Date: 10/4/18



BH-17 boring location within Building 3.



BH-16 soil core; 0 – 12 fbgs; top to bottom, left to right.



BH-18 boring location within Building 2.



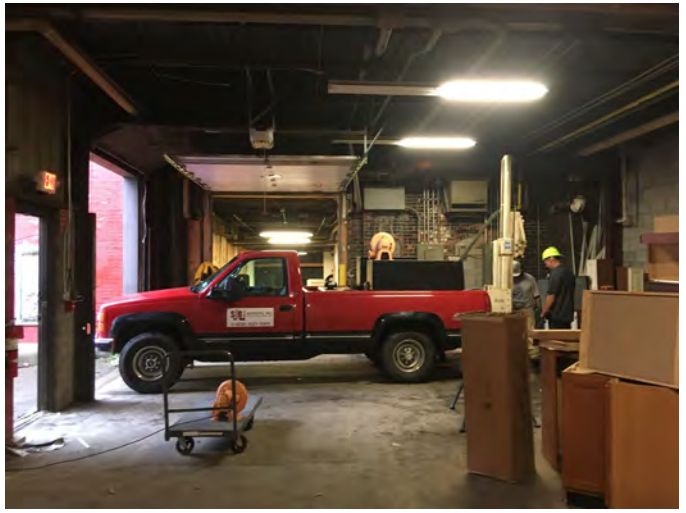
BH-18 boring location looking east.

BE3/PANAMERICAN Photolog
Soil Boring and Sampling

Date: 10/4/18



BH-18 floor coring; 5.5” concrete.



BH-19 boring location within Building 8.



BH-19 boring within Building 8 access.



BH-19 soil core; 0 – 6 fbgs. Top to bottom, right to left.

BE3/PANAMERICAN Photolog
Soil Boring and Sampling

Date: 10/4/18



BH-15 boring location looking northeast.



BH-15 boring location looking south.



BH-20 boring location looking south.



BH-20 soil core; 0 – 16 fbgs, bottom to top, left to right.

BE3/PANAMERICAN Photolog
Soil Boring and Sampling

Date: 10/4/18



BH-21 boing location looking south.



BH-20 soil core; 0 – 12 fbgs, bottom to top, left to right.

BE3/PANAMERICAN Photolog
Soil Boring and Sampling

Date: 10/5/18



BH-22 boring location looking west.



BH-22 boring location looking south.



BH-22 split spoon samples 0-4’; fill; bottom to top, left to right.



BH-22 split spoon sample; native; 8-10’; left to right.

BE3/PANAMERICAN Photolog
Surface Soil Sampling

Date: 10/5/18



S1 surface soil sample location near PCB transformers, looking south.



S2 surface sample location along northwestern river bank, looking northwest.



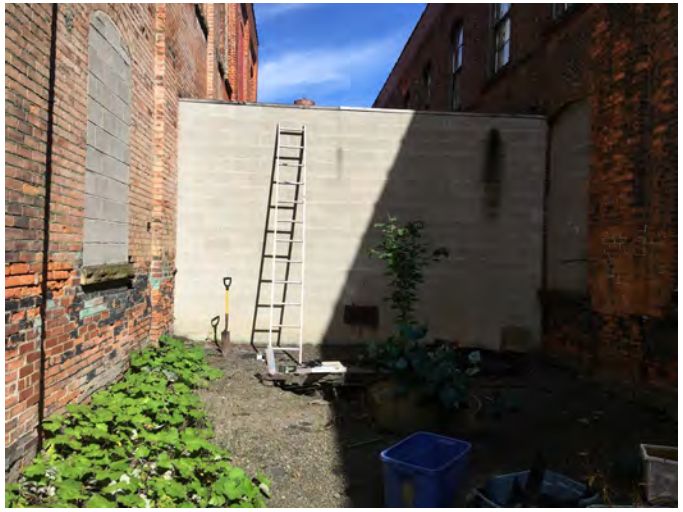
S3 surface sample location below asphalt in western parking lot.



S4 sample location in courtyard between Buildings 4 and 5, looking south.

BE3/PANAMERICAN Photolog
Surface Soil Sampling

Date: 10/5/18



S5 surface sample on north side of courtyard between Buildings 4 & 5, looking north.



S6 surface soil sample location in small courtyard between Buildings 6 & 4, looking north



S7 surface sample location along eastern river bank, looking east.



S7 surface sample location along eastern riverbank, looking south.

BE3/PANAMERICAN Photolog
Subsurface Pit/Tank Investigation

Date: 10/9/18



Discovery of 20,000 gallon brick walled tank in small courtyard. Dimensions; L: 16', W: 21' D: 8'. Approximately 4 feet of standing water.



Manhole access to pit in courtyard.



Northeast corner delineation of cement/brick wall of tank.

BE3/PANAMERICAN Photolog
Sediment Sampling

Date: 10/19/18



Location of sediment sample Sed-01, looking west.



Location of sediment sample Sed-02, looking east.

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BE3/PANAMERICAN Photolog
Exterior Test Pitting Investigation

Date: 10/31/18



Discovery of 2” piping found on east side of building approx. 1 fbgs adjacent from the south end of Building 2.



Excavation done within concrete wall structure adjacent Building 2.



Small 6’x8’ cement walled tank found at north end of discovered piping. Noticeable sheen in water. Labeled TP-01. Sample taken at 6-8’.



Location of TP-01. Backfilled after sampling.

BE3/PANAMERICAN Photolog
Exterior Test Pitting Investigation

Date: 10/31/18



Discovered 2” piping 1 fbgs running ESE at location of TP-02. Piping seems to run towards large concrete pad to the west.



Discovered piping running ESE towards river. No outfall was discovered.



Additional test pitting done to follow piping to the southeast. No more piping discovered. Could not move mulching containers to investigate subsurface there.



Additional test pitting done looking northeast towards river.

BE3/PANAMERICAN Photolog
53 & 55 Water St Phase II Photolog

Date: 12/04/17



View of 53 Water St looking north from Water St.



Rear of 53 Water St looking south.



Basement of 53 Water St. Various paints and household cleaners noted.



Basement of 53 Water St. Still occupied by current owner.

BE3/PANAMERICAN Photolog
53 & 55 Water St Phase II Photolog

Date: 12/04/17



Street side view of 55 Water St. looking north.



Rear of 55 Water St. looking south.



Backyard of 55 Water St including detached garage. Looking south.



View of Chadakoin River at north end of 55 Water St parcel looking east.

APPENDIX D

DER-10 APPENDIX 3C FISH & WILDLIFE DECISION KEY
&
FISH & WILDLIFE RESOURCES IMPACT ANALYSIS PART 1

Gateway Lofts - 31 water street C907046

Appendix 3C Fish and Wildlife Resources Impact Analysis Decision Key	If YES Go to:	If NO Go to:
1. Is the site or area of concern a discharge or spill event?	13	2
2. Is the site or area of concern a point source of contamination to the groundwater which will be prevented from discharging to surface water? Soil contamination is not widespread, or if widespread, is confined under buildings and paved areas.	13	3
3. Is the site and all adjacent property a developed area with buildings, paved surfaces and little or no vegetation?	4	9
4. Does the site contain habitat of an endangered, threatened or special concern species?	Section 3.10.1	5
5. Has the contamination gone off-site?	6	14
6. Is there any discharge or erosion of contamination to surface water or the potential for discharge or erosion of contamination?	7	14
7. Are the site contaminants PCBs, pesticides or other persistent, bioaccumulable substances?	Section 3.10.1	8
8. Does contamination exist at concentrations that could exceed ecological impact SCGs or be toxic to aquatic life if discharged to surface water?	Section 3.10.1	14
9. Does the site or any adjacent or downgradient property contain any of the following resources? i. Any endangered, threatened or special concern species or rare plants or their habitat ii. Any DEC designated significant habitats or rare NYS Ecological Communities iii. Tidal or freshwater wetlands iv. Stream, creek or river v. Pond, lake, lagoon vi. Drainage ditch or channel vii. Other surface water feature viii. Other marine or freshwater habitat ix. Forest x. Grassland or grassy field xi. Parkland or woodland xii. Shrubby area xiii. Urban wildlife habitat xiv. Other terrestrial habitat	11	10
10. Is the lack of resources due to the contamination?	3.10.1	14
11. Is the contamination a localized source which has not migrated and will not migrate from the source to impact any on-site or off-site resources?	14	12
12. Does the site have widespread surface soil contamination that is not confined under and around buildings or paved areas?	Section 3.10.1	12
13. Does the contamination at the site or area of concern have the potential to migrate to, erode into or otherwise impact any on-site or off-site habitat of endangered, threatened or special concern species or other fish and wildlife resource? (See #9 for list of potential resources. Contact DEC for information regarding endangered species.)	Section 3.10.1	14
14. No Fish and Wildlife Resources Impact Analysis needed.	✓	

Gateway Lofts Fish and Wildlife Resources Impact Analysis Part 1

The purpose of this Fish and Wildlife Resources Impact Analysis (FWRIA) Part 1 for the proposed Gateway Lofts Brownfield site is to identify fish and wildlife resources in the general vicinity of the site, and to assess potential impacts resulting from contaminants of ecological concern.

Site Conditions

The Gateway Lofts site is located within a highly urbanized area, consisting of commercial and industrial land uses, and dense urban residential areas interspersed with a few less developed open spaces. A topographic map of the general vicinity of the project site is provided in Figure 1. An aerial photograph of the existing environment within 0.5 mile of the site is shown in Figure 2, and the area within 0.25 mile is shown in Figure 3.

The existing site is almost entirely developed, consisting of buildings and associated paved access and parking areas. The only areas of potential habitat are along the immediate shoreline of the Chadakoin River, which abuts the property along the northern and eastern boundaries. Along the river are scattered trees and woody shrubs, which provide some habitat for wildlife species likely to be encountered along an urban riverine corridor. With the exception of the Chadakoin River, there are no federal or state regulated wetlands located on or near the site.

The Chadakoin River is the predominant natural feature in the general vicinity of the project site. The Chadakoin River is a Class C waterbody, indicating it is suitable for general recreational use and support of aquatic animals, but not as a water supply or as a public bathing area. The river begins at the outlet of Chatauqua Lake, and runs approximately 8 miles to the junction with Cassadaga Creek. Cassadaga Creek continues to Conewango Creek, which ultimately discharges into the Allegheny River. The USFWS National Wetland Inventory (see Figure 4) classifies the Chadakoin River as R2UBH, which indicates a lower perennial stream with an unconsolidated bottom, permanently flooded. The river consists of a series of pools and riffles, and is channelized for some of its length.

Water quality in the Chadakoin River has been assessed as “impaired due to aquatic life support and recreational uses that are known or thought to be impaired by nutrients and other toxic substances thought to be from industrial discharges and urban/storm runoff” (NYSDEC Waterbody Inventory/Priority Waterbody List- Allegheny River WI/PWL, Revised 12/18/2014). Macroinvertebrate assessments of the river were conducted in 2006, 2011 and 2012 near the mouth of the river in Falconer, and sampling was also performed upstream at Dow Street in 2011. Both areas indicated slightly to moderately impaired water quality conditions, and elevated levels of some metals and PAHs have been documented.

Wildlife resources in the general vicinity of the project site include various birds, mammals, and reptiles and amphibians that are expected to occur in and around urban environments. The only biological surveys located that specifically targeted the general vicinity of the project site are those conducted by the Project Wild America Youth Ambassadors Program conducted by the Roger Tory Peterson Institute (RTPI) of the Chadakoin River during the past several years. The species recorded during these surveys are listed in Table 1. Additional available information on the biological resources in the general vicinity of the project site are provided below.

Bird species reported to breed in the general area were identified from the most recent New York State Breeding Bird Atlas (2000-2005). The site is located on the border between two survey tracts: Block 1466A and Block 1466B. Bird species recorded within these blocks are listed in Tables 2 and 3, respectively. Between the two survey tracts, a total of 77 different species were recorded. Most of these species are unlikely to make use of the project site. Those species that might use the site or the adjacent Chadakoin River at some time are highlighted in bold. None of these species are listed as threatened or endangered. Cooper's Hawk and Red-shouldered hawk are listed as species of special concern, but neither is likely to occur on the project site except perhaps in a transient manner.

Reptiles and amphibians (herps) known to occur in the general vicinity of the project site were identified from the New York Herp Atlas completed between 1990 and 1999. The project site lies on the border between two survey quadrangles, and the species identified within these two blocks are listed in Table 4. Those species that might occur on the project site or in the adjacent Chadakoin River are highlighted in bold. One species known to be present on the site, the eastern spiny softshell turtle, is a species of special concern in New York.

No comprehensive survey of mammals was located for the project area. However, based on known habitat preferences and likely occurrences in urban environments, the following species of mammals could be expected to be found in the general vicinity of the site (those that might use the site are highlighted in bold.): White-tailed deer, **raccoon, skunk, opossum**, red fox, gray fox, coyote**, river otter, mink, muskrat, beaver, gray squirrel, chipmunk, deer mouse, Norway rat**, meadow vole and several species of **bats**, including the federally **threatened northern long-eared bat**.

No specific fishery surveys of the Chadakoin River by the NYSDEC were located. However, a survey of the larger Conewango Creek watershed was conducted, which included some (unspecified) sites in the Chadakoin River (Daniels, R.A., R.S. Morse, and B.R. Weatherwax, 2006, Fish of the Conewango Creek, Allegheny River Drainage, New York State Museum, Cultural Education Center). The survey identified 77 different species of fish in the Conewango Creek watershed, but the distribution within individual streams was not specified (Table 5). No recorded fish kills are known from the Chadakoin River, and there are no specific fish or wildlife consumption health advisories for the river.

Threatened, Endangered and Special Concern Species of Fish and Wildlife

To identify any threatened, endangered or special concern fish or wildlife species in the general vicinity of the Gateway Lofts site, several on-line data bases were queried. These included the New York State Natural Heritage Program, the NYSDEC Environmental Resource (ER) Mapper, the NYSDEC Environmental Assessment Form (EAF) Mapper, and the U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) website. The New York Natural Heritage Program indicated in a letter dated May 26, 2020 that no records of rare or state-listed plants or animals, or significant natural communities, were known from the project site. However, within 0.25 mile, the eastern spiny softshell turtle, a state listed species of special concern, was recorded.

A review of the area within approximately 0.5 mile of the project site was conducted through the NYSDEC ER Mapper (see Figure 5). No state-regulated wetlands, significant fish and wildlife habitats, state forests, forest preserves, parks or other designated green space were identified within 0.5 mile of the site. However, there was an indication that a rare plant or animal was known to be present in the immediate vicinity of the site. A query to the NYSDEC EAF Mapper website revealed the species of

concern near the site is the eastern spiny softshell turtle, a state Species of Special Concern. A more encompassing review of the ER Mapper (see Figure 6) indicated that additional rare plants or animals existed further downstream from the project site, and thus might be affected by contaminants from the site. A further query to the EAF Mapper for this larger area revealed that in addition to the eastern spiny softshell turtle, two fish species of special concern, the Black Redhorse and the Redfin Shiner, were known to exist several miles downstream from the project site. In addition, a federally listed endangered species, the rayed bean (a mussel), was also known to be present, as well as a NY state endangered plant, the tall ironweed.

A query made to the U.S. Fish and Wildlife Service's IPaC website for the project site and the area within approximately 0.5 mile around the site identified one mammal, the federally threatened northern long-eared bat, and three federally endangered mussels: the clubshell, the rayed bean, and the northern riffleshell.

The northern long eared bat is distributed widely throughout New York state, but no critical habitat has been designated, and there are no known hibernacula or nursery trees anywhere near the site. Northern long eared bats reportedly prefer forested habitats, and typically forage beneath the canopy. However, they are known to utilize riverine sites as well (S. Doran, USFWS, personal communication May 14,2020). Provided the existing trees along the Chadakoin River are left undisturbed, no impacts are anticipated, and no additional surveys are required.

None of the endangered mussels have been reported from the Chadakoin River, but no surveys have been conducted in the vicinity of the project site, and some recent records are known for Cassadaga Creek as well as further downstream in the drainage basin in the Allegheny River (S. Doran, USFWS, personal communication, May 14, 2020). Provided the project does not result in any disturbance to the stream banks, or cause erosion and sedimentation to the river, no adverse impacts to endangered mussels are anticipates, and no further surveys would be required.

Of the state or federally listed threatened, endangered or special concern species identified above that may occur in the general vicinity of the project site, only one, the eastern spiny softshell turtle, is known to use the project site. The Chadakoin River in the immediate vicinity of the project site is home to numerous spiny softshell turtles, and the project site itself is thought to be the primary nesting site for the turtles in this portion of the river (personal communication, T. Leenders, Roger Tory Peterson Institute, May 12, 2020). At any one time, as many as 30 turtles can be seen attempting to nest, and evidence of over 100 nests has been observed. It is not known what the success rate is for these nests, but young hatchling turtles have been seen indicating that at least some of the nests are successful.

Potential Impacts of Proposed Project

The extent to which existing contamination of the Gateway Lofts site is affecting fish or wildlife resources is unknown. No analytical results of contaminant levels in biological tissues were located. As detailed in the RI AAR, possible pathways for exposure of fish and wildlife to contamination include primarily fugitive dust and groundwater migration. Sediment samples from the Chadakoin River likely reflect to some extent the contamination from groundwater from the site, and thus potential exposure to fish and wildlife resources. Two sediment samples from the Chadakoin River were analyzed. Four metals (arsenic, copper, lead and zinc) and one semi-volatile organic compound (Benzo[a]pyrene) were found at levels that exceeded restricted use SCO's for protection of ecological resources. For arsenic,

lead and Benzo(a)pyrene, the levels in sediment exceeded SCOs by small amounts (15 vs 13ppm for arsenic; 82 vs 63 ppm for lead; and 2.81 vs 2.6 for Benzo(a)pyrene. Sediment sample 1 exceeded the standard for copper and zinc, but was within an order of magnitude (479 vs 50ppm for copper; 681 vs 109ppm for zinc).

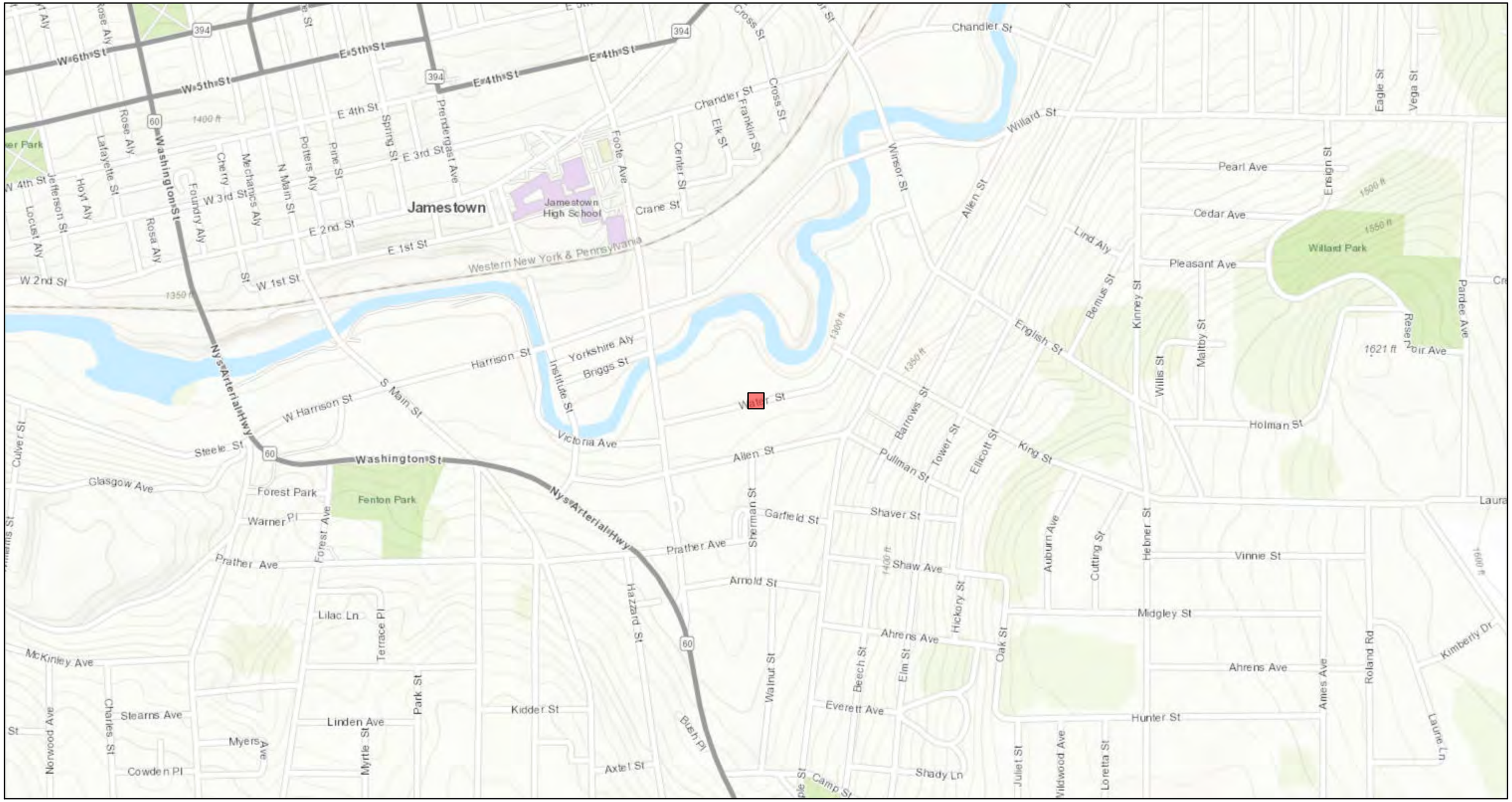
Although there may be some exposure of aquatic resources to groundwater contamination from the Gateway Lofts site under existing conditions, the completion of the project will serve to reduce that exposure over time. Specifically, the project will remove some overburden from the site and replace it with clean fill material removing a source of potential contamination; the majority of the site will be repaved minimizing movement of any remaining contamination into the groundwater; and a permanent barrier groundwater wall will be installed to minimize migration of contaminants to the river. As such, the project itself is not expected to cause any significant exposure to fish and wildlife resources, and in fact should reduce the extent of any exposure that is present under existing conditions.

Figures and Tables for FWRIA for Gateway Lofts

31 Water Street

Jamestown, NY

Figure 1. Topographic Map of Gateway Lofts and vicinity



May 8, 2020

1:9,028

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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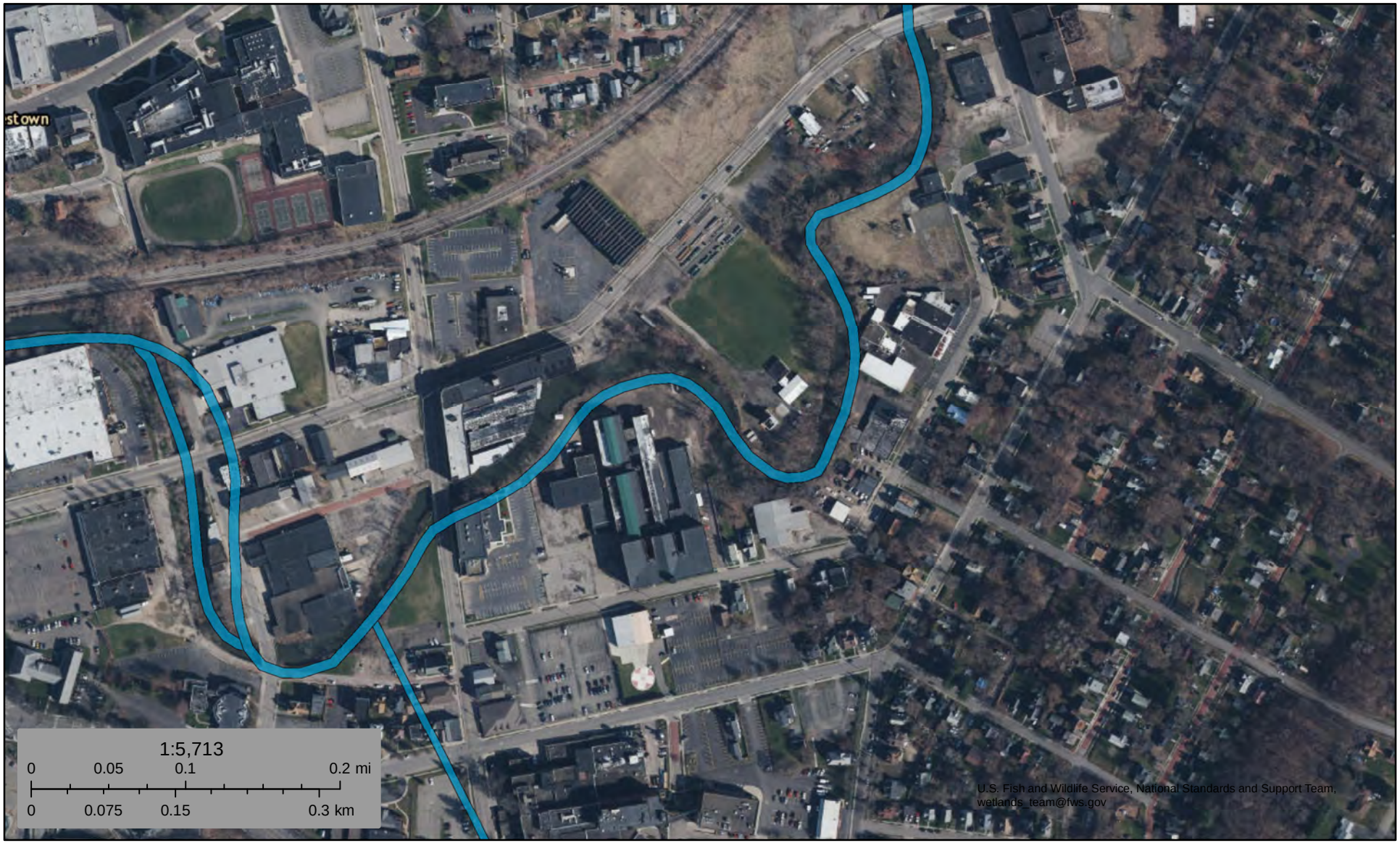
Figure 2. Area within 0.5 mile of the Gateway Lofts project site at 31 Water Street, Jamestown, New York.



Figure 3. Area within 0.25 mile of Gateway Lofts project site at 31 Water Street, Jamestown, New York.

U.S. Fish and Wildlife Service
National Wetlands Inventory

Figure 4. NWI Map



May 6, 2020

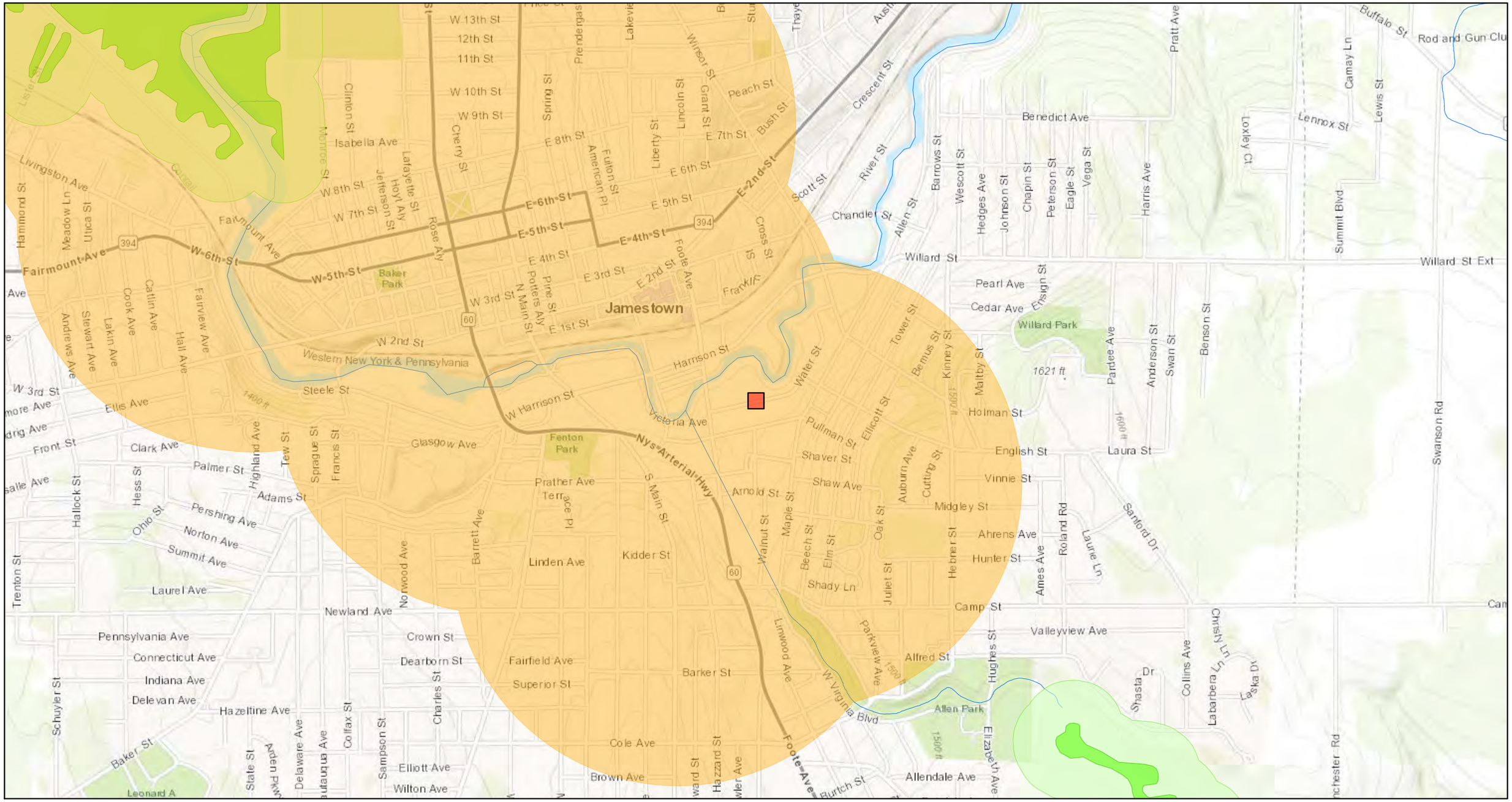
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Figure 5. NYSDEC Environemntal Resource Mapper within 0.5 mile



May 8, 2020

1:18,056

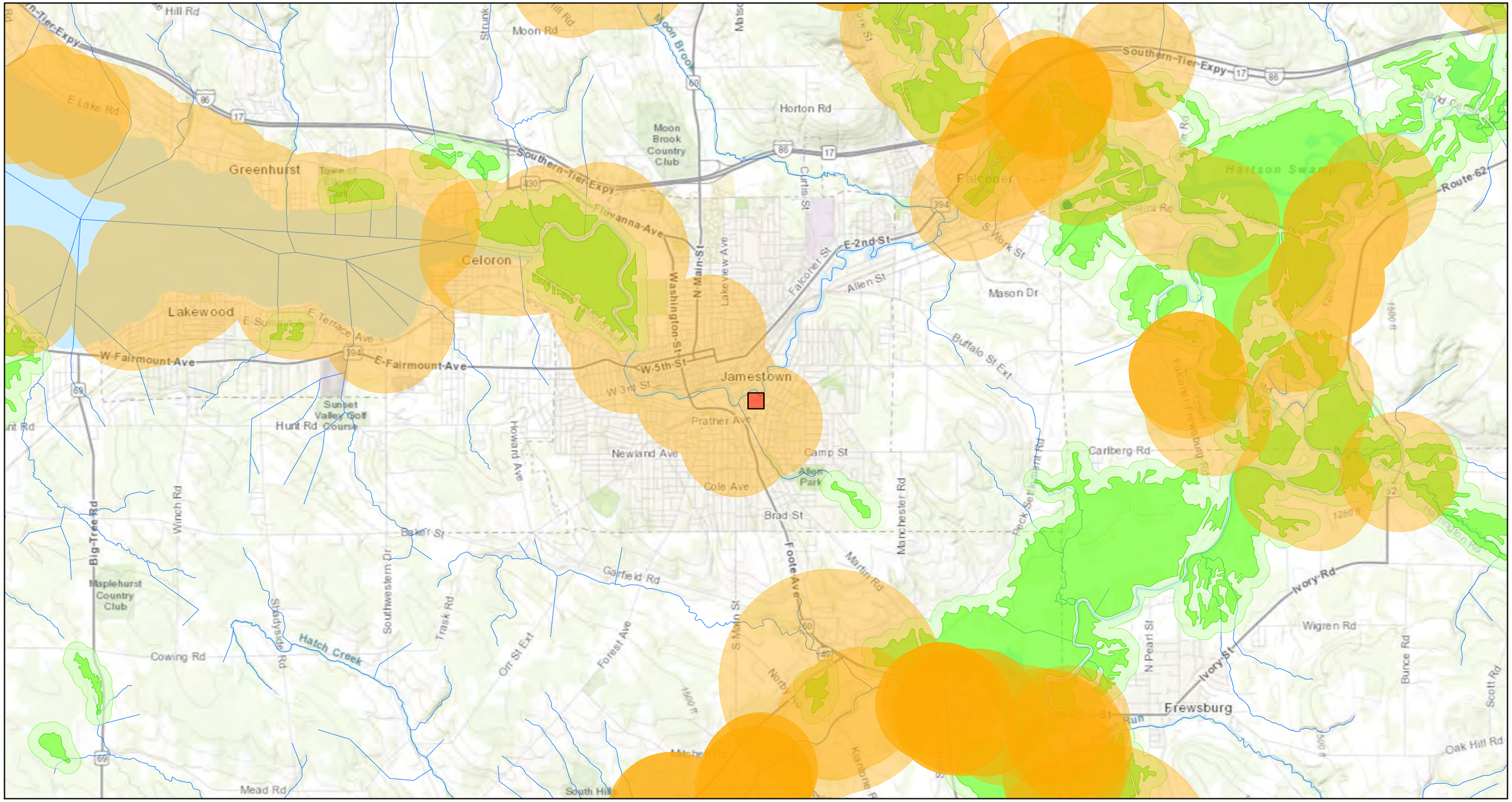
0 0.15 0.3 0.6 mi

0 0.28 0.55 1.1 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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Figure 6. NYSDEC Environmental Resource Mapper large scale



May 8, 2020

1:72,224

0 0.5 1 2 mi

0 1 2 4 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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Table 1. List of Fish and Wildlife Species along the Chadakoin River compiled by Project Wild America Youth Ambassadors from 2015 to present

Amphibians

American Bullfrog| American Toad| Green Frog| Leopard Frog| Wood Frog | Eastern Red-back Salamander| Northern Dusky Salamander| Slimy Salamander

Birds

American Crow| American Goldfinch| American Robin| Bald Eagle| Baltimore Oriole| Bank Swallow| Barn Swallow| Belted Kingfisher| Blackburnian Warbler| Black-capped Chickadee| Black-crowned Night-heron| Blackpoll Warbler| Blue Jay| Broad-winged Hawk| Brown-headed Cowbird| Bufflehead| Canada Goose| Caspian Tern| Cedar Waxwing| Chimney Swift| Chipping Sparrow| Cliff Swallow| Common Grackle| Common Merganser| Common Nighthawk| Common Yellowthroat| Cooper's Hawk| Dark-eyed Junco| Double-crested Cormorant| Downy Woodpecker| Eastern Kingbird| Eastern Phoebe| Eastern Towhee| Eastern Wood-pewee| European Starling| Gray Catbird| Great Blue Heron| Great Crested Flycatcher| Hairy Woodpecker| Herring Gull| Hooded Merganser| Horned Grebe| House Finch| House Sparrow| Killdeer| Louisiana Waterthrush| Mallard| Mourning Dove| Northern Cardinal| Northern Flicker| Northern Parula| Northern Rough-winged Swallow| Northern Waterthrush| Osprey| Palm Warbler| Peregrine Falcon| Pileated Woodpecker| Red-bellied Woodpecker| Red-eyed Vireo| Red-shouldered Hawk| Red-tailed Hawk| Red-winged Blackbird| Ring-billed Gull| Rock Pigeon| Ruby-crowned Kinglet| Song Sparrow| Spotted Sandpiper| Swamp Sparrow| Tree Swallow| Turkey Vulture| Willow Flycatcher| Wood Duck| Yellow Warbler| Yellow-billed Cuckoo| Yellow-rumped WarblerREPORT THIS AD

Fish

Brown Bullhead| Catfish| Common Carp| Muskellunge| Shiners| Small-mouth Bass| Yellow Perch|

Invertebrates

Fat Mucket Mussel| Kidneyshell Mussel| Zebra Mussel

Mammals

Beaver| Meadow Vole| Muskrat| River Otter| White-tailed Deer| Woodchuck

REPORT THIS AD

Reptiles

DeKay's Brown Snake| Eastern Garter snake| Eastern Spiny Softshell Turtle| Musk Turtle| Painted Turtle| Red-eared Slider| Snapping Turtle

Table 2. Breeding birds known to occur in the general vicinity of the Gateway Lofts project site based on NYS Breeding Bird Atlas (2000-2005) survey block 1466A. Species in bold may utilize project site or adjacent Chadakoin River.

List of Species Breeding in Atlas Block 1466A				
Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
Mallard	***Anas platyrhynchos***	**P2**	**6/5/2005**	**Game Species**
Northern Bobwhite	*Colinus virginianus*	X1	7/2/2002	Game Species
Ring-necked Pheasant	*Phasianus colchicus*	S2	6/11/2005	Game Species
Wild Turkey	*Meleagris gallopavo*	S2	6/11/2005	Game Species
Great Blue Heron	***Ardea herodias***	**X1**	**6/11/2005**	**Protected**
Green Heron	***Butorides virescens***	**P2**	**6/11/2005**	**Protected**
Turkey Vulture	*Cathartes aura*	X1	7/4/2004	Protected
Cooper's Hawk	*Accipiter cooperii*	X1	6/12/2005	Protected-Special Concern
Red-shouldered Hawk	*Buteo lineatus*	T2	7/3/2004	Protected-Special Concern
Red-tailed Hawk	*Buteo jamaicensis*	ON	6/12/2005	Protected
Killdeer	***Charadrius vociferus***	**S2**	**6/11/2005**	**Protected**
Rock Pigeon	***Columba livia***	**N2**	**6/11/2005**	**Unprotected**
Mourning Dove	***Zenaida macroura***	**N2**	**6/11/2005**	**Protected**
Black-billed Cuckoo	*Coccyzus erythropthalmus*	S2	6/12/2005	Protected
Chimney Swift	***Chaetura pelagica***	**ON**	**6/11/2005**	**Protected**
Ruby-throated Hummingbird	*Archilochus colubris*	T2	6/12/2005	Protected
Red-bellied Woodpecker	***Melanerpes carolinus***	**S2**	**6/11/2005**	**Protected**
Downy Woodpecker	***Picoides pubescens***	**T2**	**6/12/2005**	**Protected**
Hairy Woodpecker	***Picoides villosus***	**FY**	**6/11/2005**	**Protected**
Northern Flicker	***Colaptes auratus***	**T2**	**7/4/2004**	**Protected**
Pileated Woodpecker	*Dryocopus pileatus*	X1	6/5/2005	Protected

Eastern Wood-Pewee	*Contopus virens*	T2	6/11/2005	Protected
Alder Flycatcher	*Empidonax alnorum*	S2	6/11/2005	Protected
Willow Flycatcher	*Empidonax traillii*	T2	6/12/2005	Protected
Eastern Phoebe	***Sayornis phoebe***	**T2**	**6/11/2005**	**Protected**
Great Crested Flycatcher	*Myiarchus crinitus*	T2	6/5/2005	Protected
Eastern Kingbird	*Tyrannus tyrannus*	T2	6/12/2005	Protected
Warbling Vireo	***Vireo gilvus***	**T2**	**6/11/2005**	**Protected**
Red-eyed Vireo	*Vireo olivaceus*	T2	7/4/2004	Protected
Blue Jay	***Cyanocitta cristata***	**T2**	**7/3/2004**	**Protected**
American Crow	***Corvus brachyrhynchos***	**T2**	**7/4/2004**	**Game Species**
Tree Swallow	***Tachycineta bicolor***	**ON**	**6/12/2005**	**Protected**
Barn Swallow	*Hirundo rustica*	ON	6/12/2005	Protected
Black-capped Chickadee	*Poecile atricapillus*	ON	6/12/2005	Protected
Tufted Titmouse	*Baeolophus bicolor*	T2	6/12/2005	Protected
Red-breasted Nuthatch	*Sitta canadensis*	T2	6/12/2005	Protected
White-breasted Nuthatch	*Sitta carolinensis*	FL	6/12/2005	Protected
Carolina Wren	*Thryothorus ludovicianus*	NY	8/16/2002	Protected
House Wren	*Troglodytes aedon*	T2	7/4/2004	Protected
Wood Thrush	*Hylocichla mustelina*	T2	7/3/2004	Protected
American Robin	***Turdus migratorius***	**ON**	**6/12/2005**	**Protected**
Gray Catbird	*Dumetella carolinensis*	FL	6/12/2005	Protected
Northern Mockingbird	*Mimus polyglottos*	X1	4/9/2005	Protected
European Starling	***Sturnus vulgaris***	**FL**	**7/4/2004**	**Unprotected**
Cedar Waxwing	*Bombycilla cedrorum*	P2	7/4/2004	Protected
Blue-winged Warbler	*Vermivora pinus*	T2	6/12/2005	Protected
Yellow Warbler	*Dendroica petechia*	T2	7/4/2004	Protected

Chestnut-sided Warbler	*Dendroica pensylvanica*	T2	6/12/2005	Protected
American Redstart	*Setophaga ruticilla*	S2	6/11/2005	Protected
Common Yellowthroat	*Geothlypis trichas*	T2	7/4/2004	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	S2	6/12/2005	Protected
Chipping Sparrow	*Spizella passerina*	T2	7/4/2004	Protected
Field Sparrow	*Spizella pusilla*	S2	6/12/2005	Protected
Savannah Sparrow	*Passerculus sandwichensis*	T2	7/4/2004	Protected
Song Sparrow	*Melospiza melodia*	ON	6/12/2005	Protected
Swamp Sparrow	*Melospiza georgiana*	T2	6/11/2005	Protected
Scarlet Tanager	*Piranga olivacea*	T2	6/12/2005	Protected
Northern Cardinal	*Cardinalis cardinalis*	T2	7/4/2004	Protected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	ON	6/12/2005	Protected
Indigo Bunting	*Passerina cyanea*	T2	7/3/2004	Protected
Bobolink	*Dolichonyx oryzivorus*	T2	6/12/2005	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	FL	7/4/2004	Protected
Eastern Meadowlark	*Sturnella magna*	T2	6/11/2005	Protected
Common Grackle	*Quiscalus quiscula*	FL	7/4/2004	Protected
Brown-headed Cowbird	*Molothrus ater*	S2	6/11/2005	Protected
Baltimore Oriole	*Icterus galbula*	T2	6/11/2005	Protected
Purple Finch	*Carpodacus purpureus*	S2	6/11/2005	Protected
House Finch	*Carpodacus mexicanus*	FL	7/4/2004	Protected
American Goldfinch	*Spinus tristis*	T2	7/4/2004	Protected
House Sparrow	*Passer domesticus*	FL	7/4/2004	Unprotected

Current Date: 5/6/2020

Table 3. Breeding birds known to occur in the general vicinity of the Gateway Lofts site based on NYS Breeding Bird Atlas (2000-2005) survey block 1466B. Species in bold may utilize project site or adjacent Chadakoin River.

List of Species Breeding in Atlas Block 1466B				
Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
Canada Goose	***Branta canadensis***	**FL**	**7/3/2004**	**Game Species**
Wood Duck	***Aix sponsa***	**FL**	**7/3/2004**	**Game Species**
Mallard	***Anas platyrhynchos***	**FL**	**6/1/2002**	**Game Species**
Great Blue Heron	***Ardea herodias***	**X1**	**7/3/2004**	**Protected**
Green Heron	***Butorides virescens***	**X1**	**7/3/2004**	**Protected**
Red-tailed Hawk	*Buteo jamaicensis*	T2	7/3/2004	Protected
Rock Pigeon	***Columba livia***	**T2**	**7/3/2004**	**Unprotected**
Mourning Dove	***Zenaida macroura***	**T2**	**7/3/2004**	**Protected**
Belted Kingfisher	***Megaceryle alcyon***	**T2**	**7/3/2004**	**Protected**
Downy Woodpecker	***Picoides pubescens***	**T2**	**7/3/2004**	**Protected**
Northern Flicker	***Colaptes auratus***	**T2**	**7/3/2004**	**Protected**
Eastern Wood-Pewee	*Contopus virens*	T2	7/3/2004	Protected
Willow Flycatcher	*Empidonax traillii*	T2	7/3/2004	Protected
Eastern Phoebe	***Sayornis phoebe***	**T2**	**7/3/2004**	**Protected**
Eastern Kingbird	*Tyrannus tyrannus*	T2	7/3/2004	Protected
Red-eyed Vireo	*Vireo olivaceus*	T2	7/3/2004	Protected
Blue Jay	***Cyanocitta cristata***	**T2**	**7/3/2004**	**Protected**
American Crow	***Corvus brachyrhynchos***	**T2**	**7/3/2004**	**Game Species**
Tree Swallow	***Tachycineta bicolor***	**ON**	**7/3/2004**	**Protected**
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	ON	6/1/2002	Protected
Barn Swallow	*Hirundo rustica*	ON	7/3/2004	Protected
Black-capped Chickadee	*Poecile atricapillus*	T2	7/3/2004	Protected
Tufted Titmouse	*Baeolophus bicolor*	T2	7/3/2004	Protected

Red-breasted Nuthatch	*Sitta canadensis*	ON	6/23/2003	Protected
White-breasted Nuthatch	*Sitta carolinensis*	T2	7/3/2004	Protected
House Wren	*Troglodytes aedon*	T2	7/3/2004	Protected
Veery	*Catharus fuscescens*	T2	7/3/2004	Protected
Wood Thrush	*Hylocichla mustelina*	T2	7/3/2004	Protected
American Robin	***Turdus migratorius***	**NY**	**6/23/2003**	**Protected**
Gray Catbird	***Dumetella carolinensis***	**T2**	**7/3/2004**	**Protected**
European Starling	***Sturnus vulgaris***	**FL**	**6/23/2003**	**Unprotected**
Yellow Warbler	*Dendroica petechia*	FL	7/2/2004	Protected
Chestnut-sided Warbler	*Dendroica pensylvanica*	FL	7/3/2004	Protected
Yellow-rumped Warbler	*Dendroica coronata*	T2	7/3/2004	Protected
Mourning Warbler	*Oporornis philadelphia*	T2	7/3/2004	Protected
Common Yellowthroat	*Geothlypis trichas*	T2	7/3/2004	Protected
Chipping Sparrow	***Spizella passerina***	**NE**	**6/23/2003**	**Protected**
Savannah Sparrow	*Passerculus sandwichensis*	T2	7/3/2004	Protected
Song Sparrow	*Melospiza melodia*	FL	7/3/2004	Protected
Swamp Sparrow	*Melospiza georgiana*	T2	7/3/2004	Protected
Northern Cardinal	***Cardinalis cardinalis***	**FY**	**6/23/2003**	**Protected**
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	T2	7/3/2004	Protected
Indigo Bunting	*Passerina cyanea*	T2	7/3/2004	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	FL	7/3/2004	Protected
Common Grackle	*Quiscalus quiscula*	FL	6/23/2003	Protected
Brown-headed Cowbird	*Molothrus ater*	FL	7/3/2004	Protected
House Finch	***Carpodacus mexicanus***	**FL**	**6/23/2003**	**Protected**
American Goldfinch	*Spinus tristis*	T2	7/3/2004	Protected
House Sparrow	***Passer domesticus***	**NY**	**6/23/2003**	**Unprotected**

Current Date: 5/6/2020

Table 4. Herp species known to occur in the general vicinity of the Gateway Lofts site based on the New York State Amphibian and Reptile Atlas Project (species in bold might utilize the project site or adjacent Chadakoin River)

Salamanders	
Common Name (links go to distribution maps)	**Scientific Name**
Spotted Salamander	*Ambystoma maculatum*
Red-spotted Newt	***Notophthalmus v. viridescens***
Allegheny Dusky Salamander	***Desmognathus ochrophaeus***
Northern Redback Salamander	*Plethodon c. cinereus*
Northern Slimy Salamander	***Plethodon glutinosus***
Northern Spring Salamander	*Gyrinophilus p. porphyriticus*
Northern Two-lined Salamander	*Eurycea bislineata*

Snakes	
Common Name (links go to distribution maps)	**Scientific Name**
Northern Water Snake	***Nerodia s. sipedon***
Northern Brown Snake	*Storeria d. dekayi*
Northern Redbelly Snake	*Storeria o. occipitomaculata*
Common Garter Snake	***Thamnophis sirtalis***
Shorthead Garter Snake	*Thamnophis brachystoma*
Northern Ringneck Snake	*Diadophis punctatus edwardsii*
Smooth Green Snake	*Liochlorophis vernalis*

Toads	
Common Name (links go to distribution maps)	**Scientific Name**
Eastern American Toad	***Bufo a. americanus***

Frogs	
Common Name (links go to distribution maps)	**Scientific Name**
Gray Treefrog	***Hyla versicolor***
Northern Spring Peeper	*Pseudacris c. crucifer*
Western Chorus Frog	*Pseudacris triseriata*
Bullfrog	***Rana catesbeiana***
Green Frog	***Rana clamitans melanota***
Northern Leopard Frog	***Rana pipiens***

Turtles	
Common Name (links go to distribution maps)	**Scientific Name**
Common Snapping Turtle	***Chelydra s. serpentina***
Common Musk Turtle	***Sternotherus odoratus***
Wood Turtle	*Clemmys insculpta*
Eastern Box Turtle	*Terrapene c. carolina*
Painted Turtle	***Chrysemys picta***
Eastern Spiny Softshell	***Apalone s. spinifera***

Table 5. Occurrence of fishes in the Conewango Creek basin of the Allegheny River watershed.

1999	**2004-05**	
Petromyzontidae		
Ichthyomyzon bdellium (Jordan, 1885)		Ohio lamprey
Ichthyomyzon greeleyi Hubbs and Trautman, 1937		mountain brook lamprey
Ichthyomyzon sp.		lamprey ammocoetes
Lampetra appendix (DeKay, 1842)		American brook lamprey
Clupeidae		
Dorosoma cepedianum (Lesueur, 1817)		gizzard shad
Ictaluridae		
Ameiurus natalis (Lesueur, 1819)		yellow bullhead
Ameiurus nebulosus (Lesueur, 1819)		brown bullhead
Noturus flavus Rafinesque, 1818		stonecat
Noturus miurus Jordan, 1877		brindled madtom
Catostomidae		
Carpiodes cyprinus (Lesueur, 1817)		quillback
Catostomus commersonii (Forster, 1773)		white sucker
Hypentelium nigricans (Lesueur, 1817)		northern hog sucker
Moxostoma anisurum (Rafinesque, 1820)		silver redhorse
Moxostoma breviceps (Cope, 1870)		smallmouth redhorse
Moxostoma duquesnei (Lesueur, 1817)		black redhorse
Moxostoma erythrurum (Rafinesque, 1818)		golden redhorse
Cyprinidae		
Campostoma anomalum (Rafinesque, 1820)		central stoneroller
C. anomalum X *L. cornutus* hybrid 1		
C. anomalum X *R. cataractae* hybrid 1		
Clinostomus elongatus (Kirtland, 1838)		redside dace
Cyprinella spiloptera (Cope, 168)		spotfin shiner
Cyprinus carpio Linnaeus, 1758		common carp
Exoglossum laurae (Hubbs, 1931)		tonguetied minnow

Hybognathus hankinsoni Hubbs, 1929	brassy minnow
Luxilus chrysocephalus (Rafinesque, 1820)	striped shiner
Luxilus cornutus (Mitchill, 1817)	common shiner
Lythrurus umbratilis (Girard, 1857)	redfin shiner
Margariscus margarita (Cope, 1868)	pearl dace
Nocomis micropogon (Cope, 1865)	river chub
Notemigonus crysoleucas (Mitchill, 1814)	golden shiner
Hybopsis amblops (Rafinesque, 1820)	bigeye chub
Notropis atherinoides Rafinesque, 1818	emerald shiner
Notropis buccatus (Cope, 1865)	silverjaw minnow
Notropis dorsalis (Agassiz, 1854)	bigmouth shiner
Notropis heterolepis Eigenmann and Eigenmann, 1893	blacknose shiner
Notropis hudsonius (Clinton, 1824)	spottail shiner
Notropis photogenis (Cope, 1865)	silver shiner
Notorpis rubellus (Agassiz, 1850)	rosyface shiner
Notropis stramineus (Cope, 1865)	sand shiner
Notropis volucellus (Cope, 1865)	mimic shiner
Phoxinus eos (Cope, 1862)	northern redbelly dace
Phoxinus neogaeus Cope, 1868	finescale dace
Pimephales notatus (Rafinesque, 1820)	bluntnose minnow
Pimephales promelas Rafinesque, 1820	fathead minnow
Rhinichthys cataractae (Valenciennes, 1842)	longnose dace
Rhinichthys obtusus Agassiz, 1854	western blacknose dace
Semotilus atromaculatus (Mitchill, 1818)	creek chub
Cobitidae	
Misgurnus anguillicaudatus (Cantor, 1842)	oriental weatherfish
Salmonidae	
Oncorhynchus mykiss (Walbaum, 1792)	rainbow trout
Salmo trutta Linnaeus 1758	brown trout
Salvelinus fontinalis (Mitchill, 1815)	brook trout

Umbridae	
Umbra limi (Kirtland, 1841)	central mudminnow
Esocidae	
Esox americanus vermiculatus Lesueur, 1818	grass pickerel
Esox lucius Linnaeus, 1758	northern pike
Esox masquinongy Mitchill, 1824	muskellunge
Percopsidae	
Percopsis omiscomaycus (Walbaum, 1792)	trout-perch
Gadidae	
Lota lota (Linnaeus, 1758)	burbot
Fundulidae	
Fundulus diaphanus (Lesueur, 1817)	banded killifish
Atherinopsidae	
Labidesthes sicculus (Cope, 1865)	brook silverside
Gasterosteidae	
Culaea inconstans (Kirtland, 1840)	brook stickleback
Cottidae	
Cottus bairdii Girard, 1850	mottled sculpin
Moronidae	
Morone americana (Gmelin, 1789)	white perch
Morone chrysops (Rafinesque, 1820)	white bass
Centrarchidae	
Ambloplites rupestris (Rafinesque, 1817)	rock bass
Lepomis cyanellus Rafinesque, 1819	green sunfish
Lepomis gibbosus (Linnaeus, 1758)	pumpkinseed
L. gibbosus X *L. macrochirus* hybrid 1	
Lepomis macrochirus Rafinesque, 1818	bluegill
Micropterus dolomieu Lacepède, 1802	smallmouth bass
Micropterus salmoides (Lacepède, 1802)	largemouth bass
Pomoxis annularis Rafinesque, 1818	white crappie

Pomoxis nigromaculatus (Lesueur, 1829)	black crappie
Percidae	
Ammocrypta pellucida (Putnam, 1863)	eastern sand darter
Etheostoma blennioides Rafinesque, 1819	greenside darter
Etheostoma caeruleum Storer, 1845	rainbow darter
Etheostoma flabellare Rafinesque, 1819	fantail dater
Etheostoma nigrum Rafinesque, 1820	johnny darter
Etheostoma variatum Kirtland, 1838	variegate darter
Etheostoma zonale (Cope, 1868)	banded darter
Perca flavescens (Mitchill, 1814)	yellow perch
Percina caprodes (Rafinesque, 1818)	logperch
Percina maculata (Girard, 1860)	blackside darter
Sander vitreus (Mitchill, 1818)	walleye

APPENDIX E

BUILDING HAZARDOUS MATERIALS INSPECTION REPORT

Hazardous Materials Inspection Report

Asbestos, Lead-Based Paint, Visual Mold, PCB Light Ballast, PCB Caulk, Mercury Switch, and Waste Materials

Project Location:

The Gateway Center
31 Water Street
Jamestown, New York 14701
Project ID: 18-0619DB-A

Conditions as of: June 19th, 2018

Prepared for:

SouthernTier Environments for Living
715 Centeral Avenue
Dunkirk, New York 14048

Prepared by:

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July 9th, 2018

Southern Tier Environments for Living, Inc.
715 Central Avenue
Dunkirk, New York 14048

Re: Hazardous Materials Inspection Report
The Gateway Center
31 Water Street
Jamestown, New York 14701
AMD Project ID: 18-0619DB-A

To whom it may concern:

I am pleased to present this summary of hazardous materials survey services at the above referenced address.

AMD Environmental conducted a Hazardous Materials Inspection at the above referenced address on June 19th through June 26th, 2018. Asbestos, Lead-Based Paint, Visual Mold, PCB Light Ballasts, PCB Caulk and Mercury Switches were sampled and or inventoried for this report. For more detail please refer to the summary's provided for each material category which can be found via the table of contents on the following page.

New York State asbestos regulations (12 NYCRR 56-5) require that asbestos surveys are conducted in order to determine whether or not the building or structure, or portion(s) thereof to be demolished, renovated, remodeled, contains ACM, PACM or asbestos materials. These regulations also require that a copy of the pre-renovation survey be forwarded to the local New York State Department of Labor (NYSDOL) Asbestos Control Bureau immediately upon completion of the survey (NYSDOL contact info. at end of report). **If requested in writing, a copy of the survey will be submitted on your behalf to the NYSDOL, otherwise a copy must be submitted by the owner.**

AMD Environmental Consultants, Inc. surveys are intended to determine, to a reasonable extent, the presence, location, quantity, and condition of accessible asbestos containing materials (surfacing, thermal systems insulation, and miscellaneous materials). The information contained herein is representative of conditions found onsite during the date/time this survey was conducted. Environmental conditions, renovation, vandalism, etc. may alter conditions from the date/time that this survey was conducted, potentially creating new hazards.

Please do not hesitate to contact me if I may provide any additional information.

Sincerely,

Anthony DeMiglio
President

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1.0 Asbestos Inspection

1.1 Introduction

AMD Environmental Consultants, Inc (AMD) was retained by Southern Tier Environments for Living, Inc. to inspect the building located at 31 Water Street in Jamestown, New York for the presence of materials suspected of containing asbestos (ACBM).

AMD was assigned to:

- Locate suspect asbestos containing materials,
- Sample these materials to determine asbestos content, and
- Identify the locations and estimated quantities of the confirmed asbestos containing materials.

The information following this introduction details the amount of asbestos present in this facility and the location of the ACBM (asbestos containing building materials). Although the report is a comprehensive analysis of the asbestos inspection work performed, it would be helpful to review all applicable federal, state and local rules, laws and regulations regarding the handling and treatment of asbestos containing building materials (ACBM).

The following is a list of suggested reading and information sources relating to asbestos:

- New York State Department of Labor Industrial Code Rule 56
- National Emission Standard for Hazardous Air Pollutants (NESHAPS)
- Occupational Safety and Health Administration
  (OSHA 1926.1101, 1910.134, 1910.1020, 1910.1200, 1910.145, 1910.95, 1926.58)
- Environmental Protection Agency rule CFR 763.46 Asbestos Hazard Emergency Response Act

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1.2 Executive Summary

The scope of services included the identification of suspect asbestos containing building materials in areas of planned renovations; sampling and analysis of the suspect materials; and identifying the locations, estimated quantities, and condition of the confirmed asbestos containing materials.

Sampling and analysis of the suspect materials under Polarized Light Microscopy (PLM) ,and where necessary, under Transmission Electron Microscopy (TEM), revealed the following materials as asbestos containing building materials (ACBM):

ASBESTOS CONTAINING MATERIALS SUMMARY

HAN	Material Description	SID (Space Identification Number)	Estimated Quantity SF*	Friability/ Condition
300	Brown Square Pattern Linoleum	2nd Floor, 3rd Floor and 4th Floor	3 ,500 sq. ft.	NF/I
601	Sink Insulation – Black	4th Floor	<10 sq. ft.	NF/D
602	Window Caulk	Exterior- Exterior Original Wood Casings	160 sq. ft.	NF/D
604	Elevator Brake Shoes	Elevator – See Note 1	10 sq. ft,	NF/I
607	Door Caulk	Exterior – Water St. Side Only	<10 sq. ft.	NF/I
700	Roof - Field	Roof A	23,913 sq. ft.	NF/I
701	Roof – Flashing	Roof A	Included in Han 700	NF/I
702	Repair Tar at Parapet Wall	Roof A	Included in Han 700	NF/I
703	Repair Tar	Roof A	Included in Han 700	NF/I
708	Roof – Flashing	Roof D	700 sq. ft.	NF/I
710	Repair Tar	Roof D	50 sg. Ft.	NF/I
713	Roof - Flashing	Roof F	900 sq. ft.	NF/I
717	Repair Tar	Roof G – See Note 1	<10 sq. ft.	NF/I
720	Roof – Field	Roof K, L, M	5,204 sq. ft.	NF/I
721	Roof – Flashing	Roof K, L, M	Included in Han 720	NF/I
723	Roof – Flashing	Roof N	250 sq. ft.	NF/I
725	Roof – Field	Roof O, P, Q	14,000 sq. ft.	NF/I
726	Roof – Flashing	Roof O, P, Q	Included in Han 725	NF/I
728	Repair Tar	Roof O, P, Q	75 sq. ft.	NF/I
729	Roof – Field	Roof R	4,986 sq. ft.	NF/I
730	Roof – Flashing	Roof R	Included in Han 729	NF/I
731	Repair Tar	Roof R	50 sq. ft.	NF/I
732	Roof – Field	Roof T	2,200 sq, ft.	NF/I

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ASBESTOS CONTAINING MATERIALS SUMMARY (continued)

HAN	Material Description	SID (Space Identification Number)	Estimated Quantity SF*	Friability/ Condition
733	Roof – Flashing	Roof T	Included in Han 733	NF/I
734	Silver Paint	Roof M	2,570 sq. ft.	NF/I

*Quantities are approximate, and are only associated with areas of planned renovation. Additional asbestos containing materials may be located outside areas of planned renovation that were not surveyed, assessed or quantified during this inspection.

INSPECTION NOTES:

Note 1: Materials were assumed to contain asbestos based on AMD Environmental's experience on similar projects with materials of the same likeness that have been found to contain asbestos.

Note 2: Work on the 4th floor was limited due to large amounts of avian pathogens

Notes to Executive Summary and Asbestos Containing Materials Summary:

KEY TERMS AND DEFINITIONS:

HAN=Homogenous Area Number; number assigned to categorize materials of like composition, texture and appearance

SID=Space Identification Number: Sample Locations

Friability/Condition:

F=Friable: a material that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure, or is capable of being released into the air by hand pressure.

NF=Non Friable: a material that when dry cannot be crumbled, pulverized, or reduced to hand pressure, and is not capable of being released into the air by hand pressure

I=Intact: Asbestos material that has not crumbled, been pulverized, or otherwise been damaged or disturbed, and the material's matrix has not noticeably deteriorated.

D=Damaged: Asbestos material that has deteriorated or sustained physical injury demonstrated by separation of the ACM into layers, separation of the ACM from the substrate, flaking, blistering, crumbling, water damage, scrapes, gouges, or other signs of physical injury.

SD=Significantly Damaged: Damaged asbestos where the damage is extensive and severe.

ACM=Asbestos Containing Material: material analyzed and confirmed by laboratory to contain above 1% of asbestos

PACM= Presumed Asbestos Containing Material: this material was assumed to contain asbestos to either save the client on lab fees or because the material was adhered to another asbestos containing material (or adjacent to other materials needing abatement) and must be managed as such.

The inspection for suspect asbestos containing building materials was conducted for readily accessible building spaces as outlined by the client. Building personnel were notified of the need to enter locked spaces and pipe chases where accessible. The inspection consisted of an inventory of building materials. At minimum, materials which make up flooring, walls, ceilings and thermal system insulation were reviewed. Upon completion of the building inspection, representative samples of each material were sampled and sent to a certified lab for analysis.

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1.3 Purpose

The purpose of the asbestos inspection was to identify and quantify the types of asbestos containing building materials (ACBM) in the areas of planned renovations. Samples of the suspect materials were collected for analysis by an independent laboratory, and the condition of each material noted in relation to its potential to be disturbed. The potential for fiber release was also considered.

The report is generated for the exclusive use of Southern Tier Environments for Living and its representatives or agents, and is not designed to serve as a specification for abatement. Before requesting bids for abatement of materials identified in this report, the owner is strongly encouraged to contract with a consultant to provide this valuable service. A specification assures that all contractors are bidding on the same methodology and following the specific requirements for the work to be performed.

The inspection was conducted by NYS DOL Certified Asbestos Inspectors David Batt, David Lang and John Doucette from June 19th through 26th, 2018 and revealed the following suspect asbestos containing building materials:

HOMOGENOUS MATERIALS & SAMPLE RESULTS

HAN	Suspect Asbestos Containing Material Description	SID (Space Identification Number)	Sample No.	ACM (Y/N)	Estimated Quantity SF*	Friability/ Condition
101	Drywall	1st Floor, 2nd Floor, 3rd Floor and 4th Floor	101-1, 101-2, 101-3, 101-4, 101-5, 101-6, 101-7, 101-8	No	N/A	F/I
101A	Joint Compound	1st Floor, 2nd Floor, 3rd Floor and 4th Floor	101A-1, 101A-2, 101A-3, 101A-4, 101A-5, 101A-6, 101A-7, 101A-8	No	N/A	F/I
102	Textured Wall Coating	2nd Floor	102-1, 102-2	No	N/A	F/I
200	2' x 4' Ceiling Tile – Fissure	1st Floor, 2nd Floor and 3rd Floor	200-1, 200-2	No	N/A	F/I
201	2' x 2' Ceiling Tile - Holed	2nd Floor and 3rd Floor	201-1, 201-2	No	N/A	F/I
300	**Brown Square Pattern Linoleum**	**2nd Floor, 3rd Floor and 4th Floor**	**300-1, 300-2**	**Yes**	**3 ,500 sq. ft.**	**NF/I**
301	Carpet Mastic	1st Floor, 2nd Floor and 3rd Floor	301-1, 301-2	No	N/A	NF/I
302	Cove Base Mastic	1st Floor, 2nd Floor, 3rd Floor and 4th Floor	302-1, 302-2	No	N/A	NF/I
303	Brown Jute Back Linoleum	4th Floor	303-1, 303-2	No	N/A	NF/I
304	12" x 12" Floor Tile – Beige	2nd Floor and 3rd Floor	304-1, 304-2	No	N/A	NF/I
305	Ceramic Tile Pattern Linoleum	2nd Floor	305-1, 305-2	No	N/A	NF/I
306	12" x 12' Floor Tile – Grey	2nd Floor	306-1, 306-2	No	N/A	NF/I
307	12" x 12" Floor Tile Mastic	2nd Floor, 3rd Floor and 4th Floor	307-1, 307-2	No	N/A	NF/I

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HOMOGENOUS MATERIALS & SAMPLE RESULTS (Continued)

HAN	Suspect Asbestos Containing Material Description	SID (Space Identification Number)	Sample No.	ACM (Y/N)	Estimated Quantity SF*	Friability/ Condition
308	Ceramic Tile Mortar	2nd Floor	308-1, 308-2	No	N/A	NF/I
308A	Ceramic Tile Mastic	2nd Floor	308A-1, 308A-2	No	N/A	NF/I
310	4 inch Block Pattern Linoleum	2nd Floor	310-1, 310-2	No	N/A	NF/I
311	Epoxy Flooring – Grey	1st Floor	311-1, 311-2	No	N/A	NF/D
312	Epoxy Flooring – Brown	1st Floor	312-1, 312-2	No	N/A	NF/D
400	TSI – Mag Pipe Insulation	1st and 3rd Floors	400-1, 400-2	No	N/A	F/D
401	Pipe Fittings on Fiberglass	1st Floor	401-1, 401-2	No	N/A	F/I
600	Window Glazing	Exterior	600-1, 600-2	No	N/A	NF/D
601	**Sink Insulation – Black**	**4th Floor**	**601-1, 601-2**	**Yes**	**<10 sq. ft.**	**NF/D**
602	**Window Caulk – Exterior Original Wood Casings**	**Exterior**	**602-1, 602-2**	**Yes**	**160 sq. ft.**	**NF/D**
603	Window Caulk – Interior	1st Floor, 2nd Floor, 3rd Floor and 4th Floor	603-1, 603-2	No	N/A	NF/I
604	**Elevator Brake Shoes**	**Elevator**	**Sample Not Submitted – See Note 1**	**Yes**	**20 sq. ft.**	**F/I**
605	Window Caulk – Infilled Windows	Exterior	605-1, 605-2	No	N/A	NF/D
606	Window Caulk – New Windows	Exterior	606-1, 606-2	No	N/A	NF/I
607	**Door Caulk**	**Exterior – Water St. Side Only**	**607-1, 607-2**	**Yes**	**<10 sq. ft.**	**NF/I**
608	Asphalt Siding	Exterior	608-1, 608-2	No	N/A	NF/I
700	**Roof - Field**	**Roof A**	**700-1, 700-2**	**Yes**	**23,913 sq. ft.**	**NF/I**
701	**Roof – Flashing**	**Roof A**	**701-1, 701-2**	**Yes**	**Included in Han 700**	**NF/I**
702	**Repair Tar at Parapet Wall**	**Roof A**	**702-1, 702-2**	**Yes**	**Included in Han 700**	**NF/I**
703	**Repair Tar**	**Roof A**	**703-1, 703-2**	**Yes**	**Included in Han 700**	**NF/I**
704	Roof – Field	Roof C	704-1, 704-2	No	N/A	NF/I
705	Roof – Flashing	Roof C	705-1, 705-2	No	N/A	NF/I
706	Repair Tar	Roof C	706-1, 706-2	No	N/A	NF/I
707	Roof – Field	Roof D	707-1, 707-2	No	N/A	NF/I
708	**Roof – Flashing**	**Roof D**	**708-1, 708-2**	**Yes**	**700 sq. ft.**	**NF/I**
709	Repair Tar at Parapet Wall	Roof D	709-1, 709-2	No	N/A	NF/I
710	**Repair Tar**	**Roof D**	**710-1, 710-2**	**Yes**	**50 sg. Ft.**	**NF/I**
711	Repair Tar	Roof E	711-1, 711-2	No	N/A	NF/I
712	Roof – Field	Roof F	712-1, 712-2	No	N/A	NF/I
713	**Roof - Flashing**	**Roof F**	**713-1, 713-2**	**Yes**	**900 sq. ft.**	**NF/I**
714	Tar on Coping Stones	Roof F	714-1, 714-2	No	N/A	NF/I

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HOMOGENOUS MATERIALS & SAMPLE RESULTS (Continued)

HAN	Suspect Asbestos Containing Material Description	SID (Space Identification Number)	Sample No.	ACM (Y/N)	Estimated Quantity SF*	Friability/ Condition
715	Silver Paint	Roof F	715-1, 715-2	No	N/A	NF/I
716	Rolled Roof	Roof G	716-1, 716-2	No	N/A	NF/I
717	**Repair Tar**	**Roof G**	**Samples Not Submitted – See Note 1**	**Yes**	**<10 sq. ft.**	**NF/I**
718	Roof – Field	Roof J	718-1, 718-2	No	N/A	NF/I
719	Roof – Flashing	Roof J	719-1, 719-2	No	N/A	NF/I
720	**Roof – Field**	**Roof K, L, M**	**720-1, 720-2**	**Yes**	**5,204 sq. ft.**	**NF/I**
721	**Roof – Flashing**	**Roof K, L, M**	**721-1, 721-2**	**Yes**	**Included in Han 720**	**NF/I**
722	Roof – Field	Roof N	722-1, 722-2	No	N/A	NF/I
723	**Roof – Flashing**	**Roof N**	**723-1, 723-2**	**Yes**	**250 sq. ft.**	**NF/I**
724	Roof – Repair Tar	Roof N	724-1, 724-2	No	N/A	NF/I
725	**Roof – Field**	**Roof O, P, Q**	**725-1, 725-2**	**Yes**	**14,000 sq. ft.**	**NF/I**
726	**Roof – Flashing**	**Roof O, P, Q**	**726-1, 726-2**	**Yes**	**Included in Han 725**	**NF/I**
727	Repair Tar on Parapet	Roof O, P, Q	727-1, 727-2	No	N/A	NF/I
728	**Repair Tar**	**Roof O, P, Q**	**728-1, 728-2**	**Yes**	**75 sq. ft.**	**NF/I**
729	**Roof – Field**	**Roof R**	**729-1, 729-2**	**Yes**	**4,986 sq. ft.**	**NF/I**
730	**Roof – Flashing**	**Roof R**	**730-1, 730-1**	**Yes**	**Included in Han 729**	**NF/I**
731	**Repair Tar**	**Roof R**	**731-1, 731-2**	**Yes**	**50 sq. ft.**	**NF/I**
732	**Roof – Field**	**Roof T**	**732-1, 732-2**	**Yes**	**2,200 sq, ft.**	**NF/I**
733	**Roof – Flashing**	**Roof T**	**733-1, 733-2**	**Yes**	**Included in Han 733**	**NF/I**
734	**Silver Paint**	**Roof M**	**734-1, 734-2**	**Yes**	**2,570 sq. ft.**	**NF/I**
735	Silver Paint	Roof Q	735-1, 735-2	No	N/A	NF/I

*Quantities are approximate, and are only associated with areas of planned renovation. Additional asbestos containing materials may be located outside areas of planned renovation that were not surveyed, assessed or quantified during this inspection.

The above listed table provides a list of the materials that were sampled and tested for asbestos by Polarized Light Microscopy (PLM) and or Transmission Electron Microscopy (TEM), as applicable. Any sample determined to be a non-friable organically bound material (NOB), and which was found to be negative by Polarized Light Microscopy (PLM) analysis, was then analyzed by Transmission Electron Microscopy (TEM) analysis at American Science Team New York Inc. (AmeriSci) in New York, New York. AmeriSci is an ELAP Certified laboratory (ID: 11480) and conducts analysis according to EPA Method 198.1, 198.4 and 198.6. See Section 2.0 for the laboratory's analytical results.

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Notes to Executive Summary and Asbestos Containing Materials Summary:

Note 1: Materials were assumed to contain asbestos based on AMD Environmental's experience on similar projects with materials of the same likeness that have been found to contain asbestos.

Note 2: Work on the 4th floor was limited due to large amounts of avian pathogens

The inspection for suspect asbestos containing building materials was conducted for readily accessible building spaces as outlined by the client. Building personnel were notified of the need to enter locked spaces and pipe chases where accessible. The inspection consisted of an inventory of building materials. At minimum, materials which make up flooring, walls, ceilings and thermal system insulation were reviewed. Upon completion of the building inspection, representative samples of each material were sampled and sent to a certified lab for analysis.

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1.5 Methodology

All work performed by AMD Environmental Consultants, Inc. was conducted in accordance with applicable regulations, including New York State Department of Labor standards 12NYCRR Part 56, National Emission Standards for Hazardous Air Pollutants (NESHAPS), and Occupational Safety and Health Administration regulations 29CFR1910.1101 and 29CFR1910.134. All AMD personnel assigned to conduct inspections have completed the Environmental Protection Agency (EPA) required training and New York State Department of Labor Division of Safety and Health certification program.

Each suspect asbestos containing building material (ACBM) was assigned a homogenous area number (HAN). Homogeneous areas consist of materials of like composition, texture and appearance.

Based on the homogeneous areas, samples of suspect materials were collected. Techniques used for sample collection were designed to minimize damage to suspected areas, reduce any potential for fiber release, and ensure the safety of the inspector and building occupants. Samples were collected by AMD personnel using the following procedures:

1. The surface to be sampled was sprayed with amended water (detergent and water) as necessary

2. A plastic sample bag was held to the surface sampled

3. The sample was collected using tools appropriate to the friability of the material sampled

4. Sample bags were labeled with a unique sample identification number

5. Samples were recorded on a Chain of Custody form, and submitted under strict chain-of-custody procedures to American Science Team New York Inc. (AmeriSci) in New York, New York. AmeriSci is an ELAP and NYSDOH approved, certified laboratory for PLM and TEM analysis (ELAP ID: 11480).

Samples were first analyzed using PLM, Polarized Light Microscopy in accordance with US Environmental Protection Agency Interim Method, 40CFRPt763, Supt F, App A(7-1-87). For the sample results not considered definitive, additional analysis was performed under Transmission Electron Microscopy (TEM) in accordance with NYSDOH ELAP Item 198.4, for Non-friable Organically Bound Bulk Material (NOB). The results of these analyses confirmed whether or not a suspect materials actually contained asbestos. All materials sampled are summarized in Section 1.3 of this report; the presumed asbestos containing materials and materials containing asbestos above 1.0% are listed in Section 1.2.

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2.0 Lead-Based Paint Inspection

2.1 Introduction

AMD Environmental Consultants, Inc (AMD) was retained by Southern Tier Environments for Living to conduct representative lead based paint testing throughout the building located at 31 Water Street in Jamestown, NY for the presence of surfaces containing lead-based paint.
AMD was assigned to:

- Locate suspect surfaces
- Measuring lead concentrations on suspect surface, using an X-ray florescence spectrum analyzer, and

Although this report is a representative analysis of the lead-based paint in this structure, the following information, as well as a reading of the sources listed at the end of this section, will help ensure compliance to applicable rules, laws and regulations regarding lead based paint.

TITLE X:

On October 28, 1995, the Housing and Community Development Act of 1992 was signed into law. Title X, as this bill is commonly referred to, is comprehensive and significant in addressing lead poisoning and prevention. Under the Toxic Substances Control Act (TSCA), as amended by Title X, EPA is developing regulations governing lead-based paint hazard evaluation and abatement in private and public housing, public and commercial buildings, and commercial structures.

Although it is recommended that property owners, lenders, insurers, etc. become familiar with the full content of Title X and the EPA regulations, an understanding of the following terms will assist in the interpretation of the results of this survey:

1. The term “lead-based paint” as used in Title X is defined as paint on surfaces with lead in excess of 1.0 mg/cm^2 (milligrams per centimeter squared) as measured by X-ray fluorescence (XRF) detector or 0.5 percent by weight.

2. The term “lead based paint hazard” is defined as any condition that causes exposure to lead sufficient to cause adverse human effects.

3. “Deteriorated LBP” is any interior or exterior LBP that is peeling, chipping, chalking, or cracking, or located on a surface or fixture that is damaged or deteriorated.

4. LBP on any “friction surface” is defined as any interior or exterior surface subject to damage by repeated impacts, such as painted floors and friction surfaces on windows.

5. LBP on any “impact surface” is defined as any interior or exterior surface subject to damage by repeated impacts, such as parts of door frames.

6. LBP on any “accessible surface” is defined as any interior or exterior surface accessible for a young child to mouth or chew, such as a window sill.

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7. "Lead-contaminated dust" is defined as a surface dust in residential dwellings that contains an area or mass concentration of lead in excess of the standard to be established by EPA.

OSHA

On May 4, 1993, OSHA promulgated the Lead Exposure in Construction Rule (29 CFR Part 1926.62). This regulation applies to all construction activities involving potential lead exposures. This regulation defines construction work as "…work for construction, alteration and/or repair including painting and decorating" and further states "…the standard for the construction industry applies to all occupational exposure to lead in all construction work in which lead, in any amount, is present in an occupationally related context … where the source of the lead is employment related…"

The employer must ensure that no worker is exposed to concentrations of lead in excess of the permissible exposure limit (PEL) for lead, which is an eight hour time weighted average (TWA) exposure of 50 mg/m3 (micrograms per cubic meter). This means that the pre-project site must be inspected to determine if a lead hazard exists. If determined to exist, the employer must either perform an "Exposure Assessment" as defined in 29 CFR Part 1926.62 paragraph (d), or implement employee protective measures as prescribed in paragraph (d)(2)(v) including appropriate respiratory protection, personal protective clothing, change areas, hand washing facilities, biological monitoring, and training.

HUD

The statutory requirements and foundations for HUD Guidelines can be found in Section 302 of the Lead-Based Paint Poisoning Prevention Act (LBPPPA).

Certain aspects of the HUD Guidelines are typically applied to public and commercial buildings. The most common adopted techniques used to identify LBP are X-ray Fluorescence Spectrum Analyzer (XRF) and Atomic Absorption Spectroscopy (AAS). HUD defines LBP as having an XRF reading greater than 1.0 mg of lead per centimeter squared, or a paint chip analyzed by AAS having greater than 0.5 percent lead by weight.

The above information coupled with this report will help assure compliance to applicable laws and regulations and protect the occupants and contractors from exposure while in the building.

2.2 Methodology

All work performed by AMD Environmental Consultants, Inc. was conducted in accordance with applicable regulations. All AMD personnel assigned to conduct inspections have completed the Environmental Protection Agency (EPA) required training. Please see appendices for certifications and licenses and risk assessors' signatures.

AMD Environmental Consultants, Inc. used a Heuresis Pb200i XRF Spectrum Analyzer to test suspect painted surfaces. Progression through the structure followed a clockwise direction around the floor plan. Each component tested is identified by its particular side of the building, labeled walls "A, B, C, or D". Side A of any room is always the same side as the front exterior entrance (or address side of the building). Side B is the side to the left of side A, and so on.

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Representative surfaces/components were tested in a manner designed to adequately represent the different components, substrates, types of paint, construction and paint history at various locations throughout the building, including areas exhibiting peeling, chipping and flaking paint.

2.3 Lead-Based Paint Inspection Summary

AMD's on-site lead risk assessor conducted the representative lead-based paint inspection on June 19th - 26th, 2018. Painted components throughout the interior of property located at 31 Water Street, Jamestown, NY were identified and tested based on component groups and paint history. Surfaces tested included (interior walls, ceilings, doors, structural members, window components and exterior components.

The XRF analysis indicated that the following painted surfaces have a lead content at greater than 1.0 mg/cm^2 and are therefore classified as lead-based paint, based on Title X. For any renovations undertaken that require demolition of these painted surfaces, contractors should be advised of the presence of lead, and required to comply with the previously mentioned OSHA regulations for construction worker safety.

Component groups that were identified to contain lead-based paint are:

- All painted ceilings, beams and support columns throughout the building
- All original window components (window sills, casings, and sashes) throughout the building
- All painted wood stair components (tread, stringer, and risers) throughout the building
- All painted wood walls on the second, third and fourth floors
- All original painted wood doors and components (interior)
- A-side exterior painted door casings

Please see the table in Section 2.4 for the complete XRF analysis of individual components and substrates.

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2.4 XRF Spectrum Analyzer Report

Reading #	Side	Room	Component	Substrate	Color	XRF Reading	Condition	Result
1			Calibration			1.1		
2			Calibration			1		
3			Calibration			1.1		
4			Calibration			0.1		
5			Calibration			0.1		
6			Calibration			0.1		
7	**A**	**2012**	**Win. Casing**	**Wood**	**Brown**	**6.9**	**POOR**	**Positive**
8	**A**	**2012**	**Win. Sill-Stool**	**Wood**	**Brown**	**4.3**	**POOR**	**Positive**
9	C	2012	Win. Sill-Stool	Wood	Stain	0	POOR	Negative
10	C	2012	Win. Casing	Wood	Stain	-0.1	POOR	Negative
11	C	2012	Door Casing	Wood	Stain	0.1	POOR	Negative
12	C	2012	Door Jamb	Wood	White	0.1	POOR	Negative
13	C	2012	Door	Wood	White	0	POOR	Negative
14	C	2012	Column	Wood	Stain	0.1	POOR	Negative
15	C	2012	Wall	Drywall	Beige	0.1	POOR	Negative
16	C	2012	Wall	Vinyl	Beige	0.1	POOR	Negative
17	C	2012	Floor	Wood	Stain	0.1	POOR	Negative
18		4th Floor	Column	Wood	Blue	0.1	POOR	Negative
19		4th Floor	Wall	Brick	Grey	-0.1	POOR	Negative
20		**4th Floor**	**Win. Sash**	**Wood**	**Grey**	**9.3**	**POOR**	**Positive**
21		4th Floor	Win. Casing	Wood	Grey	0.4	POOR	Negative
22	**D**	**4th Floor**	**Stair Wall**	**Wood**	**White**	**10.7**	**POOR**	**Positive**
23		**4th Floor**	**Stair Riser**	**Wood**	**Brown**	**8.4**	**POOR**	**Positive**
24		**4th Floor**	**Stair Stringer**	**Wood**	**Brown**	**8**	**POOR**	**Positive**
25	**A**	**3rd Floor**	**Win. Casing**	**Wood**	**Grey**	**8.9**	**POOR**	**Positive**
26	**A**	**3rd Floor**	**Win. Sash**	**Wood**	**Grey**	**13.9**	**POOR**	**Positive**

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Reading #	Side	Room	Component	Substrate	Color	XRF Reading	Condition	Result
27	A	3rd Floor	Win. Sill-Stool	Wood	Brown	0.7	POOR	Negative
28	**A**	**3rd Floor**	**Win. Sill-Stool**	**Wood**	**Brown**	**12.6**	**POOR**	**Positive**
29	A	3rd Floor	Wall	Brick	Grey	0	POOR	Negative
30	A	3rd Floor	Wall	Wood	Pink	-0.1	POOR	Negative
31	**B**	**3rd Floor**	**Wall**	**Wood**	**White**	**16.8**	**POOR**	**Positive**
32	**B**	**3rd Floor**	**Column**	**Wood**	**Red**	**7.8**	**POOR**	**Positive**
33	**B**	**3rd Floor**	**Column**	**Wood**	**Grey**	**8.7**	**POOR**	**Positive**
34	**A**	**3rd Floor**	**Door**	**Wood**	**White**	**15**	**POOR**	**Positive**
35	A	3rd Floor	Radiator	Metal	Green	0.1	POOR	Negative
36	B	3rd Floor	Wall	Drywall	White	0.2	POOR	Negative
37	A	3rd Floor	Wall	Brick	White	0	POOR	Negative
38	C	3rd Floor	Wall	Drywall	White	0.2	POOR	Negative
39	C	3rd Floor	Door	Wood	Brown	0	POOR	Negative
40	C	3rd Floor	Door Jamb	Wood	Brown	0	POOR	Negative
41	C	3rd Floor	Wall	Brick	White	-0.1	POOR	Negative
42		**3rd Floor**	**Beam**	**Wood**	**White**	**16.6**	**POOR**	**Positive**
43		**3rd Floor**	**Ceiling**	**Wood**	**White**	**16.1**	**POOR**	**Positive**
44		3rd Floor	Door Casing	Metal	Grey	0.1	POOR	Negative
45		3rd Floor	Door	Metal	Grey	0.1	POOR	Negative
46		**3rd Floor**	**Win. Casing**	**Wood**	**Grey**	**10.7**	**POOR**	**Positive**
47		**3rd Floor**	**Win. Sill-Stool**	**Wood**	**Grey**	**5.1**	**POOR**	**Positive**
48		**3rd Floor**	**Win. Sash**	**Wood**	**Grey**	**22.9**	**POOR**	**Positive**

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Reading #	Side	Room	Component	Substrate	Color	XRF Reading	Condition	Result
49		**2005**	**Win. Casing**	**Wood**	**White**	**7.5**	**POOR**	**Positive**
50		**2005**	**Win. Sill-Stool**	**Wood**	**White**	**10.3**	**POOR**	**Positive**
51		2005	Wall	Brick	Beige	0	POOR	Negative
52	B	2005	Wall	Brick	Beige	0	POOR	Negative
53	B	2005	Wainscoting	Wood	Stain	-0.1	POOR	Negative
54	C	2005	Door	Metal	White	0	POOR	Negative
55	A	2007	Wall	Drywall	Blue	0	INTACT	Negative
56	**A**	**2007**	**Column**	**Wood**	**White**	**12.9**	**INTACT**	**Positive**
57	C	2007	Wall	Drywall	Green	0	INTACT	Negative
58	C	2007	Floor	Wood	Green	0	INTACT	Negative
59	B	2007	Wall	Brick	Blue	0.2	INTACT	Negative
60	**B**	**2007**	**Win. Casing**	**Wood**	**Red**	**13.9**	**INTACT**	**Positive**
61	**C**	**2007**	**Door Casing**	**Wood**	**Yellow**	**19.7**	**INTACT**	**Positive**
62	A	2008	Wall	Cinderblock	Beige	0	INTACT	Negative
63	C	2008	Wall	Drywall	Grey	0.1	INTACT	Negative
64	D	2008	Wall	Brick	Beige	0	INTACT	Negative
65	**D**	**2008**	**Win. Casing**	**Wood**	**Beige**	**11.1**	**INTACT**	**Positive**
66	**A**	**2010**	**Win. Casing**	**Wood**	**Brown**	**5.5**	**POOR**	**Positive**
67	**A**	**2010**	**Win. Sill-Stool**	**Wood**	**Brown**	**10.3**	**POOR**	**Positive**
69	A	2010	Wall	Brick	Beige	0.1	POOR	Negative
70	**B**	**2010**	**Stair Wall**	**Wood**	**White**	**13**	**POOR**	**Positive**
71	**B**	**2010**	**Stair Riser**	**Wood**	**Grey**	**6.3**	**POOR**	**Positive**
72	B	2010	Floor	Wood	Grey	0	POOR	Negative
73	A	2010	Door Casing	Wood	White	0.1	POOR	Negative
74	A	2010	Door	Wood	White	-0.1	POOR	Negative
75	**A**	**2013**	**Stair Wall**	**Wood**	**Blue**	**9.3**	**POOR**	**Positive**
76	**A**	**2013**	**Railing**	**Wood**	**Green**	**13.6**	**POOR**	**Positive**
77	**A**	**2013**	**Stair Thread**	**Wood**	**Blue**	**2.8**	**POOR**	**Positive**
78	**A**	**2013**	**Stair Riser**	**Wood**	**Blue**	**13.3**	**POOR**	**Positive**
79			Calibration			1		
80			Calibration			1.1		
81			Calibration			1.1		
82			Calibration			0		
83			Calibration			0.1		
84			Calibration			0		
85			Calibration			1		

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Reading #	Side	Room	Component	Substrate	Color	XRF Reading	Condition	Result
86			Calibration			1		
87			Calibration			1.1		
88			Calibration			0.1		
89			Calibration			0.1		
90			Calibration			0.1		
91	A	2013	Wall	Brick	White	0.6	POOR	Negative
92	A	2013	Floor	Wood	Brown	0.1	POOR	Negative
93	**D**	**2013**	**Wall**	**Wood**	**White**	**8.3**	**POOR**	**Positive**
94		**2013**	**Ceiling**	**Wood**	**White**	**9.5**	**POOR**	**Positive**
95	D	2013	Stair Thread	Wood	White	0.1	POOR	Negative
96	D	2013	Stair Riser	Wood	White	-0.1	POOR	Negative
97		**2013**	**Ceiling**	**Wood**	**White**	**10.1**	**POOR**	**Positive**
98		**2013**	**Beam**	**Wood**	**White**	**10.5**	**POOR**	**Positive**
99		**2013**	**Column**	**Metal**	**White**	**8.7**	**POOR**	**Positive**
100	A	2014	Toilet	Porcelain	White	-0.1	INTACT	Negative
101	A	2014	Urinal	Porcelain	White	-0.2	INTACT	Negative
102	A	2014	Partition	Wood	Brown	-0.1	INTACT	Negative
103	A	1003	Wall	Drywall	Grey	0.3	INTACT	Negative
104	B	1003	Door Casing	Wood	Red	0	INTACT	Negative
105	B	1003	Door	Wood	Red	0.2	INTACT	Negative
106	**B**	**1003**	**Door**	**Wood**	**Red**	**13.6**	**INTACT**	**Positive**
107	C	1003	Sink	Porcelain	White	-0.3	INTACT	Negative
108	C	1003	Urinal	Porcelain	White	0.2	INTACT	Negative
109	C	1003	Toilet	Porcelain	White	0	INTACT	Negative
110	C	1003	Partition	Metal	Beige	0	INTACT	Negative
111	A	1005	Wall	Drywall	Brown	0	INTACT	Negative
112	A	1005	Stair Thread	Wood	Grey	-0.1	POOR	Negative
113	A	1005	Stair Riser	Wood	Grey	0.1	POOR	Negative
114	A	1005	Ceiling	Wood	White	0.2	POOR	Negative
115	A	1005	Ceiling	Wood	White	0.1	POOR	Negative
116	C	1005	Wall	Drywall	White	0.1	INTACT	Negative
117	A	1006	Wall	Brick	Red	0.1	INTACT	Negative
118	A	1006	Floor	Concrete	Grey	0.3	POOR	Negative
119	C	1008	Wall	Brick	Green	-0.2	POOR	Negative

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Reading #	Side	Room	Component	Substrate	Color	XRF Reading	Condition	Result
120	C	1008	Pipe	Metal	Yellow	0.3	POOR	Negative
121	**C**	**1008**	**Column**	**Wood**	**White**	**17**	**POOR**	**Positive**
122	C	1008	Door	Wood	Green	0.9	POOR	Negative
123	C	1008	Door	Wood	Green	0.9	POOR	Negative
124	C	1008	Door Casing	Wood	Green	0	POOR	Negative
125	**A**	**Exterior**	**Door Casing**	**Wood**	**Grey**	**2.3**	**INTACT**	**Positive**
126	A	Exterior	Door	Wood	Grey	-0.3	INTACT	Negative
127	B	Exterior	Door	Metal	Brown	0.2	INTACT	Negative
128	B	Exterior	Door Casing	Metal	Brown	0.2	INTACT	Negative
129	B	Exterior	Door Casing	Metal	Grey	0.2	INTACT	Negative
130	A	Exterior	Overhead Door	Metal	Brown	-0.1	INTACT	Negative
131	A	Exterior	Door Trim	Metal	Brown	0.2	INTACT	Negative
133	A	Exterior	Dock Plate	Metal	Yellow	-0.1	POOR	Negative
134	B	Exterior	Dock Plate	Metal	Yellow	0.6	POOR	Negative
135	B	Exterior	Railing	Metal	Yellow	0.4	POOR	Negative
136	C	Exterior	Column	Metal	Brown	0.1	POOR	Negative
137	C	Exterior	Stair Stringer	Metal	Brown	0.2	POOR	Negative
138	D	Exterior	Door Casing	Wood	Brown	0.1	POOR	Negative
139	D	Exterior	Door	Wood	Grey	0.1	POOR	Negative
140	C	Exterior	Door	Wood	Green	0.1	POOR	Negative
141	C	Exterior	Door Casing	Wood	Green	0	POOR	Negative
142	C	Exterior	Overhead Door	Wood	Green	0	POOR	Negative
143	D	Exterior	Door	Wood	Green	0.2	POOR	Negative
144	D	Exterior	Door Casing	Wood	Green	0	POOR	Negative
145			Calibration			1		
146			Calibration			1		
147			Calibration			1		
148			Calibration			0.1		
149			Calibration			0		
150			Calibration			0.1		

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3.0 Polychlorinated Biphenyls (PCB) in Light Ballasts

AMD Environmental was retained by Southern Tier Environments for Living to inspect the building located at 31 Water Street in Jamestown, New York for the presence of light ballasts containing Polychlorinated Biphenyls (PCBs) that may be impacted by future renovations.

Visual inspection of the areas revealed the following:

- **There are approximately 423PCB containing light ballasts on the 1st Floor**
- **There are approximately 200 PCB containing light ballasts on the 2nd Floor.**
- **There are approximately 150 PCB containing light ballasts on the 3rd Floor.**
- **There are approximately 80 PCB containing light ballasts on the 4th Floor.**

All ballasts should be considered PCB containing unless "NO PCB" is clearly marked on the ballast.

4.0 Polychlorinated Biphenyls (PCB) in Caulks Sampling Summary Table

Sample Number	Type	Location	Results (µg/kg)	Results reported In ppm	Hazardous Waste (Y/N)
01	Window Caulk	All Windows	< 500	<0.500	No
02	Door Caulk	All Doors	< 443	<0.443	No

During the PCB sampling conducted on June 26, 2018. Two (2) samples were collected for analysis. The Laboratory analysis performed on samples revealed the following:

- **The material sampled on the date of inspection was found to be below the 50 ppm threshold for PCB's by laboratory analysis.**

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5.0 Mercury Thermostats

AMD Environmental was retained by Southern Tier Environments for Living to inspect the building located at 31 Water Street in Jamestown, New York for the presence of mercury thermostats that may be impacted by future renovations.

Visual inspection of the areas revealed the following:

- **No Mercury Thermostats were found during the inspection**

6.0 Visual Mold Assessment

Summary of Findings:

This summary of mold assessment services and mitigation recommendations consistent with the guidelines set forth by NYSDOL in Article 32, Title 2:"Minimum Work Standards for the Conduct of Mold Assessments and Remediation by Licensed Persons."

A visual assessment of the property revealed the following:

- Multiple areas of moisture intrusion due to roof leaks.
- Minor to severe component deterioration of interior finishes, mostly on the 3rd and 4th floors.

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7.0 Miscellaneous Hazardous Waste / Environmental Issues

The inspection identified numerous other miscellaneous hazardous waste/environmental issues (e.g. paints, lubricants, and other chemical containers) that were inventoried. Reuse of these materials and supplies are part of routine school operations. If disposal measures for these items are to be required they should be evaluated on a case-by-case basis by the contractor as individual containers are identified during the removal phase.

Materials Identified	Location:	Description	Quantity	Comments
32"-36" Round Fluorescent Bulbs	**1st Floor** **2nd Floor** **3rd Floor** **4th Floor**	**In 2'x4' Rectangle Fixtures and 1'x4' (423)** **In 2'x4' Rectangle and 1'x4' Rectangle Fixtures (200)** **In 2'x4' Rectangle and 1'x4' Rectangle Fixtures (150)** **In 2'x4' Rectangle Fixtures and 1'x4' Rectangle Fixtures (80)**	**823**	*Dispose properly*

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8.0 MATERIALS HANDLING RECOMMENDATIONS

8.1 Fluorescent Lights

Disposal/recycling of fluorescent/HID bulbs is conducted by various vendors. Currently, fluorescent lamps are regulated by the July 6, 1999, amendment to the United States Environmental Protection Agency (EPA) for the Typically inclusion of hazardous waste lamps in the federal Universal Waste Rule (UWR) of 40 CFR Part 273., disposal/recycling involve the packing of fluorescent lamps to avoid breakage as they may contain small amounts of mercury. The cost of disposal can vary considerably depending upon whether disposal or recycling is selected.

8.2 Mercury Containing Thermostats, Thermometers and Switches

These materials are considered Universal Waste they should be drummed and properly disposed of. A certificate of destruction or re-use can be provided by the disposal company.

8.3 Ozone Depleting Substances

A licensed HVAC contractor should decommission any refrigeration or HVAC equipment prior to disposal of these items. It was assumed that the existing HVAC system was to be re-used. T

8.4 PCB/DEHP Light Ballasts & Transformers

While the disposal/recycling for PCB/DEHP ballasts is dependent on the condition of the ballast, the EPA encourages commercial and industrial firms that use and dispose of large quantities of PCB ballasts to establish a collection and disposal program that would result in waste capacitors going to chemical or hazardous waste landfills or high-temperature incinerators. Disposal costs will depend on whether the PCB/DEHP ballasts are transported for high temperature incineration, hazardous waste landfill disposal, or recycling.

8.5 Tanks, Pumps, Compressors, Elevators and Boilers

The interior tanks (i.e., Oil, AST, compressor tanks) can be emptied, dismantled, removed, and disposed of.

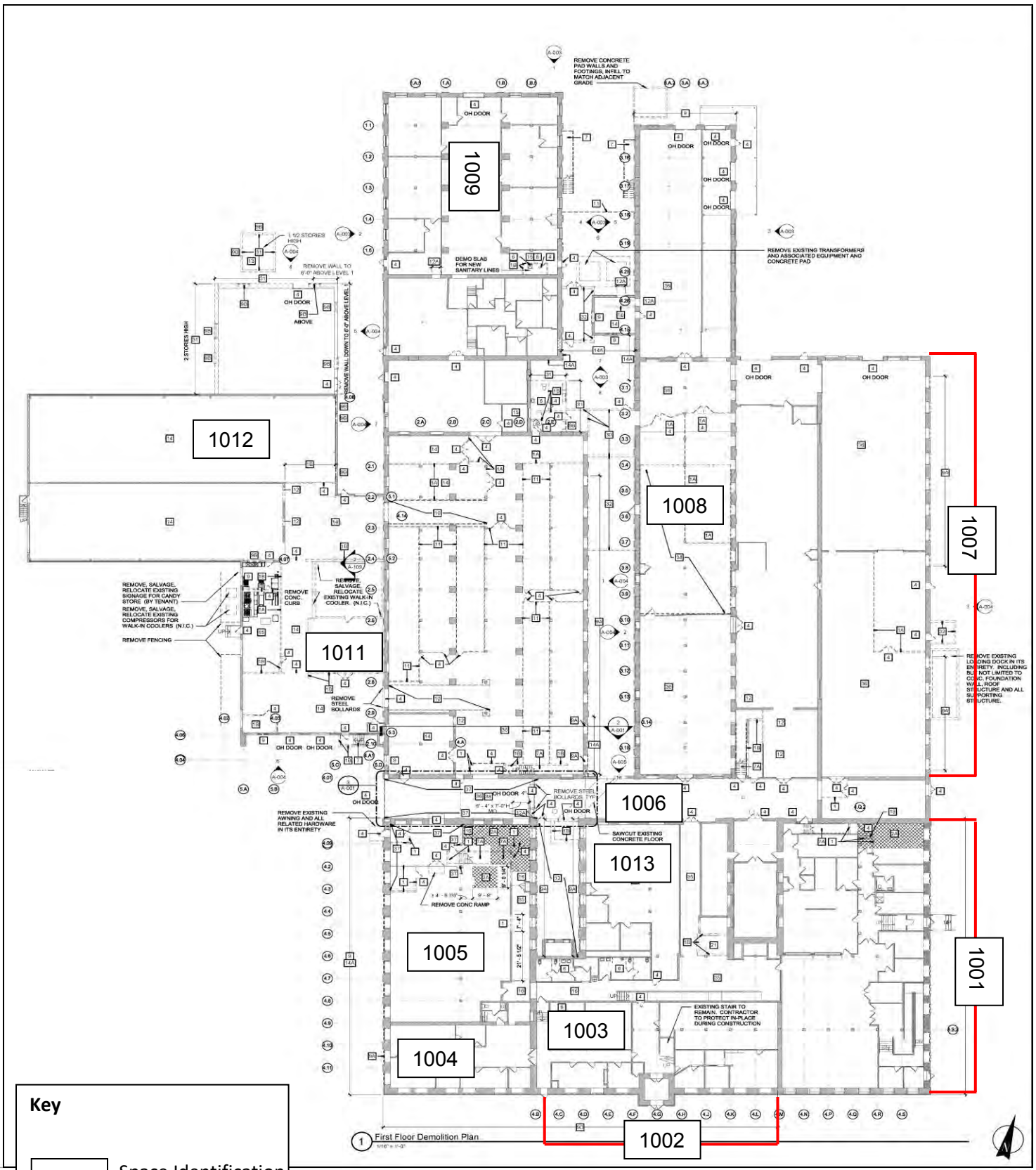
8.6 Miscellaneous Hazardous Waste/Environmental Issues

Numerous miscellaneous materials are typical in all buildings. Many of these materials are common materials that are used in the everyday operations of the industrial food manufacturing. These materials include paints, cleaning supplies, and various products and equipment that can be used. The costs are associated with the proper disposal of these materials if they are not being re-used.

AMD Environmental Consultants, Inc.
712 Main St. Suite L1
Buffalo, NY 14202
Office: 716-833-0043 Fax: 716-241-8689
www.amdenvironmental.com

Appendix A: Site Map(s)

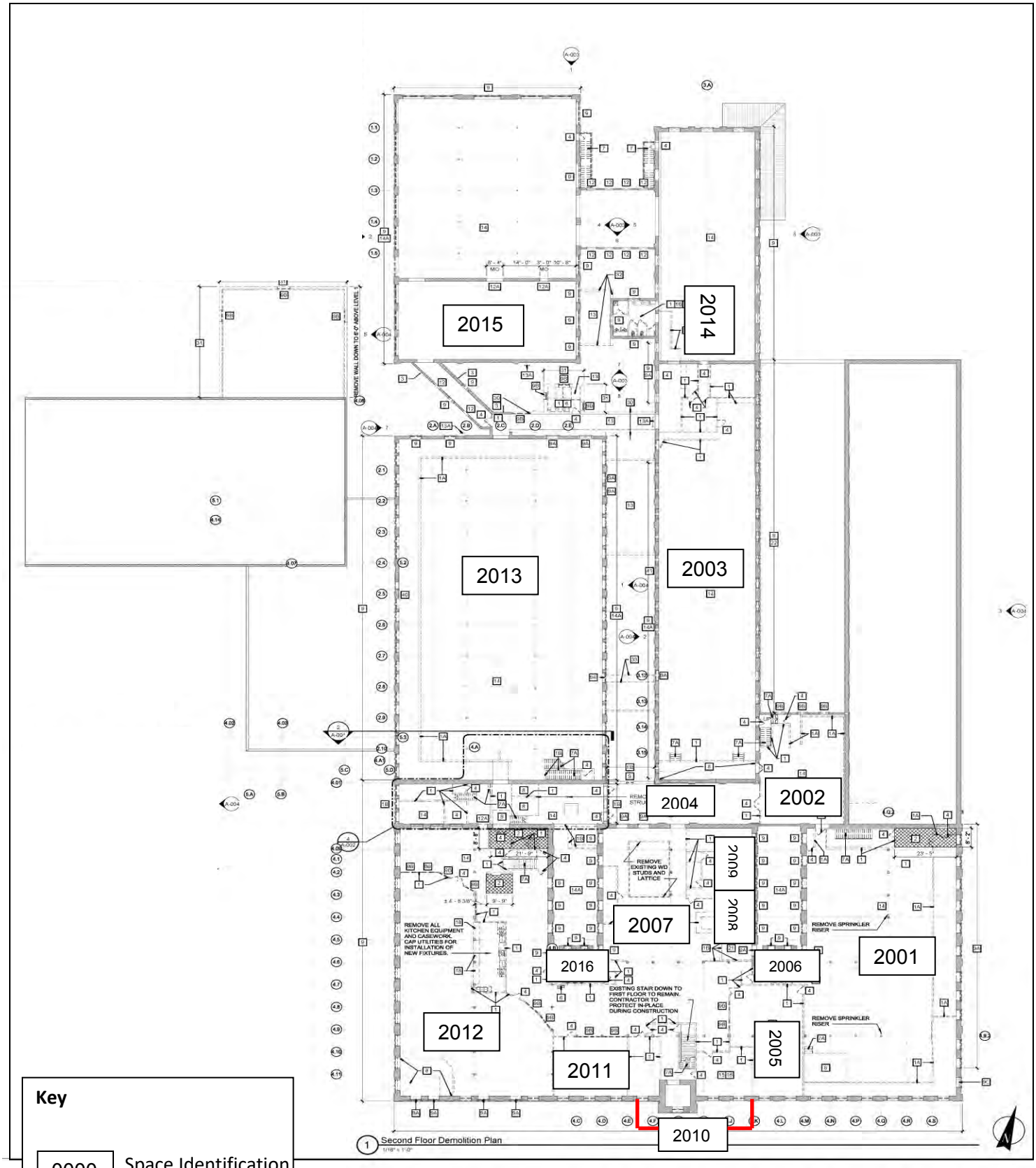
31 Water Street Site Map-1st Floor



Key

0000 Space Identification Number (SID)

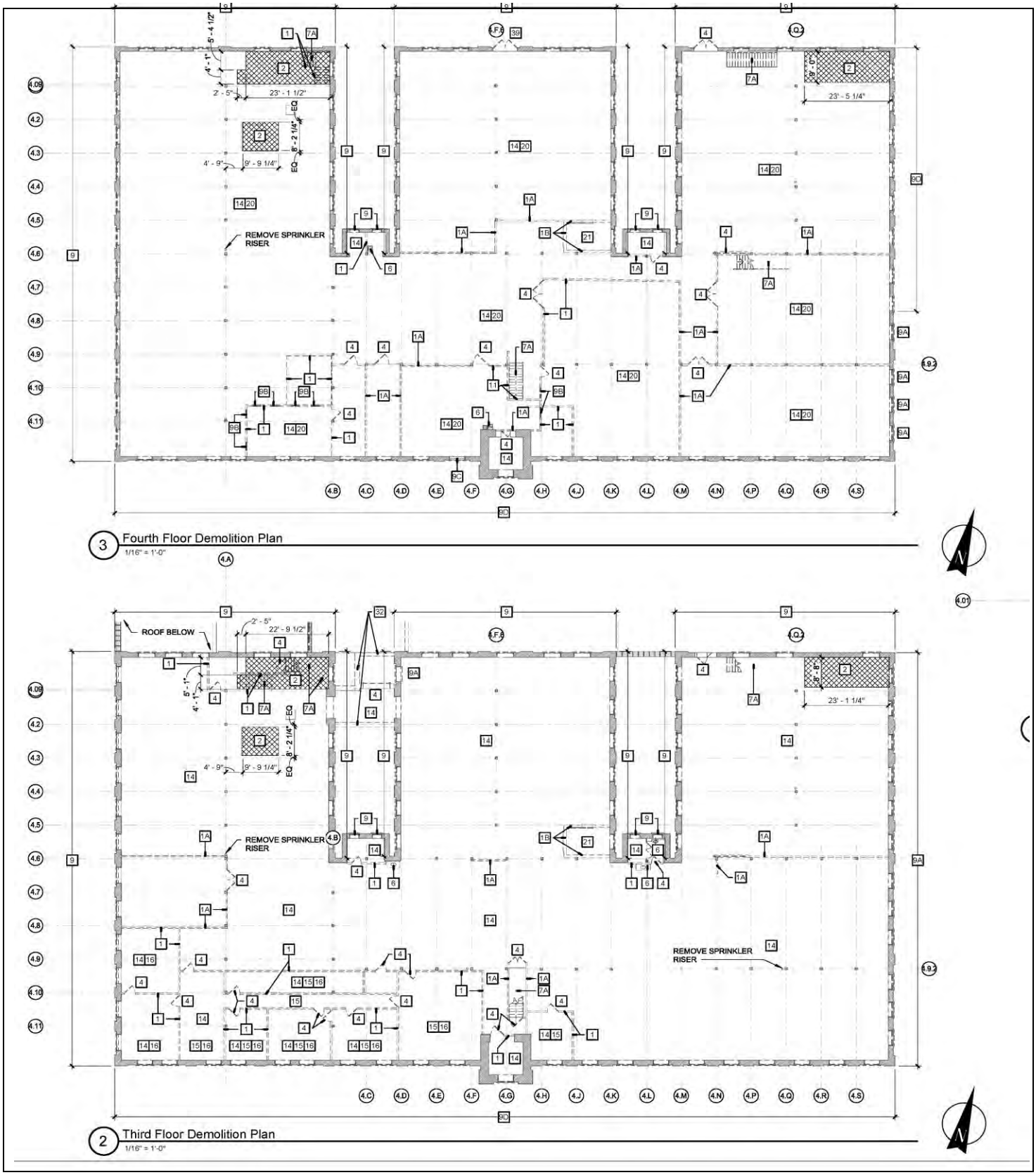
31 Water Street Site Map-2nd Floor

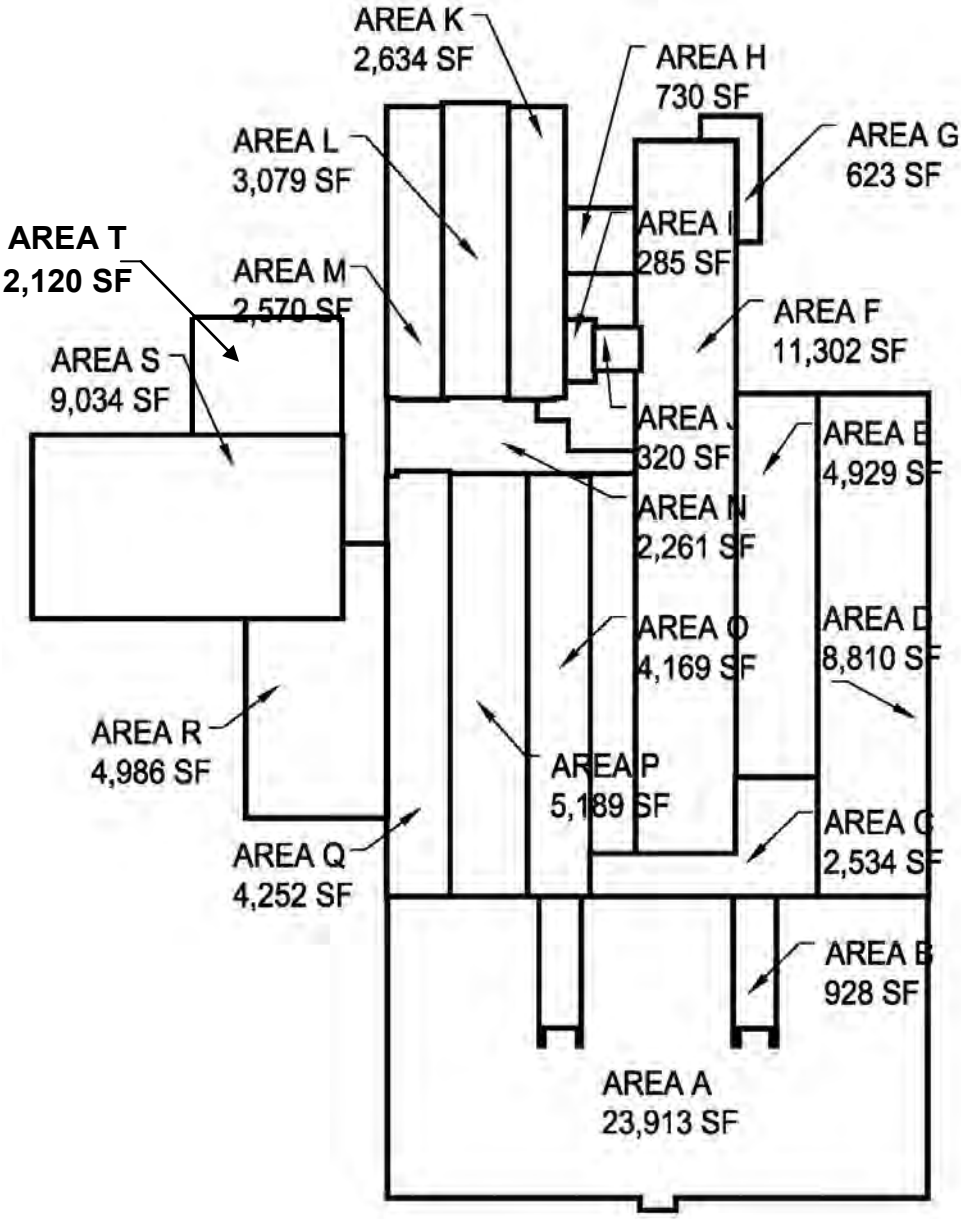


Key

0000 Space Identification Number (SID)

31 Water Street Site Map-3rd & 4th Floor





ROOF AREAS:

A = 23,913 SF
B = 928 SF
C = 2,534 SF
D = 8,810 SF
E = 4,929 SF
F = 11,302 SF
G = 623 SF
H = 730 SF
I = 285 SF
J = 320 SF
K = 2,634 SF
L = 3,079 SF
M = 2,570 SF
N = 2,261 SF
O = 4,169 SF
P = 5,189 SF
Q = 4,252 SF
R = 4,986 SF
S = 9,034 SF
T= 2,120 SF

TOTAL SF OF ROOF:
92,548 SF

1 THE GATEWAY CENTER - SF OF EXISTING ROOF
NTS

north

AMD Environmental Consultants, Inc.
712 Main St. Suite L1
Buffalo, NY 14202
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www.amdenvironmental.com

Appendix B: Asbestos Sample Analyses & Sample Chains of Custody

AMERI SCI

AmeriSci New York
117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

PLM Bulk Asbestos Report

AMD Environmental Consultants, Inc.
Attn: John Wolf
712 Main Street
Suite L1
Buffalo, NY 14202

Date Received 06/27/18 **AmeriSci Job #** 218065347
Date Examined 07/02/18 **P.O. #**
ELAP # 11480 **Page** 1 **of** 12
RE: 18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
101-1 101	218065347-01 **Location:** 1st Floor - Drywall	***No***	NAD [1] (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose Trace, Fibrous glass 3 %, Non-fibrous 97 %			
101-2 101	218065347-02 **Location:** 1st Floor - Drywall	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 15 %, Fibrous glass 2 %, Non-fibrous 83 %			
101-3 101	218065347-03 **Location:** 2nd Floor - Drywall	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 30 %, Fibrous glass 2 %, Non-fibrous 68 %			
101-4 101	218065347-04 **Location:** 2nd Floor - Drywall	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 35 %, Fibrous glass 2 %, Non-fibrous 63 %			
101-5 101	218065347-05 **Location:** 3rd Floor - Drywall	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 35 %, Fibrous glass 2 %, Non-fibrous 63 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
101-6 101	218065347-06 **Location:** 3rd Floor - Drywall	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 20 %, Fibrous glass 2 %, Non-fibrous 78 %			
101-7 101	218065347-07 **Location:** 4th Floor - Drywall	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 20 %, Fibrous glass 2 %, Non-fibrous 78 %			
101-8 101	218065347-08 **Location:** 4th Floor - Drywall	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 25 %, Fibrous glass 2 %, Non-fibrous 73 %			
101A-1 101A	218065347-09 **Location:** 1st Floor - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
101A-2 101A	218065347-10 **Location:** 1st Floor - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
101A-3 101A	218065347-11 **Location:** 2nd Floor - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

PLM Bulk Asbestos Report

18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
101A-4 101A	218065347-12 **Location:** 2nd Floor - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
101A-5 101A	218065347-13 **Location:** 3rd Floor - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
101A-6 101A	218065347-14 **Location:** 3rd Floor - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
101A-7 101A	218065347-15 **Location:** 4th Floor - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
101A-8 101A	218065347-16 **Location:** 4th Floor - Joint Compound	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
102-1 102	218065347-17 **Location:** 2nd Floor - Textured Wall Coating	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
102-2 102	218065347-18 **Location:** 2nd Floor - Textured Wall Coating	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
200-1 200	218065347-19 **Location:** 3rd Floor - 2 x 4 Ceiling Tile	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 53.6 %			
200-2 200	218065347-20 **Location:** 3rd Floor - 2 x 4 Ceiling Tile	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 67.7 %			
201-1 201	218065347-21 **Location:** 2nd Floor - 2 x 2 Ceiling Tile	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 45.1 %			
201-2 201	218065347-22 **Location:** 2nd Floor - 2 x 2 Ceiling Tile	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 44.4 %			
300-1 300	218065347-23 **Location:** 3rd Floor - Brown W/ Squares Linoleum	***Yes***	1.8 % (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 1.8 % **Other Material:** Non-fibrous 1.7 %			

PLM Bulk Asbestos Report

18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
300-2 300	218065347-24 **Location:** 3rd Floor - Brown W/ Squares Linoleum		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
301-1 301	218065347-25 **Location:** 3rd Floor - Carpet Mastic	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 14 %			
301-2 301	218065347-26 **Location:** 3rd Floor - Carpet Mastic	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 9.1 %			
302-1 302	218065347-27 **Location:** 3rd Floor - Cove Base Mastic	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 31.3 %			
302-2 302	218065347-28 **Location:** 3rd Floor - Cove Base Mastic	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 28 %			
303-1 303	218065347-29 **Location:** 3rd Floor - Jute Back Linoleum	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 5.9 %			

PLM Bulk Asbestos Report

18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
303-2 303	218065347-30 **Location:** 3rd Floor - Jute Back Linoleum	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 5.4 %			
304-1 304	218065347-31 **Location:** 3rd Floor - Beige 12 x 12 Floor Tile	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 20.6 %			
304-2 304	218065347-32 **Location:** 3rd Floor - Beige 12 x 12 Floor Tile	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 15.4 %			
305-1 305	218065347-33 **Location:** 2nd Floor - Ceramic Tile Pattern Linoleum	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 13.1 %			
305-2 305	218065347-34 **Location:** 2nd Floor - Ceramic Tile Pattern Linoleum	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 13.6 %			
306-1 306	218065347-35 **Location:** 2nd Floor - Grey 12 x 12 Floor Tile	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 51.3 %			

PLM Bulk Asbestos Report

18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
306-2 306	218065347-36 **Location:** 2nd Floor - Grey 12 x 12 Floor Tile	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 49.3 %			
307-1 307	218065347-37 **Location:** 2nd Floor - Mastic Of 12 x 12 Floor Tile	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 11.5 %			
307-2 307	218065347-38 **Location:** 2nd Floor - Mastic Of 12 x 12 Floor Tile	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 10.4 %			
308-1 308	218065347-39 **Location:** 2nd Floor - Ceramic Tile Grout	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
308-2 308	218065347-40 **Location:** 2nd Floor - Ceramic Tile Grout	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
308A-1 308A	218065347-41 **Location:** 2nd Floor - Ceramic Tile Mastic	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 15.1 %			

PLM Bulk Asbestos Report

18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
308A-2 308A	218065347-42 **Location:** 2nd Floor - Ceramic Tile Mastic	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 14.3 %			
310-1 310	218065347-43 **Location:** 2nd Floor - 4 Inch Black Linoleum	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 14.6 %			
310-2 310	218065347-44 **Location:** 2nd Floor - 4 Inch Black Linoleum	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 10.7 %			
311-1 311	218065347-45 **Location:** 1st Floor - Grey Epoxy Floor Coating	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 20.4 %			
311-2 311	218065347-46 **Location:** 1st Floor - Grey Epoxy Floor Coating	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 18.7 %			
312-1 312	218065347-47 **Location:** 1st Floor - Brown Epoxy Floor Coating	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 45.4 %			

PLM Bulk Asbestos Report

18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
312-2 312	218065347-48 **Location:** 1st Floor - Brown Epoxy Floor Coating	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 25.4 %			
400-1 400	218065347-49 **Location:** 3rd Floor - TSI Mag. Pipe	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: White, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Fibrous glass 5 %, Synthetic fibers 10 %, Non-fibrous 85 %			
400-2 400	218065347-50 **Location:** 3rd Floor - TSI Mag. Pipe	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Fibrous glass 5 %, Synthetic fibers 10 %, Non-fibrous 85 %			
401-1 401	218065347-51 **Location:** 1st Floor - Pipe Fitting	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Fibrous glass 15 %, Non-fibrous 85 %			
401-2 401	218065347-52 **Location:** 1st Floor - Pipe Fitting	***No***	NAD (by NYS ELAP 198.1) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Fibrous glass 15 %, Non-fibrous 85 %			
600-1 600	218065347-53 **Location:** Exterior - Window Glaze	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.2 %			

PLM Bulk Asbestos Report

18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
600-2 600	218065347-54 **Location:** Exterior - Window Glaze	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 6.5 %			
601-1 601	218065347-55 **Location:** 3rd Floor - Sink Insulation	***Yes***	1.5 % (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 1.5 % **Other Material:** Non-fibrous 4.1 %			
601-2 601	218065347-56 **Location:** 3rd Floor - Sink Insulation		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
602-1 602	218065347-57 **Location:** Exterior - Window Caulk	***Yes***	11.7 % (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 11.7 % **Other Material:** Non-fibrous 20.5 %			
602-2 602	218065347-58 **Location:** Exterior - Window Caulk		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
603-1 603	218065347-59 **Location:** 2nd Floor - Window Caulk (Interior)	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 5.6 %			

PLM Bulk Asbestos Report

18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
603-2 603	218065347-60 **Location:** 2nd Floor - Window Caulk (Interior)	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 6 %			
605-1 605	218065347-61 **Location:** Exterior - In-Filled Windows Caulk	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 2.1 %			
605-2 605	218065347-62 **Location:** Exterior - In-Filled Windows Caulk	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: OffWhite, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3.6 %			
606-1 606	218065347-63 **Location:** Exterior - Window Caulk (Newer Windows)	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 8 %			
606-2 606	218065347-64 **Location:** Exterior - Window Caulk (Newer Windows)	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 9.9 %			
607-1 607	218065347-65 **Location:** Exterior - Door Caulk	***Yes***	5.7 % (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 5.7 % **Other Material:** Non-fibrous 12.9 %			

PLM Bulk Asbestos Report

18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
607-2 607	218065347-66 **Location:** Exterior - Door Caulk		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
608-1 608	218065347-67 **Location:** Exterior - Asphalt Siding	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 50.2 %			
608-2 608	218065347-68 **Location:** Exterior - Asphalt Siding	***No***	NAD (by NYS ELAP 198.6) by John P. Koubiadis on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 45.4 %			

Reporting Notes:

(1) This job was - Analyzed using Olympus BH-2 Pol Scope S/N 223705

Analyzed by: John P. Koubiadis

*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite or 198.6 for NOB samples or EPA 400 pt ct by EPA 600/M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. AIHA-LAP, LLC Lab ID 102843, RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054.

Reviewed By: _____ END OF REPORT _____

Table I
Summary of Bulk Asbestos Analysis Results
18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	101-1	101	----	----	----	----	NAD	NA
Location: 1st Floor - Drywall								
02	101-2	101	----	----	----	----	NAD	NA
Location: 1st Floor - Drywall								
03	101-3	101	----	----	----	----	NAD	NA
Location: 2nd Floor - Drywall								
04	101-4	101	----	----	----	----	NAD	NA
Location: 2nd Floor - Drywall								
05	101-5	101	----	----	----	----	NAD	NA
Location: 3rd Floor - Drywall								
06	101-6	101	----	----	----	----	NAD	NA
Location: 3rd Floor - Drywall								
07	101-7	101	----	----	----	----	NAD	NA
Location: 4th Floor - Drywall								
08	101-8	101	----	----	----	----	NAD	NA
Location: 4th Floor - Drywall								
09	101A-1	101A	----	----	----	----	NAD	NA
Location: 1st Floor - Joint Compound								
10	101A-2	101A	----	----	----	----	NAD	NA
Location: 1st Floor - Joint Compound								
11	101A-3	101A	----	----	----	----	NAD	NA
Location: 2nd Floor - Joint Compound								
12	101A-4	101A	----	----	----	----	NAD	NA
Location: 2nd Floor - Joint Compound								
13	101A-5	101A	----	----	----	----	NAD	NA
Location: 3rd Floor - Joint Compound								
14	101A-6	101A	----	----	----	----	NAD	NA
Location: 3rd Floor - Joint Compound								
15	101A-7	101A	----	----	----	----	NAD	NA
Location: 4th Floor - Joint Compound								
16	101A-8	101A	----	----	----	----	NAD	NA
Location: 4th Floor - Joint Compound								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results
18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
17	102-1	102	----	----	----	----	NAD	NA
Location: 2nd Floor - Textured Wall Coating								
18	102-2	102	----	----	----	----	NAD	NA
Location: 2nd Floor - Textured Wall Coating								
19	200-1	200	0.263	24.3	22.1	53.6	NAD	NAD
Location: 3rd Floor - 2 x 4 Ceiling Tile								
20	200-2	200	0.217	23.0	9.2	67.7	NAD	NAD
Location: 3rd Floor - 2 x 4 Ceiling Tile								
21	201-1	201	0.293	25.6	29.4	45.1	NAD	NAD
Location: 2nd Floor - 2 x 2 Ceiling Tile								
22	201-2	201	0.270	23.7	31.9	44.4	NAD	NAD
Location: 2nd Floor - 2 x 2 Ceiling Tile								
23	300-1	300	0.256	35.5	60.9	1.8	Chrysotile 1.8	NA
Location: 3rd Floor - Brown W/ Squares Linoleum								
24	300-2	300	0.172	32.0	65.1	2.9	NA/PS	NA
Location: 3rd Floor - Brown W/ Squares Linoleum								
25	301-1	301	0.235	37.0	48.9	14.0	NAD	NAD
Location: 3rd Floor - Carpet Mastic								
26	301-2	301	0.320	24.7	66.3	9.1	NAD	NAD
Location: 3rd Floor - Carpet Mastic								
27	302-1	302	0.144	50.7	18.1	31.3	NAD	NAD
Location: 3rd Floor - Cove Base Mastic								
28	302-2	302	0.211	55.9	16.1	28.0	NAD	NAD
Location: 3rd Floor - Cove Base Mastic								
29	303-1	303	0.153	78.4	15.7	5.9	NAD	NAD
Location: 3rd Floor - Jute Back Linoleum								
30	303-2	303	0.184	78.3	16.3	5.4	NAD	NAD
Location: 3rd Floor - Jute Back Linoleum								
31	304-1	304	0.238	14.7	64.7	20.6	NAD	NAD
Location: 3rd Floor - Beige 12 x 12 Floor Tile								
32	304-2	304	0.292	28.8	55.8	15.4	NAD	NAD
Location: 3rd Floor - Beige 12 x 12 Floor Tile								

31 Water St., Jamestown NY
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18-0619DB-A

Table I
Summary of Bulk Asbestos Analysis Results
18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
33	305-1	305	0.153	57.5	29.4	13.1	NAD	NAD
Location: 2nd Floor - Ceramic Tile Pattern Linoleum								
34	305-2	305	0.154	61.7	24.7	13.6	NAD	NAD
Location: 2nd Floor - Ceramic Tile Pattern Linoleum								
35	306-1	306	0.300	14.7	34.0	51.3	NAD	NAD
Location: 2nd Floor - Grey 12 x 12 Floor Tile								
36	306-2	306	0.221	14.9	35.7	49.3	NAD	NAD
Location: 2nd Floor - Grey 12 x 12 Floor Tile								
37	307-1	307	0.226	47.3	41.2	11.5	NAD	NAD
Location: 2nd Floor - Mastic Of 12 x 12 Floor Tile								
38	307-2	307	0.183	53.6	36.1	10.4	NAD	NAD
Location: 2nd Floor - Mastic Of 12 x 12 Floor Tile								
39	308-1	308	----	----	----	----	NAD	NA
Location: 2nd Floor - Ceramic Tile Grout								
40	308-2	308	----	----	----	----	NAD	NA
Location: 2nd Floor - Ceramic Tile Grout								
41	308A-1	308A	0.172	30.8	54.1	15.1	NAD	NAD
Location: 2nd Floor - Ceramic Tile Mastic								
42	308A-2	308A	0.147	32.0	53.7	14.3	NAD	NAD
Location: 2nd Floor - Ceramic Tile Mastic								
43	310-1	310	0.158	57.6	27.8	14.6	NAD	NAD
Location: 2nd Floor - 4 Inch Black Linoleum								
44	310-2	310	0.168	59.5	29.8	10.7	NAD	NAD
Location: 2nd Floor - 4 Inch Black Linoleum								
45	311-1	311	0.191	59.2	20.4	20.4	NAD	NAD
Location: 1st Floor - Grey Epoxy Floor Coating								
46	311-2	311	0.171	62.0	19.3	18.7	NAD	NAD
Location: 1st Floor - Grey Epoxy Floor Coating								
47	312-1	312	0.183	16.9	37.7	45.4	NAD	NAD
Location: 1st Floor - Brown Epoxy Floor Coating								
48	312-2	312	0.236	16.1	58.5	25.4	NAD	NAD
Location: 1st Floor - Brown Epoxy Floor Coating								

31 Water St., Jamestown NY 43 18-0619DB-A

Table I
Summary of Bulk Asbestos Analysis Results
18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos by TEM
49	400-1	400	----	----	----	----	NAD	NA
Location: 3rd Floor - TSI Mag. Pipe								
50	400-2	400	----	----	----	----	NAD	NA
Location: 3rd Floor - TSI Mag. Pipe								
51	401-1	401	----	----	----	----	NAD	NA
Location: 1st Floor - Pipe Fitting								
52	401-2	401	----	----	----	----	NAD	NA
Location: 1st Floor - Pipe Fitting								
53	600-1	600	0.227	7.5	90.3	2.0	NAD	Chrysotile <1.0
Location: Exterior - Window Glaze								
54	600-2	600	0.337	7.7	85.8	6.3	NAD	Chrysotile <1.0
Location: Exterior - Window Glaze								
55	601-1	601	0.266	17.7	76.7	4.1	Chrysotile 1.5	NA
Location: 3rd Floor - Sink Insulation								
56	601-2	601	0.236	18.2	74.6	7.2	NA/PS	NA
Location: 3rd Floor - Sink Insulation								
57	602-1	602	0.180	57.8	10.0	20.5	Chrysotile 11.7	NA
Location: Exterior - Window Caulk								
58	602-2	602	0.147	58.5	9.5	32.0	NA/PS	NA
Location: Exterior - Window Caulk								
59	603-1	603	0.249	29.7	64.7	5.6	NAD	NAD
Location: 2nd Floor - Window Caulk (Interior)								
60	603-2	603	0.184	29.9	64.1	6.0	NAD	NAD
Location: 2nd Floor - Window Caulk (Interior)								
61	605-1	605	0.190	20.5	77.4	2.1	NAD	NAD
Location: Exterior - In-Filled Windows Caulk								
62	605-2	605	0.169	21.3	75.1	3.6	NAD	NAD
Location: Exterior - In-Filled Windows Caulk								
63	606-1	606	0.176	61.9	30.1	8.0	NAD	NAD
Location: Exterior - Window Caulk (Newer Windows)								
64	606-2	606	0.274	60.6	29.6	9.9	NAD	NAD
Location: Exterior - Window Caulk (Newer Windows)								

31 Water St., Jamestown NY
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18-0619DB-A

Table I
Summary of Bulk Asbestos Analysis Results
18-0619DB-A; 31 Water Street; 31 Water St., Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
65	607-1	607	0.237	29.5	51.9	12.9	Chrysotile 5.7	NA
Location: Exterior - Door Caulk								
66	607-2	607	0.185	30.3	53.5	16.2	NA/PS	NA
Location: Exterior - Door Caulk								
67	608-1	608	0.271	45.0	4.8	50.2	NAD	NAD
Location: Exterior - Asphalt Siding								
68	608-2	608	0.328	49.1	5.5	45.4	NAD	NAD
Location: Exterior - Asphalt Siding								

Analyzed by: John P. Koubiadis; Date Analyzed 7/2/2018

**Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by EPA 600/M4-82-020 per 40 CFR or ELAP 198.1 for New York friable samples or ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (not covered by NVLAP Bulk accreditation) or ELAP 198.4; for New York samples; NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, AIHA-LAP, LLC (PLM) Lab ID 102843.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogenous materials).

Reviewed By:

Relinquished By: [signature] Date/Time: 6-26-18

Received By: SFagan Date/Time: 6/27-18 1235

Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: _____

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BULK CHAIN OF CUSTODY

AMERISCI NEW YORK
117 EAST 30TH STREET
NEW YORK, NY 10016
TOLL FREE: (800) 705-5227
PHONE: (212) 679-8600
FAX: (212) 679-9392

Company: AMD Environmental

Street Address: 712 Main Street, Suite L 1

City: Buffalo State: NY Zip: 14202

Phone: 716-833-0043 Cell:

Fax Results? Y ☐ Fax #:

Email Results? Y ☑ Email: to all parties listed below

Results to: jwolf@amdenv.com, anthony@amdenv.com,

Project: 31 Water Street AmeriSci #:

Proj Mgr: Proj #: 18-0619DB-A

Proj Address: 31 Water Street Jamestown Proj State: NY

Analysis: ☐ PLM; ☒ Positive Stop; ☐ TEM; ☒ NY ELAP PLM/TEM w/ NOB Prep.

ASTM Dust ☐ (Microvac) ☐ (Wipe); ☐ Qualitative; ☐ Other (describe in comments)

Turnaround Time: 5 Day Material Type: ☒ Bulk ☐ Dust ☐ Water

Sampled By: David Batt Date Sampled: 6/26/18

Special Instructions or Comments:

admin@amdenv.com, dbatt@amdenv.com, sdunlap@amdenv.com, john.doucette@amdenv.com

Lab ID	Field ID	Location	Sample Description (dust area)	Homogenous Area
	306-1,2	2nd Floor	Grey 12 x12 Floor Tile	
	307-1,2	2nd Floor	Mastic of 12 x12 Floor tile	
	308-1,2	2nd Floor	Ceramic Tile Grout	
	308A-1,2	2nd Floor	Ceramic tile mastic	
	310-1,2	2nd Floor	4inch Block linoleum	
	311-1,2	1st Floor	Grey Epoxy Floor Coating	
	312-1,2	1st Floor	Brown Epoxy Floor Coating	
	400-1,2	3rd Floor	TSI - Mag pipe	
	401-1,2	1st Floor	Pipe Fitting	
	600-1,2	Exterior	Window Glaze	
	601-1,2	3rd Floor	Sink Insulation	
	602-1,2	Exterior	Window Caulk	
	603-1,2	2nd Floor	Window Caulk - Interior	
	605-1,2	Exterior	In Filled Windows Caulk	
	606-1,2	Exterior	Window Caulk - Newer Windows	
	607-1,2	Exterior	Door Caulk	
	608-1,2	Exterior	Asphalt Siding	

#2180065347

31 Water St Jamestown NY

18-0619DB-A

Relinquished By: [signature] Date/Time: 6/26/18

Received By: [signature] Date/Time: 6-27-18 1235

Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: _____

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FAX: (212) 679-9392

31 Water St Jamestown NY

Company: AMD Environmental

Street Address: 712 Main Street, Suite L 1

City: Buffalo State: NY Zip: 14202

Phone: 716-833-0043 Cell:

Fax Results? Y ☐ Fax #:

Email Results? Y ☑ Email: to all parties listed below

Results to: jwolf@amdenv.com, anthony@amdenv.com,

Project: 31 Water Street AmeriSci #:

Proj Mgr: Proj #: 18-0619DB-A

Proj Address: 31 Water St. Jamestown Proj State: NY

Analysis: ☐ PLM; ☒ Positive Stop; ☐ TEM; ☒ NY ELAP PLM/TEM w/ NOB Prep.

ASTM Dust ☐ (Microvac) ☐ (Wipe); ☐ Qualitative; ☐ Other (describe in comments)

Turnaround Time: 5 Day Material Type: ☒ Bulk ☐ Dust ☐ Water

Sampled By: David Batt Date Sampled: 6/26/18

Special Instructions or Comments:

admin@amdenv.com, dbatt@amdenv.com, sdunlap@amdenv.com, john.doucette@amdenv.com

Lab ID	Field ID	Location	Sample Description (dust area)	Homogenous Area
	101-1,2	1st Floor	Dry wall	
	101-3,4	2nd Floor	Dry wall	
	101-5,6	3rd Floor	Dry wall	
	101-7,8	4th Floor	Dry wall	
	101A-1,2	1st Floor	Joint Compound	
	101A-3,4	2nd Floor	Joint Compound	
	101A-5,6	3rd Floor	Joint Compound	
	101A-7,8	4th Floor	Joint Compound	
	102-1,2	2nd Floor	Textured wall Coating	
	200-1,2	3rd Floor	2x4 Ceiling Tile	
	201-1,2	2nd Floor	2x2 Ceiling Tile	
	300-1,2	3rd Floor	Brown w/squares linoleum	
	301-1,2	3rd Floor	Carpet Mastic	
	302-1,2	3rd Floor	Cove Base Mastic	
	303-1,2	3rd Floor	Jute Back linoleum	
	304-1,2	3rd Floor	Beige 12x12 Floor Tile	
	305-1,2	2nd Floor	Ceramic tile pattern linoleum	

#2180653 47

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18-0619DB-A

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AmeriSci New York
117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

PLM Bulk Asbestos Report

AMD Environmental Consultants, Inc.
Attn: John Wolf
712 Main Street
Suite L1
Buffalo, NY 14202

Date Received 06/27/18 **AmeriSci Job #** 218065406
Date Examined 07/02/18 **P.O. #**
ELAP # 11480 **Page** 1 **of** 5
RE: 180619DB-A; Roof G-Q; 31 Water St Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
716-1 716	218065406-01 **Location:** Roof G - Rolled Roofing	***Yes***	Trace (<0.25 % pc) [1,2] (EPA 400 PC) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile <0.25 % pc **Other Material:** Non-fibrous 42.3 %			
716-2 716	218065406-02 **Location:** Roof G - Rolled Roofing	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 39.9 %			
718-1 718	218065406-03 **Location:** Roof J - Field	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 7.1 %			
718-2 718	218065406-04 **Location:** Roof J - Field	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 14.8 %			
719-1 719	218065406-05 **Location:** Roof J - Flashing	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 19 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

180619DB-A; Roof G-Q; 31 Water St Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
719-2 719	218065406-06 **Location:** Roof J - Flashing	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 19.7 %			
720-1 720	218065406-07 **Location:** Roof K, L, M - Field	***Yes***	1.5 % [1] (EPA 400 PC) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 1.5 % **Other Material:** Non-fibrous 22.6 %			
720-2 720	218065406-08 **Location:** Roof K, L, M - Field	***Yes***	1.5 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 1.5 % **Other Material:** Non-fibrous 9.8 %			
721-1 721	218065406-09 **Location:** Roof K, L, M - Flashing	***Yes***	3.3 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 3.3 % **Other Material:** Non-fibrous 12.6 %			
721-2 721	218065406-10 **Location:** Roof K, L, M - Flashing	***Yes***	2.9 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 2.9 % **Other Material:** Non-fibrous 10.3 %			
722-1 722	218065406-11 **Location:** Roof N - Field	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 18.2 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

180619DB-A; Roof G-Q; 31 Water St Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
722-2 722	218065406-12 **Location:** Roof N - Field	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 15.3 %			
723-1 723	218065406-13 **Location:** Roof N - Flashing	***Yes***	Trace (<0.25 % pc) [1] (EPA 400 PC) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile <0.25 % pc **Other Material:** Non-fibrous 37.8 %			
723-2 723	218065406-14 **Location:** Roof N - Flashing	***Yes***	Trace (<0.25 % pc) [1] (EPA 400 PC) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile <0.25 % pc **Other Material:** Non-fibrous 38.4 %			
724-1 724	218065406-15 **Location:** Roof N - Repair Tar	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 27.8 %			
724-2 724	218065406-16 **Location:** Roof N - Repair Tar	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 25.8 %			
725-1 725	218065406-17 **Location:** Roof O, P, Q - Field	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 24.2 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

180619DB-A; Roof G-Q; 31 Water St Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
725-2 725	218065406-18 **Location:** Roof O, P, Q - Field	***Yes***	6 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 6.0 % **Other Material:** Non-fibrous 28.3 %			
726-1 726	218065406-19 **Location:** Roof O, P, Q - Flashing	***Yes***	3.4 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 3.4 % **Other Material:** Non-fibrous 10.9 %			
726-2 726	218065406-20 **Location:** Roof O, P, Q - Flashing	***Yes***	2.8 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 2.8 % **Other Material:** Non-fibrous 11.4 %			
727-1 727	218065406-21 **Location:** Roof O, P, Q - Tar On Parapet Wall	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 15 %			
727-2 727	218065406-22 **Location:** Roof O, P, Q - Tar On Parapet Wall	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 15.7 %			
728-1 728	218065406-23 **Location:** Roof O, P, Q - Repair Tar	***Yes***	9.6 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 9.5 % **Other Material:** Non-fibrous 31 %			

PLM Bulk Asbestos Report

180619DB-A; Roof G-Q; 31 Water St Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
728-2	218065406-24	*Yes*	7.2 %
728	**Location:** Roof O, P, Q - Repair Tar		(by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18

Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material
Asbestos Types: Chrysotile 7.2 %
Other Material: Non-fibrous 30.7 %

Reporting Notes:

(1) Sample prepared for analysis by ELAP 198.6 method

(2) This job was - Analyzed using Motic BA310 PolScope S/N 1190000326

Analyzed by: Jared C. Clarke _____

*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite or 198.6 for NOB samples or EPA 400 pt ct by EPA 600/M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. AIHA-LAP, LLC Lab ID 102843, RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054.

Reviewed By:_____ _____END OF REPORT_____

18-0619DB-A

Table I
Summary of Bulk Asbestos Analysis Results
180619DB-A; Roof G-Q; 31 Water St Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	716-1	716	0.312	49.4	8.3	42.1	Chrysotile <0.25	Chrysotile <1.0
Location: Roof G - Rolled Roofing								
02	716-2	716	0.218	44.5	15.6	39.9	NAD	NAD
Location: Roof G - Rolled Roofing								
03	718-1	718	0.365	65.5	27.4	7.1	NAD	NAD
Location: Roof J - Field								
04	718-2	718	0.264	59.0	26.2	14.8	NAD	NAD
Location: Roof J - Field								
05	719-1	719	0.210	58.1	22.9	19.0	NAD	NAD
Location: Roof J - Flashing								
06	719-2	719	0.208	61.1	19.2	19.7	NAD	NAD
Location: Roof J - Flashing								
07	720-1	720	0.615	71.5	4.4	22.6	Chrysotile 1.5	NA
Location: Roof K, L, M - Field								
08	720-2	720	0.371	80.9	7.8	9.8	Chrysotile 1.5	NA
Location: Roof K, L, M - Field								
09	721-1	721	0.422	79.9	4.3	12.6	Chrysotile 3.3	NA
Location: Roof K, L, M - Flashing								
10	721-2	721	0.325	82.5	4.3	10.3	Chrysotile 2.9	NA
Location: Roof K, L, M - Flashing								
11	722-1	722	0.456	66.2	15.6	18.2	NAD	NAD
Location: Roof N - Field								
12	722-2	722	0.334	69.5	15.3	15.3	NAD	NAD
Location: Roof N - Field								
13	723-1	723	0.294	54.8	7.5	35.9	Chrysotile <0.25	Chrysotile 1.9
Location: Roof N - Flashing								
14	723-2	723	0.385	54.8	6.8	38.4	Chrysotile <0.25	NA/PS
Location: Roof N - Flashing								
15	724-1	724	0.295	58.6	13.6	27.8	NAD	NAD
Location: Roof N - Repair Tar								
16	724-2	724	0.244	56.6	17.6	25.8	NAD	NAD
Location: Roof N - Repair Tar								

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See Reporting notes on last page

18-0619DB-A

Table I
Summary of Bulk Asbestos Analysis Results
180619DB-A; Roof G-Q; 31 Water St Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
17	725-1	725	0.356	68.5	7.3	24.2	NAD	NAD
Location: Roof O, P, Q - Field								
18	725-2	725	0.341	61.3	4.4	28.3	Chrysotile 6.0	NA
Location: Roof O, P, Q - Field								
19	726-1	726	0.258	81.4	4.3	10.9	Chrysotile 3.4	NA
Location: Roof O, P, Q - Flashing								
20	726-2	726	0.521	80.4	5.4	11.4	Chrysotile 2.8	NA
Location: Roof O, P, Q - Flashing								
21	727-1	727	0.274	75.9	9.1	15.0	NAD	NAD
Location: Roof O, P, Q - Tar On Parapet Wall								
22	727-2	727	0.191	83.8	0.5	15.7	NAD	NAD
Location: Roof O, P, Q - Tar On Parapet Wall								
23	728-1	728	0.207	44.9	14.5	31.0	Chrysotile 9.5	NA
Location: Roof O, P, Q - Repair Tar								
24	728-2	728	0.224	48.2	13.8	30.7	Chrysotile 7.2	NA
Location: Roof O, P, Q - Repair Tar								

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Analyzed by: Marik Peysakhov_____; Date Analyzed 7/2/2018

**Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by EPA 600/M4-82-020 per 40 CFR or ELAP 198.1 for New York friable samples or ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (not covered by NVLAP Bulk accreditation) or ELAP 198.4; for New York samples; NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, AIHA-LAP, LLC (PLM) Lab ID 102843.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogenous materials).

Reviewed By:_____

Jamestown, NY

Relinquished By: J Doucette Date/Time:

Received By: SFagan Date/Time: 6.27.18 12pm

Relinquished By: Date/Time:

Received By: Date/Time:

18-03819DB-A

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BULK CHAIN OF CUSTODY

AMERISCI NEW YORK
117 EAST 30TH STREET
NEW YORK, NY 10016
TOLL FREE: (800) 705-5227
PHONE: (212) 679-8600
FAX: (212) 679-9392

Company: AMD Environmental

Street Address: 712 Main Street, Suite L 1

City: Buffalo State: NY Zip: 14202

Phone: 716-833-0043 Cell:

Fax Results? Y ☐ Fax #:

Email Results? Y ☑ Email: to all parties listed below

Results to: jwolf@amdenv.com, anthony@amdenv.com,

Project: Roof G – Q

Proj Mgr:

Proj #: 18-03819DB-A

Proj Address: 31 Water St. Jamestown Proj State: NY

Analysis: ☐ PLM; ☐ Positive Stop; ☐ TEM; ☒ NY ELAP PLM/TEM w/ NOB Prep.

ASTM Dust ☐ (Microvac) ☐ (Wipe); ☐ Qualitative; ☐ Other (describe in comments)

Turnaround Time: 5 Day Material Type: ☒ Bulk ☐ Dust ☐ Water

Sampled By: Doucette / Batt Date Sampled: 6.22.18

Special Instructions or Comments:

admin@amdenv.com, dbatt@amdenv.com, sdunlap@amdenv.com, john.doucette@amdenv.com

Lab ID	Field ID	Location	Sample Description (Optional)	Homogeneous Area
55	716-1,2	Roof G	Rolled Roofing	
	718-1,2	Roof J	Field	
	719-1,2	Roof J	Flashing	
	720-1,2	Roof K,L,M	Field	
	721-1,2	Roof K,L,M	Flashing	
	722-1,2	Roof N	Field	
	723-1,2	Roof N	Flashing	
	~~724-1,2~~	~~Roof O,P,Q~~	~~Field~~	
	724-1,2	Roof N	Repair Tar	
	725-1,2	Roof O,P,Q	Field	
	726-1,2	Roof O,P,Q	~~Tar on Parapet Wall~~ Flashing	
	727-1,2	Roof O,P,Q	Tar on Parapet Wall	
	728-1,2	Roof O,P,Q	Repair Tar	

#21806540 6

31 Water St. Jamestown NY

AMERI SCI

AmeriSci New York
117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

PLM Bulk Asbestos Report

AMD Environmental Consultants, Inc.
Attn: John Wolf
712 Main Street
Suite L1
Buffalo, NY 14202

Date Received 06/27/18 **AmeriSci Job #** 218065398
Date Examined 07/02/18 **P.O. #**
ELAP # 11480 **Page** 1 **of** 3
RE: 180619DB-A; Roof R-T; 31 Water St, Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
729-1 729	218065398-01 **Location:** Roof R - Field	***Yes***	6.8 % [1] (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 6.8 % **Other Material:** Non-fibrous 23.6 %			
729-2 729	218065398-02 **Location:** Roof R - Field	***Yes***	4.1 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 4.1 % **Other Material:** Non-fibrous 18.4 %			
730-1 730	218065398-03 **Location:** Roof R - Flashing	***Yes***	6.9 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 6.9 % **Other Material:** Non-fibrous 22.5 %			
730-2 730	218065398-04 **Location:** Roof R - Flashing	***Yes***	5.8 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 5.8 % **Other Material:** Non-fibrous 24.9 %			
731-1 731	218065398-05 **Location:** Roof R - Repair Tar	***Yes***	10.6 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 10.6 % **Other Material:** Non-fibrous 29.1 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

180619DB-A; Roof R-T; 31 Water St, Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
731-2 731	218065398-06 **Location:** Roof R - Repair Tar	***Yes***	7.1 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 7.1 % **Other Material:** Non-fibrous 30.4 %			
732-1 732	218065398-07 **Location:** Roof T - Field	***Yes***	6.2 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 6.2 % **Other Material:** Non-fibrous 20.1 %			
732-2 732	218065398-08 **Location:** Roof T - Field	***Yes***	7 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 7.0 % **Other Material:** Non-fibrous 22.6 %			
733-1 733	218065398-09 **Location:** Roof T - Flashing	***Yes***	6.8 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 6.8 % **Other Material:** Non-fibrous 22 %			
733-2 733	218065398-10 **Location:** Roof T - Flashing	***Yes***	9.9 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 9.9 % **Other Material:** Non-fibrous 32.3 %			
734-1 734	218065398-11 **Location:** Silver Paint, Room M - Silver Paint	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Silver, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 7.2 %			

PLM Bulk Asbestos Report

180619DB-A; Roof R-T; 31 Water St, Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
734-2 734	218065398-12 **Location:** Silver Paint, Room M - Silver Paint	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Silver, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 8.2 %			
735-1 735	218065398-13 **Location:** Roof Q - Silver Paint	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Silver, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 31 %			
735-2 735	218065398-14 **Location:** Roof Q - Silver Paint	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Silver, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 6.8 %			

Reporting Notes:

(1) This job was - Analyzed using Motic BA310 Pol Scope S/N 1190000326

Analyzed by: Jared C. Clarke

*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite or 198.6 for NOB samples or EPA 400 pt ct by EPA 600/M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. AIHA-LAP, LLC Lab ID 102843, RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054.

Reviewed By:_____

END OF REPORT

AmeriSci Job #: **218065398**

Client Name: AMD Environmental Consultants, Inc.

18-0619DB-A

Table I
Summary of Bulk Asbestos Analysis Results
180619DB-A; Roof R-T; 31 Water St, Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	729-1	729	0.359	66.9	2.8	23.6	Chrysotile 6.8	NA
Location: Roof R - Field								
02	729-2	729	0.315	74.6	2.9	18.4	Chrysotile 4.1	NA
Location: Roof R - Field								
03	730-1	730	0.310	68.1	2.6	22.5	Chrysotile 6.9	NA
Location: Roof R - Flashing								
04	730-2	730	0.323	65.9	3.4	24.9	Chrysotile 5.8	NA
Location: Roof R - Flashing								
05	731-1	731	0.234	47.4	12.8	29.1	Chrysotile 10.6	NA
Location: Roof R - Repair Tar								
06	731-2	731	0.323	48.6	13.9	30.4	Chrysotile 7.1	NA
Location: Roof R - Repair Tar								
07	732-1	732	0.334	71.0	2.7	20.1	Chrysotile 6.2	NA
Location: Roof T - Field								
08	732-2	732	0.321	67.9	2.5	22.6	Chrysotile 7.0	NA
Location: Roof T - Field								
09	733-1	733	0.337	67.7	3.6	22.0	Chrysotile 6.8	NA
Location: Roof T - Flashing								
10	733-2	733	0.306	53.9	3.9	32.3	Chrysotile 9.9	NA
Location: Roof T - Flashing								
11	734-1	734	0.223	79.8	13.0	7.2	NAD	NAD
Location: Silver Paint, Room M - Silver Paint								
12	734-2	734	0.279	82.4	9.3	8.2	NAD	NAD
Location: Silver Paint, Room M - Silver Paint								
13	735-1	735	0.365	59.2	9.9	31.0	NAD	NAD
Location: Roof Q - Silver Paint								
14	735-2	735	0.234	83.3	9.8	6.8	NAD	NAD
Location: Roof Q - Silver Paint								

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See Reporting notes on last page

18-06619DB-A

Table I
Summary of Bulk Asbestos Analysis Results
180619DB-A; Roof R-T; 31 Water St, Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM

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Analyzed by: Marik Peysakhov_____; Date Analyzed 7/2/2018

**Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by EPA 600/M4-82-020 per 40 CFR or ELAP 198.1 for New York friable samples or ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (not covered by NVLAP Bulk accreditation) or ELAP 198.4; for New York samples; NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, AIHA-LAP, LLC (PLM) Lab ID 102843.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogenous materials).

Reviewed By:_____

31 Water St, Jamestown NY

18-06619DB-A

Relinquished By: [signature] Date/Time:
Received By: [signature] Date/Time: 6.27.18 1255
Relinquished By: Date/Time:
Received By: Date/Time:

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PHONE: (212) 679-8600
FAX: (212) 679-9392

Company: AMD Environmental
Street Address: 712 Main Street, Suite L 1
City: Buffalo State: NY Zip: 14202
Phone: 716-833-0043 Cell:
Fax Results? Y ☐ Fax #:
Email Results? Y ☑ Email: to all parties listed below
Results to: jwolf@amdenv.com, anthony@amdenv.com,

Project: Roof R-T
Proj Mgr:
Proj #: 180619DB-A
Proj Address: 31 Water St, Jamestown Proj State: NY
Analysis: ☐ PLM; ☐ Positive Stop; ☐ TEM; ☒ NY ELAP PLM/TEM w/ NOB Prep.
ASTM Dust ☐ (Microvac) ☐ (Wipe); ☐ Qualitative; ☐ Other (describe in comments)
Turnaround Time: 5 Day Material Type: ☒ Bulk ☐ Dust ☐ Water
Sampled By: Doucette/Batt Date Sampled: 6-27-18

Special Instructions or Comments:
admin@amdenv.com, dbatt@amdenv.com, sdunlap@amdenv.com, john.doucette@amdenv.com

	729-1,2	Roof R	Field	
	730-1,2	Roof R	Flashing	
	731-1,2	Roof R	Repair Tar	
	732-1,2	Roof T	Field	
	733-1,2	Roof T	Flashing	
	734-1,2	Silver Paint - Roof M	~~Roof~~ Silver Paint	
	735-1,2	Roof Q	Silver Paint	

#21806539 8

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31 Water St., Jamestown NY

AmeriSci, Bulk CoC, rev May 20, 2009

AMERI SCI

AmeriSci New York
117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

PLM Bulk Asbestos Report

AMD Environmental Consultants, Inc.
Attn: John Wolf
712 Main Street
Suite L1
Buffalo, NY 14202

Date Received 06/27/18 **AmeriSci Job #** 218065339
Date Examined 07/02/18 **P.O. #**
ELAP # 11480 **Page** 1 **of** 6
RE: 180619DB-A; Roof A-F; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
700-1 700	218065339-01 **Location:** Roof A - Roofing Field	***Yes***	Trace (<0.25 % pc) [1,2] (EPA 400 PC) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile <0.25 % pc **Other Material:** Non-fibrous 10 %			
700-2 700	218065339-02 **Location:** Roof A - Roofing Field	***Yes***	5 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 5.0 % **Other Material:** Non-fibrous 21.1 %			
701-1 701	218065339-03 **Location:** Roof A - Roofing Flashing	***Yes***	Trace (<0.25 % pc) [1] (EPA 400 PC) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile <0.25 % pc **Other Material:** Non-fibrous 9 %			
701-2 701	218065339-04 **Location:** Roof A - Roofing Flashing	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3.9 %			
702-1 702	218065339-05 **Location:** Roof A - Tar On Parapet Walls	***Yes***	5.2 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 5.2 % **Other Material:** Non-fibrous 20.9 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

180619DB-A; Roof A-F; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
702-2 702	218065339-06 **Location:** Roof A - Tar On Parapet Walls	***Yes***	4.8 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 4.8 % **Other Material:** Non-fibrous 20.2 %			
703-1 703	218065339-07 **Location:** Roof A - Repair Tar	***Yes***	4.5 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 4.5 % **Other Material:** Non-fibrous 14.5 %			
703-2 703	218065339-08 **Location:** Roof A - Repair Tar	***Yes***	3.9 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 3.9 % **Other Material:** Non-fibrous 15.6 %			
704-1 704	218065339-09 **Location:** Roof C - Field	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 9.3 %			
704-2 704	218065339-10 **Location:** Roof C - Field	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 8.4 %			
705-1 705	218065339-11 **Location:** Roof C - Flashing	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3 %			

PLM Bulk Asbestos Report

180619DB-A; Roof A-F; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
705-2 705	218065339-12 **Location:** Roof C - Flashing	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 5.4 %			
706-1 706	218065339-13 **Location:** Roof C - Repair Tar	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 31.2 %			
706-2 706	218065339-14 **Location:** Roof C - Repair Tar	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 13.6 %			
707-1 707	218065339-15 **Location:** Roof D - Field	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 14.9 %			
707-2 707	218065339-16 **Location:** Roof D - Field	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3.7 %			
708-1 708	218065339-17 **Location:** Roof D - Flashing	***Yes***	Trace (<0.25 % pc) [1] (EPA 400 PC) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile <0.25 % pc **Other Material:** Non-fibrous 13.2 %			

PLM Bulk Asbestos Report

180619DB-A; Roof A-F; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
708-2 708	218065339-18 **Location:** Roof D - Flashing	***Yes***	Trace (<0.25 % pc) [1] (EPA 400 PC) by Jared C. Clarke on 07/02/18
	Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile <0.25 % pc **Other Material:** Non-fibrous 8 %		
709-1 709	218065339-19 **Location:** Roof D - Tar On Parapet Walls	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
	Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 18.7 %		
709-2 709	218065339-20 **Location:** Roof D - Tar On Parapet Walls	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
	Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 20.5 %		
710-1 710	218065339-21 **Location:** Roof D - Repair Tar	***Yes***	4.9 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
	Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 4.8 % **Other Material:** Non-fibrous 23 %		
710-2 710	218065339-22 **Location:** Roof D - Repair Tar	***Yes***	3.4 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
	Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 3.4 % **Other Material:** Non-fibrous 14.4 %		
711-1 711	218065339-23 **Location:** Roof E - Repair Tar	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
	Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 14.8 %		

See Reporting notes on last page

PLM Bulk Asbestos Report

180619DB-A; Roof A-F; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
711-2 711	218065339-24 **Location:** Roof E - Repair Tar	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 12.8 %			
712-1 712	218065339-25 **Location:** Roof F - Field	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 1.3 %			
712-2 712	218065339-26 **Location:** Roof F - Field	***Yes***	Trace (<0.25 % pc) [1] (EPA 400 PC) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile <0.25 % pc **Other Material:** Non-fibrous 11.8 %			
713-1 713	218065339-27 **Location:** Roof F - Flashing	***Yes***	9.3 % (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 9.3 % **Other Material:** Fibrous glass Trace, Non-fibrous 63.1 %			
713-2 713	218065339-28 **Location:** Roof F - Flashing	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 4.9 %			
714-1 714	218065339-29 **Location:** Roof F - Tar On Coping Stone	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 11.3 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

180619DB-A; Roof A-F; 31 Water St., Jamestown, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
714-2 714	218065339-30 **Location:** Roof F - Tar On Coping Stone	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 16.2 %			
715-1 715	218065339-31 **Location:** Roof F - Silver Paint	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Silver, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 7.7 %			
715-2 715	218065339-32 **Location:** Roof F - Silver Paint	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 07/02/18
Analyst Description: Silver, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 9.4 %			

Reporting Notes:

(1) Sample prepared for analysis by ELAP 198.6 method

(2) This job was - Analyzed using Motic BA310 Pol Scope S/N 1190000326

Analyzed by: Jared C. Clarke _____

*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite or 198.6 for NOB samples or EPA 400 pt ct by EPA 600/M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. AIHA-LAP, LLC Lab ID 102843, RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054.

Reviewed By:_____ _____END OF REPORT_____

AmeriSci Job #: **218065339**

Client Name: AMD Environmental Consultants, Inc.

18-0619DB-A

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31 Water St., Jamestown NY

Table I
Summary of Bulk Asbestos Analysis Results
180619DB-A; Roof A-F; 31 Water St., Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	700-1	700	0.422	88.9	1.2	10.0	Chrysotile <0.25	NA
Location: Roof A - Roofing Field								
02	700-2	700	0.464	71.1	2.8	21.1	Chrysotile 5.0	NA
Location: Roof A - Roofing Field								
03	701-1	701	0.432	89.8	1.2	8.8	Chrysotile <0.25	Chrysotile <1.0
Location: Roof A - Roofing Flashing								
04	701-2	701	0.335	94.6	1.5	2.5	NAD	Chrysotile 1.4
Location: Roof A - Roofing Flashing								
05	702-1	702	0.199	66.8	7.0	20.9	Chrysotile 5.2	NA
Location: Roof A - Tar On Parapet Walls								
06	702-2	702	0.240	67.9	7.1	20.2	Chrysotile 4.8	NA
Location: Roof A - Tar On Parapet Walls								
07	703-1	703	0.168	63.1	17.9	14.5	Chrysotile 4.5	NA
Location: Roof A - Repair Tar								
08	703-2	703	0.261	65.5	14.9	15.6	Chrysotile 3.9	NA
Location: Roof A - Repair Tar								
09	704-1	704	0.537	78.2	12.5	9.3	NAD	NAD
Location: Roof C - Field								
10	704-2	704	0.395	84.1	7.6	8.4	NAD	NAD
Location: Roof C - Field								
11	705-1	705	0.433	93.5	3.5	3.0	NAD	NAD
Location: Roof C - Flashing								
12	705-2	705	0.484	90.9	3.7	5.4	NAD	NAD
Location: Roof C - Flashing								
13	706-1	706	0.215	40.5	28.4	31.2	NAD	NAD
Location: Roof C - Repair Tar								
14	706-2	706	0.220	53.2	33.2	13.6	NAD	NAD
Location: Roof C - Repair Tar								
15	707-1	707	0.706	72.9	12.2	14.9	NAD	NAD
Location: Roof D - Field								
16	707-2	707	0.273	93.0	3.3	3.7	NAD	NAD
Location: Roof D - Field								

See Reporting notes on last page

18-0619DB-A

Table I
Summary of Bulk Asbestos Analysis Results
180619DB-A; Roof A-F; 31 Water St., Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
17	708-1	708	0.417	73.6	13.2	7.9	Chrysotile <0.25	Chrysotile 5.3
Location: Roof D - Flashing								
18	708-2	708	0.387	83.2	8.8	8.0	Chrysotile <0.25	NA/PS
Location: Roof D - Flashing								
19	709-1	709	0.342	45.6	35.7	18.5	NAD	Chrysotile <1.0
Location: Roof D - Tar On Parapet Walls								
20	709-2	709	0.244	43.0	36.5	20.4	NAD	Chrysotile Trace
Location: Roof D - Tar On Parapet Walls								
21	710-1	710	0.262	36.3	35.9	23.0	Chrysotile 4.8	NA
Location: Roof D - Repair Tar								
22	710-2	710	0.404	40.8	41.3	14.4	Chrysotile 3.4	NA
Location: Roof D - Repair Tar								
23	711-1	711	0.250	56.4	28.8	14.8	NAD	NAD
Location: Roof E - Repair Tar								
24	711-2	711	0.196	53.1	34.2	12.8	NAD	NAD
Location: Roof E - Repair Tar								
25	712-1	712	0.226	95.6	3.1	1.3	NAD	NAD
Location: Roof F - Field								
26	712-2	712	0.306	84.6	3.6	11.7	Chrysotile <0.25	Chrysotile Trace
Location: Roof F - Field								
27	713-1	713	0.116	6.0	21.6	63.1	Chrysotile 9.3	NA
Location: Roof F - Flashing								
28	713-2	713	0.389	90.0	5.1	4.9	NAD	NAD
Location: Roof F - Flashing								
29	714-1	714	0.310	78.4	10.3	11.3	NAD	NAD
Location: Roof F - Tar On Coping Stone								
30	714-2	714	0.277	76.2	7.6	16.2	NAD	NAD
Location: Roof F - Tar On Coping Stone								
31	715-1	715	0.233	77.7	14.6	7.7	NAD	NAD
Location: Roof F - Silver Paint								
32	715-2	715	0.212	73.6	17.0	9.4	NAD	NAD
Location: Roof F - Silver Paint								

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31 Water St., Jamestown NY

See Reporting notes on last page

18-0619DB-A

Table I
Summary of Bulk Asbestos Analysis Results
180619DB-A; Roof A-F; 31 Water St., Jamestown, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
70								

Analyzed by: Marik Peysakhov; Date Analyzed 7/2/2018

**Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by EPA 600/M4-82-020 per 40 CFR or ELAP 198.1 for New York friable samples or ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (not covered by NVLAP Bulk accreditation) or ELAP 198.4; for New York samples; NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, AIHA-LAP, LLC (PLM) Lab ID 102843.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogenous materials).

Reviewed By:

1 Wilkey St Jamestown NY

Relinquished By: D Batt Date/Time: 6-26-18

Received By: [signature] Date/Time: 6/27/18 1259

Relinquished By: Date/Time:

Received By: Date/Time:

180619DB-A

AMERI SCI

WWW.AMERISCI.COM

BULK CHAIN OF CUSTODY

AMERISCI NEW YORK
117 EAST 30TH STREET
NEW YORK, NY 10016
TOLL FREE: (800) 705-5227
PHONE: (212) 679-8600
FAX: (212) 679-9392

Company: AMD Environmental

Street Address: 712 Main Street, Suite L 1

City: Buffalo State: NY Zip: 14202

Phone: 716-833-0043 Cell:

Fax Results? Y ☐ Fax #:

Email Results? Y ☑ Email: to all parties listed below

Results to: jwolf@amdenv.com, anthony@amdenv.com,

Project: Roof A-F

Proj Mgr:

Proj #: 180619DB-A

Proj Address: 31 Water St, Jamestown Proj State: NY

Analysis: ☐ PLM; ☐ Positive Stop; ☐ TEM; ☒ NY ELAP PLM/TEM w/ NOB Prep.

ASTM Dust ☐ (Microvac) ☐ (Wipe); ☐ Qualitative; ☐ Other (describe in comments)

Turnaround Time: 5 Day Material Type: ☒ Bulk ☐ Dust ☐ Water

Sampled By: Doucette/Batt Date Sampled: 6-22-18

Special Instructions or Comments:

admin@amdenv.com, dbatt@amdenv.com, sdunlap@amdenv.com, john.doucette@amdenv.com

Lab ID	Field ID	Location	Sample Description (dust/area)	Homogeneous Area
71	700-1,2	Roof A	Roofing - Field	
	701-1,2	Roof A	Roof Flashing	
	702-1,2	Roof A	Tar on Parapet Walls	
	703 1,2	Roof A	Repair Tar	
	704-1,2	Roof C	Field	
	705-1,2	Roof C	Flashing	
	706-1,2	Roof C	Repair Tar	
	707-1,2	Roof D	Field	
	708-1,2	Roof D	Flashing	
	709-1,2	Roof D	Tar on Parapet Walls	
	710-1,2	Roof D	Repair Tar	
	711-1,2	Roof E	Repair Tar	
	712-1,2	Roof F	Field	
	713-1,2	Roof F	Flashing	
	714-1,2	Roof F	Tar on Coping Stone	
	715-1,2	Roof F	Silver Paint	

#21806539

31 Water St, Jamestown NY

AMD Environmental Consultants, Inc.
712 Main St. Suite L1
Buffalo, NY 14202
Office: 716-833-0043 Fax: 716-241-8689
www.amdenvironmental.com

Appendix C: PCB Sample Analyses & Sample Chains of Custody

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: AMD Environmental Consultants (4689)
Address: 712 Main St
Suite L1
Buffalo, NY 14202

Attn:

Project: 31 Water Street
Location: 31 Water Street, Jamestown NY
Number: 18-0619DB-A

Order #: 267537

Matrix Bulk
Received 06/28/18
Reported 06/29/18

PO Number:

Sample ID / Parameter	Cust. Sample ID / Method	Result	RL*	Units	Analysis Date	Analyst
267537-001	01Window					
Semi-volatile Organic Compounds						
Aroclor - 1016	SW846 8082A	**<500**	500	µg/Kg	06/29/18	AE
Aroclor - 1221	SW846 8082A	**<500**	500	µg/Kg	06/29/18	AE
Aroclor - 1232	SW846 8082A	**<500**	500	µg/Kg	06/29/18	AE
Aroclor - 1242	SW846 8082A	**<500**	500	µg/Kg	06/29/18	AE
Aroclor - 1248	SW846 8082A	**<500**	500	µg/Kg	06/29/18	AE
Aroclor - 1254	SW846 8082A	**<500**	500	µg/Kg	06/29/18	AE
Aroclor - 1260	SW846 8082A	**<500**	500	µg/Kg	06/29/18	AE
Aroclor - 1262	SW846 8082A	**<500**	500	µg/Kg	06/29/18	AE
Aroclor - 1268	SW846 8082A	**<500**	500	µg/Kg	06/29/18	AE
PCB - Surrogate Recoveries						
DCB	MI					
TCMX	MI					
267537-002	02Deer					
Semi-volatile Organic Compounds						
Aroclor - 1016	SW846 8082A	**<443**	442	µg/Kg	06/29/18	AE
Aroclor - 1221	SW846 8082A	**<443**	442	µg/Kg	06/29/18	AE
Aroclor - 1232	SW846 8082A	**<443**	442	µg/Kg	06/29/18	AE
Aroclor - 1242	SW846 8082A	**<443**	442	µg/Kg	06/29/18	AE
Aroclor - 1248	SW846 8082A	**<443**	442	µg/Kg	06/29/18	AE
Aroclor - 1254	SW846 8082A	**<443**	442	µg/Kg	06/29/18	AE
Aroclor - 1260	SW846 8082A	**<443**	442	µg/Kg	06/29/18	AE
Aroclor - 1262	SW846 8082A	**<443**	442	µg/Kg	06/29/18	AE
Aroclor - 1268	SW846 8082A	**<443**	442	µg/Kg	06/29/18	AE
PCB - Surrogate Recoveries						
DCB	MI					
TCMX	MI					

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results reported relate only to the samples submitted.

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: AMD Environmental Consultants (4689)
Address: 712 Main St
Suite L1
Buffalo, NY 14202

Attn:

Project: 31 Water Street
Location: 31 Water Street, Jamestown NY
Number: 18-0619DB-A

Order #: 267537

Matrix Bulk
Received 06/28/18
Reported 06/29/18

PO Number:

Sample ID / Parameter	Cust. Sample ID / Method	Result	RL*	Units	Analysis Date	Analyst
267537-06/29/18 11:05 AM						

Reviewed By: **Thoria Nadiem**
Analyst

State Certifications

Method	Parameter	New York	Virginia
SW846 8082A	Aroclor - 1016	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1221	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1232	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1242	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1248	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1254	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1260	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1262	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1268	ELAP Certified	VELAP Certified

State	Certificate Number
New York	ELAP 57776
Virginia	VELAP 9567

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results reported relate only to the samples submitted.

267537 R 2

V:\267\267537

fghraizi 6/28/2018 9:[illegible]:00 AM

UPS 1Z2E2899906[illegible]849305

SCHNEIDER LABORATORIES GLOBAL, INC.

2512 West Cary Street, Richmond, Virginia 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475
www.slabinc.com e-mail: info@slabinc.com

Submitting Co.	AMD Environmental	Lab WO#		Phone	716-833-0043
712 Main Street		Acct #		Fax \ Email	jwolf@amdenv.com
Buffalo, NY 14202		Standard Deliverables		Results	☐ Fax ☐ Email

Project Name:	31 Water Street
Project Location:	31 Water Street Jamestown, NY
Project Number:	18-0619 DB-A
Purchase Order #	
TAT Requested	(Business Day) ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☑ 10 ☐ Other: _____

Special Instructions [include requests for special reporting or data packages]

Sample #	# Containers	Chlorine (Cl)	Temp *	pH	Matrix: Drinking Water	Waste Water	Ground Water	Soil / Sludge	Wipe	Oil or Air	Bulk	Analysis Request: BTEX ☐ MTBE ☐ Naphthalene ☐	Purgeable Aromatics 8021 ☐	Petrol Hydrocarbons GC 8015M Diesel ☐ 8015M Gas ☐	TPH 418.1 ☐	Corrosivity ☐ Reactivity ☐ Flashpoint, Closed Cup ☐	Volatile Organics 624 ☐ 8260 ☐	Semivolatile Organics 625 ☐ 8270 ☐	PAHs 610 ☐ 8270 ☐ 8310 By HPLC ☐	TCLP Semi-Vols ☐ BNAs ☐ Pest ☐ Herb ☐ VOAs ☐ Full ☐	Pesticides 608 ☐ 8081 ☐ Herbicides 8151 ☐ PCB's 8082 ☑	Other
01 window																					✓	
02 door																					✓	

Sampled by
NAME David Batt
SIGNATURE 18-0619DB-A
DATE/TIME 6/26/18

Relinquished to lab by
NAME David Batt
SIGNATURE
DATE/TIME 6/26/18

31 Water St., Jamestown NY

Sample Disposal
If samples over req. weight (Refer to Fee Schedule)
☐ Return to Sender (Shipping fees)
☐ Disposal by lab ($50 fee)

Shipping Methods
☐ FX ☐ UPS ☐ USM
☐ HD ☐ DB

AMD Environmental Consultants, Inc.
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Buffalo, NY 14202
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www.amdenvironmental.com

Appendix D: Heuresis Pb200i XRF Unit PCS

Performance Characteristic Sheet

EFFECTIVE DATE: **December 1, 2015**

MANUFACTURER AND MODEL:

Make: ***Heuresis***
Models: ***Model Pb200i***
Source: ***^{57}Co, 5 mCi (nominal – new source)***

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Action Level mode

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm^2 (inclusive)

SUBSTRATE CORRECTION:

Not applicable

INCONCLUSIVE RANGE OR THRESHOLD:

ACTION LEVEL MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Results not corrected for substrate bias on any substrate	Brick Concrete Drywall Metal Plaster Wood	1.0 1.0 1.0 1.0 1.0 1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD ***Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*** ("HUD Guidelines"). Performance parameters shown on this sheet are calculated using test results on building components in the HUD archive. Testing was conducted on 146 test samples in November 2015, with two separate instruments running software version 2.1-2 in Action Level test mode. The actual source strength of each instrument on the day of testing was approximately 2.0 mCi; source ages were approximately one year.

OPERATING PARAMETERS

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film).

If the average (rounded to 1 decimal place) of three readings is outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instrument into control before XRF testing proceeds.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Chapter 7 of the HUD Guidelines provides guidance on correcting XRF results for substrate bias. Supplemental guidance for using the paint film nearest 1.0 mg/cm^2 for substrate correction is provided:

XRF results are corrected for substrate bias by subtracting from each XRF result a correction value determined separately in each house for single-family housing or in each development for multifamily housing, for each substrate. The correction value is an average of XRF readings taken over the NIST SRM paint film nearest to 1.0 mg/cm^2 at test locations that have been scraped bare of their paint covering. Compute the correction values as follows:

> Using the same XRF instrument, take three readings on a bare substrate area covered with the NIST SRM paint film nearest 1 mg/cm^2. Repeat this procedure by taking three more readings on a second bare substrate area of the same substrate covered with the NIST SRM.
>
> Compute the correction value for each substrate type where XRF readings indicate substrate correction is needed by computing the average of all six readings as shown below.
>
> <u>For each substrate type</u> (the 1.02 mg/cm^2 NIST SRM is shown in this example; use the actual lead loading of the NIST SRM used for substrate correction):
>
> Correction value = (1st + 2nd + 3rd + 4th + 5th + 6th ***Reading***)/6 - 1.02 mg/cm^2
>
> Repeat this procedure for each substrate requiring substrate correction in the house or housing development.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing.

Conduct XRF re-testing at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and the retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF readings.

Compute the average of all ten re-test XRF readings.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES:

In the Action Level paint test mode, the instrument takes the longest time to complete readings close to the Federal standard of 1.0 mg/cm^2. The table below shows the mean and standard deviation of actual reading times by reading level for paint samples during the November 2015 archive testing. The tested instruments reported readings to one decimal place. No significant differences in reading times by substrate were observed. These times apply only to instruments with the same source strength as those tested (2.0 mCi). Instruments with stronger sources will have shorter reading times and those with weaker sources, longer reading times, than those in the table.

Mean and Standard Deviation of Reading Times in Action Level Mode by Reading Level

Reading (mg/cm^2)	Mean Reading Time (seconds)	Standard Deviation (seconds)
< 0.7	3.48	0.47
0.7	7.29	1.92
0.8	13.95	1.78
0.9 – 1.2	15.25	0.66
1.3 – 1.4	6.08	2.50
$\geq$ 1.5	3.32	0.05

CLASSIFICATION OF RESULTS:

XRF results are classified as **positive** if they are **greater than or equal** to the stated threshold for the instrument (1.0 mg/cm^2), and ***negative*** if they are ***less than*** the threshold.

DOCUMENTATION:

A report titled ***Methodology for XRF Performance Characteristic Sheets*** (EPA 747-R-95-008) provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. The report may be downloaded at http://www2.epa.gov/lead/methodology-xrf-performance-characteristic-sheets-epa-747-r-95-008-september-1997.

This XRF Performance Characteristic Sheet (PCS) was developed by QuanTech, Inc., under a contract with the XRF manufacturer.

AMD Environmental Consultants, Inc.
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Buffalo, NY 14202
Office: 716-833-0043 Fax: 716-241-8689
www.amdenvironmental.com

Appendix E: Firm Certifications & Personnel Licenses

AMD Environmental Consultants, Inc.
712 Main St. Suite L1
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www.amdenvironmental.com

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

ASBESTOS HANDLING LICENSE

AMD Environmental Consultants, Inc.
Suite L1
712 Main Street

Buffalo, NY 14202

FILE NUMBER: 10-56177
LICENSE NUMBER: 56177
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 11/02/2017
EXPIRATION DATE: 11/30/2018

Duly Authorized Representative – Anthony DeMiglio:

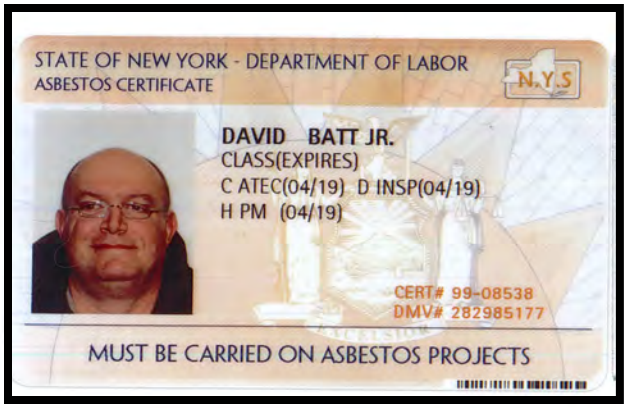
This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Eileen M. Franko, Director
For the Commissioner of Labor

SH 432 (8/12)

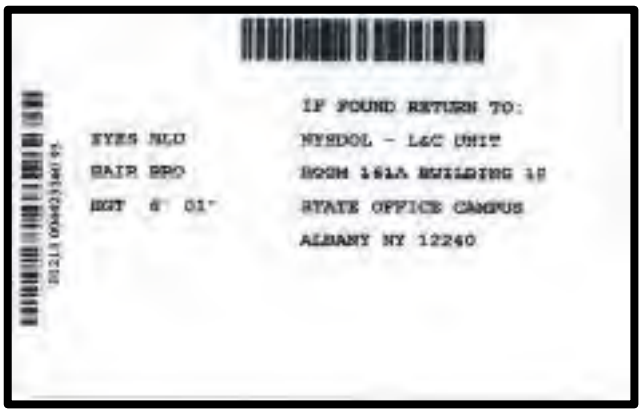
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United States Environmental Protection Agency

This is to certify that

AMD Environmental Consultants, Inc.

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires December 25, 2019

LBP-83285-1
Certification #

December 15, 2016
Issued On

Michelle Price, Chief
Lead, Heavy Metals, and Inorganics Branch

AMD Environmental Consultants, Inc.
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Buffalo, NY 14202
Office: 716-833-0043 Fax: 716-241-8689
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United States Environmental Protection Agency

This is to certify that



David Charles Batt Jr.,

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Risk Assessor

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires May 14, 2019

LBP-R-1388-1
Certification #

March 11, 2016
Issued On

John Gorman, Chief
Pesticides & Toxic Substances Branch

AMD Environmental Consultants, Inc.
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Appendix F: Laboratory Certifications

AMD Environmental Consultants, Inc.
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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2019
Issued April 01, 2018

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. PAUL J. MUCHA
AMERICA SCIENCE TEAM NEW YORK, INC
117 EAST 30TH ST
NEW YORK, NY 10016

NY Lab Id No: 11480

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual

Serial No.: 57809

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Page 1 of 1

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2018
Issued April 01, 2017

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. FAYEZ ABOUZAKI
SCHNEIDER LABORATORIES GLOBAL, INC
2512 WEST CARY STREET
RICHMOND, VA 23220-5117

NY Lab Id No: 11413

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Characteristic Testing		**Polychlorinated Biphenyls**	
TCLP	EPA 1311	PCB-1268	EPA 8082A
Metals I		**Sample Preparation Methods**	
Barium, Total	EPA 6010C		EPA 3010A
Cadmium, Total	EPA 6010C		EPA 3050B
Chromium, Total	EPA 6010C		EPA 3550C
Lead, Total	EPA 6010C		EPA 3031
	EPA 7000B		
Nickel, Total	EPA 6010C		
Silver, Total	EPA 6010C		
Metals II			
Antimony, Total	EPA 6010C		
Arsenic, Total	EPA 6010C		
Chromium VI	EPA 7196A		
Mercury, Total	EPA 7471B		
Selenium, Total	EPA 6010C		
Polychlorinated Biphenyls			
PCB-1016	EPA 8082A		
PCB-1221	EPA 8082A		
PCB-1232	EPA 8082A		
PCB-1242	EPA 8082A		
PCB-1248	EPA 8082A		
PCB-1254	EPA 8082A		
PCB-1260	EPA 8082A		
PCB-1262	EPA 8082A		

Serial No.: 56000

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

APPENDIX F

NYSDOH VAPOR INTRUSION MATRICES

Soil Vapor / Indoor Air Matrix A
May 2017

Analytes Assigned:
Trichloroethene (TCE), *cis*-1,2-Dichloroethene (*c*12-DCE), 1,1-Dichloroethene (11-DCE), Carbon Tetrachloride

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)		
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 0.2	0.2 to < 1	1 and above
< 6	1. No further action	2. No Further Action	3. IDENTIFY SOURCE(S) and RESAMPLE or MITIGATE
6 to < 60	4. No further action	5. MONITOR	6. MITIGATE
60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

No further action: No additional actions are recommended to address human exposures.

Identify Source(s) and Resample or Mitigate: We recommend that reasonable and practical actions be taken to identify the source(s) affecting the indoor air quality and that actions be implemented to reduce indoor air concentrations to within background ranges. For example, if an indoor or outdoor air source is identified, we recommend the appropriate party implement actions to reduce the levels. In the event that indoor or outdoor sources are not readily identified or confirmed, resampling (which might include additional sub-slab vapor and indoor air sampling locations) is recommended to demonstrate that SVI mitigation actions are not needed. Based on the information available, mitigation might also be recommended when soil vapor intrusion cannot be ruled out.

Monitor: We recommend monitoring (sampling on a recurring basis), including but not necessarily limited to sub-slab vapor, basement air and outdoor air sampling, to determine whether concentrations in the indoor air or sub-slab vapor have changed and/or to evaluate temporal influences. Monitoring might also be recommended to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined based on site-, building- and analyte-specific information, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: We recommend mitigation to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

These general recommendations are made with consideration being given to the additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX A

This matrix summarizes actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate analyte-specific, building-specific conditions (e.g., dirt floor in basement, crawl spaces, thick slabs, current occupancy, etc.), and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, collection of additional samples may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Mitigation might be recommended when the results of multiple contaminants indicate monitoring is recommended. Proactive actions may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action might be undertaken for reasons other than public health (e.g., seeking community acceptance, reducing costs, etc.). However, actions implemented *in lieu* of sampling will typically be expected to be captured in the final engineering report and site management plan, and might not rule out the need for post-implementation sampling (e.g., to document effectiveness or to support terminating the action).

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of soil vapor contamination, nor does it preclude remediating contaminated soil vapor or the source of soil vapor contamination.

[3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 0.20 microgram per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples and dirt floor soil vapor samples, a minimum reporting limit of 1 microgram per cubic meter is recommended.

[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions might be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

[5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including but not limited to the following: the identified source of the volatile chemicals, the environmental remediation program, and analyte-specific, site-specific and building-specific factors.

Soil Vapor / Indoor Air Matrix B
May 2017

Analytes Assigned:
Tetrachloroethene (PCE), 1,1,1-Trichloroethane (111-TCA), Methylene Chloride

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)		
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 3	3 to < 10	10 and above
< 100	1. No further action	2. No Further Action	3. IDENTIFY SOURCE(S) and RESAMPLE or MITIGATE
100 to < 1,000	4. No further action	5. MONITOR	6. MITIGATE
1,000 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

No further action: No additional actions are recommended to address human exposures.

Identify Source(s) and Resample or Mitigate: We recommend that reasonable and practical actions be taken to identify the source(s) affecting the indoor air quality and that actions be implemented to reduce indoor air concentrations to within background ranges. For example, if an indoor or outdoor air source is identified, we recommend the appropriate party implement actions to reduce the levels. In the event that indoor or outdoor sources are not readily identified or confirmed, resampling (which might include additional sub-slab vapor and indoor air sampling locations) is recommended to demonstrate that SVI mitigation actions are not needed. Based on the information available, mitigation might also be recommended when soil vapor intrusion cannot be ruled out.

Monitor: We recommend monitoring (sampling on a recurring basis), including but not necessarily limited to sub-slab vapor, basement air and outdoor air sampling, to determine whether concentrations in the indoor air or sub-slab vapor have changed and/or to evaluate temporal influences. Monitoring might also be recommended to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined based on site-, building- and analyte-specific information, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: We recommend mitigation to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

These general recommendations are made with consideration being given to the additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX B

This matrix summarizes actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate analyte-specific, building-specific conditions (e.g., dirt floor in basement, crawl spaces, thick slabs, current occupancy, etc.), and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, collection of additional samples may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Mitigation might be recommended when the results of multiple contaminants indicate monitoring is recommended. Proactive actions may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action might be undertaken for reasons other than public health (e.g., seeking community acceptance, reducing costs, etc.). However, actions implemented *in lieu* of sampling will typically be expected to be captured in the final engineering report and site management plan, and might not rule out the need for post-implementation sampling (e.g., to document effectiveness or to support terminating the action).

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of soil vapor contamination, nor does it preclude remediating contaminated soil vapor or the source of soil vapor contamination.

[3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 1 microgram per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples and dirt floor soil vapor samples, a minimum reporting limit of 1 microgram per cubic meter is recommended.

[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions might be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

[5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including but not limited to the following: the identified source of the volatile chemicals, the environmental remediation program, and analyte-specific, site-specific and building-specific factors.

Soil Vapor/Indoor Air Matrix C

May 2017

Analytes Assigned:
Vinyl Chloride

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)	
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 0.2	0.2 and above
< 6	1. No further action	2. IDENTIFY SOURCE(S) and RESAMPLE or MITIGATE
6 to < 60	3. MONITOR	4. MITIGATE
60 and above	5. MITIGATE	6. MITIGATE

No further action: No additional actions are recommended to address human exposures.

Identify Source(s) and Resample or Mitigate: We recommend that reasonable and practical actions be taken to identify the source(s) affecting the indoor air quality and that actions be implemented to reduce indoor air concentrations to within background ranges. For example, if an indoor or outdoor air source is identified, we recommend the appropriate party implement actions to reduce the levels. In the event that indoor or outdoor sources are not readily identified or confirmed, resampling (which might include additional sub-slab vapor and indoor air sampling locations) is recommended to demonstrate that SVI mitigation actions are not needed. Based on the information available, mitigation might also be recommended when soil vapor intrusion cannot be ruled out.

Monitor: We recommend monitoring (sampling on a recurring basis), including but not necessarily limited to sub-slab vapor, basement air and outdoor air sampling, to determine whether concentrations in the indoor air or sub-slab vapor have changed and/or to evaluate temporal influences. Monitoring might also be recommended to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined based on site-, building- and analyte-specific information, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: We recommend mitigation to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

These general recommendations are made with consideration being given to the additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX C

This matrix summarizes actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate analyte-specific, building-specific conditions (e.g., dirt floor in basement, crawl spaces, thick slabs, current occupancy, etc.), and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, collection of additional samples may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Mitigation might be recommended when the results of multiple contaminants indicate monitoring is recommended. Proactive actions may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action might be undertaken for reasons other than public health (e.g., seeking community acceptance, reducing costs, etc.). However, actions implemented *in lieu* of sampling will typically be expected to be captured in the final engineering report and site management plan, and might not rule out the need for post-implementation sampling (e.g., to document effectiveness or to support terminating the action).

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of soil vapor contamination, nor does it preclude remediating contaminated soil vapor or the source of soil vapor contamination.

[3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 0.20 microgram per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples and dirt floor soil vapor samples, a minimum reporting limit of 1 microgram per cubic meter is recommended.

[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions might be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

[5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including but not limited to the following: the identified source of the volatile chemicals, the environmental remediation program, and analyte-specific, site-specific and building-specific factors.

APPENDIX G

SITE BOUNDARY/TOPOGRAPHY SURVEY MAP

NORTH IS RELATED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM

LEGEND

- UTILITY POLE WITH LIGHT
- UTILITY POLE
- GUY WIRE
- ELECTRIC METER
- SANITARY SEWER MANHOLE
- UNKNOWN MANHOLE
- GAS VALVE
- GAS METER
- WATER VALVE
- FIRE HYDRANT
- CATCH BASIN
- ROAD SIGN
- UNKNOWN VALVE
- DISTRICT HEAT LINE

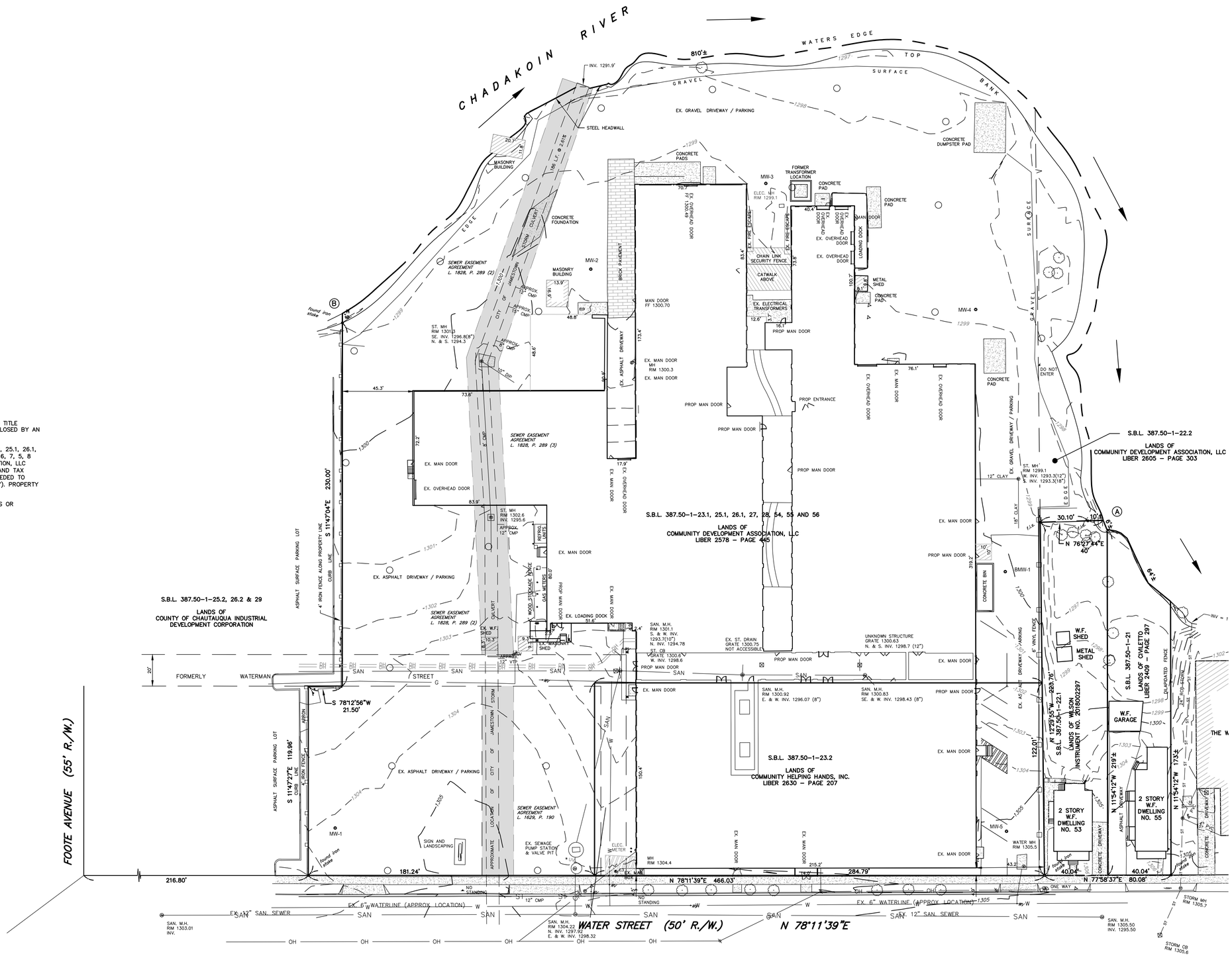
NOTES:

(1) SURVEY AND PLAT ARE PREPARED WITHOUT THE BENEFIT OF REVIEW OF A TITLE SEARCH AND ARE SUBJECT TO ANY STATEMENT OF FACTS THAT MAY BE DISCLOSED BY AN EXAMINATION OF SUCH.

(2) SUBJECT PROPERTY IS KNOWN AS TAX PARCEL NOS. 387.50-1-22.2, 23.1, 25.1, 26.1, 27, 28, 54, 55 AND 56 (FORMERLY 418-3-2.2, 1.1, 417-4-1.1, 417-7-10.1, 6, 7, 5, 8 AND 9), WHICH IS CURRENTLY DEEDED TO COMMUNITY DEVELOPMENT ASSOCIATION, LLC (REFERENCE DEED: LIBER 2578 - PAGE 445 AND LIBER 2605 - PAGE 303) AND TAX PARCEL NO. 387.50-1-23.2 (FORMERLY 418-3-1.2), WHICH IS CURRENTLY DEEDED TO COMMUNITY HELPING HANDS, INC. (REFERENCE DEED: LIBER 2630 - PAGE 207). PROPERTY CONTAINS 5.18 ACRES, MORE OR LESS.

(3) PREMISES ARE SUBJECT TO ALL RIGHTS OF WAY, EASEMENTS, AGREEMENTS OR RESTRICTIONS OF RECORD THAT MAY APPLY.

(4) ELEVATIONS ARE NAVD88 DATUM.



GPI ENGINEERING, LANDSCAPE ARCHITECTURE AND SURVEYING, LLP
ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE
200 HARRISON STREET - SUITE H2
JAMESTOWN, NEW YORK 14701
(716) 488-2803 FAX 488-2802

DRAWN BY: E. A. OLSON
CHECKED BY: J. B. GOSSETT
JOB NO.: 01-17-11A
DRAWING NO.: SHEE01711A.DWG
SCALE: 1" = 30'
DATE: DECEMBER 4, 2017

NO.	REVISIONS:	BY	DATE

TOPOGRAPHICAL SURVEY PREPARED FOR: SOUTHERN TIER ENVIRONMENTS FOR LIVING, INC.

31 WATER STREET
CITY OF JAMESTOWN
CHAUTAUQUA COUNTY - NEW YORK
BEING PART OF LOT 25, TOWN 2 AND RANGE 11
OF THE HOLLAND LAND COMPANY'S SURVEY

WARNING: ALTERATIONS TO THIS DOCUMENT NOT CONFORMING TO SECTION 7209, SUBDIVISION 2, STATE EDUCATION LAW, ARE PROHIBITED

SHEET NO.

1 OF 1

APPENDIX H

ALTERNATIVES COST ESTIMATES

31 WATER STREET SITE
REMEDIAL ALTERNATIVE COST ESTIMATES

Assumptions:

1) - Conversion factor of cubic yards of soil/stone to tons is 1.5

ALTERNATIVE 1 - REMEDIATE TO TRACK 4 - RESTRICTED RESIDENTIAL			
Item	**Unit Cost**	**Quantity**	**Total**
Mobilization/Demobilization	$10,000.00	1	$10,000.00
Excavate/dispose- open areas-top 1' to 2'(tons)	$50.00	11000	$550,000.00
Disposal Sampling	$1,200.00	11	$13,200.00
8" Stone placement - New parking & Concrete slabs (tons)	$25.00	3750	$93,750.00
Open Area - 4" asphalt placement (SF)	$4.00	100000	$400,000.00
Delinieation fabric (SY)	$1.50	12000	$18,000.00
Clean Stone/fill Greenspace/PCB areas Area (2')	$25.00	5440	$136,000.00
Place new concrete foundation/slab/sidewalks (LS)	$20,000.00	1	$20,000.00
Vapor Mitigation System (LS)	$300,000.00	1	$300,000.00
Groundwater Treatment with 3 new wells (LS)	$170,000.00	1	$170,000.00
Confirmation sampling (LS)	$12,000.00	1	$12,000.00
Concrete UST Removal with Impacted soils	$25,000.00	1	$25,000.00
Supplemental Building 2 sub-slab investigation (LS)	$15,000.00	1	$15,000.00
Sub-Total			$1,762,950.00
Engineering Oversight (3 months) (LS)	$80,000.00	1	$80,000.00
Subtotal			$1,842,950.00
Contingency (20%)			$368,590.00
Estimated Capital CostTotal			**$2,211,540.00**
Engineering Oversight & Remedial Cost			**$2,211,540.00**

ALTERNATIVE 2 - UNRESTRICTED USE			
Item	**Unit Cost**	**Quantity**	**Total**
-			
Mobilization/Demobilization (LS)	$10,000.00	1	$10,000.00
Excavate/dispose- open area -6' deep (tons)	$50.00	52200	$2,610,000.00
Excavate/Dispose Soil,etc beneath Building floors (tons)	$60.00	36300	$2,178,000.00
Replacement Clean fill 6+/- feet (tons)	$20.00	88500	$1,770,000.00
Disposal Sampling	$1,200.00	60	$72,000.00
Vapor Mitigation System (LS)	$200,000.00	1	$200,000.00
Groundwater Monitoring wells (LS)	$30,000.00	1	$30,000.00
Confirmation sampling (ea)	$1,200.00	120	$144,000.00
Concrete UST Removal with Impacted soils	$15,000.00	1	$15,000.00
Sub-Total			$7,014,000.00
GW andIndoor Air Sampling (5 years)	$10,000.00	5	$50,000.00
Engineering Oversight (6 months) (LS)	$130,000.00	1	$130,000.00
Sub-Total			$7,194,000.00
Contingency (20%)			$1,438,800.00
Estimated Total			$8,632,800.00
Engineering Oversight & Remedial Cost			**$8,632,800.00**

APPENDIX I

ANALYTICAL RESULTS WITH DATA USABILITY SUMMARY REPORTS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

October 15, 2018

Jason Brydes
BE3 Environmental
1270 Niagara St
Buffalo, NY 14213

RE: Project: 31 WATER ST RI
Pace Project No.: 7066870

Dear Jason Brydes:
Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Murphy
james.murphy@pacelabs.com
(518)346-4592
Project Manager

Enclosures

cc: Alex Brennen, BE3 Corp

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

CERTIFICATIONS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Long Island Certification IDs

575 Broad Hollow Rd, Melville, NY 11747
New York Certification #: 10478 Primary Accrediting Body
New Jersey Certification #: NY158
Pennsylvania Certification #: 68-00350
Connecticut Certification #: PH-0435
Maryland Certification #: 208
Rhode Island Certification #: LAO00340
Massachusetts Certification #: M-NY026
New Hampshire Certification #: 2987

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE SUMMARY

Project: 31 WATER ST RI
Pace Project No.: 7066870

Lab ID	Sample ID	Matrix	Date Collected	Date Received
7066870001	**BH-1 (7-8)**	Solid	10/03/18 08:30	10/04/18 10:30
7066870002	**BH-2 (1-3)**	Solid	10/03/18 09:30	10/04/18 10:30
7066870003	**BH-3 (1-4)**	Solid	10/03/18 10:00	10/04/18 10:30
7066870004	**BH-4 (0-4)**	Solid	10/03/18 11:00	10/04/18 10:30
7066870005	**BH-6 (0-4)**	Solid	10/03/18 11:45	10/04/18 10:30
7066870006	**BH-5 (8-12)**	Solid	10/03/18 12:15	10/04/18 10:30
7066870007	**BH-7 (0-4)**	Solid	10/03/18 13:30	10/04/18 10:30
7066870008	**BH-8 (8-12)**	Solid	10/03/18 14:00	10/04/18 10:30
7066870009	**BH-9 (4-7)**	Solid	10/03/18 14:45	10/04/18 10:30
7066870010	**BH-9 (13-14)**	Solid	10/03/18 15:00	10/04/18 10:30
7066870011	**BH-11 (0-4)**	Solid	10/03/18 15:50	10/04/18 10:30
7066870012	**BH-12 (0-4)**	Solid	10/03/18 16:20	10/04/18 10:30

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SAMPLE ANALYTE COUNT

Project: 31 WATER ST RI
Pace Project No.: 7066870

Lab ID	Sample ID	Method	Analysts	Analytes Reported
7066870001	**BH-1 (7-8)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	JMW	1
		EPA 8270D	MLM	41
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1
7066870002	**BH-2 (1-3)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	JMW	1
		EPA 8270D	MLM	37
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1
7066870003	**BH-3 (1-4)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	JMW	1
		EPA 8270D	MLM	34
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1
7066870004	**BH-4 (0-4)**	EPA 8081B	JMD	17

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(631)694-3040

SAMPLE ANALYTE COUNT

Project: 31 WATER ST RI
Pace Project No.: 7066870

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	JMW	1
		EPA 8270D	MLM	35
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1
7066870005	**BH-6 (0-4)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	JMW	1
		EPA 8270D	MLM	33
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1
7066870006	**BH-5 (8-12)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	JMW	1
		EPA 8270D	MLM	41
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1
7066870007	**BH-7 (0-4)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE ANALYTE COUNT

Project: 31 WATER ST RI
Pace Project No.: 7066870

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	JMW	1
		EPA 8270D	MLM	40
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1
7066870008	**BH-8 (8-12)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	JMW	1
		EPA 8270D	MLM	49
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1
7066870009	**BH-9 (4-7)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	JMW	1
		EPA 8270D	MLM	35
		EPA 8260C	BBL	48
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1
7066870010	**BH-9 (13-14)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12

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(631)694-3040

SAMPLE ANALYTE COUNT

Project: 31 WATER ST RI
Pace Project No.: 7066870

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 7471B	JMW	1
		EPA 8270D	MLM	39
		EPA 8260C	KGG	36
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1
7066870011	**BH-11 (0-4)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	JMW	1
		EPA 8270D	MLM	35
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1
7066870012	**BH-12 (0-4)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	JMW	1
		EPA 8270D	MLM	35
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
		EPA 7196A	DJS	1
		Trivalent Chromium Calculation	SDO	1
		EPA 9014 Total Cyanide	JS3	1

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Date: October 15, 2018

BH-2 (1-3) (Lab ID: 7066870002)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-3 (1-4) (Lab ID: 7066870003)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-4 (0-4) (Lab ID: 7066870004)

- Method 8260C: The internal standard response exceeded the lower acceptance limits and confirmed by reanalysis. Results may be biased high.
- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-6 (0-4) (Lab ID: 7066870005)

- Method 8260C: The internal standard response exceeded the lower acceptance limits and confirmed by reanalysis. Results may be biased high.
- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-8 (8-12) (Lab ID: 7066870008)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-9 (4-7) (Lab ID: 7066870009)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-11 (0-4) (Lab ID: 7066870011)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-12 (0-4) (Lab ID: 7066870012)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: October 15, 2018

General Information:
12 samples were analyzed for EPA 8081B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 85846

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BH-11 (0-4) (Lab ID: 7066870011)
  - 4,4'-DDT
- BH-12 (0-4) (Lab ID: 7066870012)
  - 4,4'-DDT
- BH-2 (1-3) (Lab ID: 7066870002)
  - 4,4'-DDT
- BH-3 (1-4) (Lab ID: 7066870003)
  - 4,4'-DDT
- BH-4 (0-4) (Lab ID: 7066870004)
  - 4,4'-DDT
- BH-6 (0-4) (Lab ID: 7066870005)
  - 4,4'-DDT
- BH-8 (8-12) (Lab ID: 7066870008)
  - 4,4'-DDT
- BH-9 (4-7) (Lab ID: 7066870009)
  - 4,4'-DDT

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: October 15, 2018

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8082A**
Description: 8082 GCS PCB
Client: BE3 Environmental
Date: October 15, 2018

General Information:
12 samples were analyzed for EPA 8082A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 85854

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066870004

R1: RPD value was outside control limits.

- MSD (Lab ID: 394973)
  - PCB-1260 (Aroclor 1260)

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8151A**
Description: 8151 Chlorinated Herbicides
Client: BE3 Environmental
Date: October 15, 2018

General Information:
12 samples were analyzed for EPA 8151A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 8151A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 85932

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066870001

R1: RPD value was outside control limits.

- MSD (Lab ID: 395229)
  - 2,4,5-TP (Silvex)

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 6010C**
Description: 6010 MET ICP
Client: BE3 Environmental
Date: October 15, 2018

General Information:
12 samples were analyzed for EPA 6010C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 85841

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066870001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 394914)
  - Barium
  - Manganese

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 85841

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 394913)
  - Manganese

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 7471B**
Description: 7471 Mercury
Client: BE3 Environmental
Date: October 15, 2018

General Information:
12 samples were analyzed for EPA 7471B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8270D**
Description: 8270 MSSV
Client: BE3 Environmental
Date: October 15, 2018

General Information:
12 samples were analyzed for EPA 8270D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3545A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 85805

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-1 (7-8) (Lab ID: 7066870001)
  - 2,4,6-Tribromophenol (S)
- BH-11 (0-4) (Lab ID: 7066870011)
  - 2,4,6-Tribromophenol (S)
- BH-12 (0-4) (Lab ID: 7066870012)
  - 2,4,6-Tribromophenol (S)
- BH-2 (1-3) (Lab ID: 7066870002)
  - 2,4,6-Tribromophenol (S)
- BH-3 (1-4) (Lab ID: 7066870003)
  - 2,4,6-Tribromophenol (S)
- BH-4 (0-4) (Lab ID: 7066870004)
  - 2,4,6-Tribromophenol (S)
- BH-5 (8-12) (Lab ID: 7066870006)
  - 2,4,6-Tribromophenol (S)
- BH-6 (0-4) (Lab ID: 7066870005)
  - 2,4,6-Tribromophenol (S)
- BH-7 (0-4) (Lab ID: 7066870007)
  - 2,4,6-Tribromophenol (S)
- BH-8 (8-12) (Lab ID: 7066870008)
  - 2,4,6-Tribromophenol (S)
- BH-9 (13-14) (Lab ID: 7066870010)
  - 2,4,6-Tribromophenol (S)
- BH-9 (4-7) (Lab ID: 7066870009)
  - 2,4,6-Tribromophenol (S)
- BLANK (Lab ID: 394832)
  - 2,4,6-Tribromophenol (S)
- LCS (Lab ID: 394833)

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8270D**
Description: 8270 MSSV
Client: BE3 Environmental
Date: October 15, 2018

QC Batch: 85805

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
- 2,4,6-Tribromophenol (S)

- MS (Lab ID: 394859)
  - 2,4,6-Tribromophenol (S)
- MSD (Lab ID: 394860)
  - 2,4,6-Tribromophenol (S)

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 85805

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066870012

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
- MSD (Lab ID: 394860)
  - Dibenz(a,h)anthracene
  - Indeno(1,2,3-cd)pyrene

R1: RPD value was outside control limits.
- MSD (Lab ID: 394860)
  - Benzo(g,h,i)perylene
  - Dibenz(a,h)anthracene

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8260C**
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: October 15, 2018

General Information:
11 samples were analyzed for EPA 8260C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A-L with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86468

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-5 (8-12) (Lab ID: 7066870006)
  - 2-Butanone (MEK)
  - Acetone
- BH-8 (8-12) (Lab ID: 7066870008)
  - 2-Butanone (MEK)
  - Acetone
- BH-9 (4-7) (Lab ID: 7066870009)
  - Acetone
- BLANK (Lab ID: 397701)
  - 1,2-Dichloroethane-d4 (S)
- DUP (Lab ID: 398496)
  - 2-Butanone (MEK)
  - Acetone
- LCS (Lab ID: 397702)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride
- MS (Lab ID: 397703)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 1,2-Dichloroethane-d4 (S)
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8260C**
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: October 15, 2018

QC Batch: 86669

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-12 (0-4) (Lab ID: 7066870012)
  - Tetrachloroethene
- DUP (Lab ID: 398792)
  - Acetone
- LCS (Lab ID: 398789)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride
  - Tetrachloroethene

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 86669

S1: Surrogate recovery outside laboratory control limits (confirmed by re-analysis).

- DUP (Lab ID: 398792)
  - 1,2-Dichloroethane-d4 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86468

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066645002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 397703)
  - Acetone
  - cis-1,2-Dichloroethene

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8260C**
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: October 15, 2018

QC Batch: 86468

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 398496)
  - Acetone

QC Batch: 86669

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 398792)
  - Acetone
  - Methylene Chloride
  - Trichloroethene
  - o-Xylene

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8260C**
Description: 8260 MSV 5035A-H Med Level
Client: BE3 Environmental
Date: October 15, 2018

General Information:
1 sample was analyzed for EPA 8260C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A-H/5030C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86646

IH: This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.

- LCS (Lab ID: 398743)
  - Acetone

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86646

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 398743)
  - 1,4-Dioxane (p-Dioxane)

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BH-9 (13-14) (Lab ID: 7066870010)
  - 2-Butanone (MEK)
- BLANK (Lab ID: 398742)
  - 2-Butanone (MEK)
- LCS (Lab ID: 398743)
  - 2-Butanone (MEK)

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8260C**
Description: 8260 MSV 5035A-H Med Level
Client: BE3 Environmental
Date: October 15, 2018

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 8260**
Description: TIC MSV Soil
Client: BE3 Environmental
Date: October 15, 2018

General Information:
10 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 7196A**
Description: 7196 Chromium, Hexavalent
Client: BE3 Environmental
Date: October 15, 2018

General Information:
12 samples were analyzed for EPA 7196A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3060A with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86148

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066870001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 396308)
  - Chromium, Hexavalent

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **Trivalent Chromium Calculation**
Description: Trivalent Chromium Calculation
Client: BE3 Environmental
Date: October 15, 2018

General Information:
12 samples were analyzed for Trivalent Chromium Calculation. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 9014 Total Cyanide**
Description: 9014 Cyanide, Total
Client: BE3 Environmental
Date: October 15, 2018

General Information:
12 samples were analyzed for EPA 9014 Total Cyanide. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 9010C with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-1 (7-8) **Lab ID: 7066870001** Collected: 10/03/18 08:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.0**	ug/kg	2.0	1.0	1	10/05/18 13:13	10/11/18 12:55	309-00-2	
alpha-BHC	**<2.0**	ug/kg	2.0	1.0	1	10/05/18 13:13	10/11/18 12:55	319-84-6	
beta-BHC	**<2.0**	ug/kg	2.0	1.0	1	10/05/18 13:13	10/11/18 12:55	319-85-7	
delta-BHC	**<2.0**	ug/kg	2.0	1.0	1	10/05/18 13:13	10/11/18 12:55	319-86-8	
gamma-BHC (Lindane)	**<2.0**	ug/kg	2.0	1.0	1	10/05/18 13:13	10/11/18 12:55	58-89-9	
alpha-Chlordane	**<2.0**	ug/kg	2.0	1.0	1	10/05/18 13:13	10/11/18 12:55	5103-71-9	
4,4'-DDD	**<3.9**	ug/kg	3.9	1.9	1	10/05/18 13:13	10/11/18 12:55	72-54-8	
4,4'-DDE	**<3.9**	ug/kg	3.9	1.9	1	10/05/18 13:13	10/11/18 12:55	72-55-9	
4,4'-DDT	**<3.9**	ug/kg	3.9	1.9	1	10/05/18 13:13	10/11/18 12:55	50-29-3	
Dieldrin	**<3.9**	ug/kg	3.9	1.9	1	10/05/18 13:13	10/11/18 12:55	60-57-1	
Endosulfan I	**<2.0**	ug/kg	2.0	1.0	1	10/05/18 13:13	10/11/18 12:55	959-98-8	
Endosulfan II	**<3.9**	ug/kg	3.9	1.9	1	10/05/18 13:13	10/11/18 12:55	33213-65-9	
Endosulfan sulfate	**<3.9**	ug/kg	3.9	1.9	1	10/05/18 13:13	10/11/18 12:55	1031-07-8	
Endrin	**<3.9**	ug/kg	3.9	1.9	1	10/05/18 13:13	10/11/18 12:55	72-20-8	
Heptachlor	**<2.0**	ug/kg	2.0	1.0	1	10/05/18 13:13	10/11/18 12:55	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	77	%	30-150		1	10/05/18 13:13	10/11/18 12:55	877-09-8	
Decachlorobiphenyl (S)	111	%	30-150		1	10/05/18 13:13	10/11/18 12:55	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<38.9**	ug/kg	38.9	19.5	1	10/05/18 13:13	10/10/18 18:27	12674-11-2	
PCB-1221 (Aroclor 1221)	**<79.0**	ug/kg	79.0	39.5	1	10/05/18 13:13	10/10/18 18:27	11104-28-2	
PCB-1232 (Aroclor 1232)	**<38.9**	ug/kg	38.9	19.5	1	10/05/18 13:13	10/10/18 18:27	11141-16-5	
PCB-1242 (Aroclor 1242)	**<38.9**	ug/kg	38.9	19.5	1	10/05/18 13:13	10/10/18 18:27	53469-21-9	
PCB-1248 (Aroclor 1248)	**<38.9**	ug/kg	38.9	19.5	1	10/05/18 13:13	10/10/18 18:27	12672-29-6	
PCB-1254 (Aroclor 1254)	**<38.9**	ug/kg	38.9	19.5	1	10/05/18 13:13	10/10/18 18:27	11097-69-1	
PCB-1260 (Aroclor 1260)	**<38.9**	ug/kg	38.9	19.5	1	10/05/18 13:13	10/10/18 18:27	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	62	%	30-150		1	10/05/18 13:13	10/10/18 18:27	877-09-8	
Decachlorobiphenyl (S)	90	%	30-150		1	10/05/18 13:13	10/10/18 18:27	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<5.8**	ug/kg	5.8	0.31	1	10/05/18 15:43	10/08/18 22:02	93-72-1	R1
Surrogates									
2,4-DCAA (S)	88	%	29-136		1	10/05/18 15:43	10/08/18 22:02	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**10**	mg/kg	0.62	0.19	1	10/05/18 11:16	10/05/18 16:32	7440-38-2	
Barium	**204**	mg/kg	12.5	0.95	1	10/05/18 11:16	10/05/18 16:32	7440-39-3	M1
Beryllium	**0.39**	mg/kg	0.31	0.040	1	10/05/18 11:16	10/05/18 16:32	7440-41-7	
Cadmium	**0.12J**	mg/kg	0.16	0.019	1	10/05/18 11:16	10/05/18 16:32	7440-43-9	
Chromium	**12.8**	mg/kg	0.62	0.060	1	10/05/18 11:16	10/05/18 16:32	7440-47-3	
Copper	**7.5**	mg/kg	1.6	0.11	1	10/05/18 11:16	10/05/18 16:32	7440-50-8	
Lead	**12.2**	mg/kg	0.31	0.15	1	10/05/18 11:16	10/05/18 16:32	7439-92-1	
Manganese	**754**	mg/kg	0.94	0.054	1	10/05/18 11:16	10/05/18 16:32	7439-96-5	D6,M1

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-1 (7-8) **Lab ID: 7066870001** Collected: 10/03/18 08:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**16.4**	mg/kg	2.5	0.22	1	10/05/18 11:16	10/05/18 16:32	7440-02-0	
Selenium	**0.84**	mg/kg	0.62	0.33	1	10/05/18 11:16	10/05/18 16:32	7782-49-2	
Silver	**<0.62**	mg/kg	0.62	0.079	1	10/05/18 11:16	10/05/18 16:32	7440-22-4	
Zinc	**48.2**	mg/kg	1.2	0.080	1	10/05/18 11:16	10/05/18 16:32	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.043**	mg/kg	0.043	0.026	1	10/05/18 11:47	10/05/18 14:53	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<79.0**	ug/kg	79.0	11.7	1	10/05/18 09:50	10/09/18 17:19	83-32-9	
Acenaphthylene	**<79.0**	ug/kg	79.0	15.8	1	10/05/18 09:50	10/09/18 17:19	208-96-8	
Anthracene	**<79.0**	ug/kg	79.0	23.1	1	10/05/18 09:50	10/09/18 17:19	120-12-7	
Benzo(a)anthracene	**<79.0**	ug/kg	79.0	18.1	1	10/05/18 09:50	10/09/18 17:19	56-55-3	
Benzo(a)pyrene	**<79.0**	ug/kg	79.0	33.4	1	10/05/18 09:50	10/09/18 17:19	50-32-8	
Benzo(b)fluoranthene	**<79.0**	ug/kg	79.0	27.4	1	10/05/18 09:50	10/09/18 17:19	205-99-2	
Benzo(g,h,i)perylene	**<79.0**	ug/kg	79.0	38.2	1	10/05/18 09:50	10/09/18 17:19	191-24-2	
Benzo(k)fluoranthene	**<79.0**	ug/kg	79.0	24.5	1	10/05/18 09:50	10/09/18 17:19	207-08-9	
Chrysene	**<79.0**	ug/kg	79.0	35.4	1	10/05/18 09:50	10/09/18 17:19	218-01-9	
Dibenz(a,h)anthracene	**<79.0**	ug/kg	79.0	25.8	1	10/05/18 09:50	10/09/18 17:19	53-70-3	
Dibenzofuran	**<79.0**	ug/kg	79.0	14.3	1	10/05/18 09:50	10/09/18 17:19	132-64-9	
Fluoranthene	**<79.0**	ug/kg	79.0	66.4	1	10/05/18 09:50	10/09/18 17:19	206-44-0	
Fluorene	**<79.0**	ug/kg	79.0	20.1	1	10/05/18 09:50	10/09/18 17:19	86-73-7	
Hexachlorobenzene	**<79.0**	ug/kg	79.0	15.6	1	10/05/18 09:50	10/09/18 17:19	118-74-1	
Indeno(1,2,3-cd)pyrene	**<79.0**	ug/kg	79.0	30.2	1	10/05/18 09:50	10/09/18 17:19	193-39-5	
2-Methylphenol(o-Cresol)	**<79.0**	ug/kg	79.0	43.8	1	10/05/18 09:50	10/09/18 17:19	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<79.0**	ug/kg	79.0	28.5	1	10/05/18 09:50	10/09/18 17:19		
Naphthalene	**<79.0**	ug/kg	79.0	8.7	1	10/05/18 09:50	10/09/18 17:19	91-20-3	
Pentachlorophenol	**<790**	ug/kg	790	8.0	1	10/05/18 09:50	10/09/18 17:19	87-86-5	
Phenanthrene	**<79.0**	ug/kg	79.0	25.4	1	10/05/18 09:50	10/09/18 17:19	85-01-8	
Phenol	**<79.0**	ug/kg	79.0	15.1	1	10/05/18 09:50	10/09/18 17:19	108-95-2	
Pyrene	**<79.0**	ug/kg	79.0	37.5	1	10/05/18 09:50	10/09/18 17:19	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	51	%	23-120		1	10/05/18 09:50	10/09/18 17:19	4165-60-0	
2-Fluorobiphenyl (S)	57	%	30-115		1	10/05/18 09:50	10/09/18 17:19	321-60-8	
p-Terphenyl-d14 (S)	79	%	18-137		1	10/05/18 09:50	10/09/18 17:19	1718-51-0	
Phenol-d5 (S)	56	%	24-113		1	10/05/18 09:50	10/09/18 17:19	4165-62-2	
2-Fluorophenol (S)	57	%	25-121		1	10/05/18 09:50	10/09/18 17:19	367-12-4	
2,4,6-Tribromophenol (S)	70	%	19-122		1	10/05/18 09:50	10/09/18 17:19	118-79-6	CH
2-Chlorophenol-d4 (S)	55	%	20-130		1	10/05/18 09:50	10/09/18 17:19	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	45	%	20-130		1	10/05/18 09:50	10/09/18 17:19	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**202J**	ug/kg			1	10/05/18 09:50	10/09/18 17:19		
Unknown Ketone	**4870J**	ug/kg			1	10/05/18 09:50	10/09/18 17:19		
Unknown Ketone	**304J**	ug/kg			1	10/05/18 09:50	10/09/18 17:19		
Unknown Ketone	**53000J**	ug/kg			1	10/05/18 09:50	10/09/18 17:19		

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-1 (7-8) **Lab ID: 7066870001** Collected: 10/03/18 08:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Aldol Condensate	**1010J**	ug/kg			1	10/05/18 09:50	10/09/18 17:19		
Unknown Aldol Condensate	**271J**	ug/kg			1	10/05/18 09:50	10/09/18 17:19		
Unknown Petroleum Alkane	**1880J**	ug/kg			1	10/05/18 09:50	10/09/18 17:19		
Unknown Petroleum Alkane	**323J**	ug/kg			1	10/05/18 09:50	10/09/18 17:19		
Unknown Ketone	**170J**	ug/kg			1	10/05/18 09:50	10/09/18 17:19		
Unknown Organic Acid	**498J**	ug/kg			1	10/05/18 09:50	10/09/18 17:19		
Unknown Amide	**418J**	ug/kg			1	10/05/18 09:50	10/09/18 17:19		
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<2.2**	ug/kg	2.2	2.1	1	10/09/18 12:09	10/09/18 18:48	67-64-1	
Benzene	**<2.2**	ug/kg	2.2	0.85	1	10/09/18 12:09	10/09/18 18:48	71-43-2	
2-Butanone (MEK)	**<2.2**	ug/kg	2.2	1.3	1	10/09/18 12:09	10/09/18 18:48	78-93-3	
n-Butylbenzene	**<2.2**	ug/kg	2.2	0.87	1	10/09/18 12:09	10/09/18 18:48	104-51-8	
sec-Butylbenzene	**<2.2**	ug/kg	2.2	0.86	1	10/09/18 12:09	10/09/18 18:48	135-98-8	
tert-Butylbenzene	**<2.2**	ug/kg	2.2	1.1	1	10/09/18 12:09	10/09/18 18:48	98-06-6	
Carbon tetrachloride	**<2.2**	ug/kg	2.2	1.4	1	10/09/18 12:09	10/09/18 18:48	56-23-5	
Chlorobenzene	**<2.2**	ug/kg	2.2	0.89	1	10/09/18 12:09	10/09/18 18:48	108-90-7	
Chloroform	**<2.2**	ug/kg	2.2	0.59	1	10/09/18 12:09	10/09/18 18:48	67-66-3	
1,2-Dichlorobenzene	**<2.2**	ug/kg	2.2	0.89	1	10/09/18 12:09	10/09/18 18:48	95-50-1	
1,3-Dichlorobenzene	**<2.2**	ug/kg	2.2	0.88	1	10/09/18 12:09	10/09/18 18:48	541-73-1	
1,4-Dichlorobenzene	**<2.2**	ug/kg	2.2	0.89	1	10/09/18 12:09	10/09/18 18:48	106-46-7	
1,1-Dichloroethane	**<2.2**	ug/kg	2.2	0.85	1	10/09/18 12:09	10/09/18 18:48	75-34-3	
1,2-Dichloroethane	**<2.2**	ug/kg	2.2	0.53	1	10/09/18 12:09	10/09/18 18:48	107-06-2	
1,1-Dichloroethene	**<2.2**	ug/kg	2.2	0.84	1	10/09/18 12:09	10/09/18 18:48	75-35-4	
cis-1,2-Dichloroethene	**<2.2**	ug/kg	2.2	0.80	1	10/09/18 12:09	10/09/18 18:48	156-59-2	
trans-1,2-Dichloroethene	**<2.2**	ug/kg	2.2	0.62	1	10/09/18 12:09	10/09/18 18:48	156-60-5	
1,4-Dioxane (p-Dioxane)	**<54.0**	ug/kg	54.0	31.9	1	10/09/18 12:09	10/09/18 18:48	123-91-1	
Ethylbenzene	**<2.2**	ug/kg	2.2	0.83	1	10/09/18 12:09	10/09/18 18:48	100-41-4	
Methylene Chloride	**1.4J**	ug/kg	2.2	0.98	1	10/09/18 12:09	10/09/18 18:48	75-09-2	
Methyl-tert-butyl ether	**<2.2**	ug/kg	2.2	0.48	1	10/09/18 12:09	10/09/18 18:48	1634-04-4	
n-Propylbenzene	**<2.2**	ug/kg	2.2	0.89	1	10/09/18 12:09	10/09/18 18:48	103-65-1	
Tetrachloroethene	**<2.2**	ug/kg	2.2	1.1	1	10/09/18 12:09	10/09/18 18:48	127-18-4	
Toluene	**<2.2**	ug/kg	2.2	1.0	1	10/09/18 12:09	10/09/18 18:48	108-88-3	
1,2,4-Trichlorobenzene	**<2.2**	ug/kg	2.2	0.87	1	10/09/18 12:09	10/09/18 18:48	120-82-1	
1,1,1-Trichloroethane	**<2.2**	ug/kg	2.2	1.1	1	10/09/18 12:09	10/09/18 18:48	71-55-6	
Trichloroethene	**<2.2**	ug/kg	2.2	0.90	1	10/09/18 12:09	10/09/18 18:48	79-01-6	
1,2,4-Trimethylbenzene	**<2.2**	ug/kg	2.2	0.93	1	10/09/18 12:09	10/09/18 18:48	95-63-6	
1,3,5-Trimethylbenzene	**<2.2**	ug/kg	2.2	0.83	1	10/09/18 12:09	10/09/18 18:48	108-67-8	
Vinyl chloride	**<2.2**	ug/kg	2.2	0.48	1	10/09/18 12:09	10/09/18 18:48	75-01-4	
Xylene (Total)	**<4.3**	ug/kg	4.3	2.2	1	10/09/18 12:09	10/09/18 18:48	1330-20-7	
m&p-Xylene	**<4.3**	ug/kg	4.3	2.1	1	10/09/18 12:09	10/09/18 18:48	179601-23-1	
o-Xylene	**<2.2**	ug/kg	2.2	0.93	1	10/09/18 12:09	10/09/18 18:48	95-47-6	
Surrogates									
Toluene-d8 (S)	107	%	43-157		1	10/09/18 12:09	10/09/18 18:48	2037-26-5	

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-1 (7-8) **Lab ID: 7066870001** Collected: 10/03/18 08:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Surrogates									
4-Bromofluorobenzene (S)	106	%	34-145		1	10/09/18 12:09	10/09/18 18:48	460-00-4	
1,2-Dichloroethane-d4 (S)	145	%	33-150		1	10/09/18 12:09	10/09/18 18:48	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/11/18 12:18		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**15.2**	%	0.10	0.10	1		10/04/18 14:56		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.2**	mg/kg	1.2	0.25	1	10/09/18 06:56	10/09/18 11:53	18540-29-9	M1
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**12.8**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**0.27J**	mg/kg	0.58	0.17	1	10/09/18 09:25	10/09/18 15:09	57-12-5	

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Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-2 (1-3) **Lab ID: 7066870002** Collected: 10/03/18 09:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 16:22	309-00-2	
alpha-BHC	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 16:22	319-84-6	
beta-BHC	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 16:22	319-85-7	
delta-BHC	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 16:22	319-86-8	
gamma-BHC (Lindane)	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 16:22	58-89-9	
alpha-Chlordane	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 16:22	5103-71-9	
4,4'-DDD	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 16:22	72-54-8	
4,4'-DDE	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 16:22	72-55-9	
4,4'-DDT	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 16:22	50-29-3	CL
Dieldrin	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 16:22	60-57-1	
Endosulfan I	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 16:22	959-98-8	
Endosulfan II	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 16:22	33213-65-9	
Endosulfan sulfate	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 16:22	1031-07-8	
Endrin	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 16:22	72-20-8	
Heptachlor	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 16:22	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	64	%	30-150		1	10/05/18 13:13	10/11/18 16:22	877-09-8	
Decachlorobiphenyl (S)	78	%	30-150		1	10/05/18 13:13	10/11/18 16:22	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<37.5**	ug/kg	37.5	18.7	1	10/05/18 13:13	10/10/18 21:01	12674-11-2	
PCB-1221 (Aroclor 1221)	**<76.1**	ug/kg	76.1	38.1	1	10/05/18 13:13	10/10/18 21:01	11104-28-2	
PCB-1232 (Aroclor 1232)	**<37.5**	ug/kg	37.5	18.7	1	10/05/18 13:13	10/10/18 21:01	11141-16-5	
PCB-1242 (Aroclor 1242)	**<37.5**	ug/kg	37.5	18.7	1	10/05/18 13:13	10/10/18 21:01	53469-21-9	
PCB-1248 (Aroclor 1248)	**<37.5**	ug/kg	37.5	18.7	1	10/05/18 13:13	10/10/18 21:01	12672-29-6	
PCB-1254 (Aroclor 1254)	**<37.5**	ug/kg	37.5	18.7	1	10/05/18 13:13	10/10/18 21:01	11097-69-1	
PCB-1260 (Aroclor 1260)	**<37.5**	ug/kg	37.5	18.7	1	10/05/18 13:13	10/10/18 21:01	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	68	%	30-150		1	10/05/18 13:13	10/10/18 21:01	877-09-8	
Decachlorobiphenyl (S)	78	%	30-150		1	10/05/18 13:13	10/10/18 21:01	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<5.7**	ug/kg	5.7	0.30	1	10/05/18 15:43	10/09/18 05:30	93-72-1	
Surrogates									
2,4-DCAA (S)	77	%	29-136		1	10/05/18 15:43	10/09/18 05:30	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**10.5**	mg/kg	0.60	0.18	1	10/05/18 11:16	10/05/18 16:38	7440-38-2	
Barium	**102**	mg/kg	12.0	0.92	1	10/05/18 11:16	10/05/18 16:38	7440-39-3	
Beryllium	**0.32**	mg/kg	0.30	0.039	1	10/05/18 11:16	10/05/18 16:38	7440-41-7	
Cadmium	**0.075J**	mg/kg	0.15	0.018	1	10/05/18 11:16	10/05/18 16:38	7440-43-9	
Chromium	**12.9**	mg/kg	0.60	0.058	1	10/05/18 11:16	10/05/18 16:38	7440-47-3	
Copper	**32.2**	mg/kg	1.5	0.11	1	10/05/18 11:16	10/05/18 16:38	7440-50-8	
Lead	**96.3**	mg/kg	0.30	0.14	1	10/05/18 11:16	10/05/18 16:38	7439-92-1	
Manganese	**400**	mg/kg	0.90	0.052	1	10/05/18 11:16	10/05/18 16:38	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-2 (1-3) **Lab ID: 7066870002** Collected: 10/03/18 09:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**16.8**	mg/kg	2.4	0.22	1	10/05/18 11:16	10/05/18 16:38	7440-02-0	
Selenium	**0.99**	mg/kg	0.60	0.32	1	10/05/18 11:16	10/05/18 16:38	7782-49-2	
Silver	**<0.60**	mg/kg	0.60	0.076	1	10/05/18 11:16	10/05/18 16:38	7440-22-4	
Zinc	**66.8**	mg/kg	1.2	0.077	1	10/05/18 11:16	10/05/18 16:38	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.13**	mg/kg	0.051	0.031	1	10/05/18 11:47	10/05/18 14:59	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**579J**	ug/kg	758	112	10	10/05/18 09:50	10/10/18 15:00	83-32-9	
Acenaphthylene	**<758**	ug/kg	758	152	10	10/05/18 09:50	10/10/18 15:00	208-96-8	
Anthracene	**1530**	ug/kg	758	221	10	10/05/18 09:50	10/10/18 15:00	120-12-7	
Benzo(a)anthracene	**10600**	ug/kg	758	174	10	10/05/18 09:50	10/10/18 15:00	56-55-3	
Benzo(a)pyrene	**12000**	ug/kg	758	320	10	10/05/18 09:50	10/10/18 15:00	50-32-8	
Benzo(b)fluoranthene	**17000**	ug/kg	758	263	10	10/05/18 09:50	10/10/18 15:00	205-99-2	
Benzo(g,h,i)perylene	**5750**	ug/kg	758	367	10	10/05/18 09:50	10/10/18 15:00	191-24-2	
Benzo(k)fluoranthene	**6280**	ug/kg	758	235	10	10/05/18 09:50	10/10/18 15:00	207-08-9	
Chrysene	**12800**	ug/kg	758	340	10	10/05/18 09:50	10/10/18 15:00	218-01-9	
Dibenz(a,h)anthracene	**1470**	ug/kg	758	247	10	10/05/18 09:50	10/10/18 15:00	53-70-3	
Dibenzofuran	**<758**	ug/kg	758	137	10	10/05/18 09:50	10/10/18 15:00	132-64-9	
Fluoranthene	**30600**	ug/kg	758	637	10	10/05/18 09:50	10/10/18 15:00	206-44-0	
Fluorene	**488J**	ug/kg	758	192	10	10/05/18 09:50	10/10/18 15:00	86-73-7	
Hexachlorobenzene	**<758**	ug/kg	758	150	10	10/05/18 09:50	10/10/18 15:00	118-74-1	
Indeno(1,2,3-cd)pyrene	**6470**	ug/kg	758	290	10	10/05/18 09:50	10/10/18 15:00	193-39-5	
2-Methylphenol(o-Cresol)	**<758**	ug/kg	758	420	10	10/05/18 09:50	10/10/18 15:00	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<758**	ug/kg	758	273	10	10/05/18 09:50	10/10/18 15:00		
Naphthalene	**478J**	ug/kg	758	83.7	10	10/05/18 09:50	10/10/18 15:00	91-20-3	
Pentachlorophenol	**<7580**	ug/kg	7580	76.3	10	10/05/18 09:50	10/10/18 15:00	87-86-5	
Phenanthrene	**9980**	ug/kg	758	244	10	10/05/18 09:50	10/10/18 15:00	85-01-8	
Phenol	**<758**	ug/kg	758	144	10	10/05/18 09:50	10/10/18 15:00	108-95-2	
Pyrene	**24200**	ug/kg	758	359	10	10/05/18 09:50	10/10/18 15:00	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	67	%	23-120		10	10/05/18 09:50	10/10/18 15:00	4165-60-0	
2-Fluorobiphenyl (S)	76	%	30-115		10	10/05/18 09:50	10/10/18 15:00	321-60-8	
p-Terphenyl-d14 (S)	88	%	18-137		10	10/05/18 09:50	10/10/18 15:00	1718-51-0	
Phenol-d5 (S)	73	%	24-113		10	10/05/18 09:50	10/10/18 15:00	4165-62-2	
2-Fluorophenol (S)	73	%	25-121		10	10/05/18 09:50	10/10/18 15:00	367-12-4	
2,4,6-Tribromophenol (S)	91	%	19-122		10	10/05/18 09:50	10/10/18 15:00	118-79-6	CH
2-Chlorophenol-d4 (S)	73	%	20-130		10	10/05/18 09:50	10/10/18 15:00	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	65	%	20-130		10	10/05/18 09:50	10/10/18 15:00	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**5180J**	ug/kg			10	10/05/18 09:50	10/10/18 15:00		
Unknown Ketone	**80900J**	ug/kg			10	10/05/18 09:50	10/10/18 15:00		
Phenanthrene, 2-methyl-	**1890J**	ug/kg			10	10/05/18 09:50	10/10/18 15:00	2531-84-2	N
Unknown Hydrocarbon	**2570J**	ug/kg			10	10/05/18 09:50	10/10/18 15:00		

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-2 (1-3) **Lab ID: 7066870002** Collected: 10/03/18 09:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Aldol Condensate	**2200J**	ug/kg			10	10/05/18 09:50	10/10/18 15:00		
Unknown Hydrocarbon	**1930J**	ug/kg			10	10/05/18 09:50	10/10/18 15:00		
Perylene	**2470J**	ug/kg			10	10/05/18 09:50	10/10/18 15:00	198-55-0	N
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<2.5**	ug/kg	2.5	2.5	1	10/09/18 12:09	10/09/18 19:12	67-64-1	
Benzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 19:12	71-43-2	
2-Butanone (MEK)	**<2.5**	ug/kg	2.5	1.6	1	10/09/18 12:09	10/09/18 19:12	78-93-3	
n-Butylbenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 19:12	104-51-8	
sec-Butylbenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 19:12	135-98-8	
tert-Butylbenzene	**<2.5**	ug/kg	2.5	1.3	1	10/09/18 12:09	10/09/18 19:12	98-06-6	
Carbon tetrachloride	**<2.5**	ug/kg	2.5	1.6	1	10/09/18 12:09	10/09/18 19:12	56-23-5	
Chlorobenzene	**<2.5**	ug/kg	2.5	1.1	1	10/09/18 12:09	10/09/18 19:12	108-90-7	
Chloroform	**<2.5**	ug/kg	2.5	0.70	1	10/09/18 12:09	10/09/18 19:12	67-66-3	
1,2-Dichlorobenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 19:12	95-50-1	
1,3-Dichlorobenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 19:12	541-73-1	
1,4-Dichlorobenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 19:12	106-46-7	
1,1-Dichloroethane	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 19:12	75-34-3	
1,2-Dichloroethane	**<2.5**	ug/kg	2.5	0.62	1	10/09/18 12:09	10/09/18 19:12	107-06-2	
1,1-Dichloroethene	**<2.5**	ug/kg	2.5	0.99	1	10/09/18 12:09	10/09/18 19:12	75-35-4	
cis-1,2-Dichloroethene	**<2.5**	ug/kg	2.5	0.94	1	10/09/18 12:09	10/09/18 19:12	156-59-2	
trans-1,2-Dichloroethene	**<2.5**	ug/kg	2.5	0.73	1	10/09/18 12:09	10/09/18 19:12	156-60-5	
1,4-Dioxane (p-Dioxane)	**<63.7**	ug/kg	63.7	37.6	1	10/09/18 12:09	10/09/18 19:12	123-91-1	
Ethylbenzene	**<2.5**	ug/kg	2.5	0.97	1	10/09/18 12:09	10/09/18 19:12	100-41-4	
Methylene Chloride	**2.2J**	ug/kg	2.5	1.2	1	10/09/18 12:09	10/09/18 19:12	75-09-2	
Methyl-tert-butyl ether	**<2.5**	ug/kg	2.5	0.57	1	10/09/18 12:09	10/09/18 19:12	1634-04-4	
n-Propylbenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 19:12	103-65-1	
Tetrachloroethene	**<2.5**	ug/kg	2.5	1.3	1	10/09/18 12:09	10/09/18 19:12	127-18-4	
Toluene	**<2.5**	ug/kg	2.5	1.2	1	10/09/18 12:09	10/09/18 19:12	108-88-3	
1,2,4-Trichlorobenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 19:12	120-82-1	
1,1,1-Trichloroethane	**<2.5**	ug/kg	2.5	1.3	1	10/09/18 12:09	10/09/18 19:12	71-55-6	
Trichloroethene	**1.7J**	ug/kg	2.5	1.1	1	10/09/18 12:09	10/09/18 19:12	79-01-6	
1,2,4-Trimethylbenzene	**<2.5**	ug/kg	2.5	1.1	1	10/09/18 12:09	10/09/18 19:12	95-63-6	
1,3,5-Trimethylbenzene	**<2.5**	ug/kg	2.5	0.97	1	10/09/18 12:09	10/09/18 19:12	108-67-8	
Vinyl chloride	**<2.5**	ug/kg	2.5	0.56	1	10/09/18 12:09	10/09/18 19:12	75-01-4	
Xylene (Total)	**<5.1**	ug/kg	5.1	2.5	1	10/09/18 12:09	10/09/18 19:12	1330-20-7	
m&p-Xylene	**<5.1**	ug/kg	5.1	2.5	1	10/09/18 12:09	10/09/18 19:12	179601-23-1	
o-Xylene	**<2.5**	ug/kg	2.5	1.1	1	10/09/18 12:09	10/09/18 19:12	95-47-6	
Surrogates									
Toluene-d8 (S)	114	%	43-157		1	10/09/18 12:09	10/09/18 19:12	2037-26-5	
4-Bromofluorobenzene (S)	107	%	34-145		1	10/09/18 12:09	10/09/18 19:12	460-00-4	
1,2-Dichloroethane-d4 (S)	132	%	33-150		1	10/09/18 12:09	10/09/18 19:12	17060-07-0	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-2 (1-3) **Lab ID: 7066870002** Collected: 10/03/18 09:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/11/18 12:19		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**12.0**	%	0.10	0.10	1		10/04/18 14:56		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.1**	mg/kg	1.1	0.24	1	10/09/18 06:56	10/09/18 11:54	18540-29-9	
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**12.9**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**<0.56**	mg/kg	0.56	0.16	1	10/09/18 09:25	10/09/18 15:22	57-12-5	

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-3 (1-4) **Lab ID: 7066870003** Collected: 10/03/18 10:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<1.8**	ug/kg	1.8	0.91	1	10/05/18 13:13	10/11/18 16:36	309-00-2	
alpha-BHC	**<1.8**	ug/kg	1.8	0.91	1	10/05/18 13:13	10/11/18 16:36	319-84-6	
beta-BHC	**<1.8**	ug/kg	1.8	0.91	1	10/05/18 13:13	10/11/18 16:36	319-85-7	
delta-BHC	**<1.8**	ug/kg	1.8	0.91	1	10/05/18 13:13	10/11/18 16:36	319-86-8	
gamma-BHC (Lindane)	**<1.8**	ug/kg	1.8	0.91	1	10/05/18 13:13	10/11/18 16:36	58-89-9	
alpha-Chlordane	**<1.8**	ug/kg	1.8	0.91	1	10/05/18 13:13	10/11/18 16:36	5103-71-9	
4,4'-DDD	**<3.5**	ug/kg	3.5	1.8	1	10/05/18 13:13	10/11/18 16:36	72-54-8	
4,4'-DDE	**<3.5**	ug/kg	3.5	1.8	1	10/05/18 13:13	10/11/18 16:36	72-55-9	
4,4'-DDT	**<3.5**	ug/kg	3.5	1.8	1	10/05/18 13:13	10/11/18 16:36	50-29-3	CL
Dieldrin	**<3.5**	ug/kg	3.5	1.8	1	10/05/18 13:13	10/11/18 16:36	60-57-1	
Endosulfan I	**<1.8**	ug/kg	1.8	0.91	1	10/05/18 13:13	10/11/18 16:36	959-98-8	
Endosulfan II	**<3.5**	ug/kg	3.5	1.8	1	10/05/18 13:13	10/11/18 16:36	33213-65-9	
Endosulfan sulfate	**<3.5**	ug/kg	3.5	1.8	1	10/05/18 13:13	10/11/18 16:36	1031-07-8	
Endrin	**<3.5**	ug/kg	3.5	1.8	1	10/05/18 13:13	10/11/18 16:36	72-20-8	
Heptachlor	**<1.8**	ug/kg	1.8	0.91	1	10/05/18 13:13	10/11/18 16:36	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	66	%	30-150		1	10/05/18 13:13	10/11/18 16:36	877-09-8	
Decachlorobiphenyl (S)	63	%	30-150		1	10/05/18 13:13	10/11/18 16:36	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<35.5**	ug/kg	35.5	17.8	1	10/05/18 13:13	10/10/18 20:35	12674-11-2	
PCB-1221 (Aroclor 1221)	**<72.2**	ug/kg	72.2	36.1	1	10/05/18 13:13	10/10/18 20:35	11104-28-2	
PCB-1232 (Aroclor 1232)	**<35.5**	ug/kg	35.5	17.8	1	10/05/18 13:13	10/10/18 20:35	11141-16-5	
PCB-1242 (Aroclor 1242)	**<35.5**	ug/kg	35.5	17.8	1	10/05/18 13:13	10/10/18 20:35	53469-21-9	
PCB-1248 (Aroclor 1248)	**<35.5**	ug/kg	35.5	17.8	1	10/05/18 13:13	10/10/18 20:35	12672-29-6	
PCB-1254 (Aroclor 1254)	**<35.5**	ug/kg	35.5	17.8	1	10/05/18 13:13	10/10/18 20:35	11097-69-1	
PCB-1260 (Aroclor 1260)	**<35.5**	ug/kg	35.5	17.8	1	10/05/18 13:13	10/10/18 20:35	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	69	%	30-150		1	10/05/18 13:13	10/10/18 20:35	877-09-8	
Decachlorobiphenyl (S)	87	%	30-150		1	10/05/18 13:13	10/10/18 20:35	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<5.4**	ug/kg	5.4	0.28	1	10/05/18 15:43	10/09/18 02:18	93-72-1	
Surrogates									
2,4-DCAA (S)	77	%	29-136		1	10/05/18 15:43	10/09/18 02:18	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**7.6**	mg/kg	0.55	0.17	1	10/05/18 11:16	10/05/18 16:39	7440-38-2	
Barium	**102**	mg/kg	11.1	0.85	1	10/05/18 11:16	10/05/18 16:39	7440-39-3	
Beryllium	**0.46**	mg/kg	0.28	0.035	1	10/05/18 11:16	10/05/18 16:39	7440-41-7	
Cadmium	**0.11J**	mg/kg	0.14	0.017	1	10/05/18 11:16	10/05/18 16:39	7440-43-9	
Chromium	**9.1**	mg/kg	0.55	0.053	1	10/05/18 11:16	10/05/18 16:39	7440-47-3	
Copper	**21.2**	mg/kg	1.4	0.10	1	10/05/18 11:16	10/05/18 16:39	7440-50-8	
Lead	**30.8**	mg/kg	0.28	0.13	1	10/05/18 11:16	10/05/18 16:39	7439-92-1	
Manganese	**676**	mg/kg	0.83	0.048	1	10/05/18 11:16	10/05/18 16:39	7439-96-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-3 (1-4) **Lab ID: 7066870003** Collected: 10/03/18 10:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**14.5**	mg/kg	2.2	0.20	1	10/05/18 11:16	10/05/18 16:39	7440-02-0	
Selenium	**0.48J**	mg/kg	0.55	0.29	1	10/05/18 11:16	10/05/18 16:39	7782-49-2	
Silver	**<0.55**	mg/kg	0.55	0.070	1	10/05/18 11:16	10/05/18 16:39	7440-22-4	
Zinc	**65.4**	mg/kg	1.1	0.071	1	10/05/18 11:16	10/05/18 16:39	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.050**	mg/kg	0.050	0.030	1	10/05/18 11:47	10/05/18 15:00	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**329J**	ug/kg	714	106	10	10/05/18 09:50	10/10/18 15:27	83-32-9	
Acenaphthylene	**<714**	ug/kg	714	143	10	10/05/18 09:50	10/10/18 15:27	208-96-8	
Anthracene	**1110**	ug/kg	714	209	10	10/05/18 09:50	10/10/18 15:27	120-12-7	
Benzo(a)anthracene	**2780**	ug/kg	714	164	10	10/05/18 09:50	10/10/18 15:27	56-55-3	
Benzo(a)pyrene	**2280**	ug/kg	714	302	10	10/05/18 09:50	10/10/18 15:27	50-32-8	
Benzo(b)fluoranthene	**2730**	ug/kg	714	248	10	10/05/18 09:50	10/10/18 15:27	205-99-2	
Benzo(g,h,i)perylene	**850**	ug/kg	714	346	10	10/05/18 09:50	10/10/18 15:27	191-24-2	
Benzo(k)fluoranthene	**1250**	ug/kg	714	221	10	10/05/18 09:50	10/10/18 15:27	207-08-9	
Chrysene	**2720**	ug/kg	714	320	10	10/05/18 09:50	10/10/18 15:27	218-01-9	
Dibenz(a,h)anthracene	**<714**	ug/kg	714	233	10	10/05/18 09:50	10/10/18 15:27	53-70-3	
Dibenzofuran	**<714**	ug/kg	714	129	10	10/05/18 09:50	10/10/18 15:27	132-64-9	
Fluoranthene	**5640**	ug/kg	714	600	10	10/05/18 09:50	10/10/18 15:27	206-44-0	
Fluorene	**408J**	ug/kg	714	181	10	10/05/18 09:50	10/10/18 15:27	86-73-7	
Hexachlorobenzene	**<714**	ug/kg	714	141	10	10/05/18 09:50	10/10/18 15:27	118-74-1	
Indeno(1,2,3-cd)pyrene	**984**	ug/kg	714	273	10	10/05/18 09:50	10/10/18 15:27	193-39-5	
2-Methylphenol(o-Cresol)	**<714**	ug/kg	714	396	10	10/05/18 09:50	10/10/18 15:27	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<714**	ug/kg	714	257	10	10/05/18 09:50	10/10/18 15:27		
Naphthalene	**434J**	ug/kg	714	78.9	10	10/05/18 09:50	10/10/18 15:27	91-20-3	
Pentachlorophenol	**<7140**	ug/kg	7140	71.9	10	10/05/18 09:50	10/10/18 15:27	87-86-5	
Phenanthrene	**4660**	ug/kg	714	230	10	10/05/18 09:50	10/10/18 15:27	85-01-8	
Phenol	**<714**	ug/kg	714	136	10	10/05/18 09:50	10/10/18 15:27	108-95-2	
Pyrene	**4790**	ug/kg	714	339	10	10/05/18 09:50	10/10/18 15:27	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	67	%	23-120		10	10/05/18 09:50	10/10/18 15:27	4165-60-0	
2-Fluorobiphenyl (S)	73	%	30-115		10	10/05/18 09:50	10/10/18 15:27	321-60-8	
p-Terphenyl-d14 (S)	86	%	18-137		10	10/05/18 09:50	10/10/18 15:27	1718-51-0	
Phenol-d5 (S)	70	%	24-113		10	10/05/18 09:50	10/10/18 15:27	4165-62-2	
2-Fluorophenol (S)	72	%	25-121		10	10/05/18 09:50	10/10/18 15:27	367-12-4	
2,4,6-Tribromophenol (S)	86	%	19-122		10	10/05/18 09:50	10/10/18 15:27	118-79-6	CH
2-Chlorophenol-d4 (S)	71	%	20-130		10	10/05/18 09:50	10/10/18 15:27	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	65	%	20-130		10	10/05/18 09:50	10/10/18 15:27	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**3710J**	ug/kg			10	10/05/18 09:50	10/10/18 15:27		
Unknown Ketone	**55900J**	ug/kg			10	10/05/18 09:50	10/10/18 15:27		
Unknown Hydrocarbon	**1520J**	ug/kg			10	10/05/18 09:50	10/10/18 15:27		
Perylene	**1540J**	ug/kg			10	10/05/18 09:50	10/10/18 15:27	198-55-0	N

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-3 (1-4) **Lab ID: 7066870003** Collected: 10/03/18 10:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<2.4**	ug/kg	2.4	2.3	1	10/09/18 12:09	10/09/18 19:36	67-64-1	
Benzene	**<2.4**	ug/kg	2.4	0.94	1	10/09/18 12:09	10/09/18 19:36	71-43-2	
2-Butanone (MEK)	**<2.4**	ug/kg	2.4	1.5	1	10/09/18 12:09	10/09/18 19:36	78-93-3	
n-Butylbenzene	**<2.4**	ug/kg	2.4	0.95	1	10/09/18 12:09	10/09/18 19:36	104-51-8	
sec-Butylbenzene	**<2.4**	ug/kg	2.4	0.94	1	10/09/18 12:09	10/09/18 19:36	135-98-8	
tert-Butylbenzene	**<2.4**	ug/kg	2.4	1.2	1	10/09/18 12:09	10/09/18 19:36	98-06-6	
Carbon tetrachloride	**<2.4**	ug/kg	2.4	1.5	1	10/09/18 12:09	10/09/18 19:36	56-23-5	
Chlorobenzene	**<2.4**	ug/kg	2.4	0.98	1	10/09/18 12:09	10/09/18 19:36	108-90-7	
Chloroform	**<2.4**	ug/kg	2.4	0.65	1	10/09/18 12:09	10/09/18 19:36	67-66-3	
1,2-Dichlorobenzene	**<2.4**	ug/kg	2.4	0.98	1	10/09/18 12:09	10/09/18 19:36	95-50-1	
1,3-Dichlorobenzene	**<2.4**	ug/kg	2.4	0.97	1	10/09/18 12:09	10/09/18 19:36	541-73-1	
1,4-Dichlorobenzene	**<2.4**	ug/kg	2.4	0.98	1	10/09/18 12:09	10/09/18 19:36	106-46-7	
1,1-Dichloroethane	**<2.4**	ug/kg	2.4	0.94	1	10/09/18 12:09	10/09/18 19:36	75-34-3	
1,2-Dichloroethane	**<2.4**	ug/kg	2.4	0.58	1	10/09/18 12:09	10/09/18 19:36	107-06-2	
1,1-Dichloroethene	**<2.4**	ug/kg	2.4	0.92	1	10/09/18 12:09	10/09/18 19:36	75-35-4	
cis-1,2-Dichloroethene	**1.3J**	ug/kg	2.4	0.88	1	10/09/18 12:09	10/09/18 19:36	156-59-2	
trans-1,2-Dichloroethene	**<2.4**	ug/kg	2.4	0.68	1	10/09/18 12:09	10/09/18 19:36	156-60-5	
1,4-Dioxane (p-Dioxane)	**<59.4**	ug/kg	59.4	35.1	1	10/09/18 12:09	10/09/18 19:36	123-91-1	
Ethylbenzene	**<2.4**	ug/kg	2.4	0.91	1	10/09/18 12:09	10/09/18 19:36	100-41-4	
Methylene Chloride	**2.2J**	ug/kg	2.4	1.1	1	10/09/18 12:09	10/09/18 19:36	75-09-2	
Methyl-tert-butyl ether	**<2.4**	ug/kg	2.4	0.53	1	10/09/18 12:09	10/09/18 19:36	1634-04-4	
n-Propylbenzene	**<2.4**	ug/kg	2.4	0.98	1	10/09/18 12:09	10/09/18 19:36	103-65-1	
Tetrachloroethene	**<2.4**	ug/kg	2.4	1.2	1	10/09/18 12:09	10/09/18 19:36	127-18-4	
Toluene	**<2.4**	ug/kg	2.4	1.1	1	10/09/18 12:09	10/09/18 19:36	108-88-3	
1,2,4-Trichlorobenzene	**<2.4**	ug/kg	2.4	0.95	1	10/09/18 12:09	10/09/18 19:36	120-82-1	
1,1,1-Trichloroethane	**<2.4**	ug/kg	2.4	1.2	1	10/09/18 12:09	10/09/18 19:36	71-55-6	
Trichloroethene	**3.5**	ug/kg	2.4	0.99	1	10/09/18 12:09	10/09/18 19:36	79-01-6	
1,2,4-Trimethylbenzene	**<2.4**	ug/kg	2.4	1.0	1	10/09/18 12:09	10/09/18 19:36	95-63-6	
1,3,5-Trimethylbenzene	**<2.4**	ug/kg	2.4	0.91	1	10/09/18 12:09	10/09/18 19:36	108-67-8	
Vinyl chloride	**<2.4**	ug/kg	2.4	0.52	1	10/09/18 12:09	10/09/18 19:36	75-01-4	
Xylene (Total)	**2.4J**	ug/kg	4.8	2.4	1	10/09/18 12:09	10/09/18 19:36	1330-20-7	
m&p-Xylene	**2.4J**	ug/kg	4.8	2.3	1	10/09/18 12:09	10/09/18 19:36	179601-23-1	
o-Xylene	**<2.4**	ug/kg	2.4	1.0	1	10/09/18 12:09	10/09/18 19:36	95-47-6	
Surrogates									
Toluene-d8 (S)	111	%	43-157		1	10/09/18 12:09	10/09/18 19:36	2037-26-5	
4-Bromofluorobenzene (S)	90	%	34-145		1	10/09/18 12:09	10/09/18 19:36	460-00-4	
1,2-Dichloroethane-d4 (S)	139	%	33-150		1	10/09/18 12:09	10/09/18 19:36	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/11/18 12:20		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**7.1**	%	0.10	0.10	1		10/04/18 14:56		

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-3 (1-4) **Lab ID: 7066870003** Collected: 10/03/18 10:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.1**	mg/kg	1.1	0.23	1	10/09/18 06:56	10/09/18 11:54	18540-29-9	
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**9.1**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**0.17J**	mg/kg	0.54	0.16	1	10/09/18 09:25	10/09/18 15:23	57-12-5	

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Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-4 (0-4) **Lab ID: 7066870004** Collected: 10/03/18 11:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:51	309-00-2	
alpha-BHC	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:51	319-84-6	
beta-BHC	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:51	319-85-7	
delta-BHC	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:51	319-86-8	
gamma-BHC (Lindane)	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:51	58-89-9	
alpha-Chlordane	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:51	5103-71-9	
4,4'-DDD	**<4.2**	ug/kg	4.2	2.1	1	10/05/18 13:13	10/11/18 16:51	72-54-8	
4,4'-DDE	**<4.2**	ug/kg	4.2	2.1	1	10/05/18 13:13	10/11/18 16:51	72-55-9	
4,4'-DDT	**<4.2**	ug/kg	4.2	2.1	1	10/05/18 13:13	10/11/18 16:51	50-29-3	CL
Dieldrin	**<4.2**	ug/kg	4.2	2.1	1	10/05/18 13:13	10/11/18 16:51	60-57-1	
Endosulfan I	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:51	959-98-8	
Endosulfan II	**<4.2**	ug/kg	4.2	2.1	1	10/05/18 13:13	10/11/18 16:51	33213-65-9	
Endosulfan sulfate	**<4.2**	ug/kg	4.2	2.1	1	10/05/18 13:13	10/11/18 16:51	1031-07-8	
Endrin	**<4.2**	ug/kg	4.2	2.1	1	10/05/18 13:13	10/11/18 16:51	72-20-8	
Heptachlor	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:51	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	43	%	30-150		1	10/05/18 13:13	10/11/18 16:51	877-09-8	
Decachlorobiphenyl (S)	95	%	30-150		1	10/05/18 13:13	10/11/18 16:51	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<42.1**	ug/kg	42.1	21.1	1	10/05/18 13:13	10/11/18 15:47	12674-11-2	
PCB-1221 (Aroclor 1221)	**<85.5**	ug/kg	85.5	42.8	1	10/05/18 13:13	10/11/18 15:47	11104-28-2	
PCB-1232 (Aroclor 1232)	**<42.1**	ug/kg	42.1	21.1	1	10/05/18 13:13	10/11/18 15:47	11141-16-5	
PCB-1242 (Aroclor 1242)	**<42.1**	ug/kg	42.1	21.1	1	10/05/18 13:13	10/11/18 15:47	53469-21-9	
PCB-1248 (Aroclor 1248)	**<42.1**	ug/kg	42.1	21.1	1	10/05/18 13:13	10/11/18 15:47	12672-29-6	
PCB-1254 (Aroclor 1254)	**<42.1**	ug/kg	42.1	21.1	1	10/05/18 13:13	10/11/18 15:47	11097-69-1	
PCB-1260 (Aroclor 1260)	**<42.1**	ug/kg	42.1	21.1	1	10/05/18 13:13	10/11/18 15:47	11096-82-5	R1
Surrogates									
Tetrachloro-m-xylene (S)	62	%	30-150		1	10/05/18 13:13	10/11/18 15:47	877-09-8	
Decachlorobiphenyl (S)	79	%	30-150		1	10/05/18 13:13	10/11/18 15:47	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<6.4**	ug/kg	6.4	0.33	1	10/05/18 15:43	10/09/18 03:22	93-72-1	
Surrogates									
2,4-DCAA (S)	73	%	29-136		1	10/05/18 15:43	10/09/18 03:22	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**16.7**	mg/kg	0.67	0.20	1	10/05/18 11:16	10/05/18 16:40	7440-38-2	
Barium	**520**	mg/kg	13.4	1.0	1	10/05/18 11:16	10/05/18 16:40	7440-39-3	
Beryllium	**0.76**	mg/kg	0.33	0.043	1	10/05/18 11:16	10/05/18 16:40	7440-41-7	
Cadmium	**0.50**	mg/kg	0.17	0.020	1	10/05/18 11:16	10/05/18 16:40	7440-43-9	
Chromium	**14.4**	mg/kg	0.67	0.064	1	10/05/18 11:16	10/05/18 16:40	7440-47-3	
Copper	**150**	mg/kg	1.7	0.12	1	10/05/18 11:16	10/05/18 16:40	7440-50-8	
Lead	**192**	mg/kg	0.33	0.16	1	10/05/18 11:16	10/05/18 16:40	7439-92-1	
Manganese	**175**	mg/kg	1.0	0.057	1	10/05/18 11:16	10/05/18 16:40	7439-96-5	

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Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-4 (0-4) **Lab ID: 7066870004** Collected: 10/03/18 11:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**14.9**	mg/kg	2.7	0.24	1	10/05/18 11:16	10/05/18 16:40	7440-02-0	
Selenium	**1.6**	mg/kg	0.67	0.35	1	10/05/18 11:16	10/05/18 16:40	7782-49-2	
Silver	**<0.67**	mg/kg	0.67	0.084	1	10/05/18 11:16	10/05/18 16:40	7440-22-4	
Zinc	**142**	mg/kg	1.3	0.086	1	10/05/18 11:16	10/05/18 16:40	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.14**	mg/kg	0.051	0.031	1	10/05/18 11:47	10/05/18 15:02	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<853**	ug/kg	853	127	10	10/05/18 09:50	10/10/18 15:55	83-32-9	
Acenaphthylene	**<853**	ug/kg	853	171	10	10/05/18 09:50	10/10/18 15:55	208-96-8	
Anthracene	**<853**	ug/kg	853	249	10	10/05/18 09:50	10/10/18 15:55	120-12-7	
Benzo(a)anthracene	**<853**	ug/kg	853	195	10	10/05/18 09:50	10/10/18 15:55	56-55-3	
Benzo(a)pyrene	**<853**	ug/kg	853	360	10	10/05/18 09:50	10/10/18 15:55	50-32-8	
Benzo(b)fluoranthene	**<853**	ug/kg	853	296	10	10/05/18 09:50	10/10/18 15:55	205-99-2	
Benzo(g,h,i)perylene	**<853**	ug/kg	853	413	10	10/05/18 09:50	10/10/18 15:55	191-24-2	
Benzo(k)fluoranthene	**<853**	ug/kg	853	265	10	10/05/18 09:50	10/10/18 15:55	207-08-9	
Chrysene	**461J**	ug/kg	853	382	10	10/05/18 09:50	10/10/18 15:55	218-01-9	
Dibenz(a,h)anthracene	**<853**	ug/kg	853	279	10	10/05/18 09:50	10/10/18 15:55	53-70-3	
Dibenzofuran	**<853**	ug/kg	853	155	10	10/05/18 09:50	10/10/18 15:55	132-64-9	
Fluoranthene	**<853**	ug/kg	853	717	10	10/05/18 09:50	10/10/18 15:55	206-44-0	
Fluorene	**<853**	ug/kg	853	217	10	10/05/18 09:50	10/10/18 15:55	86-73-7	
Hexachlorobenzene	**<853**	ug/kg	853	169	10	10/05/18 09:50	10/10/18 15:55	118-74-1	
Indeno(1,2,3-cd)pyrene	**<853**	ug/kg	853	326	10	10/05/18 09:50	10/10/18 15:55	193-39-5	
2-Methylphenol(o-Cresol)	**<853**	ug/kg	853	473	10	10/05/18 09:50	10/10/18 15:55	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<853**	ug/kg	853	307	10	10/05/18 09:50	10/10/18 15:55		
Naphthalene	**627J**	ug/kg	853	94.2	10	10/05/18 09:50	10/10/18 15:55	91-20-3	
Pentachlorophenol	**<8530**	ug/kg	8530	85.9	10	10/05/18 09:50	10/10/18 15:55	87-86-5	
Phenanthrene	**721J**	ug/kg	853	275	10	10/05/18 09:50	10/10/18 15:55	85-01-8	
Phenol	**<853**	ug/kg	853	163	10	10/05/18 09:50	10/10/18 15:55	108-95-2	
Pyrene	**438J**	ug/kg	853	405	10	10/05/18 09:50	10/10/18 15:55	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	65	%	23-120		10	10/05/18 09:50	10/10/18 15:55	4165-60-0	
2-Fluorobiphenyl (S)	74	%	30-115		10	10/05/18 09:50	10/10/18 15:55	321-60-8	
p-Terphenyl-d14 (S)	86	%	18-137		10	10/05/18 09:50	10/10/18 15:55	1718-51-0	
Phenol-d5 (S)	66	%	24-113		10	10/05/18 09:50	10/10/18 15:55	4165-62-2	
2-Fluorophenol (S)	60	%	25-121		10	10/05/18 09:50	10/10/18 15:55	367-12-4	
2,4,6-Tribromophenol (S)	88	%	19-122		10	10/05/18 09:50	10/10/18 15:55	118-79-6	CH
2-Chlorophenol-d4 (S)	64	%	20-130		10	10/05/18 09:50	10/10/18 15:55	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	62	%	20-130		10	10/05/18 09:50	10/10/18 15:55	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**5190J**	ug/kg			10	10/05/18 09:50	10/10/18 15:55		
Unknown Ketone	**83500J**	ug/kg			10	10/05/18 09:50	10/10/18 15:55		
Unknown Aldol Condensate	**1930J**	ug/kg			10	10/05/18 09:50	10/10/18 15:55		
Perylene	**2480J**	ug/kg			10	10/05/18 09:50	10/10/18 15:55	198-55-0	N

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-4 (0-4) **Lab ID: 7066870004** Collected: 10/03/18 11:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
1,2-Benzenedicarboxylic	**3290J**	ug/kg			10	10/05/18 09:50	10/10/18 15:55	17851-53-5	N
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<2.7**	ug/kg	2.7	2.7	1	10/09/18 12:09	10/09/18 20:00	67-64-1	
Benzene	**<2.7**	ug/kg	2.7	1.1	1	10/09/18 12:09	10/09/18 20:00	71-43-2	
2-Butanone (MEK)	**<2.7**	ug/kg	2.7	1.7	1	10/09/18 12:09	10/09/18 20:00	78-93-3	
n-Butylbenzene	**<2.7**	ug/kg	2.7	1.1	1	10/09/18 12:09	10/09/18 20:00	104-51-8	
sec-Butylbenzene	**<2.7**	ug/kg	2.7	1.1	1	10/09/18 12:09	10/09/18 20:00	135-98-8	
tert-Butylbenzene	**<2.7**	ug/kg	2.7	1.3	1	10/09/18 12:09	10/09/18 20:00	98-06-6	
Carbon tetrachloride	**<2.7**	ug/kg	2.7	1.7	1	10/09/18 12:09	10/09/18 20:00	56-23-5	
Chlorobenzene	**<2.7**	ug/kg	2.7	1.1	1	10/09/18 12:09	10/09/18 20:00	108-90-7	
Chloroform	**<2.7**	ug/kg	2.7	0.74	1	10/09/18 12:09	10/09/18 20:00	67-66-3	
1,2-Dichlorobenzene	**<2.7**	ug/kg	2.7	1.1	1	10/09/18 12:09	10/09/18 20:00	95-50-1	
1,3-Dichlorobenzene	**<2.7**	ug/kg	2.7	1.1	1	10/09/18 12:09	10/09/18 20:00	541-73-1	
1,4-Dichlorobenzene	**<2.7**	ug/kg	2.7	1.1	1	10/09/18 12:09	10/09/18 20:00	106-46-7	
1,1-Dichloroethane	**<2.7**	ug/kg	2.7	1.1	1	10/09/18 12:09	10/09/18 20:00	75-34-3	
1,2-Dichloroethane	**<2.7**	ug/kg	2.7	0.66	1	10/09/18 12:09	10/09/18 20:00	107-06-2	
1,1-Dichloroethene	**<2.7**	ug/kg	2.7	1.0	1	10/09/18 12:09	10/09/18 20:00	75-35-4	
cis-1,2-Dichloroethene	**<2.7**	ug/kg	2.7	1.0	1	10/09/18 12:09	10/09/18 20:00	156-59-2	
trans-1,2-Dichloroethene	**<2.7**	ug/kg	2.7	0.78	1	10/09/18 12:09	10/09/18 20:00	156-60-5	
1,4-Dioxane (p-Dioxane)	**<67.6**	ug/kg	67.6	39.9	1	10/09/18 12:09	10/09/18 20:00	123-91-1	
Ethylbenzene	**<2.7**	ug/kg	2.7	1.0	1	10/09/18 12:09	10/09/18 20:00	100-41-4	
Methylene Chloride	**25.3**	ug/kg	2.7	1.2	1	10/09/18 12:09	10/09/18 20:00	75-09-2	
Methyl-tert-butyl ether	**<2.7**	ug/kg	2.7	0.60	1	10/09/18 12:09	10/09/18 20:00	1634-04-4	
n-Propylbenzene	**<2.7**	ug/kg	2.7	1.1	1	10/09/18 12:09	10/09/18 20:00	103-65-1	
Tetrachloroethene	**<2.7**	ug/kg	2.7	1.4	1	10/09/18 12:09	10/09/18 20:00	127-18-4	
Toluene	**<2.7**	ug/kg	2.7	1.3	1	10/09/18 12:09	10/09/18 20:00	108-88-3	
1,2,4-Trichlorobenzene	**<2.7**	ug/kg	2.7	1.1	1	10/09/18 12:09	10/09/18 20:00	120-82-1	
1,1,1-Trichloroethane	**<2.7**	ug/kg	2.7	1.4	1	10/09/18 12:09	10/09/18 20:00	71-55-6	
Trichloroethene	**<2.7**	ug/kg	2.7	1.1	1	10/09/18 12:09	10/09/18 20:00	79-01-6	
1,2,4-Trimethylbenzene	**<2.7**	ug/kg	2.7	1.2	1	10/09/18 12:09	10/09/18 20:00	95-63-6	
1,3,5-Trimethylbenzene	**<2.7**	ug/kg	2.7	1.0	1	10/09/18 12:09	10/09/18 20:00	108-67-8	
Vinyl chloride	**<2.7**	ug/kg	2.7	0.60	1	10/09/18 12:09	10/09/18 20:00	75-01-4	
Xylene (Total)	**<5.4**	ug/kg	5.4	2.7	1	10/09/18 12:09	10/09/18 20:00	1330-20-7	
m&p-Xylene	**<5.4**	ug/kg	5.4	2.6	1	10/09/18 12:09	10/09/18 20:00	179601-23-1	
o-Xylene	**<2.7**	ug/kg	2.7	1.2	1	10/09/18 12:09	10/09/18 20:00	95-47-6	
Surrogates									
Toluene-d8 (S)	138	%	43-157		1	10/09/18 12:09	10/09/18 20:00	2037-26-5	
4-Bromofluorobenzene (S)	83	%	34-145		1	10/09/18 12:09	10/09/18 20:00	460-00-4	
1,2-Dichloroethane-d4 (S)	144	%	33-150		1	10/09/18 12:09	10/09/18 20:00	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/11/18 12:21		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-4 (0-4) **Lab ID: 7066870004** Collected: 10/03/18 11:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**21.7**	%	0.10	0.10	1		10/04/18 14:56		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.3**	mg/kg	1.3	0.27	1	10/09/18 06:56	10/09/18 11:54	18540-29-9	
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**14.4**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**0.24J**	mg/kg	0.63	0.18	1	10/09/18 09:25	10/09/18 15:23	57-12-5	

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ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-6 (0-4) **Lab ID: 7066870005** Collected: 10/03/18 11:45 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<1.8**	ug/kg	1.8	0.90	1	10/05/18 13:13	10/11/18 17:06	309-00-2	
alpha-BHC	**<1.8**	ug/kg	1.8	0.90	1	10/05/18 13:13	10/11/18 17:06	319-84-6	
beta-BHC	**2.5**	ug/kg	1.8	0.90	1	10/05/18 13:13	10/11/18 17:06	319-85-7	
delta-BHC	**<1.8**	ug/kg	1.8	0.90	1	10/05/18 13:13	10/11/18 17:06	319-86-8	
gamma-BHC (Lindane)	**4.5**	ug/kg	1.8	0.90	1	10/05/18 13:13	10/11/18 17:06	58-89-9	
alpha-Chlordane	**6.7**	ug/kg	1.8	0.90	1	10/05/18 13:13	10/11/18 17:06	5103-71-9	
4,4'-DDD	**<3.5**	ug/kg	3.5	1.7	1	10/05/18 13:13	10/11/18 17:06	72-54-8	
4,4'-DDE	**152**	ug/kg	17.5	8.7	5	10/05/18 13:13	10/13/18 07:37	72-55-9	
4,4'-DDT	**<3.5**	ug/kg	3.5	1.7	1	10/05/18 13:13	10/11/18 17:06	50-29-3	CL
Dieldrin	**18.3**	ug/kg	3.5	1.7	1	10/05/18 13:13	10/11/18 17:06	60-57-1	
Endosulfan I	**<1.8**	ug/kg	1.8	0.90	1	10/05/18 13:13	10/11/18 17:06	959-98-8	
Endosulfan II	**<3.5**	ug/kg	3.5	1.7	1	10/05/18 13:13	10/11/18 17:06	33213-65-9	
Endosulfan sulfate	**<3.5**	ug/kg	3.5	1.7	1	10/05/18 13:13	10/11/18 17:06	1031-07-8	
Endrin	**<3.5**	ug/kg	3.5	1.7	1	10/05/18 13:13	10/11/18 17:06	72-20-8	
Heptachlor	**<1.8**	ug/kg	1.8	0.90	1	10/05/18 13:13	10/11/18 17:06	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	36	%	30-150		1	10/05/18 13:13	10/11/18 17:06	877-09-8	
Decachlorobiphenyl (S)	54	%	30-150		1	10/05/18 13:13	10/11/18 17:06	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<880**	ug/kg	880	440	25	10/05/18 13:13	10/11/18 15:08	12674-11-2	
PCB-1221 (Aroclor 1221)	**<1790**	ug/kg	1790	893	25	10/05/18 13:13	10/11/18 15:08	11104-28-2	
PCB-1232 (Aroclor 1232)	**<880**	ug/kg	880	440	25	10/05/18 13:13	10/11/18 15:08	11141-16-5	
PCB-1242 (Aroclor 1242)	**<880**	ug/kg	880	440	25	10/05/18 13:13	10/11/18 15:08	53469-21-9	
PCB-1248 (Aroclor 1248)	**10200**	ug/kg	880	440	25	10/05/18 13:13	10/11/18 15:08	12672-29-6	
PCB-1254 (Aroclor 1254)	**<880**	ug/kg	880	440	25	10/05/18 13:13	10/11/18 15:08	11097-69-1	
PCB-1260 (Aroclor 1260)	**<880**	ug/kg	880	440	25	10/05/18 13:13	10/11/18 15:08	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	64	%	30-150		1	10/05/18 13:13	10/10/18 20:22	877-09-8	
Decachlorobiphenyl (S)	77	%	30-150		1	10/05/18 13:13	10/10/18 20:22	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<5.3**	ug/kg	5.3	0.28	1	10/05/18 15:43	10/09/18 03:01	93-72-1	
Surrogates									
2,4-DCAA (S)	44	%	29-136		1	10/05/18 15:43	10/09/18 03:01	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**28.9**	mg/kg	0.58	0.18	1	10/05/18 11:16	10/05/18 16:43	7440-38-2	
Barium	**165**	mg/kg	11.7	0.89	1	10/05/18 11:16	10/05/18 16:43	7440-39-3	
Beryllium	**0.58**	mg/kg	0.29	0.037	1	10/05/18 11:16	10/05/18 16:43	7440-41-7	
Cadmium	**1.5**	mg/kg	0.15	0.018	1	10/05/18 11:16	10/05/18 16:43	7440-43-9	
Chromium	**16.1**	mg/kg	0.58	0.056	1	10/05/18 11:16	10/05/18 16:43	7440-47-3	
Copper	**660**	mg/kg	1.5	0.11	1	10/05/18 11:16	10/05/18 16:43	7440-50-8	
Lead	**81.2**	mg/kg	0.29	0.14	1	10/05/18 11:16	10/05/18 16:43	7439-92-1	
Manganese	**292**	mg/kg	0.88	0.050	1	10/05/18 11:16	10/05/18 16:43	7439-96-5	

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-6 (0-4) **Lab ID: 7066870005** Collected: 10/03/18 11:45 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**21.4**	mg/kg	2.3	0.21	1	10/05/18 11:16	10/05/18 16:43	7440-02-0	
Selenium	**1.3**	mg/kg	0.58	0.31	1	10/05/18 11:16	10/05/18 16:43	7782-49-2	
Silver	**<0.58**	mg/kg	0.58	0.074	1	10/05/18 11:16	10/05/18 16:43	7440-22-4	
Zinc	**423**	mg/kg	1.2	0.075	1	10/05/18 11:16	10/05/18 16:43	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.99**	mg/kg	0.042	0.025	1	10/05/18 11:47	10/05/18 15:04	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<712**	ug/kg	712	106	10	10/05/18 09:50	10/10/18 16:23	83-32-9	
Acenaphthylene	**<712**	ug/kg	712	142	10	10/05/18 09:50	10/10/18 16:23	208-96-8	
Anthracene	**<712**	ug/kg	712	208	10	10/05/18 09:50	10/10/18 16:23	120-12-7	
Benzo(a)anthracene	**902**	ug/kg	712	163	10	10/05/18 09:50	10/10/18 16:23	56-55-3	
Benzo(a)pyrene	**1170**	ug/kg	712	301	10	10/05/18 09:50	10/10/18 16:23	50-32-8	
Benzo(b)fluoranthene	**1870**	ug/kg	712	247	10	10/05/18 09:50	10/10/18 16:23	205-99-2	
Benzo(g,h,i)perylene	**599J**	ug/kg	712	345	10	10/05/18 09:50	10/10/18 16:23	191-24-2	
Benzo(k)fluoranthene	**809**	ug/kg	712	221	10	10/05/18 09:50	10/10/18 16:23	207-08-9	
Chrysene	**1250**	ug/kg	712	319	10	10/05/18 09:50	10/10/18 16:23	218-01-9	
Dibenz(a,h)anthracene	**<712**	ug/kg	712	233	10	10/05/18 09:50	10/10/18 16:23	53-70-3	
Dibenzofuran	**<712**	ug/kg	712	129	10	10/05/18 09:50	10/10/18 16:23	132-64-9	
Fluoranthene	**2150**	ug/kg	712	599	10	10/05/18 09:50	10/10/18 16:23	206-44-0	
Fluorene	**<712**	ug/kg	712	181	10	10/05/18 09:50	10/10/18 16:23	86-73-7	
Hexachlorobenzene	**<712**	ug/kg	712	141	10	10/05/18 09:50	10/10/18 16:23	118-74-1	
Indeno(1,2,3-cd)pyrene	**599J**	ug/kg	712	273	10	10/05/18 09:50	10/10/18 16:23	193-39-5	
2-Methylphenol(o-Cresol)	**<712**	ug/kg	712	395	10	10/05/18 09:50	10/10/18 16:23	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<712**	ug/kg	712	257	10	10/05/18 09:50	10/10/18 16:23		
Naphthalene	**<712**	ug/kg	712	78.7	10	10/05/18 09:50	10/10/18 16:23	91-20-3	
Pentachlorophenol	**<7120**	ug/kg	7120	71.8	10	10/05/18 09:50	10/10/18 16:23	87-86-5	
Phenanthrene	**1030**	ug/kg	712	230	10	10/05/18 09:50	10/10/18 16:23	85-01-8	
Phenol	**<712**	ug/kg	712	136	10	10/05/18 09:50	10/10/18 16:23	108-95-2	
Pyrene	**1700**	ug/kg	712	338	10	10/05/18 09:50	10/10/18 16:23	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	60	%	23-120		10	10/05/18 09:50	10/10/18 16:23	4165-60-0	
2-Fluorobiphenyl (S)	70	%	30-115		10	10/05/18 09:50	10/10/18 16:23	321-60-8	
p-Terphenyl-d14 (S)	84	%	18-137		10	10/05/18 09:50	10/10/18 16:23	1718-51-0	
Phenol-d5 (S)	66	%	24-113		10	10/05/18 09:50	10/10/18 16:23	4165-62-2	
2-Fluorophenol (S)	63	%	25-121		10	10/05/18 09:50	10/10/18 16:23	367-12-4	
2,4,6-Tribromophenol (S)	80	%	19-122		10	10/05/18 09:50	10/10/18 16:23	118-79-6	CH
2-Chlorophenol-d4 (S)	64	%	20-130		10	10/05/18 09:50	10/10/18 16:23	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	57	%	20-130		10	10/05/18 09:50	10/10/18 16:23	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**4340J**	ug/kg			10	10/05/18 09:50	10/10/18 16:23		
Unknown Ketone	**71500J**	ug/kg			10	10/05/18 09:50	10/10/18 16:23		
Unknown Ketone	**2250J**	ug/kg			10	10/05/18 09:50	10/10/18 16:23		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-6 (0-4) **Lab ID: 7066870005** Collected: 10/03/18 11:45 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<2.6**	ug/kg	2.6	2.5	1	10/09/18 12:09	10/09/18 20:25	67-64-1	
Benzene	**<2.6**	ug/kg	2.6	1.0	1	10/09/18 12:09	10/09/18 20:25	71-43-2	
2-Butanone (MEK)	**<2.6**	ug/kg	2.6	1.6	1	10/09/18 12:09	10/09/18 20:25	78-93-3	
n-Butylbenzene	**<2.6**	ug/kg	2.6	1.0	1	10/09/18 12:09	10/09/18 20:25	104-51-8	
sec-Butylbenzene	**<2.6**	ug/kg	2.6	1.0	1	10/09/18 12:09	10/09/18 20:25	135-98-8	
tert-Butylbenzene	**<2.6**	ug/kg	2.6	1.3	1	10/09/18 12:09	10/09/18 20:25	98-06-6	
Carbon tetrachloride	**<2.6**	ug/kg	2.6	1.6	1	10/09/18 12:09	10/09/18 20:25	56-23-5	
Chlorobenzene	**<2.6**	ug/kg	2.6	1.1	1	10/09/18 12:09	10/09/18 20:25	108-90-7	
Chloroform	**<2.6**	ug/kg	2.6	0.71	1	10/09/18 12:09	10/09/18 20:25	67-66-3	
1,2-Dichlorobenzene	**<2.6**	ug/kg	2.6	1.1	1	10/09/18 12:09	10/09/18 20:25	95-50-1	
1,3-Dichlorobenzene	**<2.6**	ug/kg	2.6	1.1	1	10/09/18 12:09	10/09/18 20:25	541-73-1	
1,4-Dichlorobenzene	**<2.6**	ug/kg	2.6	1.1	1	10/09/18 12:09	10/09/18 20:25	106-46-7	
1,1-Dichloroethane	**<2.6**	ug/kg	2.6	1.0	1	10/09/18 12:09	10/09/18 20:25	75-34-3	
1,2-Dichloroethane	**<2.6**	ug/kg	2.6	0.63	1	10/09/18 12:09	10/09/18 20:25	107-06-2	
1,1-Dichloroethene	**<2.6**	ug/kg	2.6	1.0	1	10/09/18 12:09	10/09/18 20:25	75-35-4	
cis-1,2-Dichloroethene	**<2.6**	ug/kg	2.6	0.96	1	10/09/18 12:09	10/09/18 20:25	156-59-2	
trans-1,2-Dichloroethene	**<2.6**	ug/kg	2.6	0.75	1	10/09/18 12:09	10/09/18 20:25	156-60-5	
1,4-Dioxane (p-Dioxane)	**<64.7**	ug/kg	64.7	38.2	1	10/09/18 12:09	10/09/18 20:25	123-91-1	
Ethylbenzene	**<2.6**	ug/kg	2.6	0.99	1	10/09/18 12:09	10/09/18 20:25	100-41-4	
Methylene Chloride	**3.9**	ug/kg	2.6	1.2	1	10/09/18 12:09	10/09/18 20:25	75-09-2	
Methyl-tert-butyl ether	**<2.6**	ug/kg	2.6	0.58	1	10/09/18 12:09	10/09/18 20:25	1634-04-4	
n-Propylbenzene	**<2.6**	ug/kg	2.6	1.1	1	10/09/18 12:09	10/09/18 20:25	103-65-1	
Tetrachloroethene	**<2.6**	ug/kg	2.6	1.3	1	10/09/18 12:09	10/09/18 20:25	127-18-4	
Toluene	**<2.6**	ug/kg	2.6	1.2	1	10/09/18 12:09	10/09/18 20:25	108-88-3	
1,2,4-Trichlorobenzene	**<2.6**	ug/kg	2.6	1.0	1	10/09/18 12:09	10/09/18 20:25	120-82-1	
1,1,1-Trichloroethane	**<2.6**	ug/kg	2.6	1.4	1	10/09/18 12:09	10/09/18 20:25	71-55-6	
Trichloroethene	**2.6J**	ug/kg	2.6	1.1	1	10/09/18 12:09	10/09/18 20:25	79-01-6	
1,2,4-Trimethylbenzene	**<2.6**	ug/kg	2.6	1.1	1	10/09/18 12:09	10/09/18 20:25	95-63-6	
1,3,5-Trimethylbenzene	**<2.6**	ug/kg	2.6	0.99	1	10/09/18 12:09	10/09/18 20:25	108-67-8	
Vinyl chloride	**<2.6**	ug/kg	2.6	0.57	1	10/09/18 12:09	10/09/18 20:25	75-01-4	
Xylene (Total)	**<5.2**	ug/kg	5.2	2.6	1	10/09/18 12:09	10/09/18 20:25	1330-20-7	
m&p-Xylene	**<5.2**	ug/kg	5.2	2.5	1	10/09/18 12:09	10/09/18 20:25	179601-23-1	
o-Xylene	**<2.6**	ug/kg	2.6	1.1	1	10/09/18 12:09	10/09/18 20:25	95-47-6	
Surrogates									
Toluene-d8 (S)	132	%	43-157		1	10/09/18 12:09	10/09/18 20:25	2037-26-5	
4-Bromofluorobenzene (S)	80	%	34-145		1	10/09/18 12:09	10/09/18 20:25	460-00-4	
1,2-Dichloroethane-d4 (S)	143	%	33-150		1	10/09/18 12:09	10/09/18 20:25	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/11/18 12:22		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**6.2**	%	0.10	0.10	1		10/04/18 14:58		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-6 (0-4) **Lab ID: 7066870005** Collected: 10/03/18 11:45 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.1**	mg/kg	1.1	0.23	1	10/09/18 06:56	10/09/18 11:54	18540-29-9	
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**16.1**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**<0.53**	mg/kg	0.53	0.16	1	10/09/18 09:25	10/09/18 15:23	57-12-5	

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-5 (8-12) **Lab ID: 7066870006** Collected: 10/03/18 12:15 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 13:10	309-00-2	
alpha-BHC	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 13:10	319-84-6	
beta-BHC	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 13:10	319-85-7	
delta-BHC	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 13:10	319-86-8	
gamma-BHC (Lindane)	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 13:10	58-89-9	
alpha-Chlordane	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 13:10	5103-71-9	
4,4'-DDD	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 13:10	72-54-8	
4,4'-DDE	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 13:10	72-55-9	
4,4'-DDT	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 13:10	50-29-3	
Dieldrin	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 13:10	60-57-1	
Endosulfan I	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 13:10	959-98-8	
Endosulfan II	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 13:10	33213-65-9	
Endosulfan sulfate	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 13:10	1031-07-8	
Endrin	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 13:10	72-20-8	
Heptachlor	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 13:10	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	64	%	30-150		1	10/05/18 13:13	10/11/18 13:10	877-09-8	
Decachlorobiphenyl (S)	89	%	30-150		1	10/05/18 13:13	10/11/18 13:10	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<38.7**	ug/kg	38.7	19.4	1	10/05/18 13:13	10/10/18 18:40	12674-11-2	
PCB-1221 (Aroclor 1221)	**<78.6**	ug/kg	78.6	39.3	1	10/05/18 13:13	10/10/18 18:40	11104-28-2	
PCB-1232 (Aroclor 1232)	**<38.7**	ug/kg	38.7	19.4	1	10/05/18 13:13	10/10/18 18:40	11141-16-5	
PCB-1242 (Aroclor 1242)	**<38.7**	ug/kg	38.7	19.4	1	10/05/18 13:13	10/10/18 18:40	53469-21-9	
PCB-1248 (Aroclor 1248)	**<38.7**	ug/kg	38.7	19.4	1	10/05/18 13:13	10/10/18 18:40	12672-29-6	
PCB-1254 (Aroclor 1254)	**<38.7**	ug/kg	38.7	19.4	1	10/05/18 13:13	10/10/18 18:40	11097-69-1	
PCB-1260 (Aroclor 1260)	**<38.7**	ug/kg	38.7	19.4	1	10/05/18 13:13	10/10/18 18:40	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	56	%	30-150		1	10/05/18 13:13	10/10/18 18:40	877-09-8	
Decachlorobiphenyl (S)	86	%	30-150		1	10/05/18 13:13	10/10/18 18:40	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**0.74J**	ug/kg	5.8	0.31	1	10/05/18 15:43	10/09/18 01:35	93-72-1	
Surrogates									
2,4-DCAA (S)	111	%	29-136		1	10/05/18 15:43	10/09/18 01:35	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**6.2**	mg/kg	0.54	0.17	1	10/05/18 11:16	10/05/18 16:44	7440-38-2	
Barium	**81.2**	mg/kg	10.9	0.83	1	10/05/18 11:16	10/05/18 16:44	7440-39-3	
Beryllium	**0.26J**	mg/kg	0.27	0.035	1	10/05/18 11:16	10/05/18 16:44	7440-41-7	
Cadmium	**0.084J**	mg/kg	0.14	0.016	1	10/05/18 11:16	10/05/18 16:44	7440-43-9	
Chromium	**9.0**	mg/kg	0.54	0.052	1	10/05/18 11:16	10/05/18 16:44	7440-47-3	
Copper	**48.2**	mg/kg	1.4	0.099	1	10/05/18 11:16	10/05/18 16:44	7440-50-8	
Lead	**9.2**	mg/kg	0.27	0.13	1	10/05/18 11:16	10/05/18 16:44	7439-92-1	
Manganese	**179**	mg/kg	0.82	0.047	1	10/05/18 11:16	10/05/18 16:44	7439-96-5	

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-5 (8-12) **Lab ID: 7066870006** Collected: 10/03/18 12:15 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**17.4**	mg/kg	2.2	0.20	1	10/05/18 11:16	10/05/18 16:44	7440-02-0	
Selenium	**0.88**	mg/kg	0.54	0.29	1	10/05/18 11:16	10/05/18 16:44	7782-49-2	
Silver	**<0.54**	mg/kg	0.54	0.069	1	10/05/18 11:16	10/05/18 16:44	7440-22-4	
Zinc	**46.4**	mg/kg	1.1	0.070	1	10/05/18 11:16	10/05/18 16:44	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.038**	mg/kg	0.038	0.023	1	10/05/18 11:47	10/05/18 15:06	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<78.0**	ug/kg	78.0	11.6	1	10/05/18 09:50	10/09/18 17:48	83-32-9	
Acenaphthylene	**<78.0**	ug/kg	78.0	15.6	1	10/05/18 09:50	10/09/18 17:48	208-96-8	
Anthracene	**<78.0**	ug/kg	78.0	22.8	1	10/05/18 09:50	10/09/18 17:48	120-12-7	
Benzo(a)anthracene	**<78.0**	ug/kg	78.0	17.9	1	10/05/18 09:50	10/09/18 17:48	56-55-3	
Benzo(a)pyrene	**<78.0**	ug/kg	78.0	33.0	1	10/05/18 09:50	10/09/18 17:48	50-32-8	
Benzo(b)fluoranthene	**<78.0**	ug/kg	78.0	27.0	1	10/05/18 09:50	10/09/18 17:48	205-99-2	
Benzo(g,h,i)perylene	**<78.0**	ug/kg	78.0	37.8	1	10/05/18 09:50	10/09/18 17:48	191-24-2	
Benzo(k)fluoranthene	**<78.0**	ug/kg	78.0	24.2	1	10/05/18 09:50	10/09/18 17:48	207-08-9	
Chrysene	**<78.0**	ug/kg	78.0	35.0	1	10/05/18 09:50	10/09/18 17:48	218-01-9	
Dibenz(a,h)anthracene	**<78.0**	ug/kg	78.0	25.5	1	10/05/18 09:50	10/09/18 17:48	53-70-3	
Dibenzofuran	**<78.0**	ug/kg	78.0	14.1	1	10/05/18 09:50	10/09/18 17:48	132-64-9	
Fluoranthene	**<78.0**	ug/kg	78.0	65.6	1	10/05/18 09:50	10/09/18 17:48	206-44-0	
Fluorene	**<78.0**	ug/kg	78.0	19.8	1	10/05/18 09:50	10/09/18 17:48	86-73-7	
Hexachlorobenzene	**<78.0**	ug/kg	78.0	15.5	1	10/05/18 09:50	10/09/18 17:48	118-74-1	
Indeno(1,2,3-cd)pyrene	**<78.0**	ug/kg	78.0	29.8	1	10/05/18 09:50	10/09/18 17:48	193-39-5	
2-Methylphenol(o-Cresol)	**<78.0**	ug/kg	78.0	43.2	1	10/05/18 09:50	10/09/18 17:48	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<78.0**	ug/kg	78.0	28.1	1	10/05/18 09:50	10/09/18 17:48		
Naphthalene	**<78.0**	ug/kg	78.0	8.6	1	10/05/18 09:50	10/09/18 17:48	91-20-3	
Pentachlorophenol	**<780**	ug/kg	780	7.9	1	10/05/18 09:50	10/09/18 17:48	87-86-5	
Phenanthrene	**<78.0**	ug/kg	78.0	25.1	1	10/05/18 09:50	10/09/18 17:48	85-01-8	
Phenol	**<78.0**	ug/kg	78.0	14.9	1	10/05/18 09:50	10/09/18 17:48	108-95-2	
Pyrene	**<78.0**	ug/kg	78.0	37.0	1	10/05/18 09:50	10/09/18 17:48	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	54	%	23-120		1	10/05/18 09:50	10/09/18 17:48	4165-60-0	
2-Fluorobiphenyl (S)	62	%	30-115		1	10/05/18 09:50	10/09/18 17:48	321-60-8	
p-Terphenyl-d14 (S)	82	%	18-137		1	10/05/18 09:50	10/09/18 17:48	1718-51-0	
Phenol-d5 (S)	61	%	24-113		1	10/05/18 09:50	10/09/18 17:48	4165-62-2	
2-Fluorophenol (S)	59	%	25-121		1	10/05/18 09:50	10/09/18 17:48	367-12-4	
2,4,6-Tribromophenol (S)	74	%	19-122		1	10/05/18 09:50	10/09/18 17:48	118-79-6	CH
2-Chlorophenol-d4 (S)	59	%	20-130		1	10/05/18 09:50	10/09/18 17:48	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	47	%	20-130		1	10/05/18 09:50	10/09/18 17:48	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**168J**	ug/kg			1	10/05/18 09:50	10/09/18 17:48		
Unknown Ketone	**3880J**	ug/kg			1	10/05/18 09:50	10/09/18 17:48		
Unknown Ketone	**593J**	ug/kg			1	10/05/18 09:50	10/09/18 17:48		
Unknown Ketone	**45200J**	ug/kg			1	10/05/18 09:50	10/09/18 17:48		

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ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-5 (8-12) **Lab ID: 7066870006** Collected: 10/03/18 12:15 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Aldol Condensate	**786J**	ug/kg			1	10/05/18 09:50	10/09/18 17:48		
Unknown Organic Acid	**299J**	ug/kg			1	10/05/18 09:50	10/09/18 17:48		
Unknown Petroleum Alkane	**1790J**	ug/kg			1	10/05/18 09:50	10/09/18 17:48		
Unknown Organic Acid	**500J**	ug/kg			1	10/05/18 09:50	10/09/18 17:48		
Unknown Amide	**217J**	ug/kg			1	10/05/18 09:50	10/09/18 17:48		
Unknown Organic Acid	**338J**	ug/kg			1	10/05/18 09:50	10/09/18 17:48		
Perylene	**194J**	ug/kg			1	10/05/18 09:50	10/09/18 17:48	198-55-0	N
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**22.3**	ug/kg	2.3	2.2	1	10/09/18 12:09	10/09/18 20:49	67-64-1	CH
Benzene	**<2.3**	ug/kg	2.3	0.89	1	10/09/18 12:09	10/09/18 20:49	71-43-2	
2-Butanone (MEK)	**4.7**	ug/kg	2.3	1.4	1	10/09/18 12:09	10/09/18 20:49	78-93-3	CH
n-Butylbenzene	**<2.3**	ug/kg	2.3	0.90	1	10/09/18 12:09	10/09/18 20:49	104-51-8	
sec-Butylbenzene	**<2.3**	ug/kg	2.3	0.89	1	10/09/18 12:09	10/09/18 20:49	135-98-8	
tert-Butylbenzene	**<2.3**	ug/kg	2.3	1.1	1	10/09/18 12:09	10/09/18 20:49	98-06-6	
Carbon tetrachloride	**<2.3**	ug/kg	2.3	1.4	1	10/09/18 12:09	10/09/18 20:49	56-23-5	
Chlorobenzene	**<2.3**	ug/kg	2.3	0.93	1	10/09/18 12:09	10/09/18 20:49	108-90-7	
Chloroform	**<2.3**	ug/kg	2.3	0.62	1	10/09/18 12:09	10/09/18 20:49	67-66-3	
1,2-Dichlorobenzene	**<2.3**	ug/kg	2.3	0.92	1	10/09/18 12:09	10/09/18 20:49	95-50-1	
1,3-Dichlorobenzene	**<2.3**	ug/kg	2.3	0.92	1	10/09/18 12:09	10/09/18 20:49	541-73-1	
1,4-Dichlorobenzene	**<2.3**	ug/kg	2.3	0.93	1	10/09/18 12:09	10/09/18 20:49	106-46-7	
1,1-Dichloroethane	**<2.3**	ug/kg	2.3	0.89	1	10/09/18 12:09	10/09/18 20:49	75-34-3	
1,2-Dichloroethane	**<2.3**	ug/kg	2.3	0.55	1	10/09/18 12:09	10/09/18 20:49	107-06-2	
1,1-Dichloroethene	**<2.3**	ug/kg	2.3	0.87	1	10/09/18 12:09	10/09/18 20:49	75-35-4	
cis-1,2-Dichloroethene	**<2.3**	ug/kg	2.3	0.83	1	10/09/18 12:09	10/09/18 20:49	156-59-2	
trans-1,2-Dichloroethene	**<2.3**	ug/kg	2.3	0.65	1	10/09/18 12:09	10/09/18 20:49	156-60-5	
1,4-Dioxane (p-Dioxane)	**<56.3**	ug/kg	56.3	33.3	1	10/09/18 12:09	10/09/18 20:49	123-91-1	
Ethylbenzene	**<2.3**	ug/kg	2.3	0.86	1	10/09/18 12:09	10/09/18 20:49	100-41-4	
Methylene Chloride	**<2.3**	ug/kg	2.3	1.0	1	10/09/18 12:09	10/09/18 20:49	75-09-2	
Methyl-tert-butyl ether	**<2.3**	ug/kg	2.3	0.50	1	10/09/18 12:09	10/09/18 20:49	1634-04-4	
n-Propylbenzene	**<2.3**	ug/kg	2.3	0.93	1	10/09/18 12:09	10/09/18 20:49	103-65-1	
Tetrachloroethene	**<2.3**	ug/kg	2.3	1.2	1	10/09/18 12:09	10/09/18 20:49	127-18-4	
Toluene	**<2.3**	ug/kg	2.3	1.0	1	10/09/18 12:09	10/09/18 20:49	108-88-3	
1,2,4-Trichlorobenzene	**<2.3**	ug/kg	2.3	0.90	1	10/09/18 12:09	10/09/18 20:49	120-82-1	
1,1,1-Trichloroethane	**<2.3**	ug/kg	2.3	1.2	1	10/09/18 12:09	10/09/18 20:49	71-55-6	
Trichloroethene	**<2.3**	ug/kg	2.3	0.93	1	10/09/18 12:09	10/09/18 20:49	79-01-6	
1,2,4-Trimethylbenzene	**<2.3**	ug/kg	2.3	0.97	1	10/09/18 12:09	10/09/18 20:49	95-63-6	
1,3,5-Trimethylbenzene	**<2.3**	ug/kg	2.3	0.86	1	10/09/18 12:09	10/09/18 20:49	108-67-8	
Vinyl chloride	**<2.3**	ug/kg	2.3	0.50	1	10/09/18 12:09	10/09/18 20:49	75-01-4	
Xylene (Total)	**<4.5**	ug/kg	4.5	2.3	1	10/09/18 12:09	10/09/18 20:49	1330-20-7	
m&p-Xylene	**<4.5**	ug/kg	4.5	2.2	1	10/09/18 12:09	10/09/18 20:49	179601-23-1	
o-Xylene	**<2.3**	ug/kg	2.3	0.97	1	10/09/18 12:09	10/09/18 20:49	95-47-6	
Surrogates									
Toluene-d8 (S)	103	%	43-157		1	10/09/18 12:09	10/09/18 20:49	2037-26-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-5 (8-12) **Lab ID: 7066870006** Collected: 10/03/18 12:15 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Surrogates									
4-Bromofluorobenzene (S)	103	%	34-145		1	10/09/18 12:09	10/09/18 20:49	460-00-4	
1,2-Dichloroethane-d4 (S)	131	%	33-150		1	10/09/18 12:09	10/09/18 20:49	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/11/18 12:23		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**14.8**	%	0.10	0.10	1		10/04/18 14:58		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.2**	mg/kg	1.2	0.25	1	10/09/18 06:56	10/09/18 11:54	18540-29-9	
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**9.0**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**<0.59**	mg/kg	0.59	0.17	1	10/09/18 09:25	10/09/18 15:30	57-12-5	

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ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-7 (0-4) **Lab ID: 7066870007** Collected: 10/03/18 13:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 14:09	309-00-2	
alpha-BHC	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 14:09	319-84-6	
beta-BHC	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 14:09	319-85-7	
delta-BHC	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 14:09	319-86-8	
gamma-BHC (Lindane)	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 14:09	58-89-9	
alpha-Chlordane	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 14:09	5103-71-9	
4,4'-DDD	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 14:09	72-54-8	
4,4'-DDE	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 14:09	72-55-9	
4,4'-DDT	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 14:09	50-29-3	
Dieldrin	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 14:09	60-57-1	
Endosulfan I	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 14:09	959-98-8	
Endosulfan II	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 14:09	33213-65-9	
Endosulfan sulfate	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 14:09	1031-07-8	
Endrin	**<3.8**	ug/kg	3.8	1.9	1	10/05/18 13:13	10/11/18 14:09	72-20-8	
Heptachlor	**<2.0**	ug/kg	2.0	0.99	1	10/05/18 13:13	10/11/18 14:09	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	83	%	30-150		1	10/05/18 13:13	10/11/18 14:09	877-09-8	
Decachlorobiphenyl (S)	100	%	30-150		1	10/05/18 13:13	10/11/18 14:09	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<38.3**	ug/kg	38.3	19.2	1	10/05/18 13:13	10/10/18 18:53	12674-11-2	
PCB-1221 (Aroclor 1221)	**<77.8**	ug/kg	77.8	38.9	1	10/05/18 13:13	10/10/18 18:53	11104-28-2	
PCB-1232 (Aroclor 1232)	**<38.3**	ug/kg	38.3	19.2	1	10/05/18 13:13	10/10/18 18:53	11141-16-5	
PCB-1242 (Aroclor 1242)	**<38.3**	ug/kg	38.3	19.2	1	10/05/18 13:13	10/10/18 18:53	53469-21-9	
PCB-1248 (Aroclor 1248)	**<38.3**	ug/kg	38.3	19.2	1	10/05/18 13:13	10/10/18 18:53	12672-29-6	
PCB-1254 (Aroclor 1254)	**<38.3**	ug/kg	38.3	19.2	1	10/05/18 13:13	10/10/18 18:53	11097-69-1	
PCB-1260 (Aroclor 1260)	**<38.3**	ug/kg	38.3	19.2	1	10/05/18 13:13	10/10/18 18:53	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	61	%	30-150		1	10/05/18 13:13	10/10/18 18:53	877-09-8	
Decachlorobiphenyl (S)	105	%	30-150		1	10/05/18 13:13	10/10/18 18:53	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<5.8**	ug/kg	5.8	0.30	1	10/05/18 15:43	10/08/18 23:27	93-72-1	
Surrogates									
2,4-DCAA (S)	91	%	29-136		1	10/05/18 15:43	10/08/18 23:27	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**10.3**	mg/kg	0.55	0.17	1	10/05/18 11:16	10/05/18 16:46	7440-38-2	
Barium	**84.7**	mg/kg	10.9	0.84	1	10/05/18 11:16	10/05/18 16:46	7440-39-3	
Beryllium	**0.26J**	mg/kg	0.27	0.035	1	10/05/18 11:16	10/05/18 16:46	7440-41-7	
Cadmium	**0.097J**	mg/kg	0.14	0.016	1	10/05/18 11:16	10/05/18 16:46	7440-43-9	
Chromium	**11.8**	mg/kg	0.55	0.052	1	10/05/18 11:16	10/05/18 16:46	7440-47-3	
Copper	**21.4**	mg/kg	1.4	0.099	1	10/05/18 11:16	10/05/18 16:46	7440-50-8	
Lead	**21.0**	mg/kg	0.27	0.13	1	10/05/18 11:16	10/05/18 16:46	7439-92-1	
Manganese	**532**	mg/kg	0.82	0.047	1	10/05/18 11:16	10/05/18 16:46	7439-96-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-7 (0-4) **Lab ID: 7066870007** Collected: 10/03/18 13:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**16.6**	mg/kg	2.2	0.20	1	10/05/18 11:16	10/05/18 16:46	7440-02-0	
Selenium	**0.79**	mg/kg	0.55	0.29	1	10/05/18 11:16	10/05/18 16:46	7782-49-2	
Silver	**<0.55**	mg/kg	0.55	0.069	1	10/05/18 11:16	10/05/18 16:46	7440-22-4	
Zinc	**57.4**	mg/kg	1.1	0.070	1	10/05/18 11:16	10/05/18 16:46	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.052**	mg/kg	0.052	0.031	1	10/05/18 11:47	10/05/18 15:13	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<77.0**	ug/kg	77.0	11.4	1	10/05/18 09:50	10/09/18 18:16	83-32-9	
Acenaphthylene	**<77.0**	ug/kg	77.0	15.4	1	10/05/18 09:50	10/09/18 18:16	208-96-8	
Anthracene	**<77.0**	ug/kg	77.0	22.5	1	10/05/18 09:50	10/09/18 18:16	120-12-7	
Benzo(a)anthracene	**<77.0**	ug/kg	77.0	17.6	1	10/05/18 09:50	10/09/18 18:16	56-55-3	
Benzo(a)pyrene	**<77.0**	ug/kg	77.0	32.5	1	10/05/18 09:50	10/09/18 18:16	50-32-8	
Benzo(b)fluoranthene	**<77.0**	ug/kg	77.0	26.7	1	10/05/18 09:50	10/09/18 18:16	205-99-2	
Benzo(g,h,i)perylene	**<77.0**	ug/kg	77.0	37.3	1	10/05/18 09:50	10/09/18 18:16	191-24-2	
Benzo(k)fluoranthene	**<77.0**	ug/kg	77.0	23.9	1	10/05/18 09:50	10/09/18 18:16	207-08-9	
Chrysene	**<77.0**	ug/kg	77.0	34.5	1	10/05/18 09:50	10/09/18 18:16	218-01-9	
Dibenz(a,h)anthracene	**<77.0**	ug/kg	77.0	25.1	1	10/05/18 09:50	10/09/18 18:16	53-70-3	
Dibenzofuran	**<77.0**	ug/kg	77.0	13.9	1	10/05/18 09:50	10/09/18 18:16	132-64-9	
Fluoranthene	**<77.0**	ug/kg	77.0	64.7	1	10/05/18 09:50	10/09/18 18:16	206-44-0	
Fluorene	**<77.0**	ug/kg	77.0	19.6	1	10/05/18 09:50	10/09/18 18:16	86-73-7	
Hexachlorobenzene	**<77.0**	ug/kg	77.0	15.2	1	10/05/18 09:50	10/09/18 18:16	118-74-1	
Indeno(1,2,3-cd)pyrene	**<77.0**	ug/kg	77.0	29.4	1	10/05/18 09:50	10/09/18 18:16	193-39-5	
2-Methylphenol(o-Cresol)	**<77.0**	ug/kg	77.0	42.7	1	10/05/18 09:50	10/09/18 18:16	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<77.0**	ug/kg	77.0	27.7	1	10/05/18 09:50	10/09/18 18:16		
Naphthalene	**<77.0**	ug/kg	77.0	8.5	1	10/05/18 09:50	10/09/18 18:16	91-20-3	
Pentachlorophenol	**<770**	ug/kg	770	7.8	1	10/05/18 09:50	10/09/18 18:16	87-86-5	
Phenanthrene	**<77.0**	ug/kg	77.0	24.8	1	10/05/18 09:50	10/09/18 18:16	85-01-8	
Phenol	**<77.0**	ug/kg	77.0	14.7	1	10/05/18 09:50	10/09/18 18:16	108-95-2	
Pyrene	**<77.0**	ug/kg	77.0	36.5	1	10/05/18 09:50	10/09/18 18:16	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	57	%	23-120		1	10/05/18 09:50	10/09/18 18:16	4165-60-0	
2-Fluorobiphenyl (S)	65	%	30-115		1	10/05/18 09:50	10/09/18 18:16	321-60-8	
p-Terphenyl-d14 (S)	85	%	18-137		1	10/05/18 09:50	10/09/18 18:16	1718-51-0	
Phenol-d5 (S)	60	%	24-113		1	10/05/18 09:50	10/09/18 18:16	4165-62-2	
2-Fluorophenol (S)	59	%	25-121		1	10/05/18 09:50	10/09/18 18:16	367-12-4	
2,4,6-Tribromophenol (S)	74	%	19-122		1	10/05/18 09:50	10/09/18 18:16	118-79-6	CH
2-Chlorophenol-d4 (S)	57	%	20-130		1	10/05/18 09:50	10/09/18 18:16	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	56	%	20-130		1	10/05/18 09:50	10/09/18 18:16	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**235J**	ug/kg			1	10/05/18 09:50	10/09/18 18:16		
Unknown Ketone	**4940J**	ug/kg			1	10/05/18 09:50	10/09/18 18:16		
Unknown Ketone	**573J**	ug/kg			1	10/05/18 09:50	10/09/18 18:16		
Unknown Ketone	**54700J**	ug/kg			1	10/05/18 09:50	10/09/18 18:16		

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-7 (0-4) **Lab ID: 7066870007** Collected: 10/03/18 13:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Aldol Condensate	**1320J**	ug/kg			1	10/05/18 09:50	10/09/18 18:16		
Unknown Ketone	**1950J**	ug/kg			1	10/05/18 09:50	10/09/18 18:16		
Unknown Petroleum Alkane	**209J**	ug/kg			1	10/05/18 09:50	10/09/18 18:16		
Unknown Organic Acid	**408J**	ug/kg			1	10/05/18 09:50	10/09/18 18:16		
Unknown Organic Acid	**155J**	ug/kg			1	10/05/18 09:50	10/09/18 18:16		
Unknown Amide	**230J**	ug/kg			1	10/05/18 09:50	10/09/18 18:16		
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<2.5**	ug/kg	2.5	2.4	1	10/09/18 12:09	10/09/18 21:14	67-64-1	
Benzene	**<2.5**	ug/kg	2.5	0.98	1	10/09/18 12:09	10/09/18 21:14	71-43-2	
2-Butanone (MEK)	**<2.5**	ug/kg	2.5	1.5	1	10/09/18 12:09	10/09/18 21:14	78-93-3	
n-Butylbenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 21:14	104-51-8	
sec-Butylbenzene	**<2.5**	ug/kg	2.5	0.98	1	10/09/18 12:09	10/09/18 21:14	135-98-8	
tert-Butylbenzene	**<2.5**	ug/kg	2.5	1.2	1	10/09/18 12:09	10/09/18 21:14	98-06-6	
Carbon tetrachloride	**<2.5**	ug/kg	2.5	1.6	1	10/09/18 12:09	10/09/18 21:14	56-23-5	
Chlorobenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 21:14	108-90-7	
Chloroform	**<2.5**	ug/kg	2.5	0.68	1	10/09/18 12:09	10/09/18 21:14	67-66-3	
1,2-Dichlorobenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 21:14	95-50-1	
1,3-Dichlorobenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 21:14	541-73-1	
1,4-Dichlorobenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 21:14	106-46-7	
1,1-Dichloroethane	**<2.5**	ug/kg	2.5	0.98	1	10/09/18 12:09	10/09/18 21:14	75-34-3	
1,2-Dichloroethane	**<2.5**	ug/kg	2.5	0.61	1	10/09/18 12:09	10/09/18 21:14	107-06-2	
1,1-Dichloroethene	**<2.5**	ug/kg	2.5	0.96	1	10/09/18 12:09	10/09/18 21:14	75-35-4	
cis-1,2-Dichloroethene	**1.5J**	ug/kg	2.5	0.92	1	10/09/18 12:09	10/09/18 21:14	156-59-2	
trans-1,2-Dichloroethene	**<2.5**	ug/kg	2.5	0.72	1	10/09/18 12:09	10/09/18 21:14	156-60-5	
1,4-Dioxane (p-Dioxane)	**<62.2**	ug/kg	62.2	36.7	1	10/09/18 12:09	10/09/18 21:14	123-91-1	
Ethylbenzene	**<2.5**	ug/kg	2.5	0.95	1	10/09/18 12:09	10/09/18 21:14	100-41-4	
Methylene Chloride	**<2.5**	ug/kg	2.5	1.1	1	10/09/18 12:09	10/09/18 21:14	75-09-2	
Methyl-tert-butyl ether	**<2.5**	ug/kg	2.5	0.55	1	10/09/18 12:09	10/09/18 21:14	1634-04-4	
n-Propylbenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 21:14	103-65-1	
Tetrachloroethene	**<2.5**	ug/kg	2.5	1.3	1	10/09/18 12:09	10/09/18 21:14	127-18-4	
Toluene	**<2.5**	ug/kg	2.5	1.2	1	10/09/18 12:09	10/09/18 21:14	108-88-3	
1,2,4-Trichlorobenzene	**<2.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 21:14	120-82-1	
1,1,1-Trichloroethane	**<2.5**	ug/kg	2.5	1.3	1	10/09/18 12:09	10/09/18 21:14	71-55-6	
Trichloroethene	**14.5**	ug/kg	2.5	1.0	1	10/09/18 12:09	10/09/18 21:14	79-01-6	
1,2,4-Trimethylbenzene	**<2.5**	ug/kg	2.5	1.1	1	10/09/18 12:09	10/09/18 21:14	95-63-6	
1,3,5-Trimethylbenzene	**<2.5**	ug/kg	2.5	0.95	1	10/09/18 12:09	10/09/18 21:14	108-67-8	
Vinyl chloride	**<2.5**	ug/kg	2.5	0.55	1	10/09/18 12:09	10/09/18 21:14	75-01-4	
Xylene (Total)	**<5.0**	ug/kg	5.0	2.5	1	10/09/18 12:09	10/09/18 21:14	1330-20-7	
m&p-Xylene	**<5.0**	ug/kg	5.0	2.4	1	10/09/18 12:09	10/09/18 21:14	179601-23-1	
o-Xylene	**<2.5**	ug/kg	2.5	1.1	1	10/09/18 12:09	10/09/18 21:14	95-47-6	
Surrogates									
Toluene-d8 (S)	106	%	43-157		1	10/09/18 12:09	10/09/18 21:14	2037-26-5	
4-Bromofluorobenzene (S)	98	%	34-145		1	10/09/18 12:09	10/09/18 21:14	460-00-4	

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-7 (0-4) **Lab ID: 7066870007** Collected: 10/03/18 13:30 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Surrogates									
1,2-Dichloroethane-d4 (S)	138	%	33-150		1	10/09/18 12:09	10/09/18 21:14	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/11/18 12:23		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**13.9**	%	0.10	0.10	1		10/04/18 14:58		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.2**	mg/kg	1.2	0.25	1	10/09/18 06:56	10/09/18 11:54	18540-29-9	
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**11.8**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**0.32J**	mg/kg	0.58	0.17	1	10/10/18 07:45	10/10/18 13:52	57-12-5	

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-8 (8-12) **Lab ID: 7066870008** Collected: 10/03/18 14:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:07	309-00-2	
alpha-BHC	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:07	319-84-6	
beta-BHC	**6.0**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:07	319-85-7	
delta-BHC	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:07	319-86-8	
gamma-BHC (Lindane)	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:07	58-89-9	
alpha-Chlordane	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:07	5103-71-9	
4,4'-DDD	**<4.3**	ug/kg	4.3	2.1	1	10/05/18 13:13	10/11/18 16:07	72-54-8	
4,4'-DDE	**<4.3**	ug/kg	4.3	2.1	1	10/05/18 13:13	10/11/18 16:07	72-55-9	
4,4'-DDT	**<4.3**	ug/kg	4.3	2.1	1	10/05/18 13:13	10/11/18 16:07	50-29-3	CL
Dieldrin	**<4.3**	ug/kg	4.3	2.1	1	10/05/18 13:13	10/11/18 16:07	60-57-1	
Endosulfan I	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:07	959-98-8	
Endosulfan II	**<4.3**	ug/kg	4.3	2.1	1	10/05/18 13:13	10/11/18 16:07	33213-65-9	
Endosulfan sulfate	**<4.3**	ug/kg	4.3	2.1	1	10/05/18 13:13	10/11/18 16:07	1031-07-8	
Endrin	**<4.3**	ug/kg	4.3	2.1	1	10/05/18 13:13	10/11/18 16:07	72-20-8	
Heptachlor	**<2.2**	ug/kg	2.2	1.1	1	10/05/18 13:13	10/11/18 16:07	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	70	%	30-150		1	10/05/18 13:13	10/11/18 16:07	877-09-8	
Decachlorobiphenyl (S)	60	%	30-150		1	10/05/18 13:13	10/11/18 16:07	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<42.8**	ug/kg	42.8	21.4	1	10/05/18 13:13	10/11/18 15:21	12674-11-2	
PCB-1221 (Aroclor 1221)	**<86.9**	ug/kg	86.9	43.5	1	10/05/18 13:13	10/11/18 15:21	11104-28-2	
PCB-1232 (Aroclor 1232)	**<42.8**	ug/kg	42.8	21.4	1	10/05/18 13:13	10/11/18 15:21	11141-16-5	
PCB-1242 (Aroclor 1242)	**<42.8**	ug/kg	42.8	21.4	1	10/05/18 13:13	10/11/18 15:21	53469-21-9	
PCB-1248 (Aroclor 1248)	**51.9**	ug/kg	42.8	21.4	1	10/05/18 13:13	10/11/18 15:21	12672-29-6	
PCB-1254 (Aroclor 1254)	**<42.8**	ug/kg	42.8	21.4	1	10/05/18 13:13	10/11/18 15:21	11097-69-1	
PCB-1260 (Aroclor 1260)	**<42.8**	ug/kg	42.8	21.4	1	10/05/18 13:13	10/11/18 15:21	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	59	%	30-150		1	10/05/18 13:13	10/11/18 15:21	877-09-8	
Decachlorobiphenyl (S)	63	%	30-150		1	10/05/18 13:13	10/11/18 15:21	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<6.4**	ug/kg	6.4	0.34	1	10/05/18 15:43	10/08/18 23:48	93-72-1	
Surrogates									
2,4-DCAA (S)	73	%	29-136		1	10/05/18 15:43	10/08/18 23:48	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**9.0**	mg/kg	0.64	0.20	1	10/05/18 11:16	10/05/18 16:47	7440-38-2	
Barium	**73.5**	mg/kg	12.9	0.98	1	10/05/18 11:16	10/05/18 16:47	7440-39-3	
Beryllium	**0.074J**	mg/kg	0.32	0.041	1	10/05/18 11:16	10/05/18 16:47	7440-41-7	
Cadmium	**0.36**	mg/kg	0.16	0.019	1	10/05/18 11:16	10/05/18 16:47	7440-43-9	
Chromium	**195**	mg/kg	0.64	0.062	1	10/05/18 11:16	10/05/18 16:47	7440-47-3	
Copper	**51.5**	mg/kg	1.6	0.12	1	10/05/18 11:16	10/05/18 16:47	7440-50-8	
Lead	**67.0**	mg/kg	0.32	0.15	1	10/05/18 11:16	10/05/18 16:47	7439-92-1	
Manganese	**322**	mg/kg	0.97	0.055	1	10/05/18 11:16	10/05/18 16:47	7439-96-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-8 (8-12) **Lab ID: 7066870008** Collected: 10/03/18 14:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**11.5**	mg/kg	2.6	0.23	1	10/05/18 11:16	10/05/18 16:47	7440-02-0	
Selenium	**<0.64**	mg/kg	0.64	0.34	1	10/05/18 11:16	10/05/18 16:47	7782-49-2	
Silver	**<0.64**	mg/kg	0.64	0.081	1	10/05/18 11:16	10/05/18 16:47	7440-22-4	
Zinc	**68.3**	mg/kg	1.3	0.082	1	10/05/18 11:16	10/05/18 16:47	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.15**	mg/kg	0.042	0.026	1	10/05/18 11:47	10/05/18 15:15	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<173**	ug/kg	173	25.7	2	10/05/18 09:50	10/11/18 13:45	83-32-9	
Acenaphthylene	**<173**	ug/kg	173	34.6	2	10/05/18 09:50	10/11/18 13:45	208-96-8	
Anthracene	**<173**	ug/kg	173	50.6	2	10/05/18 09:50	10/11/18 13:45	120-12-7	
Benzo(a)anthracene	**<173**	ug/kg	173	39.7	2	10/05/18 09:50	10/11/18 13:45	56-55-3	
Benzo(a)pyrene	**<173**	ug/kg	173	73.2	2	10/05/18 09:50	10/11/18 13:45	50-32-8	
Benzo(b)fluoranthene	**<173**	ug/kg	173	60.0	2	10/05/18 09:50	10/11/18 13:45	205-99-2	
Benzo(g,h,i)perylene	**<173**	ug/kg	173	83.8	2	10/05/18 09:50	10/11/18 13:45	191-24-2	
Benzo(k)fluoranthene	**<173**	ug/kg	173	53.7	2	10/05/18 09:50	10/11/18 13:45	207-08-9	
Chrysene	**<173**	ug/kg	173	77.6	2	10/05/18 09:50	10/11/18 13:45	218-01-9	
Dibenz(a,h)anthracene	**<173**	ug/kg	173	56.6	2	10/05/18 09:50	10/11/18 13:45	53-70-3	
Dibenzofuran	**<173**	ug/kg	173	31.4	2	10/05/18 09:50	10/11/18 13:45	132-64-9	
Fluoranthene	**209**	ug/kg	173	146	2	10/05/18 09:50	10/11/18 13:45	206-44-0	
Fluorene	**<173**	ug/kg	173	44.0	2	10/05/18 09:50	10/11/18 13:45	86-73-7	
Hexachlorobenzene	**<173**	ug/kg	173	34.3	2	10/05/18 09:50	10/11/18 13:45	118-74-1	
Indeno(1,2,3-cd)pyrene	**<173**	ug/kg	173	66.3	2	10/05/18 09:50	10/11/18 13:45	193-39-5	
2-Methylphenol(o-Cresol)	**<173**	ug/kg	173	96.0	2	10/05/18 09:50	10/11/18 13:45	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<173**	ug/kg	173	62.4	2	10/05/18 09:50	10/11/18 13:45		
Naphthalene	**<173**	ug/kg	173	19.1	2	10/05/18 09:50	10/11/18 13:45	91-20-3	
Pentachlorophenol	**<1730**	ug/kg	1730	17.4	2	10/05/18 09:50	10/11/18 13:45	87-86-5	
Phenanthrene	**190**	ug/kg	173	55.8	2	10/05/18 09:50	10/11/18 13:45	85-01-8	
Phenol	**<173**	ug/kg	173	33.0	2	10/05/18 09:50	10/11/18 13:45	108-95-2	
Pyrene	**<173**	ug/kg	173	82.2	2	10/05/18 09:50	10/11/18 13:45	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	64	%	23-120		2	10/05/18 09:50	10/11/18 13:45	4165-60-0	
2-Fluorobiphenyl (S)	72	%	30-115		2	10/05/18 09:50	10/11/18 13:45	321-60-8	
p-Terphenyl-d14 (S)	81	%	18-137		2	10/05/18 09:50	10/11/18 13:45	1718-51-0	
Phenol-d5 (S)	65	%	24-113		2	10/05/18 09:50	10/11/18 13:45	4165-62-2	
2-Fluorophenol (S)	68	%	25-121		2	10/05/18 09:50	10/11/18 13:45	367-12-4	
2,4,6-Tribromophenol (S)	98	%	19-122		2	10/05/18 09:50	10/11/18 13:45	118-79-6	CH
2-Chlorophenol-d4 (S)	67	%	20-130		2	10/05/18 09:50	10/11/18 13:45	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	61	%	20-130		2	10/05/18 09:50	10/11/18 13:45	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**5230J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Ketone	**857J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Ketone	**55000J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Aldol Condensate	**1140J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-8 (8-12) **Lab ID: 7066870008** Collected: 10/03/18 14:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown	**3060J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Organic Acid	**1150J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown	**1850J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Alcohol	**996J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Hydrocarbon	**825J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Ketone	**2630J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown	**2130J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Ketone	**1130J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Ketone	**686J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Ketone	**805J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Column Bleed	**1660J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Ketone	**515J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Ketone	**6340J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Unknown Alcohol	**18600J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45		
Lanosterol	**3780J**	ug/kg			2	10/05/18 09:50	10/11/18 13:45	79-63-0	N
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**197**	ug/kg	3.3	3.2	1	10/09/18 12:09	10/09/18 21:38	67-64-1	CH,D6
Benzene	**<3.3**	ug/kg	3.3	1.3	1	10/09/18 12:09	10/09/18 21:38	71-43-2	
2-Butanone (MEK)	**44.6**	ug/kg	3.3	2.0	1	10/09/18 12:09	10/09/18 21:38	78-93-3	CH
n-Butylbenzene	**<3.3**	ug/kg	3.3	1.3	1	10/09/18 12:09	10/09/18 21:38	104-51-8	
sec-Butylbenzene	**<3.3**	ug/kg	3.3	1.3	1	10/09/18 12:09	10/09/18 21:38	135-98-8	
tert-Butylbenzene	**<3.3**	ug/kg	3.3	1.6	1	10/09/18 12:09	10/09/18 21:38	98-06-6	
Carbon tetrachloride	**<3.3**	ug/kg	3.3	2.1	1	10/09/18 12:09	10/09/18 21:38	56-23-5	
Chlorobenzene	**<3.3**	ug/kg	3.3	1.4	1	10/09/18 12:09	10/09/18 21:38	108-90-7	
Chloroform	**<3.3**	ug/kg	3.3	0.90	1	10/09/18 12:09	10/09/18 21:38	67-66-3	
1,2-Dichlorobenzene	**<3.3**	ug/kg	3.3	1.4	1	10/09/18 12:09	10/09/18 21:38	95-50-1	
1,3-Dichlorobenzene	**<3.3**	ug/kg	3.3	1.3	1	10/09/18 12:09	10/09/18 21:38	541-73-1	
1,4-Dichlorobenzene	**<3.3**	ug/kg	3.3	1.4	1	10/09/18 12:09	10/09/18 21:38	106-46-7	
1,1-Dichloroethane	**<3.3**	ug/kg	3.3	1.3	1	10/09/18 12:09	10/09/18 21:38	75-34-3	
1,2-Dichloroethane	**<3.3**	ug/kg	3.3	0.80	1	10/09/18 12:09	10/09/18 21:38	107-06-2	
1,1-Dichloroethene	**<3.3**	ug/kg	3.3	1.3	1	10/09/18 12:09	10/09/18 21:38	75-35-4	
cis-1,2-Dichloroethene	**<3.3**	ug/kg	3.3	1.2	1	10/09/18 12:09	10/09/18 21:38	156-59-2	
trans-1,2-Dichloroethene	**<3.3**	ug/kg	3.3	0.95	1	10/09/18 12:09	10/09/18 21:38	156-60-5	
1,4-Dioxane (p-Dioxane)	**<82.3**	ug/kg	82.3	48.6	1	10/09/18 12:09	10/09/18 21:38	123-91-1	
Ethylbenzene	**<3.3**	ug/kg	3.3	1.3	1	10/09/18 12:09	10/09/18 21:38	100-41-4	
Methylene Chloride	**<3.3**	ug/kg	3.3	1.5	1	10/09/18 12:09	10/09/18 21:38	75-09-2	
Methyl-tert-butyl ether	**<3.3**	ug/kg	3.3	0.73	1	10/09/18 12:09	10/09/18 21:38	1634-04-4	
n-Propylbenzene	**<3.3**	ug/kg	3.3	1.4	1	10/09/18 12:09	10/09/18 21:38	103-65-1	
Tetrachloroethene	**<3.3**	ug/kg	3.3	1.7	1	10/09/18 12:09	10/09/18 21:38	127-18-4	
Toluene	**<3.3**	ug/kg	3.3	1.5	1	10/09/18 12:09	10/09/18 21:38	108-88-3	
1,2,4-Trichlorobenzene	**<3.3**	ug/kg	3.3	1.3	1	10/09/18 12:09	10/09/18 21:38	120-82-1	
1,1,1-Trichloroethane	**<3.3**	ug/kg	3.3	1.7	1	10/09/18 12:09	10/09/18 21:38	71-55-6	
Trichloroethene	**<3.3**	ug/kg	3.3	1.4	1	10/09/18 12:09	10/09/18 21:38	79-01-6	

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-8 (8-12) **Lab ID: 7066870008** Collected: 10/03/18 14:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
1,2,4-Trimethylbenzene	**3.1J**	ug/kg	3.3	1.4	1	10/09/18 12:09	10/09/18 21:38	95-63-6	
1,3,5-Trimethylbenzene	**2.0J**	ug/kg	3.3	1.3	1	10/09/18 12:09	10/09/18 21:38	108-67-8	
Vinyl chloride	**<3.3**	ug/kg	3.3	0.73	1	10/09/18 12:09	10/09/18 21:38	75-01-4	
Xylene (Total)	**<6.6**	ug/kg	6.6	3.3	1	10/09/18 12:09	10/09/18 21:38	1330-20-7	
m&p-Xylene	**<6.6**	ug/kg	6.6	3.2	1	10/09/18 12:09	10/09/18 21:38	179601-23-1	
o-Xylene	**<3.3**	ug/kg	3.3	1.4	1	10/09/18 12:09	10/09/18 21:38	95-47-6	
Surrogates									
Toluene-d8 (S)	113	%	43-157		1	10/09/18 12:09	10/09/18 21:38	2037-26-5	
4-Bromofluorobenzene (S)	93	%	34-145		1	10/09/18 12:09	10/09/18 21:38	460-00-4	
1,2-Dichloroethane-d4 (S)	138	%	33-150		1	10/09/18 12:09	10/09/18 21:38	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/11/18 12:25		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**22.9**	%	0.10	0.10	1		10/04/18 14:58		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.3**	mg/kg	1.3	0.27	1	10/09/18 06:56	10/09/18 11:54	18540-29-9	
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**195**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**0.40J**	mg/kg	0.65	0.19	1	10/10/18 07:45	10/10/18 13:54	57-12-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-9 (4-7) **Lab ID: 7066870009** Collected: 10/03/18 14:45 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.1**	ug/kg	2.1	1.1	1	10/05/18 13:13	10/11/18 15:52	309-00-2	
alpha-BHC	**<2.1**	ug/kg	2.1	1.1	1	10/05/18 13:13	10/11/18 15:52	319-84-6	
beta-BHC	**4.8**	ug/kg	2.1	1.1	1	10/05/18 13:13	10/11/18 15:52	319-85-7	
delta-BHC	**<2.1**	ug/kg	2.1	1.1	1	10/05/18 13:13	10/11/18 15:52	319-86-8	
gamma-BHC (Lindane)	**<2.1**	ug/kg	2.1	1.1	1	10/05/18 13:13	10/11/18 15:52	58-89-9	
alpha-Chlordane	**2.2**	ug/kg	2.1	1.1	1	10/05/18 13:13	10/11/18 15:52	5103-71-9	
4,4'-DDD	**<4.1**	ug/kg	4.1	2.1	1	10/05/18 13:13	10/11/18 15:52	72-54-8	
4,4'-DDE	**44.8**	ug/kg	4.1	2.1	1	10/05/18 13:13	10/11/18 15:52	72-55-9	
4,4'-DDT	**<4.1**	ug/kg	4.1	2.1	1	10/05/18 13:13	10/11/18 15:52	50-29-3	CL
Dieldrin	**32.9**	ug/kg	4.1	2.1	1	10/05/18 13:13	10/11/18 15:52	60-57-1	
Endosulfan I	**<2.1**	ug/kg	2.1	1.1	1	10/05/18 13:13	10/11/18 15:52	959-98-8	
Endosulfan II	**8.4**	ug/kg	4.1	2.1	1	10/05/18 13:13	10/11/18 15:52	33213-65-9	
Endosulfan sulfate	**<4.1**	ug/kg	4.1	2.1	1	10/05/18 13:13	10/11/18 15:52	1031-07-8	
Endrin	**<4.1**	ug/kg	4.1	2.1	1	10/05/18 13:13	10/11/18 15:52	72-20-8	
Heptachlor	**<2.1**	ug/kg	2.1	1.1	1	10/05/18 13:13	10/11/18 15:52	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	77	%	30-150		1	10/05/18 13:13	10/11/18 15:52	877-09-8	
Decachlorobiphenyl (S)	77	%	30-150		1	10/05/18 13:13	10/11/18 15:52	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<208**	ug/kg	208	104	5	10/05/18 13:13	10/11/18 14:55	12674-11-2	
PCB-1221 (Aroclor 1221)	**<422**	ug/kg	422	211	5	10/05/18 13:13	10/11/18 14:55	11104-28-2	
PCB-1232 (Aroclor 1232)	**<208**	ug/kg	208	104	5	10/05/18 13:13	10/11/18 14:55	11141-16-5	
PCB-1242 (Aroclor 1242)	**<208**	ug/kg	208	104	5	10/05/18 13:13	10/11/18 14:55	53469-21-9	
PCB-1248 (Aroclor 1248)	**<208**	ug/kg	208	104	5	10/05/18 13:13	10/11/18 14:55	12672-29-6	
PCB-1254 (Aroclor 1254)	**1600**	ug/kg	208	104	5	10/05/18 13:13	10/11/18 14:55	11097-69-1	
PCB-1260 (Aroclor 1260)	**<208**	ug/kg	208	104	5	10/05/18 13:13	10/11/18 14:55	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	61	%	30-150		1	10/05/18 13:13	10/10/18 19:18	877-09-8	
Decachlorobiphenyl (S)	73	%	30-150		1	10/05/18 13:13	10/10/18 19:18	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<6.3**	ug/kg	6.3	0.33	1	10/05/18 15:43	10/09/18 02:39	93-72-1	
Surrogates									
2,4-DCAA (S)	90	%	29-136		1	10/05/18 15:43	10/09/18 02:39	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**14.6**	mg/kg	0.58	0.18	1	10/05/18 11:16	10/05/18 16:48	7440-38-2	
Barium	**133**	mg/kg	11.5	0.88	1	10/05/18 11:16	10/05/18 16:48	7440-39-3	
Beryllium	**0.33**	mg/kg	0.29	0.037	1	10/05/18 11:16	10/05/18 16:48	7440-41-7	
Cadmium	**0.24**	mg/kg	0.14	0.017	1	10/05/18 11:16	10/05/18 16:48	7440-43-9	
Chromium	**48.3**	mg/kg	0.58	0.055	1	10/05/18 11:16	10/05/18 16:48	7440-47-3	
Copper	**33.7**	mg/kg	1.4	0.10	1	10/05/18 11:16	10/05/18 16:48	7440-50-8	
Lead	**33.3**	mg/kg	0.29	0.13	1	10/05/18 11:16	10/05/18 16:48	7439-92-1	
Manganese	**321**	mg/kg	0.87	0.050	1	10/05/18 11:16	10/05/18 16:48	7439-96-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-9 (4-7) **Lab ID: 7066870009** Collected: 10/03/18 14:45 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**19.4**	mg/kg	2.3	0.21	1	10/05/18 11:16	10/05/18 16:48	7440-02-0	
Selenium	**0.93**	mg/kg	0.58	0.30	1	10/05/18 11:16	10/05/18 16:48	7782-49-2	
Silver	**<0.58**	mg/kg	0.58	0.073	1	10/05/18 11:16	10/05/18 16:48	7440-22-4	
Zinc	**108**	mg/kg	1.2	0.074	1	10/05/18 11:16	10/05/18 16:48	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.037J**	mg/kg	0.042	0.025	1	10/05/18 11:47	10/05/18 15:16	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<418**	ug/kg	418	62.0	5	10/05/18 09:50	10/10/18 14:04	83-32-9	
Acenaphthylene	**<418**	ug/kg	418	83.6	5	10/05/18 09:50	10/10/18 14:04	208-96-8	
Anthracene	**<418**	ug/kg	418	122	5	10/05/18 09:50	10/10/18 14:04	120-12-7	
Benzo(a)anthracene	**325J**	ug/kg	418	95.8	5	10/05/18 09:50	10/10/18 14:04	56-55-3	
Benzo(a)pyrene	**385J**	ug/kg	418	177	5	10/05/18 09:50	10/10/18 14:04	50-32-8	
Benzo(b)fluoranthene	**503**	ug/kg	418	145	5	10/05/18 09:50	10/10/18 14:04	205-99-2	
Benzo(g,h,i)perylene	**306J**	ug/kg	418	202	5	10/05/18 09:50	10/10/18 14:04	191-24-2	
Benzo(k)fluoranthene	**233J**	ug/kg	418	130	5	10/05/18 09:50	10/10/18 14:04	207-08-9	
Chrysene	**353J**	ug/kg	418	187	5	10/05/18 09:50	10/10/18 14:04	218-01-9	
Dibenz(a,h)anthracene	**<418**	ug/kg	418	137	5	10/05/18 09:50	10/10/18 14:04	53-70-3	
Dibenzofuran	**<418**	ug/kg	418	75.8	5	10/05/18 09:50	10/10/18 14:04	132-64-9	
Fluoranthene	**604**	ug/kg	418	352	5	10/05/18 09:50	10/10/18 14:04	206-44-0	
Fluorene	**<418**	ug/kg	418	106	5	10/05/18 09:50	10/10/18 14:04	86-73-7	
Hexachlorobenzene	**<418**	ug/kg	418	82.8	5	10/05/18 09:50	10/10/18 14:04	118-74-1	
Indeno(1,2,3-cd)pyrene	**298J**	ug/kg	418	160	5	10/05/18 09:50	10/10/18 14:04	193-39-5	
2-Methylphenol(o-Cresol)	**<418**	ug/kg	418	232	5	10/05/18 09:50	10/10/18 14:04	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<418**	ug/kg	418	151	5	10/05/18 09:50	10/10/18 14:04		
Naphthalene	**<418**	ug/kg	418	46.2	5	10/05/18 09:50	10/10/18 14:04	91-20-3	
Pentachlorophenol	**<4180**	ug/kg	4180	42.1	5	10/05/18 09:50	10/10/18 14:04	87-86-5	
Phenanthrene	**320J**	ug/kg	418	135	5	10/05/18 09:50	10/10/18 14:04	85-01-8	
Phenol	**<418**	ug/kg	418	79.8	5	10/05/18 09:50	10/10/18 14:04	108-95-2	
Pyrene	**579**	ug/kg	418	198	5	10/05/18 09:50	10/10/18 14:04	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	63	%	23-120		5	10/05/18 09:50	10/10/18 14:04	4165-60-0	
2-Fluorobiphenyl (S)	72	%	30-115		5	10/05/18 09:50	10/10/18 14:04	321-60-8	
p-Terphenyl-d14 (S)	92	%	18-137		5	10/05/18 09:50	10/10/18 14:04	1718-51-0	
Phenol-d5 (S)	69	%	24-113		5	10/05/18 09:50	10/10/18 14:04	4165-62-2	
2-Fluorophenol (S)	70	%	25-121		5	10/05/18 09:50	10/10/18 14:04	367-12-4	
2,4,6-Tribromophenol (S)	85	%	19-122		5	10/05/18 09:50	10/10/18 14:04	118-79-6	CH
2-Chlorophenol-d4 (S)	67	%	20-130		5	10/05/18 09:50	10/10/18 14:04	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	62	%	20-130		5	10/05/18 09:50	10/10/18 14:04	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**5840J**	ug/kg			5	10/05/18 09:50	10/10/18 14:04		
Unknown Ketone	**839J**	ug/kg			5	10/05/18 09:50	10/10/18 14:04		
Unknown Ketone	**84300J**	ug/kg			5	10/05/18 09:50	10/10/18 14:04		
Unknown Aldol Condensate	**2180J**	ug/kg			5	10/05/18 09:50	10/10/18 14:04		

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ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-9 (4-7) **Lab ID: 7066870009** Collected: 10/03/18 14:45 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Ketone	**1080J**	ug/kg			5	10/05/18 09:50	10/10/18 14:04		
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**32.4**	ug/kg	2.3	2.3	1	10/09/18 12:09	10/09/18 22:27	67-64-1	CH
Benzene	**<2.3**	ug/kg	2.3	0.92	1	10/09/18 12:09	10/09/18 22:27	71-43-2	
2-Butanone (MEK)	**<2.3**	ug/kg	2.3	1.5	1	10/09/18 12:09	10/09/18 22:27	78-93-3	
n-Butylbenzene	**<2.3**	ug/kg	2.3	0.94	1	10/09/18 12:09	10/09/18 22:27	104-51-8	
sec-Butylbenzene	**<2.3**	ug/kg	2.3	0.93	1	10/09/18 12:09	10/09/18 22:27	135-98-8	
tert-Butylbenzene	**<2.3**	ug/kg	2.3	1.2	1	10/09/18 12:09	10/09/18 22:27	98-06-6	
Carbon tetrachloride	**<2.3**	ug/kg	2.3	1.5	1	10/09/18 12:09	10/09/18 22:27	56-23-5	
Chlorobenzene	**<2.3**	ug/kg	2.3	0.97	1	10/09/18 12:09	10/09/18 22:27	108-90-7	
Chloroform	**<2.3**	ug/kg	2.3	0.64	1	10/09/18 12:09	10/09/18 22:27	67-66-3	
1,2-Dichlorobenzene	**<2.3**	ug/kg	2.3	0.96	1	10/09/18 12:09	10/09/18 22:27	95-50-1	
1,3-Dichlorobenzene	**<2.3**	ug/kg	2.3	0.95	1	10/09/18 12:09	10/09/18 22:27	541-73-1	
1,4-Dichlorobenzene	**<2.3**	ug/kg	2.3	0.96	1	10/09/18 12:09	10/09/18 22:27	106-46-7	
1,1-Dichloroethane	**<2.3**	ug/kg	2.3	0.92	1	10/09/18 12:09	10/09/18 22:27	75-34-3	
1,2-Dichloroethane	**<2.3**	ug/kg	2.3	0.57	1	10/09/18 12:09	10/09/18 22:27	107-06-2	
1,1-Dichloroethene	**<2.3**	ug/kg	2.3	0.91	1	10/09/18 12:09	10/09/18 22:27	75-35-4	
cis-1,2-Dichloroethene	**7.0**	ug/kg	2.3	0.87	1	10/09/18 12:09	10/09/18 22:27	156-59-2	
trans-1,2-Dichloroethene	**<2.3**	ug/kg	2.3	0.67	1	10/09/18 12:09	10/09/18 22:27	156-60-5	
1,4-Dioxane (p-Dioxane)	**<58.5**	ug/kg	58.5	34.5	1	10/09/18 12:09	10/09/18 22:27	123-91-1	
Ethylbenzene	**<2.3**	ug/kg	2.3	0.89	1	10/09/18 12:09	10/09/18 22:27	100-41-4	
Methylene Chloride	**<2.3**	ug/kg	2.3	1.1	1	10/09/18 12:09	10/09/18 22:27	75-09-2	
Methyl-tert-butyl ether	**<2.3**	ug/kg	2.3	0.52	1	10/09/18 12:09	10/09/18 22:27	1634-04-4	
n-Propylbenzene	**<2.3**	ug/kg	2.3	0.96	1	10/09/18 12:09	10/09/18 22:27	103-65-1	
Tetrachloroethene	**<2.3**	ug/kg	2.3	1.2	1	10/09/18 12:09	10/09/18 22:27	127-18-4	
Toluene	**<2.3**	ug/kg	2.3	1.1	1	10/09/18 12:09	10/09/18 22:27	108-88-3	
1,2,4-Trichlorobenzene	**<2.3**	ug/kg	2.3	0.94	1	10/09/18 12:09	10/09/18 22:27	120-82-1	
1,1,1-Trichloroethane	**<2.3**	ug/kg	2.3	1.2	1	10/09/18 12:09	10/09/18 22:27	71-55-6	
Trichloroethene	**4.1**	ug/kg	2.3	0.97	1	10/09/18 12:09	10/09/18 22:27	79-01-6	
1,2,4-Trimethylbenzene	**<2.3**	ug/kg	2.3	1.0	1	10/09/18 12:09	10/09/18 22:27	95-63-6	
1,3,5-Trimethylbenzene	**<2.3**	ug/kg	2.3	0.89	1	10/09/18 12:09	10/09/18 22:27	108-67-8	
Vinyl chloride	**3.5**	ug/kg	2.3	0.52	1	10/09/18 12:09	10/09/18 22:27	75-01-4	
Xylene (Total)	**<4.7**	ug/kg	4.7	2.3	1	10/09/18 12:09	10/09/18 22:27	1330-20-7	
m&p-Xylene	**<4.7**	ug/kg	4.7	2.3	1	10/09/18 12:09	10/09/18 22:27	179601-23-1	
o-Xylene	**<2.3**	ug/kg	2.3	1.0	1	10/09/18 12:09	10/09/18 22:27	95-47-6	
Surrogates									
Toluene-d8 (S)	111	%	43-157		1	10/09/18 12:09	10/09/18 22:27	2037-26-5	
4-Bromofluorobenzene (S)	107	%	34-145		1	10/09/18 12:09	10/09/18 22:27	460-00-4	
1,2-Dichloroethane-d4 (S)	141	%	33-150		1	10/09/18 12:09	10/09/18 22:27	17060-07-0	
Tentatively Identified Compounds									
Unknown Cycloalkane	**73.0J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		
Unknown	**43.7J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		
Unknown Petroleum Alkane	**156J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-9 (4-7) **Lab ID: 7066870009** Collected: 10/03/18 14:45 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Tentatively Identified Compounds									
Unknown	**43.7J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		
Unknown Petroleum Alkane	**73.8J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		
Unknown Cycloalkane	**49.8J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		
Unknown Cycloalkane	**44.2J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		
Unknown Petroleum Alkane	**49.6J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		
Unknown Cycloalkane	**67.8J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		
Unknown Cycloalkane	**58.6J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		
Unknown Cycloalkane	**76.0J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		
Unknown Cycloalkane	**44.7J**	ug/kg			1	10/09/18 12:09	10/09/18 22:27		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**20.5**	%	0.10	0.10	1		10/04/18 14:58		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.3**	mg/kg	1.3	0.27	1	10/09/18 06:56	10/09/18 11:54	18540-29-9	
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**48.3**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**0.30J**	mg/kg	0.62	0.18	1	10/10/18 07:45	10/10/18 13:55	57-12-5	

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Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-9 (13-14) **Lab ID: 7066870010** Collected: 10/03/18 15:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.1**	ug/kg	2.1	1.0	1	10/05/18 13:13	10/11/18 13:54	309-00-2	
alpha-BHC	**<2.1**	ug/kg	2.1	1.0	1	10/05/18 13:13	10/11/18 13:54	319-84-6	
beta-BHC	**<2.1**	ug/kg	2.1	1.0	1	10/05/18 13:13	10/11/18 13:54	319-85-7	
delta-BHC	**<2.1**	ug/kg	2.1	1.0	1	10/05/18 13:13	10/11/18 13:54	319-86-8	
gamma-BHC (Lindane)	**<2.1**	ug/kg	2.1	1.0	1	10/05/18 13:13	10/11/18 13:54	58-89-9	
alpha-Chlordane	**<2.1**	ug/kg	2.1	1.0	1	10/05/18 13:13	10/11/18 13:54	5103-71-9	
4,4'-DDD	**<4.1**	ug/kg	4.1	2.0	1	10/05/18 13:13	10/11/18 13:54	72-54-8	
4,4'-DDE	**<4.1**	ug/kg	4.1	2.0	1	10/05/18 13:13	10/11/18 13:54	72-55-9	
4,4'-DDT	**<4.1**	ug/kg	4.1	2.0	1	10/05/18 13:13	10/11/18 13:54	50-29-3	
Dieldrin	**<4.1**	ug/kg	4.1	2.0	1	10/05/18 13:13	10/11/18 13:54	60-57-1	
Endosulfan I	**<2.1**	ug/kg	2.1	1.0	1	10/05/18 13:13	10/11/18 13:54	959-98-8	
Endosulfan II	**<4.1**	ug/kg	4.1	2.0	1	10/05/18 13:13	10/11/18 13:54	33213-65-9	
Endosulfan sulfate	**<4.1**	ug/kg	4.1	2.0	1	10/05/18 13:13	10/11/18 13:54	1031-07-8	
Endrin	**<4.1**	ug/kg	4.1	2.0	1	10/05/18 13:13	10/11/18 13:54	72-20-8	
Heptachlor	**<2.1**	ug/kg	2.1	1.0	1	10/05/18 13:13	10/11/18 13:54	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	53	%	30-150		1	10/05/18 13:13	10/11/18 13:54	877-09-8	
Decachlorobiphenyl (S)	69	%	30-150		1	10/05/18 13:13	10/11/18 13:54	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<41.1**	ug/kg	41.1	20.5	1	10/05/18 13:13	10/10/18 19:31	12674-11-2	
PCB-1221 (Aroclor 1221)	**<83.4**	ug/kg	83.4	41.7	1	10/05/18 13:13	10/10/18 19:31	11104-28-2	
PCB-1232 (Aroclor 1232)	**<41.1**	ug/kg	41.1	20.5	1	10/05/18 13:13	10/10/18 19:31	11141-16-5	
PCB-1242 (Aroclor 1242)	**<41.1**	ug/kg	41.1	20.5	1	10/05/18 13:13	10/10/18 19:31	53469-21-9	
PCB-1248 (Aroclor 1248)	**<41.1**	ug/kg	41.1	20.5	1	10/05/18 13:13	10/10/18 19:31	12672-29-6	
PCB-1254 (Aroclor 1254)	**<41.1**	ug/kg	41.1	20.5	1	10/05/18 13:13	10/10/18 19:31	11097-69-1	
PCB-1260 (Aroclor 1260)	**<41.1**	ug/kg	41.1	20.5	1	10/05/18 13:13	10/10/18 19:31	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	47	%	30-150		1	10/05/18 13:13	10/10/18 19:31	877-09-8	
Decachlorobiphenyl (S)	63	%	30-150		1	10/05/18 13:13	10/10/18 19:31	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<6.2**	ug/kg	6.2	0.33	1	10/05/18 15:43	10/08/18 23:06	93-72-1	
Surrogates									
2,4-DCAA (S)	69	%	29-136		1	10/05/18 15:43	10/08/18 23:06	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**13.4**	mg/kg	0.66	0.20	1	10/05/18 11:16	10/05/18 16:49	7440-38-2	
Barium	**81.7**	mg/kg	13.3	1.0	1	10/05/18 11:16	10/05/18 16:49	7440-39-3	
Beryllium	**0.82**	mg/kg	0.33	0.042	1	10/05/18 11:16	10/05/18 16:49	7440-41-7	
Cadmium	**0.21**	mg/kg	0.17	0.020	1	10/05/18 11:16	10/05/18 16:49	7440-43-9	
Chromium	**23.6**	mg/kg	0.66	0.064	1	10/05/18 11:16	10/05/18 16:49	7440-47-3	
Copper	**21.4**	mg/kg	1.7	0.12	1	10/05/18 11:16	10/05/18 16:49	7440-50-8	
Lead	**16.3**	mg/kg	0.33	0.16	1	10/05/18 11:16	10/05/18 16:49	7439-92-1	
Manganese	**457**	mg/kg	1.0	0.057	1	10/05/18 11:16	10/05/18 16:49	7439-96-5	

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Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-9 (13-14) **Lab ID: 7066870010** Collected: 10/03/18 15:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**37.0**	mg/kg	2.7	0.24	1	10/05/18 11:16	10/05/18 16:49	7440-02-0	
Selenium	**0.72**	mg/kg	0.66	0.35	1	10/05/18 11:16	10/05/18 16:49	7782-49-2	
Silver	**<0.66**	mg/kg	0.66	0.084	1	10/05/18 11:16	10/05/18 16:49	7440-22-4	
Zinc	**75.0**	mg/kg	1.3	0.085	1	10/05/18 11:16	10/05/18 16:49	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.043**	mg/kg	0.043	0.026	1	10/05/18 11:47	10/05/18 15:18	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<82.9**	ug/kg	82.9	12.3	1	10/05/18 09:50	10/09/18 18:44	83-32-9	
Acenaphthylene	**<82.9**	ug/kg	82.9	16.6	1	10/05/18 09:50	10/09/18 18:44	208-96-8	
Anthracene	**<82.9**	ug/kg	82.9	24.2	1	10/05/18 09:50	10/09/18 18:44	120-12-7	
Benzo(a)anthracene	**<82.9**	ug/kg	82.9	19.0	1	10/05/18 09:50	10/09/18 18:44	56-55-3	
Benzo(a)pyrene	**<82.9**	ug/kg	82.9	35.0	1	10/05/18 09:50	10/09/18 18:44	50-32-8	
Benzo(b)fluoranthene	**<82.9**	ug/kg	82.9	28.8	1	10/05/18 09:50	10/09/18 18:44	205-99-2	
Benzo(g,h,i)perylene	**<82.9**	ug/kg	82.9	40.1	1	10/05/18 09:50	10/09/18 18:44	191-24-2	
Benzo(k)fluoranthene	**<82.9**	ug/kg	82.9	25.7	1	10/05/18 09:50	10/09/18 18:44	207-08-9	
Chrysene	**<82.9**	ug/kg	82.9	37.2	1	10/05/18 09:50	10/09/18 18:44	218-01-9	
Dibenz(a,h)anthracene	**<82.9**	ug/kg	82.9	27.1	1	10/05/18 09:50	10/09/18 18:44	53-70-3	
Dibenzofuran	**<82.9**	ug/kg	82.9	15.0	1	10/05/18 09:50	10/09/18 18:44	132-64-9	
Fluoranthene	**<82.9**	ug/kg	82.9	69.7	1	10/05/18 09:50	10/09/18 18:44	206-44-0	
Fluorene	**<82.9**	ug/kg	82.9	21.1	1	10/05/18 09:50	10/09/18 18:44	86-73-7	
Hexachlorobenzene	**<82.9**	ug/kg	82.9	16.4	1	10/05/18 09:50	10/09/18 18:44	118-74-1	
Indeno(1,2,3-cd)pyrene	**<82.9**	ug/kg	82.9	31.7	1	10/05/18 09:50	10/09/18 18:44	193-39-5	
2-Methylphenol(o-Cresol)	**<82.9**	ug/kg	82.9	46.0	1	10/05/18 09:50	10/09/18 18:44	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<82.9**	ug/kg	82.9	29.9	1	10/05/18 09:50	10/09/18 18:44		
Naphthalene	**<82.9**	ug/kg	82.9	9.2	1	10/05/18 09:50	10/09/18 18:44	91-20-3	
Pentachlorophenol	**<829**	ug/kg	829	8.4	1	10/05/18 09:50	10/09/18 18:44	87-86-5	
Phenanthrene	**<82.9**	ug/kg	82.9	26.7	1	10/05/18 09:50	10/09/18 18:44	85-01-8	
Phenol	**<82.9**	ug/kg	82.9	15.8	1	10/05/18 09:50	10/09/18 18:44	108-95-2	
Pyrene	**<82.9**	ug/kg	82.9	39.3	1	10/05/18 09:50	10/09/18 18:44	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	36	%	23-120		1	10/05/18 09:50	10/09/18 18:44	4165-60-0	
2-Fluorobiphenyl (S)	40	%	30-115		1	10/05/18 09:50	10/09/18 18:44	321-60-8	
p-Terphenyl-d14 (S)	71	%	18-137		1	10/05/18 09:50	10/09/18 18:44	1718-51-0	
Phenol-d5 (S)	40	%	24-113		1	10/05/18 09:50	10/09/18 18:44	4165-62-2	
2-Fluorophenol (S)	42	%	25-121		1	10/05/18 09:50	10/09/18 18:44	367-12-4	
2,4,6-Tribromophenol (S)	42	%	19-122		1	10/05/18 09:50	10/09/18 18:44	118-79-6	CH
2-Chlorophenol-d4 (S)	38	%	20-130		1	10/05/18 09:50	10/09/18 18:44	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	34	%	20-130		1	10/05/18 09:50	10/09/18 18:44	2199-69-1	
Tentatively Identified Compounds									
Trichloroethylene	**1030J**	ug/kg			1	10/05/18 09:50	10/09/18 18:44	79-01-6	N
Unknown Ketone	**178J**	ug/kg			1	10/05/18 09:50	10/09/18 18:44		
Unknown Ketone	**3960J**	ug/kg			1	10/05/18 09:50	10/09/18 18:44		
Unknown Ketone	**283J**	ug/kg			1	10/05/18 09:50	10/09/18 18:44		

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-9 (13-14) **Lab ID: 7066870010** Collected: 10/03/18 15:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Aldol Condensate	**46900J**	ug/kg			1	10/05/18 09:50	10/09/18 18:44		
Unknown Aldol Condensate	**688J**	ug/kg			1	10/05/18 09:50	10/09/18 18:44		
Unknown Ketone	**1760J**	ug/kg			1	10/05/18 09:50	10/09/18 18:44		
Unknown Organic Acid	**596J**	ug/kg			1	10/05/18 09:50	10/09/18 18:44		
Unknown Amide	**255J**	ug/kg			1	10/05/18 09:50	10/09/18 18:44		
8260 MSV 5035A-H Med Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-H/5030C								
Acetone	**<97.7**	ug/kg	97.7	35.0	1	10/11/18 08:40	10/11/18 13:56	67-64-1	
Benzene	**<97.7**	ug/kg	97.7	5.6	1	10/11/18 08:40	10/11/18 13:56	71-43-2	
2-Butanone (MEK)	**<97.7**	ug/kg	97.7	9.7	1	10/11/18 08:40	10/11/18 13:56	78-93-3	CL
n-Butylbenzene	**<97.7**	ug/kg	97.7	9.3	1	10/11/18 08:40	10/11/18 13:56	104-51-8	
sec-Butylbenzene	**<97.7**	ug/kg	97.7	5.0	1	10/11/18 08:40	10/11/18 13:56	135-98-8	
tert-Butylbenzene	**<97.7**	ug/kg	97.7	5.1	1	10/11/18 08:40	10/11/18 13:56	98-06-6	
Carbon tetrachloride	**<97.7**	ug/kg	97.7	27.2	1	10/11/18 08:40	10/11/18 13:56	56-23-5	
Chlorobenzene	**<97.7**	ug/kg	97.7	6.1	1	10/11/18 08:40	10/11/18 13:56	108-90-7	
Chloroform	**<97.7**	ug/kg	97.7	6.5	1	10/11/18 08:40	10/11/18 13:56	67-66-3	
1,2-Dichlorobenzene	**<97.7**	ug/kg	97.7	4.9	1	10/11/18 08:40	10/11/18 13:56	95-50-1	
1,3-Dichlorobenzene	**<97.7**	ug/kg	97.7	8.0	1	10/11/18 08:40	10/11/18 13:56	541-73-1	
1,4-Dichlorobenzene	**<97.7**	ug/kg	97.7	7.0	1	10/11/18 08:40	10/11/18 13:56	106-46-7	
1,1-Dichloroethane	**<97.7**	ug/kg	97.7	5.1	1	10/11/18 08:40	10/11/18 13:56	75-34-3	
1,2-Dichloroethane	**<97.7**	ug/kg	97.7	48.8	1	10/11/18 08:40	10/11/18 13:56	107-06-2	
1,1-Dichloroethene	**<97.7**	ug/kg	97.7	14.3	1	10/11/18 08:40	10/11/18 13:56	75-35-4	
cis-1,2-Dichloroethene	**3150**	ug/kg	97.7	8.4	1	10/11/18 08:40	10/11/18 13:56	156-59-2	
trans-1,2-Dichloroethene	**<97.7**	ug/kg	97.7	16.5	1	10/11/18 08:40	10/11/18 13:56	156-60-5	
1,4-Dioxane (p-Dioxane)	**<2440**	ug/kg	2440	1220	1	10/11/18 08:40	10/11/18 13:56	123-91-1	
Ethylbenzene	**<97.7**	ug/kg	97.7	8.9	1	10/11/18 08:40	10/11/18 13:56	100-41-4	
Methylene Chloride	**<97.7**	ug/kg	97.7	23.3	1	10/11/18 08:40	10/11/18 13:56	75-09-2	
Methyl-tert-butyl ether	**<97.7**	ug/kg	97.7	9.6	1	10/11/18 08:40	10/11/18 13:56	1634-04-4	
n-Propylbenzene	**<97.7**	ug/kg	97.7	5.8	1	10/11/18 08:40	10/11/18 13:56	103-65-1	
Tetrachloroethene	**80.5J**	ug/kg	97.7	11.1	1	10/11/18 08:40	10/11/18 13:56	127-18-4	
Toluene	**<97.7**	ug/kg	97.7	7.3	1	10/11/18 08:40	10/11/18 13:56	108-88-3	
1,1,1-Trichloroethane	**<97.7**	ug/kg	97.7	22.7	1	10/11/18 08:40	10/11/18 13:56	71-55-6	
Trichloroethene	**58700**	ug/kg	1950	182	20	10/11/18 08:40	10/11/18 14:19	79-01-6	
1,2,4-Trimethylbenzene	**<97.7**	ug/kg	97.7	7.7	1	10/11/18 08:40	10/11/18 13:56	95-63-6	
1,3,5-Trimethylbenzene	**<97.7**	ug/kg	97.7	5.1	1	10/11/18 08:40	10/11/18 13:56	108-67-8	
Vinyl chloride	**<97.7**	ug/kg	97.7	11.0	1	10/11/18 08:40	10/11/18 13:56	75-01-4	
Xylene (Total)	**<195**	ug/kg	195	97.7	1	10/11/18 08:40	10/11/18 13:56	1330-20-7	
m&p-Xylene	**<195**	ug/kg	195	11.4	1	10/11/18 08:40	10/11/18 13:56	179601-23-1	
o-Xylene	**<97.7**	ug/kg	97.7	6.6	1	10/11/18 08:40	10/11/18 13:56	95-47-6	
Surrogates									
Toluene-d8 (S)	104	%	43-157		1	10/11/18 08:40	10/11/18 13:56	2037-26-5	
4-Bromofluorobenzene (S)	99	%	34-145		1	10/11/18 08:40	10/11/18 13:56	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	33-150		1	10/11/18 08:40	10/11/18 13:56	17060-07-0	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-9 (13-14) **Lab ID: 7066870010** Collected: 10/03/18 15:00 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A-H Med Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-H/5030C								
Tentatively Identified Compounds									
Unknown	**250J**	ug/kg			1	10/11/18 08:40	10/11/18 13:56		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**19.6**	%	0.10	0.10	1		10/04/18 14:58		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.2**	mg/kg	1.2	0.27	1	10/09/18 06:56	10/09/18 11:54	18540-29-9	
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**23.6**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**0.30J**	mg/kg	0.62	0.18	1	10/10/18 07:45	10/10/18 13:55	57-12-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-11 (0-4) **Lab ID: 7066870011** Collected: 10/03/18 15:50 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<1.9**	ug/kg	1.9	0.95	1	10/05/18 13:13	10/11/18 15:23	309-00-2	
alpha-BHC	**<1.9**	ug/kg	1.9	0.95	1	10/05/18 13:13	10/11/18 15:23	319-84-6	
beta-BHC	**<1.9**	ug/kg	1.9	0.95	1	10/05/18 13:13	10/11/18 15:23	319-85-7	
delta-BHC	**<1.9**	ug/kg	1.9	0.95	1	10/05/18 13:13	10/11/18 15:23	319-86-8	
gamma-BHC (Lindane)	**<1.9**	ug/kg	1.9	0.95	1	10/05/18 13:13	10/11/18 15:23	58-89-9	
alpha-Chlordane	**<1.9**	ug/kg	1.9	0.95	1	10/05/18 13:13	10/11/18 15:23	5103-71-9	
4,4'-DDD	**<3.7**	ug/kg	3.7	1.8	1	10/05/18 13:13	10/11/18 15:23	72-54-8	
4,4'-DDE	**<3.7**	ug/kg	3.7	1.8	1	10/05/18 13:13	10/11/18 15:23	72-55-9	
4,4'-DDT	**<3.7**	ug/kg	3.7	1.8	1	10/05/18 13:13	10/11/18 15:23	50-29-3	CL
Dieldrin	**<3.7**	ug/kg	3.7	1.8	1	10/05/18 13:13	10/11/18 15:23	60-57-1	
Endosulfan I	**<1.9**	ug/kg	1.9	0.95	1	10/05/18 13:13	10/11/18 15:23	959-98-8	
Endosulfan II	**<3.7**	ug/kg	3.7	1.8	1	10/05/18 13:13	10/11/18 15:23	33213-65-9	
Endosulfan sulfate	**<3.7**	ug/kg	3.7	1.8	1	10/05/18 13:13	10/11/18 15:23	1031-07-8	
Endrin	**<3.7**	ug/kg	3.7	1.8	1	10/05/18 13:13	10/11/18 15:23	72-20-8	
Heptachlor	**<1.9**	ug/kg	1.9	0.95	1	10/05/18 13:13	10/11/18 15:23	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	85	%	30-150		1	10/05/18 13:13	10/11/18 15:23	877-09-8	
Decachlorobiphenyl (S)	97	%	30-150		1	10/05/18 13:13	10/11/18 15:23	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<36.8**	ug/kg	36.8	18.4	1	10/05/18 13:13	10/11/18 15:34	12674-11-2	
PCB-1221 (Aroclor 1221)	**<74.7**	ug/kg	74.7	37.4	1	10/05/18 13:13	10/11/18 15:34	11104-28-2	
PCB-1232 (Aroclor 1232)	**<36.8**	ug/kg	36.8	18.4	1	10/05/18 13:13	10/11/18 15:34	11141-16-5	
PCB-1242 (Aroclor 1242)	**<36.8**	ug/kg	36.8	18.4	1	10/05/18 13:13	10/11/18 15:34	53469-21-9	
PCB-1248 (Aroclor 1248)	**46.7**	ug/kg	36.8	18.4	1	10/05/18 13:13	10/11/18 15:34	12672-29-6	
PCB-1254 (Aroclor 1254)	**<36.8**	ug/kg	36.8	18.4	1	10/05/18 13:13	10/11/18 15:34	11097-69-1	
PCB-1260 (Aroclor 1260)	**<36.8**	ug/kg	36.8	18.4	1	10/05/18 13:13	10/11/18 15:34	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	49	%	30-150		1	10/05/18 13:13	10/11/18 15:34	877-09-8	
Decachlorobiphenyl (S)	68	%	30-150		1	10/05/18 13:13	10/11/18 15:34	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<5.6**	ug/kg	5.6	0.29	1	10/05/18 15:43	10/09/18 01:57	93-72-1	
Surrogates									
2,4-DCAA (S)	113	%	29-136		1	10/05/18 15:43	10/09/18 01:57	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**23.3**	mg/kg	0.60	0.18	1	10/05/18 11:16	10/05/18 16:50	7440-38-2	
Barium	**858**	mg/kg	12.1	0.92	1	10/05/18 11:16	10/05/18 16:50	7440-39-3	
Beryllium	**0.58**	mg/kg	0.30	0.039	1	10/05/18 11:16	10/05/18 16:50	7440-41-7	
Cadmium	**1.8**	mg/kg	0.15	0.018	1	10/05/18 11:16	10/05/18 16:50	7440-43-9	
Chromium	**30.7**	mg/kg	0.60	0.058	1	10/05/18 11:16	10/05/18 16:50	7440-47-3	
Copper	**1500**	mg/kg	1.5	0.11	1	10/05/18 11:16	10/05/18 16:50	7440-50-8	
Lead	**132**	mg/kg	0.30	0.14	1	10/05/18 11:16	10/05/18 16:50	7439-92-1	
Manganese	**346**	mg/kg	0.91	0.052	1	10/05/18 11:16	10/05/18 16:50	7439-96-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-11 (0-4) **Lab ID: 7066870011** Collected: 10/03/18 15:50 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**38.1**	mg/kg	2.4	0.22	1	10/05/18 11:16	10/05/18 16:50	7440-02-0	
Selenium	**1.1**	mg/kg	0.60	0.32	1	10/05/18 11:16	10/05/18 16:50	7782-49-2	
Silver	**<0.60**	mg/kg	0.60	0.076	1	10/05/18 11:16	10/05/18 16:50	7440-22-4	
Zinc	**997**	mg/kg	1.2	0.077	1	10/05/18 11:16	10/05/18 16:50	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.15**	mg/kg	0.033	0.020	1	10/05/18 11:47	10/05/18 15:20	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<371**	ug/kg	371	55.1	5	10/05/18 09:50	10/10/18 12:13	83-32-9	
Acenaphthylene	**<371**	ug/kg	371	74.3	5	10/05/18 09:50	10/10/18 12:13	208-96-8	
Anthracene	**<371**	ug/kg	371	109	5	10/05/18 09:50	10/10/18 12:13	120-12-7	
Benzo(a)anthracene	**223J**	ug/kg	371	85.1	5	10/05/18 09:50	10/10/18 12:13	56-55-3	
Benzo(a)pyrene	**<371**	ug/kg	371	157	5	10/05/18 09:50	10/10/18 12:13	50-32-8	
Benzo(b)fluoranthene	**264J**	ug/kg	371	129	5	10/05/18 09:50	10/10/18 12:13	205-99-2	
Benzo(g,h,i)perylene	**<371**	ug/kg	371	180	5	10/05/18 09:50	10/10/18 12:13	191-24-2	
Benzo(k)fluoranthene	**<371**	ug/kg	371	115	5	10/05/18 09:50	10/10/18 12:13	207-08-9	
Chrysene	**309J**	ug/kg	371	166	5	10/05/18 09:50	10/10/18 12:13	218-01-9	
Dibenz(a,h)anthracene	**<371**	ug/kg	371	121	5	10/05/18 09:50	10/10/18 12:13	53-70-3	
Dibenzofuran	**<371**	ug/kg	371	67.3	5	10/05/18 09:50	10/10/18 12:13	132-64-9	
Fluoranthene	**<371**	ug/kg	371	312	5	10/05/18 09:50	10/10/18 12:13	206-44-0	
Fluorene	**<371**	ug/kg	371	94.3	5	10/05/18 09:50	10/10/18 12:13	86-73-7	
Hexachlorobenzene	**<371**	ug/kg	371	73.5	5	10/05/18 09:50	10/10/18 12:13	118-74-1	
Indeno(1,2,3-cd)pyrene	**<371**	ug/kg	371	142	5	10/05/18 09:50	10/10/18 12:13	193-39-5	
2-Methylphenol(o-Cresol)	**<371**	ug/kg	371	206	5	10/05/18 09:50	10/10/18 12:13	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<371**	ug/kg	371	134	5	10/05/18 09:50	10/10/18 12:13		
Naphthalene	**227J**	ug/kg	371	41.0	5	10/05/18 09:50	10/10/18 12:13	91-20-3	
Pentachlorophenol	**<3710**	ug/kg	3710	37.4	5	10/05/18 09:50	10/10/18 12:13	87-86-5	
Phenanthrene	**472**	ug/kg	371	120	5	10/05/18 09:50	10/10/18 12:13	85-01-8	
Phenol	**<371**	ug/kg	371	70.8	5	10/05/18 09:50	10/10/18 12:13	108-95-2	
Pyrene	**293J**	ug/kg	371	176	5	10/05/18 09:50	10/10/18 12:13	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	71	%	23-120		5	10/05/18 09:50	10/10/18 12:13	4165-60-0	
2-Fluorobiphenyl (S)	77	%	30-115		5	10/05/18 09:50	10/10/18 12:13	321-60-8	
p-Terphenyl-d14 (S)	99	%	18-137		5	10/05/18 09:50	10/10/18 12:13	1718-51-0	
Phenol-d5 (S)	71	%	24-113		5	10/05/18 09:50	10/10/18 12:13	4165-62-2	
2-Fluorophenol (S)	68	%	25-121		5	10/05/18 09:50	10/10/18 12:13	367-12-4	
2,4,6-Tribromophenol (S)	104	%	19-122		5	10/05/18 09:50	10/10/18 12:13	118-79-6	CH
2-Chlorophenol-d4 (S)	68	%	20-130		5	10/05/18 09:50	10/10/18 12:13	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	63	%	20-130		5	10/05/18 09:50	10/10/18 12:13	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**6360J**	ug/kg			5	10/05/18 09:50	10/10/18 12:13		
Unknown Ketone	**765J**	ug/kg			5	10/05/18 09:50	10/10/18 12:13		
Unknown Ketone	**84800J**	ug/kg			5	10/05/18 09:50	10/10/18 12:13		
Unknown Aldol Condensate	**1440J**	ug/kg			5	10/05/18 09:50	10/10/18 12:13		

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-11 (0-4) **Lab ID: 7066870011** Collected: 10/03/18 15:50 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown	**3050J**	ug/kg			5	10/05/18 09:50	10/10/18 12:13		
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<8.6**	ug/kg	8.6	8.5	1	10/11/18 08:27	10/11/18 11:33	67-64-1	
Benzene	**<8.6**	ug/kg	8.6	3.4	1	10/11/18 08:27	10/11/18 11:33	71-43-2	
2-Butanone (MEK)	**<8.6**	ug/kg	8.6	5.4	1	10/11/18 08:27	10/11/18 11:33	78-93-3	
n-Butylbenzene	**<8.6**	ug/kg	8.6	3.5	1	10/11/18 08:27	10/11/18 11:33	104-51-8	
sec-Butylbenzene	**<8.6**	ug/kg	8.6	3.4	1	10/11/18 08:27	10/11/18 11:33	135-98-8	
tert-Butylbenzene	**<8.6**	ug/kg	8.6	4.3	1	10/11/18 08:27	10/11/18 11:33	98-06-6	
Carbon tetrachloride	**<8.6**	ug/kg	8.6	5.4	1	10/11/18 08:27	10/11/18 11:33	56-23-5	
Chlorobenzene	**<8.6**	ug/kg	8.6	3.6	1	10/11/18 08:27	10/11/18 11:33	108-90-7	
Chloroform	**<8.6**	ug/kg	8.6	2.4	1	10/11/18 08:27	10/11/18 11:33	67-66-3	
1,2-Dichlorobenzene	**<8.6**	ug/kg	8.6	3.5	1	10/11/18 08:27	10/11/18 11:33	95-50-1	
1,3-Dichlorobenzene	**<8.6**	ug/kg	8.6	3.5	1	10/11/18 08:27	10/11/18 11:33	541-73-1	
1,4-Dichlorobenzene	**<8.6**	ug/kg	8.6	3.6	1	10/11/18 08:27	10/11/18 11:33	106-46-7	
1,1-Dichloroethane	**<8.6**	ug/kg	8.6	3.4	1	10/11/18 08:27	10/11/18 11:33	75-34-3	
1,2-Dichloroethane	**<8.6**	ug/kg	8.6	2.1	1	10/11/18 08:27	10/11/18 11:33	107-06-2	
1,1-Dichloroethene	**<8.6**	ug/kg	8.6	3.3	1	10/11/18 08:27	10/11/18 11:33	75-35-4	
cis-1,2-Dichloroethene	**<8.6**	ug/kg	8.6	3.2	1	10/11/18 08:27	10/11/18 11:33	156-59-2	
trans-1,2-Dichloroethene	**<8.6**	ug/kg	8.6	2.5	1	10/11/18 08:27	10/11/18 11:33	156-60-5	
1,4-Dioxane (p-Dioxane)	**<216**	ug/kg	216	128	1	10/11/18 08:27	10/11/18 11:33	123-91-1	
Ethylbenzene	**<8.6**	ug/kg	8.6	3.3	1	10/11/18 08:27	10/11/18 11:33	100-41-4	
Methylene Chloride	**<8.6**	ug/kg	8.6	3.9	1	10/11/18 08:27	10/11/18 11:33	75-09-2	
Methyl-tert-butyl ether	**<8.6**	ug/kg	8.6	1.9	1	10/11/18 08:27	10/11/18 11:33	1634-04-4	
n-Propylbenzene	**<8.6**	ug/kg	8.6	3.6	1	10/11/18 08:27	10/11/18 11:33	103-65-1	
Tetrachloroethene	**<8.6**	ug/kg	8.6	4.4	1	10/11/18 08:27	10/11/18 11:33	127-18-4	
Toluene	**<8.6**	ug/kg	8.6	4.0	1	10/11/18 08:27	10/11/18 11:33	108-88-3	
1,2,4-Trichlorobenzene	**<8.6**	ug/kg	8.6	3.5	1	10/11/18 08:27	10/11/18 11:33	120-82-1	
1,1,1-Trichloroethane	**<8.6**	ug/kg	8.6	4.5	1	10/11/18 08:27	10/11/18 11:33	71-55-6	
Trichloroethene	**137**	ug/kg	8.6	3.6	1	10/11/18 08:27	10/11/18 11:33	79-01-6	
1,2,4-Trimethylbenzene	**<8.6**	ug/kg	8.6	3.7	1	10/11/18 08:27	10/11/18 11:33	95-63-6	
1,3,5-Trimethylbenzene	**<8.6**	ug/kg	8.6	3.3	1	10/11/18 08:27	10/11/18 11:33	108-67-8	
Vinyl chloride	**<8.6**	ug/kg	8.6	1.9	1	10/11/18 08:27	10/11/18 11:33	75-01-4	
Xylene (Total)	**<17.3**	ug/kg	17.3	8.6	1	10/11/18 08:27	10/11/18 11:33	1330-20-7	
m&p-Xylene	**<17.3**	ug/kg	17.3	8.4	1	10/11/18 08:27	10/11/18 11:33	179601-23-1	
o-Xylene	**<8.6**	ug/kg	8.6	3.7	1	10/11/18 08:27	10/11/18 11:33	95-47-6	
Surrogates									
Toluene-d8 (S)	101	%	43-157		1	10/11/18 08:27	10/11/18 11:33	2037-26-5	
4-Bromofluorobenzene (S)	99	%	34-145		1	10/11/18 08:27	10/11/18 11:33	460-00-4	
1,2-Dichloroethane-d4 (S)	144	%	33-150		1	10/11/18 08:27	10/11/18 11:33	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/11/18 16:22		

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-11 (0-4) **Lab ID: 7066870011** Collected: 10/03/18 15:50 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**10.3**	%	0.10	0.10	1		10/04/18 14:58		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.1**	mg/kg	1.1	0.24	1	10/09/18 06:56	10/09/18 11:54	18540-29-9	
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**30.7**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**0.67**	mg/kg	0.56	0.16	1	10/10/18 07:45	10/10/18 13:56	57-12-5	

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-12 (0-4) **Lab ID: 7066870012** Collected: 10/03/18 16:20 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 17:21	309-00-2	
alpha-BHC	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 17:21	319-84-6	
beta-BHC	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 17:21	319-85-7	
delta-BHC	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 17:21	319-86-8	
gamma-BHC (Lindane)	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 17:21	58-89-9	
alpha-Chlordane	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 17:21	5103-71-9	
4,4'-DDD	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 17:21	72-54-8	
4,4'-DDE	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 17:21	72-55-9	
4,4'-DDT	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 17:21	50-29-3	CL
Dieldrin	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 17:21	60-57-1	
Endosulfan I	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 17:21	959-98-8	
Endosulfan II	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 17:21	33213-65-9	
Endosulfan sulfate	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 17:21	1031-07-8	
Endrin	**<3.7**	ug/kg	3.7	1.9	1	10/05/18 13:13	10/11/18 17:21	72-20-8	
Heptachlor	**<1.9**	ug/kg	1.9	0.96	1	10/05/18 13:13	10/11/18 17:21	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	58	%	30-150		1	10/05/18 13:13	10/11/18 17:21	877-09-8	
Decachlorobiphenyl (S)	63	%	30-150		1	10/05/18 13:13	10/11/18 17:21	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<37.5**	ug/kg	37.5	18.8	1	10/05/18 13:13	10/10/18 21:14	12674-11-2	
PCB-1221 (Aroclor 1221)	**<76.2**	ug/kg	76.2	38.1	1	10/05/18 13:13	10/10/18 21:14	11104-28-2	
PCB-1232 (Aroclor 1232)	**<37.5**	ug/kg	37.5	18.8	1	10/05/18 13:13	10/10/18 21:14	11141-16-5	
PCB-1242 (Aroclor 1242)	**<37.5**	ug/kg	37.5	18.8	1	10/05/18 13:13	10/10/18 21:14	53469-21-9	
PCB-1248 (Aroclor 1248)	**<37.5**	ug/kg	37.5	18.8	1	10/05/18 13:13	10/10/18 21:14	12672-29-6	
PCB-1254 (Aroclor 1254)	**<37.5**	ug/kg	37.5	18.8	1	10/05/18 13:13	10/10/18 21:14	11097-69-1	
PCB-1260 (Aroclor 1260)	**<37.5**	ug/kg	37.5	18.8	1	10/05/18 13:13	10/10/18 21:14	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	65	%	30-150		1	10/05/18 13:13	10/10/18 21:14	877-09-8	
Decachlorobiphenyl (S)	79	%	30-150		1	10/05/18 13:13	10/10/18 21:14	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<5.7**	ug/kg	5.7	0.30	1	10/05/18 15:43	10/09/18 05:09	93-72-1	
Surrogates									
2,4-DCAA (S)	77	%	29-136		1	10/05/18 15:43	10/09/18 05:09	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**6.9**	mg/kg	0.61	0.19	1	10/05/18 11:16	10/05/18 16:51	7440-38-2	
Barium	**45.7**	mg/kg	12.2	0.93	1	10/05/18 11:16	10/05/18 16:51	7440-39-3	
Beryllium	**0.65**	mg/kg	0.31	0.039	1	10/05/18 11:16	10/05/18 16:51	7440-41-7	
Cadmium	**0.71**	mg/kg	0.15	0.018	1	10/05/18 11:16	10/05/18 16:51	7440-43-9	
Chromium	**8.1**	mg/kg	0.61	0.059	1	10/05/18 11:16	10/05/18 16:51	7440-47-3	
Copper	**533**	mg/kg	1.5	0.11	1	10/05/18 11:16	10/05/18 16:51	7440-50-8	
Lead	**9.9**	mg/kg	0.31	0.14	1	10/05/18 11:16	10/05/18 16:51	7439-92-1	
Manganese	**107**	mg/kg	0.92	0.053	1	10/05/18 11:16	10/05/18 16:51	7439-96-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-12 (0-4) **Lab ID: 7066870012** Collected: 10/03/18 16:20 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**22.0**	mg/kg	2.4	0.22	1	10/05/18 11:16	10/05/18 16:51	7440-02-0	
Selenium	**<0.61**	mg/kg	0.61	0.32	1	10/05/18 11:16	10/05/18 16:51	7782-49-2	
Silver	**<0.61**	mg/kg	0.61	0.077	1	10/05/18 11:16	10/05/18 16:51	7440-22-4	
Zinc	**94.6**	mg/kg	1.2	0.078	1	10/05/18 11:16	10/05/18 16:51	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.041**	mg/kg	0.041	0.025	1	10/05/18 11:47	10/05/18 15:22	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<380**	ug/kg	380	56.4	5	10/05/18 09:50	10/11/18 14:13	83-32-9	
Acenaphthylene	**<380**	ug/kg	380	76.0	5	10/05/18 09:50	10/11/18 14:13	208-96-8	
Anthracene	**<380**	ug/kg	380	111	5	10/05/18 09:50	10/11/18 14:13	120-12-7	
Benzo(a)anthracene	**<380**	ug/kg	380	87.0	5	10/05/18 09:50	10/11/18 14:13	56-55-3	
Benzo(a)pyrene	**<380**	ug/kg	380	161	5	10/05/18 09:50	10/11/18 14:13	50-32-8	
Benzo(b)fluoranthene	**<380**	ug/kg	380	132	5	10/05/18 09:50	10/11/18 14:13	205-99-2	
Benzo(g,h,i)perylene	**<380**	ug/kg	380	184	5	10/05/18 09:50	10/11/18 14:13	191-24-2	R1
Benzo(k)fluoranthene	**<380**	ug/kg	380	118	5	10/05/18 09:50	10/11/18 14:13	207-08-9	
Chrysene	**<380**	ug/kg	380	170	5	10/05/18 09:50	10/11/18 14:13	218-01-9	
Dibenz(a,h)anthracene	**<380**	ug/kg	380	124	5	10/05/18 09:50	10/11/18 14:13	53-70-3	M6,R1
Dibenzofuran	**<380**	ug/kg	380	68.8	5	10/05/18 09:50	10/11/18 14:13	132-64-9	
Fluoranthene	**<380**	ug/kg	380	319	5	10/05/18 09:50	10/11/18 14:13	206-44-0	
Fluorene	**<380**	ug/kg	380	96.5	5	10/05/18 09:50	10/11/18 14:13	86-73-7	
Hexachlorobenzene	**<380**	ug/kg	380	75.2	5	10/05/18 09:50	10/11/18 14:13	118-74-1	
Indeno(1,2,3-cd)pyrene	**<380**	ug/kg	380	145	5	10/05/18 09:50	10/11/18 14:13	193-39-5	M6
2-Methylphenol(o-Cresol)	**<380**	ug/kg	380	211	5	10/05/18 09:50	10/11/18 14:13	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<380**	ug/kg	380	137	5	10/05/18 09:50	10/11/18 14:13		
Naphthalene	**<380**	ug/kg	380	42.0	5	10/05/18 09:50	10/11/18 14:13	91-20-3	
Pentachlorophenol	**<3800**	ug/kg	3800	38.3	5	10/05/18 09:50	10/11/18 14:13	87-86-5	
Phenanthrene	**<380**	ug/kg	380	122	5	10/05/18 09:50	10/11/18 14:13	85-01-8	
Phenol	**<380**	ug/kg	380	72.5	5	10/05/18 09:50	10/11/18 14:13	108-95-2	
Pyrene	**<380**	ug/kg	380	180	5	10/05/18 09:50	10/11/18 14:13	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	67	%	23-120		5	10/05/18 09:50	10/11/18 14:13	4165-60-0	
2-Fluorobiphenyl (S)	73	%	30-115		5	10/05/18 09:50	10/11/18 14:13	321-60-8	
p-Terphenyl-d14 (S)	79	%	18-137		5	10/05/18 09:50	10/11/18 14:13	1718-51-0	
Phenol-d5 (S)	63	%	24-113		5	10/05/18 09:50	10/11/18 14:13	4165-62-2	
2-Fluorophenol (S)	52	%	25-121		5	10/05/18 09:50	10/11/18 14:13	367-12-4	
2,4,6-Tribromophenol (S)	81	%	19-122		5	10/05/18 09:50	10/11/18 14:13	118-79-6	CH
2-Chlorophenol-d4 (S)	59	%	20-130		5	10/05/18 09:50	10/11/18 14:13	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	63	%	20-130		5	10/05/18 09:50	10/11/18 14:13	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**5230J**	ug/kg			5	10/05/18 09:50	10/11/18 14:13		
Unknown Ketone	**996J**	ug/kg			5	10/05/18 09:50	10/11/18 14:13		
Unknown Ketone	**76100J**	ug/kg			5	10/05/18 09:50	10/11/18 14:13		
Unknown Aldol Condensate	**1510J**	ug/kg			5	10/05/18 09:50	10/11/18 14:13		

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-12 (0-4) **Lab ID: 7066870012** Collected: 10/03/18 16:20 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Ketone	**2260J**	ug/kg			5	10/05/18 09:50	10/11/18 14:13		
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<8.2**	ug/kg	8.2	8.1	1	10/11/18 08:27	10/11/18 11:58	67-64-1	
Benzene	**<8.2**	ug/kg	8.2	3.2	1	10/11/18 08:27	10/11/18 11:58	71-43-2	
2-Butanone (MEK)	**<8.2**	ug/kg	8.2	5.1	1	10/11/18 08:27	10/11/18 11:58	78-93-3	
n-Butylbenzene	**<8.2**	ug/kg	8.2	3.3	1	10/11/18 08:27	10/11/18 11:58	104-51-8	
sec-Butylbenzene	**<8.2**	ug/kg	8.2	3.3	1	10/11/18 08:27	10/11/18 11:58	135-98-8	
tert-Butylbenzene	**<8.2**	ug/kg	8.2	4.1	1	10/11/18 08:27	10/11/18 11:58	98-06-6	
Carbon tetrachloride	**<8.2**	ug/kg	8.2	5.2	1	10/11/18 08:27	10/11/18 11:58	56-23-5	
Chlorobenzene	**<8.2**	ug/kg	8.2	3.4	1	10/11/18 08:27	10/11/18 11:58	108-90-7	
Chloroform	**<8.2**	ug/kg	8.2	2.3	1	10/11/18 08:27	10/11/18 11:58	67-66-3	
1,2-Dichlorobenzene	**<8.2**	ug/kg	8.2	3.4	1	10/11/18 08:27	10/11/18 11:58	95-50-1	
1,3-Dichlorobenzene	**<8.2**	ug/kg	8.2	3.4	1	10/11/18 08:27	10/11/18 11:58	541-73-1	
1,4-Dichlorobenzene	**<8.2**	ug/kg	8.2	3.4	1	10/11/18 08:27	10/11/18 11:58	106-46-7	
1,1-Dichloroethane	**<8.2**	ug/kg	8.2	3.3	1	10/11/18 08:27	10/11/18 11:58	75-34-3	
1,2-Dichloroethane	**<8.2**	ug/kg	8.2	2.0	1	10/11/18 08:27	10/11/18 11:58	107-06-2	
1,1-Dichloroethene	**<8.2**	ug/kg	8.2	3.2	1	10/11/18 08:27	10/11/18 11:58	75-35-4	
cis-1,2-Dichloroethene	**6.0J**	ug/kg	8.2	3.1	1	10/11/18 08:27	10/11/18 11:58	156-59-2	
trans-1,2-Dichloroethene	**<8.2**	ug/kg	8.2	2.4	1	10/11/18 08:27	10/11/18 11:58	156-60-5	
1,4-Dioxane (p-Dioxane)	**<206**	ug/kg	206	122	1	10/11/18 08:27	10/11/18 11:58	123-91-1	
Ethylbenzene	**<8.2**	ug/kg	8.2	3.1	1	10/11/18 08:27	10/11/18 11:58	100-41-4	
Methylene Chloride	**15.6**	ug/kg	8.2	3.7	1	10/11/18 08:27	10/11/18 11:58	75-09-2	
Methyl-tert-butyl ether	**<8.2**	ug/kg	8.2	1.8	1	10/11/18 08:27	10/11/18 11:58	1634-04-4	
n-Propylbenzene	**<8.2**	ug/kg	8.2	3.4	1	10/11/18 08:27	10/11/18 11:58	103-65-1	
Tetrachloroethene	**19.2**	ug/kg	8.2	4.2	1	10/11/18 08:27	10/11/18 11:58	127-18-4	CH
Toluene	**<8.2**	ug/kg	8.2	3.8	1	10/11/18 08:27	10/11/18 11:58	108-88-3	
1,2,4-Trichlorobenzene	**<8.2**	ug/kg	8.2	3.3	1	10/11/18 08:27	10/11/18 11:58	120-82-1	
1,1,1-Trichloroethane	**<8.2**	ug/kg	8.2	4.3	1	10/11/18 08:27	10/11/18 11:58	71-55-6	
Trichloroethene	**385**	ug/kg	8.2	3.4	1	10/11/18 08:27	10/11/18 11:58	79-01-6	
1,2,4-Trimethylbenzene	**<8.2**	ug/kg	8.2	3.6	1	10/11/18 08:27	10/11/18 11:58	95-63-6	
1,3,5-Trimethylbenzene	**<8.2**	ug/kg	8.2	3.2	1	10/11/18 08:27	10/11/18 11:58	108-67-8	
Vinyl chloride	**<8.2**	ug/kg	8.2	1.8	1	10/11/18 08:27	10/11/18 11:58	75-01-4	
Xylene (Total)	**<16.5**	ug/kg	16.5	8.2	1	10/11/18 08:27	10/11/18 11:58	1330-20-7	
m&p-Xylene	**<16.5**	ug/kg	16.5	8.0	1	10/11/18 08:27	10/11/18 11:58	179601-23-1	
o-Xylene	**<8.2**	ug/kg	8.2	3.5	1	10/11/18 08:27	10/11/18 11:58	95-47-6	
Surrogates									
Toluene-d8 (S)	107	%	43-157		1	10/11/18 08:27	10/11/18 11:58	2037-26-5	
4-Bromofluorobenzene (S)	100	%	34-145		1	10/11/18 08:27	10/11/18 11:58	460-00-4	
1,2-Dichloroethane-d4 (S)	141	%	33-150		1	10/11/18 08:27	10/11/18 11:58	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/11/18 16:23		

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575 Broad Hollow Road
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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST RI
Pace Project No.: 7066870

Sample: BH-12 (0-4) **Lab ID: 7066870012** Collected: 10/03/18 16:20 Received: 10/04/18 10:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**12.0**	%	0.10	0.10	1		10/04/18 14:59		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	**<1.1**	mg/kg	1.1	0.24	1	10/09/18 06:56	10/09/18 11:54	18540-29-9	
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation								
Chromium, Trivalent	**8.1**	mg/kg	0.20		1		10/10/18 10:03	16065-83-1	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C								
Cyanide	**2.9**	mg/kg	0.57	0.17	1	10/10/18 07:45	10/10/18 13:59	57-12-5	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 85871 Analysis Method: EPA 7471B
QC Batch Method: EPA 7471B Analysis Description: 7471 Mercury
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

METHOD BLANK: 394958 Matrix: Solid
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	<0.033	0.033	0.020	10/05/18 14:50	

LABORATORY CONTROL SAMPLE: 394959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.17	0.17	102	80-120	

MATRIX SPIKE SAMPLE: 394960

Parameter	Units	7066870001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	<0.043	.22	0.25	107	80-120	

SAMPLE DUPLICATE: 394961

Parameter	Units	7066870001 Result	Dup Result	RPD	Max RPD	Qualifiers
Mercury	mg/kg	<0.043	<0.038		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 85841 Analysis Method: EPA 6010C
QC Batch Method: EPA 3050B Analysis Description: 6010 MET
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

METHOD BLANK: 394911 Matrix: Solid
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	0.34J	0.50	0.15	10/05/18 16:30	
Barium	mg/kg	<10.0	10.0	0.77	10/05/18 16:30	
Beryllium	mg/kg	<0.25	0.25	0.032	10/05/18 16:30	
Cadmium	mg/kg	<0.13	0.13	0.015	10/05/18 16:30	
Chromium	mg/kg	<0.50	0.50	0.048	10/05/18 16:30	
Copper	mg/kg	<1.3	1.3	0.091	10/05/18 16:30	
Lead	mg/kg	<0.25	0.25	0.12	10/05/18 16:30	
Manganese	mg/kg	0.12J	0.75	0.043	10/05/18 16:30	
Nickel	mg/kg	<2.0	2.0	0.18	10/05/18 16:30	
Selenium	mg/kg	0.28J	0.50	0.26	10/05/18 16:30	
Silver	mg/kg	<0.50	0.50	0.063	10/05/18 16:30	
Zinc	mg/kg	0.16J	1.0	0.064	10/05/18 16:30	

LABORATORY CONTROL SAMPLE: 394912

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	160	140	88	80-120	
Barium	mg/kg	258	227	88	80-120	
Beryllium	mg/kg	96.8	86.8	90	80-120	
Cadmium	mg/kg	209	185	88	80-120	
Chromium	mg/kg	135	119	88	80-120	
Copper	mg/kg	165	144	87	80-120	
Lead	mg/kg	110	98.7	90	80-120	
Manganese	mg/kg	226	188	83	80-120	
Nickel	mg/kg	91.2	83.3	91	80-120	
Selenium	mg/kg	189	159	84	80-120	
Silver	mg/kg	43	38.1	89	80-120	
Zinc	mg/kg	197	174	88	80-120	

MATRIX SPIKE SAMPLE: 394914

Parameter	Units	7066870001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	10	31.6	37.3	86	75-125	
Barium	mg/kg	204	31.6	208	14	75-125	M1
Beryllium	mg/kg	0.39	3.2	3.4	95	75-125	
Cadmium	mg/kg	0.12J	3.2	3.0	92	75-125	
Chromium	mg/kg	12.8	15.8	31.1	115	75-125	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

MATRIX SPIKE SAMPLE: 394914

Parameter	Units	7066870001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Copper	mg/kg	7.5	15.8	22.6	95	75-125	
Lead	mg/kg	12.2	31.6	42.6	96	75-125	
Manganese	mg/kg	754	15.8	507	-1560	75-125	M1
Nickel	mg/kg	16.4	15.8	32.5	102	75-125	
Selenium	mg/kg	0.84	47.4	41.3	85	75-125	
Silver	mg/kg	<0.62	15.8	12.8	81	75-125	
Zinc	mg/kg	48.2	63.2	116	108	75-125	

SAMPLE DUPLICATE: 394913

Parameter	Units	7066870001 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic	mg/kg	10	8.3	18	20	
Barium	mg/kg	204	198	3	20	
Beryllium	mg/kg	0.39	0.37	4	20	
Cadmium	mg/kg	0.12J	0.090J		20	
Chromium	mg/kg	12.8	12.8	0	20	
Copper	mg/kg	7.5	8.5	12	20	
Lead	mg/kg	12.2	12.4	1	20	
Manganese	mg/kg	754	611	21	20	D6
Nickel	mg/kg	16.4	16.2	1	20	
Selenium	mg/kg	0.84	0.90	7	20	
Silver	mg/kg	<0.62	<0.64		20	
Zinc	mg/kg	48.2	49.3	2	20	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 86468 Analysis Method: EPA 8260C
QC Batch Method: EPA 5035A-L Analysis Description: 8260 MSV 5035A-L Low Level
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009

METHOD BLANK: 397701 Matrix: Solid
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<2.0	2.0	1.0	10/09/18 15:56	
1,1-Dichloroethane	ug/kg	<2.0	2.0	0.78	10/09/18 15:56	
1,1-Dichloroethene	ug/kg	<2.0	2.0	0.77	10/09/18 15:56	
1,2,4-Trichlorobenzene	ug/kg	<2.0	2.0	0.79	10/09/18 15:56	
1,2-Dichlorobenzene	ug/kg	<2.0	2.0	0.81	10/09/18 15:56	
1,2-Dichloroethane	ug/kg	<2.0	2.0	0.48	10/09/18 15:56	
1,3-Dichlorobenzene	ug/kg	<2.0	2.0	0.81	10/09/18 15:56	
1,4-Dichlorobenzene	ug/kg	<2.0	2.0	0.81	10/09/18 15:56	
2-Butanone (MEK)	ug/kg	<2.0	2.0	1.2	10/09/18 15:56	
Acetone	ug/kg	<2.0	2.0	1.9	10/09/18 15:56	
Benzene	ug/kg	<2.0	2.0	0.78	10/09/18 15:56	
Carbon tetrachloride	ug/kg	<2.0	2.0	1.2	10/09/18 15:56	
Chlorobenzene	ug/kg	<2.0	2.0	0.82	10/09/18 15:56	
Chloroform	ug/kg	<2.0	2.0	0.54	10/09/18 15:56	
cis-1,2-Dichloroethene	ug/kg	<2.0	2.0	0.73	10/09/18 15:56	
Ethylbenzene	ug/kg	<2.0	2.0	0.75	10/09/18 15:56	
m&p-Xylene	ug/kg	<4.0	4.0	1.9	10/09/18 15:56	
Methyl-tert-butyl ether	ug/kg	<2.0	2.0	0.44	10/09/18 15:56	
Methylene Chloride	ug/kg	<2.0	2.0	0.90	10/09/18 15:56	
o-Xylene	ug/kg	<2.0	2.0	0.85	10/09/18 15:56	
Tetrachloroethene	ug/kg	<2.0	2.0	1.0	10/09/18 15:56	
Toluene	ug/kg	<2.0	2.0	0.92	10/09/18 15:56	
trans-1,2-Dichloroethene	ug/kg	<2.0	2.0	0.57	10/09/18 15:56	
Trichloroethene	ug/kg	<2.0	2.0	0.82	10/09/18 15:56	
Vinyl chloride	ug/kg	<2.0	2.0	0.44	10/09/18 15:56	
Xylene (Total)	ug/kg	<4.0	4.0	2.0	10/09/18 15:56	
1,2-Dichloroethane-d4 (S)	%	132	33-150		10/09/18 15:56	CH
4-Bromofluorobenzene (S)	%	100	34-145		10/09/18 15:56	
Toluene-d8 (S)	%	100	43-157		10/09/18 15:56	

LABORATORY CONTROL SAMPLE: 397702

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	50.3	61.7	123	59-134	CH
1,1-Dichloroethane	ug/kg	50.3	46.6	93	53-160	
1,1-Dichloroethene	ug/kg	50.3	45.5	90	47-152	
1,2,4-Trichlorobenzene	ug/kg	50.3	61.2	122	52-140	CH
1,2-Dichlorobenzene	ug/kg	50.3	53.7	107	67-125	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

LABORATORY CONTROL SAMPLE: 397702

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/kg	50.3	52.8	105	65-143	
1,3-Dichlorobenzene	ug/kg	50.3	56.1	112	64-124	
1,4-Dichlorobenzene	ug/kg	50.3	54.1	108	61-127	
2-Butanone (MEK)	ug/kg	50.3	64.9	129	52-164	CH
Acetone	ug/kg	50.3	80.4	160	23-196	CH
Benzene	ug/kg	50.3	50.6	101	65-129	
Carbon tetrachloride	ug/kg	50.3	65.7	131	57-135	CH
Chlorobenzene	ug/kg	50.3	53.5	106	62-136	
Chloroform	ug/kg	50.3	50.7	101	71-135	
cis-1,2-Dichloroethene	ug/kg	50.3	45.0	89	75-130	
Ethylbenzene	ug/kg	50.3	52.4	104	59-135	
m&p-Xylene	ug/kg	101	100	100	69-133	
Methyl-tert-butyl ether	ug/kg	50.3	45.7	91	25-171	
Methylene Chloride	ug/kg	50.3	39.9	79	50-164	
o-Xylene	ug/kg	50.3	52.5	104	71-135	
Tetrachloroethene	ug/kg	50.3	60.0	119	10-176	
Toluene	ug/kg	50.3	49.0	97	66-131	
trans-1,2-Dichloroethene	ug/kg	50.3	45.7	91	53-157	
Trichloroethene	ug/kg	50.3	52.7	105	62-130	
Vinyl chloride	ug/kg	50.3	44.8	89	45-137	
Xylene (Total)	ug/kg	151	153	101	62-135	
1,2-Dichloroethane-d4 (S)	%			124	33-150	
4-Bromofluorobenzene (S)	%			111	34-145	
Toluene-d8 (S)	%			107	43-157	

MATRIX SPIKE SAMPLE: 397703

Parameter	Units	7066645002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	<2.3	54.3	59.4	109	59-134	CH
1,1-Dichloroethane	ug/kg	<2.3	54.3	43.2	80	53-160	
1,1-Dichloroethene	ug/kg	<2.3	54.3	35.9	66	47-152	
1,2,4-Trichlorobenzene	ug/kg	<2.3	54.3	30.3	56	52-140	CH
1,2-Dichlorobenzene	ug/kg	<2.3	54.3	37.7	70	67-125	
1,2-Dichloroethane	ug/kg	<2.3	54.3	53.3	98	65-143	
1,3-Dichlorobenzene	ug/kg	<2.3	54.3	39.3	72	64-124	
1,4-Dichlorobenzene	ug/kg	<2.3	54.3	37.6	69	61-127	
2-Butanone (MEK)	ug/kg	<2.3	54.3	40.0	74	52-164	CH
Acetone	ug/kg	<2.3	54.3	146	270	23-196	CH,M1
Benzene	ug/kg	<2.3	54.3	49.0	90	65-129	
Carbon tetrachloride	ug/kg	<2.3	54.3	59.1	109	57-135	CH
Chlorobenzene	ug/kg	<2.3	54.3	43.5	80	62-136	
Chloroform	ug/kg	<2.3	54.3	47.3	87	71-135	
cis-1,2-Dichloroethene	ug/kg	<2.3	54.3	39.8	73	75-130	M1
Ethylbenzene	ug/kg	<2.3	54.3	41.5	76	59-135	
m&p-Xylene	ug/kg	<4.6	109	79.9	74	69-133	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

MATRIX SPIKE SAMPLE: 397703

Parameter	Units	7066645002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Methyl-tert-butyl ether	ug/kg	<2.3	54.3	45.0	83	25-171	
Methylene Chloride	ug/kg	<2.3	54.3	36.7	68	50-164	
o-Xylene	ug/kg	<2.3	54.3	42.4	78	71-135	
Tetrachloroethene	ug/kg	<2.3	54.3	70.2	129	10-176	
Toluene	ug/kg	<2.3	54.3	45.1	83	66-131	
trans-1,2-Dichloroethene	ug/kg	<2.3	54.3	39.5	73	53-157	
Trichloroethene	ug/kg	<2.3	54.3	53.6	99	62-130	
Vinyl chloride	ug/kg	<2.3	54.3	38.4	71	45-137	
Xylene (Total)	ug/kg	<4.6	163	122	75	62-135	
1,2-Dichloroethane-d4 (S)	%				133	33-150	CH
4-Bromofluorobenzene (S)	%				107	34-145	
Toluene-d8 (S)	%				105	43-157	

SAMPLE DUPLICATE: 398496

Parameter	Units	7066870008 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	<3.3	<2.4		20	
1,1-Dichloroethane	ug/kg	<3.3	<2.4		20	
1,1-Dichloroethene	ug/kg	<3.3	<2.4		20	
1,2,4-Trichlorobenzene	ug/kg	<3.3	<2.4		20	
1,2,4-Trimethylbenzene	ug/kg	3.1J	2.9		20	
1,2-Dichlorobenzene	ug/kg	<3.3	<2.4		20	
1,2-Dichloroethane	ug/kg	<3.3	<2.4		20	
1,3,5-Trimethylbenzene	ug/kg	2.0J	1.7J		20	
1,3-Dichlorobenzene	ug/kg	<3.3	<2.4		20	
1,4-Dichlorobenzene	ug/kg	<3.3	<2.4		20	
1,4-Dioxane (p-Dioxane)	ug/kg	<82.3	<60.6		20	
2-Butanone (MEK)	ug/kg	44.6	39.0	14	20	CH
Acetone	ug/kg	197	151	27	20	CH,D6
Benzene	ug/kg	<3.3	<2.4		20	
Carbon tetrachloride	ug/kg	<3.3	<2.4		20	
Chlorobenzene	ug/kg	<3.3	<2.4		20	
Chloroform	ug/kg	<3.3	<2.4		20	
cis-1,2-Dichloroethene	ug/kg	<3.3	<2.4		20	
Ethylbenzene	ug/kg	<3.3	<2.4		20	
m&p-Xylene	ug/kg	<6.6	<4.9		20	
Methyl-tert-butyl ether	ug/kg	<3.3	<2.4		20	
Methylene Chloride	ug/kg	<3.3	<2.4		20	
n-Butylbenzene	ug/kg	<3.3	<2.4		20	
n-Propylbenzene	ug/kg	<3.3	<2.4		20	
o-Xylene	ug/kg	<3.3	<2.4		20	
sec-Butylbenzene	ug/kg	<3.3	<2.4		20	
tert-Butylbenzene	ug/kg	<3.3	<2.4		20	
Tetrachloroethene	ug/kg	<3.3	<2.4		20	
Toluene	ug/kg	<3.3	<2.4		20	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

SAMPLE DUPLICATE: 398496

Parameter	Units	7066870008 Result	Dup Result	RPD	Max RPD	Qualifiers
trans-1,2-Dichloroethene	ug/kg	<3.3	<2.4		20	
Trichloroethene	ug/kg	<3.3	1.2J		20	
Vinyl chloride	ug/kg	<3.3	<2.4		20	
Xylene (Total)	ug/kg	<6.6	<4.9		20	
1,2-Dichloroethane-d4 (S)	%	138	142	27	20	
4-Bromofluorobenzene (S)	%	93	90	34	20	
Toluene-d8 (S)	%	113	113	31	20	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 86669
QC Batch Method: EPA 5035A-L
Analysis Method: EPA 8260C
Analysis Description: 8260 MSV 5035A-L Low Level
Associated Lab Samples: 7066870011, 7066870012

METHOD BLANK: 398788
Matrix: Solid
Associated Lab Samples: 7066870011, 7066870012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<2.0	2.0	1.0	10/11/18 08:33	
1,1-Dichloroethane	ug/kg	<2.0	2.0	0.78	10/11/18 08:33	
1,1-Dichloroethene	ug/kg	<2.0	2.0	0.76	10/11/18 08:33	
1,2,4-Trichlorobenzene	ug/kg	<2.0	2.0	0.79	10/11/18 08:33	
1,2,4-Trimethylbenzene	ug/kg	<2.0	2.0	0.85	10/11/18 08:33	
1,2-Dichlorobenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
1,2-Dichloroethane	ug/kg	<2.0	2.0	0.48	10/11/18 08:33	
1,3,5-Trimethylbenzene	ug/kg	<2.0	2.0	0.75	10/11/18 08:33	
1,3-Dichlorobenzene	ug/kg	<2.0	2.0	0.80	10/11/18 08:33	
1,4-Dichlorobenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
1,4-Dioxane (p-Dioxane)	ug/kg	<49.2	49.2	29.1	10/11/18 08:33	
2-Butanone (MEK)	ug/kg	<2.0	2.0	1.2	10/11/18 08:33	
Acetone	ug/kg	<2.0	2.0	1.9	10/11/18 08:33	
Benzene	ug/kg	<2.0	2.0	0.77	10/11/18 08:33	
Carbon tetrachloride	ug/kg	<2.0	2.0	1.2	10/11/18 08:33	
Chlorobenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
Chloroform	ug/kg	<2.0	2.0	0.54	10/11/18 08:33	
cis-1,2-Dichloroethene	ug/kg	<2.0	2.0	0.73	10/11/18 08:33	
Ethylbenzene	ug/kg	<2.0	2.0	0.75	10/11/18 08:33	
m&p-Xylene	ug/kg	<3.9	3.9	1.9	10/11/18 08:33	
Methyl-tert-butyl ether	ug/kg	<2.0	2.0	0.44	10/11/18 08:33	
Methylene Chloride	ug/kg	<2.0	2.0	0.89	10/11/18 08:33	
n-Butylbenzene	ug/kg	<2.0	2.0	0.79	10/11/18 08:33	
n-Propylbenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
o-Xylene	ug/kg	<2.0	2.0	0.85	10/11/18 08:33	
sec-Butylbenzene	ug/kg	<2.0	2.0	0.78	10/11/18 08:33	
tert-Butylbenzene	ug/kg	<2.0	2.0	0.98	10/11/18 08:33	
Tetrachloroethene	ug/kg	<2.0	2.0	1.0	10/11/18 08:33	
Toluene	ug/kg	<2.0	2.0	0.92	10/11/18 08:33	
trans-1,2-Dichloroethene	ug/kg	<2.0	2.0	0.57	10/11/18 08:33	
Trichloroethene	ug/kg	<2.0	2.0	0.82	10/11/18 08:33	
Vinyl chloride	ug/kg	<2.0	2.0	0.43	10/11/18 08:33	
Xylene (Total)	ug/kg	<3.9	3.9	2.0	10/11/18 08:33	
1,2-Dichloroethane-d4 (S)	%	146	33-150		10/11/18 08:33	
4-Bromofluorobenzene (S)	%	105	34-145		10/11/18 08:33	
Toluene-d8 (S)	%	100	43-157		10/11/18 08:33	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

LABORATORY CONTROL SAMPLE: 398789

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	50.2	60.7	121	59-134	CH
1,1-Dichloroethane	ug/kg	50.2	45.2	90	53-160	
1,1-Dichloroethene	ug/kg	50.2	40.8	81	47-152	
1,2,4-Trichlorobenzene	ug/kg	50.2	60.0	119	52-140	CH
1,2,4-Trimethylbenzene	ug/kg	50.2	44.2	88	59-126	
1,2-Dichlorobenzene	ug/kg	50.2	50.6	101	67-125	
1,2-Dichloroethane	ug/kg	50.2	56.2	112	65-143	
1,3,5-Trimethylbenzene	ug/kg	50.2	48.1	96	49-134	
1,3-Dichlorobenzene	ug/kg	50.2	52.7	105	64-124	
1,4-Dichlorobenzene	ug/kg	50.2	51.1	102	61-127	
1,4-Dioxane (p-Dioxane)	ug/kg	1260	1200	96	10-205	
2-Butanone (MEK)	ug/kg	50.2	50.7	101	52-164	CH
Acetone	ug/kg	50.2	47.2	94	23-196	CH
Benzene	ug/kg	50.2	48.7	97	65-129	
Carbon tetrachloride	ug/kg	50.2	65.2	130	57-135	CH
Chlorobenzene	ug/kg	50.2	50.6	101	62-136	
Chloroform	ug/kg	50.2	50.1	100	71-135	
cis-1,2-Dichloroethene	ug/kg	50.2	43.5	87	75-130	
Ethylbenzene	ug/kg	50.2	49.5	99	59-135	
m&p-Xylene	ug/kg	100	94.6	94	69-133	
Methyl-tert-butyl ether	ug/kg	50.2	47.8	95	25-171	
Methylene Chloride	ug/kg	50.2	38.9	78	50-164	
n-Butylbenzene	ug/kg	50.2	51.8	103	54-121	
n-Propylbenzene	ug/kg	50.2	47.0	94	56-125	
o-Xylene	ug/kg	50.2	50.1	100	71-135	
sec-Butylbenzene	ug/kg	50.2	50.8	101	50-126	
tert-Butylbenzene	ug/kg	50.2	50.1	100	56-127	
Tetrachloroethene	ug/kg	50.2	57.2	114	10-176	CH
Toluene	ug/kg	50.2	47.8	95	66-131	
trans-1,2-Dichloroethene	ug/kg	50.2	43.1	86	53-157	
Trichloroethene	ug/kg	50.2	52.8	105	62-130	
Vinyl chloride	ug/kg	50.2	42.3	84	45-137	
Xylene (Total)	ug/kg	151	145	96	62-135	
1,2-Dichloroethane-d4 (S)	%			132	33-150	
4-Bromofluorobenzene (S)	%			106	34-145	
Toluene-d8 (S)	%			102	43-157	

SAMPLE DUPLICATE: 398792

Parameter	Units	7067135001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	<9.7	<8.2		20	
1,1-Dichloroethane	ug/kg	<9.7	<8.2		20	
1,1-Dichloroethene	ug/kg	<9.7	<8.2		20	
1,2,4-Trichlorobenzene	ug/kg	<9.7	<8.2		20	
1,2,4-Trimethylbenzene	ug/kg	<9.7	<8.2		20	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

SAMPLE DUPLICATE: 398792

Parameter	Units	7067135001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichlorobenzene	ug/kg	<9.7	<8.2		20	
1,2-Dichloroethane	ug/kg	<9.7	<8.2		20	
1,3,5-Trimethylbenzene	ug/kg	<9.7	<8.2		20	
1,3-Dichlorobenzene	ug/kg	<9.7	<8.2		20	
1,4-Dichlorobenzene	ug/kg	<9.7	<8.2		20	
1,4-Dioxane (p-Dioxane)	ug/kg	<242	<204		20	
2-Butanone (MEK)	ug/kg	<9.7	<8.2		20	
Acetone	ug/kg	44.4	80.0	57	20	CH,D6
Benzene	ug/kg	<9.7	<8.2		20	
Carbon tetrachloride	ug/kg	<9.7	<8.2		20	
Chlorobenzene	ug/kg	<9.7	<8.2		20	
Chloroform	ug/kg	<9.7	<8.2		20	
cis-1,2-Dichloroethene	ug/kg	7.3J	11.4		20	
Ethylbenzene	ug/kg	6.1J	7.2J		20	
m&p-Xylene	ug/kg	29.4	35.5	19	20	
Methyl-tert-butyl ether	ug/kg	<9.7	<8.2		20	
Methylene Chloride	ug/kg	35.5	74.0	70	20	D6
n-Butylbenzene	ug/kg	<9.7	<8.2		20	
n-Propylbenzene	ug/kg	<9.7	<8.2		20	
o-Xylene	ug/kg	13.9	21.1	41	20	D6
sec-Butylbenzene	ug/kg	<9.7	<8.2		20	
tert-Butylbenzene	ug/kg	<9.7	<8.2		20	
Tetrachloroethene	ug/kg	<9.7	<8.2		20	
Toluene	ug/kg	<9.7	<8.2		20	
trans-1,2-Dichloroethene	ug/kg	<9.7	<8.2		20	
Trichloroethene	ug/kg	233	347	39	20	D6
Vinyl chloride	ug/kg	<9.7	<8.2		20	
Xylene (Total)	ug/kg	43.3	56.6	26	20	
1,2-Dichloroethane-d4 (S)	%	145	152	12	20	S1
4-Bromofluorobenzene (S)	%	103	101	19	20	
Toluene-d8 (S)	%	106	111	13	20	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 86646
QC Batch Method: EPA 5035A-H/5030C
Associated Lab Samples: 7066870010

Analysis Method: EPA 8260C
Analysis Description: 8260 MSV 5035A-H Med

METHOD BLANK: 398742
Matrix: Solid
Associated Lab Samples: 7066870010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<98.8	98.8	22.9	10/11/18 10:47	
1,1-Dichloroethane	ug/kg	<98.8	98.8	5.2	10/11/18 10:47	
1,1-Dichloroethene	ug/kg	<98.8	98.8	14.5	10/11/18 10:47	
1,2,4-Trimethylbenzene	ug/kg	<98.8	98.8	7.8	10/11/18 10:47	
1,2-Dichlorobenzene	ug/kg	<98.8	98.8	5.0	10/11/18 10:47	
1,2-Dichloroethane	ug/kg	<98.8	98.8	49.4	10/11/18 10:47	
1,3,5-Trimethylbenzene	ug/kg	<98.8	98.8	5.2	10/11/18 10:47	
1,3-Dichlorobenzene	ug/kg	<98.8	98.8	8.1	10/11/18 10:47	
1,4-Dichlorobenzene	ug/kg	<98.8	98.8	7.1	10/11/18 10:47	
1,4-Dioxane (p-Dioxane)	ug/kg	<2470	2470	1240	10/11/18 10:47	
2-Butanone (MEK)	ug/kg	<98.8	98.8	9.8	10/11/18 10:47	CL
Acetone	ug/kg	<98.8	98.8	35.4	10/11/18 10:47	
Benzene	ug/kg	<98.8	98.8	5.7	10/11/18 10:47	
Carbon tetrachloride	ug/kg	<98.8	98.8	27.5	10/11/18 10:47	
Chlorobenzene	ug/kg	<98.8	98.8	6.2	10/11/18 10:47	
Chloroform	ug/kg	<98.8	98.8	6.5	10/11/18 10:47	
cis-1,2-Dichloroethene	ug/kg	<98.8	98.8	8.5	10/11/18 10:47	
Ethylbenzene	ug/kg	<98.8	98.8	9.0	10/11/18 10:47	
m&p-Xylene	ug/kg	<198	198	11.6	10/11/18 10:47	
Methyl-tert-butyl ether	ug/kg	<98.8	98.8	9.8	10/11/18 10:47	
Methylene Chloride	ug/kg	<98.8	98.8	23.5	10/11/18 10:47	
n-Butylbenzene	ug/kg	<98.8	98.8	9.4	10/11/18 10:47	
n-Propylbenzene	ug/kg	<98.8	98.8	5.9	10/11/18 10:47	
o-Xylene	ug/kg	<98.8	98.8	6.7	10/11/18 10:47	
sec-Butylbenzene	ug/kg	<98.8	98.8	5.0	10/11/18 10:47	
tert-Butylbenzene	ug/kg	<98.8	98.8	5.1	10/11/18 10:47	
Tetrachloroethene	ug/kg	<98.8	98.8	11.2	10/11/18 10:47	
Toluene	ug/kg	<98.8	98.8	7.4	10/11/18 10:47	
trans-1,2-Dichloroethene	ug/kg	<98.8	98.8	16.7	10/11/18 10:47	
Trichloroethene	ug/kg	<98.8	98.8	9.2	10/11/18 10:47	
Vinyl chloride	ug/kg	<98.8	98.8	11.2	10/11/18 10:47	
Xylene (Total)	ug/kg	<198	198	98.8	10/11/18 10:47	
1,2-Dichloroethane-d4 (S)	%	93	33-150		10/11/18 10:47	
4-Bromofluorobenzene (S)	%	100	34-145		10/11/18 10:47	
Toluene-d8 (S)	%	104	43-157		10/11/18 10:47	

LABORATORY CONTROL SAMPLE: 398743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	2510	2680	107	59-134	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

LABORATORY CONTROL SAMPLE: 398743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/kg	2510	2420	97	53-160	
1,1-Dichloroethene	ug/kg	2510	2470	99	47-152	
1,2,4-Trimethylbenzene	ug/kg	2510	2620	105	59-126	
1,2-Dichlorobenzene	ug/kg	2510	2750	110	67-125	
1,2-Dichloroethane	ug/kg	2510	2600	104	65-143	
1,3,5-Trimethylbenzene	ug/kg	2510	2570	103	49-134	
1,3-Dichlorobenzene	ug/kg	2510	2750	110	64-124	
1,4-Dichlorobenzene	ug/kg	2510	2710	108	61-127	
1,4-Dioxane (p-Dioxane)	ug/kg	62600	77300	123	10-205	CH
2-Butanone (MEK)	ug/kg	2510	2260	90	52-164	CL
Acetone	ug/kg	2510	2860	114	23-196	IH
Benzene	ug/kg	2510	2550	102	65-129	
Carbon tetrachloride	ug/kg	2510	2690	107	57-135	
Chlorobenzene	ug/kg	2510	2980	119	62-136	
Chloroform	ug/kg	2510	2610	104	71-135	
cis-1,2-Dichloroethene	ug/kg	2510	2580	103	75-130	
Ethylbenzene	ug/kg	2510	2890	115	59-135	
m&p-Xylene	ug/kg	5010	5860	117	69-133	
Methyl-tert-butyl ether	ug/kg	2510	2530	101	25-171	
Methylene Chloride	ug/kg	2510	2310	92	50-164	
n-Butylbenzene	ug/kg	2510	2660	106	54-121	
n-Propylbenzene	ug/kg	2510	2490	99	56-125	
o-Xylene	ug/kg	2510	2920	117	71-135	
sec-Butylbenzene	ug/kg	2510	2570	103	50-126	
tert-Butylbenzene	ug/kg	2510	2620	105	56-127	
Tetrachloroethene	ug/kg	2510	3130	125	10-176	
Toluene	ug/kg	2510	2620	105	66-131	
trans-1,2-Dichloroethene	ug/kg	2510	2400	96	53-157	
Trichloroethene	ug/kg	2510	2660	106	62-130	
Vinyl chloride	ug/kg	2510	2350	94	45-137	
Xylene (Total)	ug/kg	7520	8780	117	62-135	
1,2-Dichloroethane-d4 (S)	%			104	33-150	
4-Bromofluorobenzene (S)	%			106	34-145	
Toluene-d8 (S)	%			102	43-157	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 85846 Analysis Method: EPA 8081B
QC Batch Method: EPA 3546 Analysis Description: 8081 GCS Pesticides
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

METHOD BLANK: 394915 Matrix: Solid
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
4,4'-DDD	ug/kg	<3.3	3.3	1.6	10/11/18 11:27	
4,4'-DDE	ug/kg	<3.3	3.3	1.6	10/11/18 11:27	
4,4'-DDT	ug/kg	<3.3	3.3	1.6	10/11/18 11:27	
Aldrin	ug/kg	<1.7	1.7	0.85	10/11/18 11:27	
alpha-BHC	ug/kg	<1.7	1.7	0.85	10/11/18 11:27	
alpha-Chlordane	ug/kg	<1.7	1.7	0.85	10/11/18 11:27	
beta-BHC	ug/kg	<1.7	1.7	0.85	10/11/18 11:27	
delta-BHC	ug/kg	<1.7	1.7	0.85	10/11/18 11:27	
Dieldrin	ug/kg	<3.3	3.3	1.6	10/11/18 11:27	
Endosulfan I	ug/kg	<1.7	1.7	0.85	10/11/18 11:27	
Endosulfan II	ug/kg	<3.3	3.3	1.6	10/11/18 11:27	
Endosulfan sulfate	ug/kg	<3.3	3.3	1.6	10/11/18 11:27	
Endrin	ug/kg	<3.3	3.3	1.6	10/11/18 11:27	
gamma-BHC (Lindane)	ug/kg	<1.7	1.7	0.85	10/11/18 11:27	
Heptachlor	ug/kg	<1.7	1.7	0.85	10/11/18 11:27	
Decachlorobiphenyl (S)	%	101	30-150		10/11/18 11:27	
Tetrachloro-m-xylene (S)	%	87	30-150		10/11/18 11:27	

LABORATORY CONTROL SAMPLE: 394916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/kg	13.3	12.7	95	57-156	
4,4'-DDE	ug/kg	13.3	12.5	94	52-135	
4,4'-DDT	ug/kg	13.3	13.0	98	64-127	
Aldrin	ug/kg	13.3	12.3	92	35-147	
alpha-BHC	ug/kg	13.3	13.0	97	41-135	
alpha-Chlordane	ug/kg	13.3	10.0	75	43-128	
beta-BHC	ug/kg	13.3	12.2	91	42-158	
delta-BHC	ug/kg	13.3	12.7	95	48-142	
Dieldrin	ug/kg	13.3	13.0	97	47-134	
Endosulfan I	ug/kg	13.3	10.6	79	54-145	
Endosulfan II	ug/kg	13.3	11.1	83	61-137	
Endosulfan sulfate	ug/kg	13.3	14.0	105	51-154	
Endrin	ug/kg	13.3	13.3	100	37-146	
gamma-BHC (Lindane)	ug/kg	13.3	12.9	97	44-139	
Heptachlor	ug/kg	13.3	12.7	95	57-148	
Decachlorobiphenyl (S)	%			96	30-150	
Tetrachloro-m-xylene (S)	%			86	30-150	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

LABORATORY CONTROL SAMPLE: 394917

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Decachlorobiphenyl (S)	%			90	30-150	
Tetrachloro-m-xylene (S)	%			73	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 394918 394919

Parameter	Units	7066870006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4,4'-DDD	ug/kg	<3.8			<3.9	<3.8					30	
4,4'-DDE	ug/kg	<3.8			<3.9	<3.8					30	
4,4'-DDT	ug/kg	<3.8			<3.9	<3.8					27	
Aldrin	ug/kg	<2.0			<2.0	<2.0					43	
alpha-BHC	ug/kg	<2.0			<2.0	<2.0					30	
alpha-Chlordane	ug/kg	<2.0			<2.0	<2.0					30	
beta-BHC	ug/kg	<2.0			<2.0	<2.0					30	
delta-BHC	ug/kg	<2.0			<2.0	<2.0					30	
Dieldrin	ug/kg	<3.8			<3.9	<3.8					38	
Endosulfan I	ug/kg	<2.0			<2.0	<2.0					30	
Endosulfan II	ug/kg	<3.8			<3.9	<3.8					30	
Endosulfan sulfate	ug/kg	<3.8			<3.9	<3.8					30	
Endrin	ug/kg	<3.8			<3.9	<3.8					45	
gamma-BHC (Lindane)	ug/kg	<2.0			<2.0	<2.0					31	
Heptachlor	ug/kg	<2.0			<2.0	<2.0					20	
Decachlorobiphenyl (S)	%						95	99	30-150		30	
Tetrachloro-m-xylene (S)	%						85	75	30-150		30	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 85854 Analysis Method: EPA 8082A
QC Batch Method: EPA 3546 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

METHOD BLANK: 394937 Matrix: Solid
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<33.0	33.0	16.5	10/10/18 14:56	
PCB-1221 (Aroclor 1221)	ug/kg	<67.0	67.0	33.5	10/10/18 14:56	
PCB-1232 (Aroclor 1232)	ug/kg	<33.0	33.0	16.5	10/10/18 14:56	
PCB-1242 (Aroclor 1242)	ug/kg	<33.0	33.0	16.5	10/10/18 14:56	
PCB-1248 (Aroclor 1248)	ug/kg	<33.0	33.0	16.5	10/10/18 14:56	
PCB-1254 (Aroclor 1254)	ug/kg	<33.0	33.0	16.5	10/10/18 14:56	
PCB-1260 (Aroclor 1260)	ug/kg	<33.0	33.0	16.5	10/10/18 14:56	
Decachlorobiphenyl (S)	%	91	30-150		10/10/18 14:56	
Tetrachloro-m-xylene (S)	%	63	30-150		10/10/18 14:56	

LABORATORY CONTROL SAMPLE: 394938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	121	73	50-136	
PCB-1260 (Aroclor 1260)	ug/kg	167	148	89	45-154	
Decachlorobiphenyl (S)	%			104	30-150	
Tetrachloro-m-xylene (S)	%			68	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 394972 394973

Parameter	Units	7066870004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<42.1	211	212	129	130	61	61	28-173	1	30	
PCB-1221 (Aroclor 1221)	ug/kg	<85.5			<84.8	<85.2					30	
PCB-1232 (Aroclor 1232)	ug/kg	<42.1			<41.8	<42.0					30	
PCB-1242 (Aroclor 1242)	ug/kg	<42.1			<41.8	<42.0					30	
PCB-1248 (Aroclor 1248)	ug/kg	<42.1			<41.8	<42.0					30	
PCB-1254 (Aroclor 1254)	ug/kg	<42.1			<41.8	<42.0					30	
PCB-1260 (Aroclor 1260)	ug/kg	<42.1	211	212	181	133	86	63	43-138	31	30	R1
Decachlorobiphenyl (S)	%						72	78	30-150		30	
Tetrachloro-m-xylene (S)	%						64	65	30-150		30	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 85932 Analysis Method: EPA 8151A
QC Batch Method: EPA 8151A Analysis Description: 8151 GCS Herbicides
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

METHOD BLANK: 395226 Matrix: Solid
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2,4,5-TP (Silvex)	ug/kg	<5.0	5.0	0.26	10/08/18 20:58	
2,4-DCAA (S)	%	88	29-136		10/08/18 20:58	

LABORATORY CONTROL SAMPLE: 395227

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4,5-TP (Silvex)	ug/kg	20	20.4	102	12-146	
2,4-DCAA (S)	%			102	29-136	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395228 395229

Parameter	Units	7066870001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4,5-TP (Silvex)	ug/kg	<5.8	23.6	23.6	12.0	17.0	51	72	12-146	34	30	R1
2,4-DCAA (S)	%						103	85	29-136		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 85805 Analysis Method: EPA 8270D
QC Batch Method: EPA 3545A Analysis Description: 8270 Solid MSSV
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

METHOD BLANK: 394832 Matrix: Solid
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2-Methylphenol(o-Cresol)	ug/kg	<67.0	67.0	37.1	10/09/18 16:24	
3&4-Methylphenol(m&p Cresol)	ug/kg	<67.0	67.0	24.1	10/09/18 16:24	
Acenaphthene	ug/kg	<67.0	67.0	9.9	10/09/18 16:24	
Acenaphthylene	ug/kg	<67.0	67.0	13.4	10/09/18 16:24	
Anthracene	ug/kg	<67.0	67.0	19.6	10/09/18 16:24	
Benzo(a)anthracene	ug/kg	<67.0	67.0	15.4	10/09/18 16:24	
Benzo(a)pyrene	ug/kg	<67.0	67.0	28.3	10/09/18 16:24	
Benzo(b)fluoranthene	ug/kg	<67.0	67.0	23.2	10/09/18 16:24	
Benzo(g,h,i)perylene	ug/kg	<67.0	67.0	32.4	10/09/18 16:24	
Benzo(k)fluoranthene	ug/kg	<67.0	67.0	20.8	10/09/18 16:24	
Chrysene	ug/kg	<67.0	67.0	30.0	10/09/18 16:24	
Dibenz(a,h)anthracene	ug/kg	<67.0	67.0	21.9	10/09/18 16:24	
Dibenzofuran	ug/kg	<67.0	67.0	12.1	10/09/18 16:24	
Fluoranthene	ug/kg	<67.0	67.0	56.3	10/09/18 16:24	
Fluorene	ug/kg	<67.0	67.0	17.0	10/09/18 16:24	
Hexachlorobenzene	ug/kg	<67.0	67.0	13.3	10/09/18 16:24	
Indeno(1,2,3-cd)pyrene	ug/kg	<67.0	67.0	25.6	10/09/18 16:24	
Naphthalene	ug/kg	<67.0	67.0	7.4	10/09/18 16:24	
Pentachlorophenol	ug/kg	<670	670	6.8	10/09/18 16:24	
Phenanthrene	ug/kg	<67.0	67.0	21.6	10/09/18 16:24	
Phenol	ug/kg	<67.0	67.0	12.8	10/09/18 16:24	
Pyrene	ug/kg	<67.0	67.0	31.8	10/09/18 16:24	
2.866:Unknown Ketone	ug/kg	196			10/09/18 16:24	
3.256:Unknown Ketone	ug/kg	4360			10/09/18 16:24	
3.475:Unknown Ketone	ug/kg	811			10/09/18 16:24	
3.662:Unknown Ketone	ug/kg	46900			10/09/18 16:24	
4.095:Unknown	ug/kg	170			10/09/18 16:24	
4.196:Unknown Petroleum Alkane	ug/kg	248			10/09/18 16:24	
4.362:Unknown Aldol Condensate	ug/kg	1350			10/09/18 16:24	
4.693:Unknown Petroleum Alkane	ug/kg	171			10/09/18 16:24	
5.035:Unknown Amine	ug/kg	412			10/09/18 16:24	
5.628:Unknown Ketone	ug/kg	146			10/09/18 16:24	
5.922:Unknown	ug/kg	184			10/09/18 16:24	
8.005:Unknown	ug/kg	171			10/09/18 16:24	
8.358:Benzophenone	ug/kg	310			10/09/18 16:24	N
9.666:Unknown Organic Acid	ug/kg	176			10/09/18 16:24	
13.128:Unknown Amide	ug/kg	136			10/09/18 16:24	
1,2-Dichlorobenzene-d4 (S)	%	65	20-130		10/09/18 16:24	
2,4,6-Tribromophenol (S)	%	76	19-122		10/09/18 16:24	CH
2-Chlorophenol-d4 (S)	%	71	20-130		10/09/18 16:24	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

METHOD BLANK: 394832 Matrix: Solid

Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2-Fluorobiphenyl (S)	%	72	30-115		10/09/18 16:24	
2-Fluorophenol (S)	%	71	25-121		10/09/18 16:24	
Nitrobenzene-d5 (S)	%	64	23-120		10/09/18 16:24	
p-Terphenyl-d14 (S)	%	91	18-137		10/09/18 16:24	
Phenol-d5 (S)	%	70	24-113		10/09/18 16:24	

LABORATORY CONTROL SAMPLE: 394833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylphenol(o-Cresol)	ug/kg	1670	1530	92	36-104	
3&4-Methylphenol(m&p Cresol)	ug/kg	1670	1260	76	37-137	
Acenaphthene	ug/kg	1670	1180	71	45-109	
Acenaphthylene	ug/kg	1670	1180	71	43-107	
Anthracene	ug/kg	1670	1370	82	50-117	
Benzo(a)anthracene	ug/kg	1670	1310	79	52-116	
Benzo(a)pyrene	ug/kg	1670	1370	82	56-119	
Benzo(b)fluoranthene	ug/kg	1670	1330	80	45-122	
Benzo(g,h,i)perylene	ug/kg	1670	1060	64	30-107	
Benzo(k)fluoranthene	ug/kg	1670	1520	91	54-124	
Chrysene	ug/kg	1670	1330	80	48-121	
Dibenz(a,h)anthracene	ug/kg	1670	1170	70	52-109	
Dibenzofuran	ug/kg	1670	1210	73	48-112	
Fluoranthene	ug/kg	1670	1490	89	45-126	
Fluorene	ug/kg	1670	1220	73	47-108	
Hexachlorobenzene	ug/kg	1670	1400	84	51-110	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	1140	69	50-108	
Naphthalene	ug/kg	1670	1130	68	18-142	
Pentachlorophenol	ug/kg	1670	1140	68	22-115	
Phenanthrene	ug/kg	1670	1380	83	47-124	
Phenol	ug/kg	1670	1060	64	38-104	
Pyrene	ug/kg	1670	1280	77	49-132	
1,2-Dichlorobenzene-d4 (S)	%			58	20-130	
2,4,6-Tribromophenol (S)	%			90	19-122	CH
2-Chlorophenol-d4 (S)	%			66	20-130	
2-Fluorobiphenyl (S)	%			67	30-115	
2-Fluorophenol (S)	%			66	25-121	
Nitrobenzene-d5 (S)	%			61	23-120	
p-Terphenyl-d14 (S)	%			80	18-137	
Phenol-d5 (S)	%			65	24-113	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 394859 394860

Parameter	Units	7066870012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Methylphenol(o-Cresol)	ug/kg	<380	1880	1890	948	714J	50	38	36-104		30	
3&4-Methylphenol(m&p Cresol)	ug/kg	<380	1880	1890	944	776	50	41	37-137	20	30	
Acenaphthene	ug/kg	<380	1880	1890	1200	1110	64	59	45-109	8	30	
Acenaphthylene	ug/kg	<380	1880	1890	1200	1060	64	56	43-107	13	30	
Anthracene	ug/kg	<380	1880	1890	1320	1210	70	64	50-117	9	30	
Benzo(a)anthracene	ug/kg	<380	1880	1890	1370	1260	73	67	52-116	8	30	
Benzo(a)pyrene	ug/kg	<380	1880	1890	1270	1130	67	60	56-119	12	30	
Benzo(b)fluoranthene	ug/kg	<380	1880	1890	1180	1080	63	57	45-122	9	30	
Benzo(g,h,i)perylene	ug/kg	<380	1880	1890	1280	925	68	49	30-107	32	30	R1
Benzo(k)fluoranthene	ug/kg	<380	1880	1890	1320	1340	70	71	54-124	1	30	
Chrysene	ug/kg	<380	1880	1890	1380	1240	74	65	48-121	11	30	
Dibenz(a,h)anthracene	ug/kg	<380	1880	1890	1210	860	64	46	52-109	34	30	M6,R1
Dibenzofuran	ug/kg	<380	1880	1890	1320	1190	70	63	48-112	11	30	
Fluoranthene	ug/kg	<380	1880	1890	1540	1380	82	73	45-126	10	30	
Fluorene	ug/kg	<380	1880	1890	1200	1110	64	59	47-108	8	30	
Hexachlorobenzene	ug/kg	<380	1880	1890	1470	1330	78	71	51-110	10	30	
Indeno(1,2,3-cd)pyrene	ug/kg	<380	1880	1890	1110	831	59	44	50-108	29	30	M6
Naphthalene	ug/kg	<380	1880	1890	1370	1200	73	63	18-142	14	30	
Pentachlorophenol	ug/kg	<3800	1880	1890	899J	740J	48	39	22-115		30	
Phenanthrene	ug/kg	<380	1880	1890	1590	1450	84	77	47-124	9	30	
Phenol	ug/kg	<380	1880	1890	953	746J	51	40	38-104		30	
Pyrene	ug/kg	<380	1880	1890	1430	1330	76	70	49-132	7	30	
1,2-Dichlorobenzene-d4 (S)	%						54	49	20-130			
2,4,6-Tribromophenol (S)	%						69	60	19-122			CH
2-Chlorophenol-d4 (S)	%						56	48	20-130			
2-Fluorobiphenyl (S)	%						64	56	30-115			
2-Fluorophenol (S)	%						58	44	25-121			
Nitrobenzene-d5 (S)	%						63	48	23-120			
p-Terphenyl-d14 (S)	%						73	63	18-137			
Phenol-d5 (S)	%						59	48	24-113			

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 85679 Analysis Method: ASTM D2216-92M
QC Batch Method: ASTM D2216-92M Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

SAMPLE DUPLICATE: 394236

Parameter	Units	30266644001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	99.4	99.5	0	20	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 86148 Analysis Method: EPA 7196A
QC Batch Method: EPA 3060A Analysis Description: 7196 Chromium, Hexavalent
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

METHOD BLANK: 396305 Matrix: Solid
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006, 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	mg/kg	<1.0	1.0	0.21	10/09/18 11:51	

LABORATORY CONTROL SAMPLE: 396306

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/kg	207	93.0	45	44-156	

MATRIX SPIKE SAMPLE: 396307

Parameter	Units	7066870001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/kg	<1.2	1140	1110	97	85-115	

MATRIX SPIKE SAMPLE: 396308

Parameter	Units	7066870001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/kg	<1.2	4.7	0.76J	16	85-115	M1

SAMPLE DUPLICATE: 396309

Parameter	Units	7066870001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	mg/kg	<1.2	<1.2		20	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 86178 Analysis Method: EPA 9014 Total Cyanide
QC Batch Method: EPA 9010C Analysis Description: 9014 Total Cyanide
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006

METHOD BLANK: 396345 Matrix: Solid
Associated Lab Samples: 7066870001, 7066870002, 7066870003, 7066870004, 7066870005, 7066870006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cyanide	mg/kg	<0.50	0.50	0.15	10/09/18 15:04	

LABORATORY CONTROL SAMPLE: 396346

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/kg	57.7	53.8	93	11-189	

MATRIX SPIKE SAMPLE: 396347

Parameter	Units	7066870001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/kg	0.27J	6	5.6	90	75-125	

SAMPLE DUPLICATE: 396348

Parameter	Units	7066870001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide	mg/kg	0.27J	0.27J		20	

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QUALITY CONTROL DATA

Project: 31 WATER ST RI
Pace Project No.: 7066870

QC Batch: 86323 Analysis Method: EPA 9014 Total Cyanide
QC Batch Method: EPA 9010C Analysis Description: 9014 Total Cyanide
Associated Lab Samples: 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

METHOD BLANK: 397343 Matrix: Solid
Associated Lab Samples: 7066870007, 7066870008, 7066870009, 7066870010, 7066870011, 7066870012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cyanide	mg/kg	<0.50	0.50	0.15	10/10/18 13:49	

LABORATORY CONTROL SAMPLE: 397344

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/kg	58.3	50.5	87	11-189	

MATRIX SPIKE SAMPLE: 397345

Parameter	Units	7066870007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/kg	0.32J	5.8	6.7	111	75-125	

SAMPLE DUPLICATE: 397346

Parameter	Units	7066870007 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide	mg/kg	0.32J	0.35J		20	

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QUALIFIERS

Project: 31 WATER ST RI
Pace Project No.: 7066870

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

SAMPLE QUALIFIERS

Sample: 7066870001
- [1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.

Sample: 7066870002
- [1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
- [2] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

Sample: 7066870003
- [1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
- [2] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

Sample: 7066870004
- [1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
- [2] Method 8260C: The internal standard response exceeded the lower acceptance limits and confirmed by reanalysis. Results may be biased high.
- [3] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

Sample: 7066870005
- [1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
- [2] Method 8260C: The internal standard response exceeded the lower acceptance limits and confirmed by reanalysis. Results may be biased high.
- [3] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

Sample: 7066870006
- [1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.

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QUALIFIERS

Project: 31 WATER ST RI
Pace Project No.: 7066870

SAMPLE QUALIFIERS

Sample: 7066870007
[1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
Sample: 7066870008
[1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
[2] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.
Sample: 7066870009
[1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
[2] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.
Sample: 7066870010
[1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
Sample: 7066870011
[1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
[2] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.
Sample: 7066870012
[1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
[2] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
IH	This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
N	The reported TIC has an 85% or higher match on a mass spectral library search.
R1	RPD value was outside control limits.
S1	Surrogate recovery outside laboratory control limits (confirmed by re-analysis).

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
7066870001	**BH-1 (7-8)**	EPA 3546	85846	EPA 8081B	86287
7066870002	**BH-2 (1-3)**	EPA 3546	85846	EPA 8081B	86287
7066870003	**BH-3 (1-4)**	EPA 3546	85846	EPA 8081B	86287
7066870004	**BH-4 (0-4)**	EPA 3546	85846	EPA 8081B	86287
7066870005	**BH-6 (0-4)**	EPA 3546	85846	EPA 8081B	86287
7066870006	**BH-5 (8-12)**	EPA 3546	85846	EPA 8081B	86287
7066870007	**BH-7 (0-4)**	EPA 3546	85846	EPA 8081B	86287
7066870008	**BH-8 (8-12)**	EPA 3546	85846	EPA 8081B	86287
7066870009	**BH-9 (4-7)**	EPA 3546	85846	EPA 8081B	86287
7066870010	**BH-9 (13-14)**	EPA 3546	85846	EPA 8081B	86287
7066870011	**BH-11 (0-4)**	EPA 3546	85846	EPA 8081B	86287
7066870012	**BH-12 (0-4)**	EPA 3546	85846	EPA 8081B	86287
7066870001	**BH-1 (7-8)**	EPA 3546	85854	EPA 8082A	86286
7066870002	**BH-2 (1-3)**	EPA 3546	85854	EPA 8082A	86286
7066870003	**BH-3 (1-4)**	EPA 3546	85854	EPA 8082A	86286
7066870004	**BH-4 (0-4)**	EPA 3546	85854	EPA 8082A	86286
7066870005	**BH-6 (0-4)**	EPA 3546	85854	EPA 8082A	86286
7066870006	**BH-5 (8-12)**	EPA 3546	85854	EPA 8082A	86286
7066870007	**BH-7 (0-4)**	EPA 3546	85854	EPA 8082A	86286
7066870008	**BH-8 (8-12)**	EPA 3546	85854	EPA 8082A	86286
7066870009	**BH-9 (4-7)**	EPA 3546	85854	EPA 8082A	86286
7066870010	**BH-9 (13-14)**	EPA 3546	85854	EPA 8082A	86286
7066870011	**BH-11 (0-4)**	EPA 3546	85854	EPA 8082A	86286
7066870012	**BH-12 (0-4)**	EPA 3546	85854	EPA 8082A	86286
7066870001	**BH-1 (7-8)**	EPA 8151A	85932	EPA 8151A	86105
7066870002	**BH-2 (1-3)**	EPA 8151A	85932	EPA 8151A	86105
7066870003	**BH-3 (1-4)**	EPA 8151A	85932	EPA 8151A	86105
7066870004	**BH-4 (0-4)**	EPA 8151A	85932	EPA 8151A	86105
7066870005	**BH-6 (0-4)**	EPA 8151A	85932	EPA 8151A	86105
7066870006	**BH-5 (8-12)**	EPA 8151A	85932	EPA 8151A	86105
7066870007	**BH-7 (0-4)**	EPA 8151A	85932	EPA 8151A	86105
7066870008	**BH-8 (8-12)**	EPA 8151A	85932	EPA 8151A	86105
7066870009	**BH-9 (4-7)**	EPA 8151A	85932	EPA 8151A	86105
7066870010	**BH-9 (13-14)**	EPA 8151A	85932	EPA 8151A	86105
7066870011	**BH-11 (0-4)**	EPA 8151A	85932	EPA 8151A	86105
7066870012	**BH-12 (0-4)**	EPA 8151A	85932	EPA 8151A	86105
7066870001	**BH-1 (7-8)**	EPA 3050B	85841	EPA 6010C	85906
7066870002	**BH-2 (1-3)**	EPA 3050B	85841	EPA 6010C	85906
7066870003	**BH-3 (1-4)**	EPA 3050B	85841	EPA 6010C	85906
7066870004	**BH-4 (0-4)**	EPA 3050B	85841	EPA 6010C	85906
7066870005	**BH-6 (0-4)**	EPA 3050B	85841	EPA 6010C	85906
7066870006	**BH-5 (8-12)**	EPA 3050B	85841	EPA 6010C	85906
7066870007	**BH-7 (0-4)**	EPA 3050B	85841	EPA 6010C	85906
7066870008	**BH-8 (8-12)**	EPA 3050B	85841	EPA 6010C	85906
7066870009	**BH-9 (4-7)**	EPA 3050B	85841	EPA 6010C	85906
7066870010	**BH-9 (13-14)**	EPA 3050B	85841	EPA 6010C	85906
7066870011	**BH-11 (0-4)**	EPA 3050B	85841	EPA 6010C	85906

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
7066870012	**BH-12 (0-4)**	EPA 3050B	85841	EPA 6010C	85906
7066870001	**BH-1 (7-8)**	EPA 7471B	85871	EPA 7471B	85897
7066870002	**BH-2 (1-3)**	EPA 7471B	85871	EPA 7471B	85897
7066870003	**BH-3 (1-4)**	EPA 7471B	85871	EPA 7471B	85897
7066870004	**BH-4 (0-4)**	EPA 7471B	85871	EPA 7471B	85897
7066870005	**BH-6 (0-4)**	EPA 7471B	85871	EPA 7471B	85897
7066870006	**BH-5 (8-12)**	EPA 7471B	85871	EPA 7471B	85897
7066870007	**BH-7 (0-4)**	EPA 7471B	85871	EPA 7471B	85897
7066870008	**BH-8 (8-12)**	EPA 7471B	85871	EPA 7471B	85897
7066870009	**BH-9 (4-7)**	EPA 7471B	85871	EPA 7471B	85897
7066870010	**BH-9 (13-14)**	EPA 7471B	85871	EPA 7471B	85897
7066870011	**BH-11 (0-4)**	EPA 7471B	85871	EPA 7471B	85897
7066870012	**BH-12 (0-4)**	EPA 7471B	85871	EPA 7471B	85897
7066870001	**BH-1 (7-8)**	EPA 3545A	85805	EPA 8270D	86136
7066870002	**BH-2 (1-3)**	EPA 3545A	85805	EPA 8270D	86136
7066870003	**BH-3 (1-4)**	EPA 3545A	85805	EPA 8270D	86136
7066870004	**BH-4 (0-4)**	EPA 3545A	85805	EPA 8270D	86136
7066870005	**BH-6 (0-4)**	EPA 3545A	85805	EPA 8270D	86136
7066870006	**BH-5 (8-12)**	EPA 3545A	85805	EPA 8270D	86136
7066870007	**BH-7 (0-4)**	EPA 3545A	85805	EPA 8270D	86136
7066870008	**BH-8 (8-12)**	EPA 3545A	85805	EPA 8270D	86136
7066870009	**BH-9 (4-7)**	EPA 3545A	85805	EPA 8270D	86136
7066870010	**BH-9 (13-14)**	EPA 3545A	85805	EPA 8270D	86136
7066870011	**BH-11 (0-4)**	EPA 3545A	85805	EPA 8270D	86136
7066870012	**BH-12 (0-4)**	EPA 3545A	85805	EPA 8270D	86136
7066870001	**BH-1 (7-8)**	EPA 5035A-L	86468	EPA 8260C	86469
7066870002	**BH-2 (1-3)**	EPA 5035A-L	86468	EPA 8260C	86469
7066870003	**BH-3 (1-4)**	EPA 5035A-L	86468	EPA 8260C	86469
7066870004	**BH-4 (0-4)**	EPA 5035A-L	86468	EPA 8260C	86469
7066870005	**BH-6 (0-4)**	EPA 5035A-L	86468	EPA 8260C	86469
7066870006	**BH-5 (8-12)**	EPA 5035A-L	86468	EPA 8260C	86469
7066870007	**BH-7 (0-4)**	EPA 5035A-L	86468	EPA 8260C	86469
7066870008	**BH-8 (8-12)**	EPA 5035A-L	86468	EPA 8260C	86469
7066870009	**BH-9 (4-7)**	EPA 5035A-L	86468	EPA 8260C	86469
7066870011	**BH-11 (0-4)**	EPA 5035A-L	86669	EPA 8260C	86670
7066870012	**BH-12 (0-4)**	EPA 5035A-L	86669	EPA 8260C	86670
7066870010	**BH-9 (13-14)**	EPA 5035A-H/5030C	86646	EPA 8260C	86648
7066870001	**BH-1 (7-8)**	EPA 8260			
7066870002	**BH-2 (1-3)**	EPA 8260			
7066870003	**BH-3 (1-4)**	EPA 8260			
7066870004	**BH-4 (0-4)**	EPA 8260			
7066870005	**BH-6 (0-4)**	EPA 8260			
7066870006	**BH-5 (8-12)**	EPA 8260			
7066870007	**BH-7 (0-4)**	EPA 8260			
7066870008	**BH-8 (8-12)**	EPA 8260			
7066870011	**BH-11 (0-4)**	EPA 8260			

REPORT OF LABORATORY ANALYSIS

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
7066870012	**BH-12 (0-4)**	EPA 8260			
7066870001	**BH-1 (7-8)**	ASTM D2216-92M	85679		
7066870002	**BH-2 (1-3)**	ASTM D2216-92M	85679		
7066870003	**BH-3 (1-4)**	ASTM D2216-92M	85679		
7066870004	**BH-4 (0-4)**	ASTM D2216-92M	85679		
7066870005	**BH-6 (0-4)**	ASTM D2216-92M	85679		
7066870006	**BH-5 (8-12)**	ASTM D2216-92M	85679		
7066870007	**BH-7 (0-4)**	ASTM D2216-92M	85679		
7066870008	**BH-8 (8-12)**	ASTM D2216-92M	85679		
7066870009	**BH-9 (4-7)**	ASTM D2216-92M	85679		
7066870010	**BH-9 (13-14)**	ASTM D2216-92M	85679		
7066870011	**BH-11 (0-4)**	ASTM D2216-92M	85679		
7066870012	**BH-12 (0-4)**	ASTM D2216-92M	85679		
7066870001	**BH-1 (7-8)**	EPA 3060A	86148	EPA 7196A	86205
7066870002	**BH-2 (1-3)**	EPA 3060A	86148	EPA 7196A	86205
7066870003	**BH-3 (1-4)**	EPA 3060A	86148	EPA 7196A	86205
7066870004	**BH-4 (0-4)**	EPA 3060A	86148	EPA 7196A	86205
7066870005	**BH-6 (0-4)**	EPA 3060A	86148	EPA 7196A	86205
7066870006	**BH-5 (8-12)**	EPA 3060A	86148	EPA 7196A	86205
7066870007	**BH-7 (0-4)**	EPA 3060A	86148	EPA 7196A	86205
7066870008	**BH-8 (8-12)**	EPA 3060A	86148	EPA 7196A	86205
7066870009	**BH-9 (4-7)**	EPA 3060A	86148	EPA 7196A	86205
7066870010	**BH-9 (13-14)**	EPA 3060A	86148	EPA 7196A	86205
7066870011	**BH-11 (0-4)**	EPA 3060A	86148	EPA 7196A	86205
7066870012	**BH-12 (0-4)**	EPA 3060A	86148	EPA 7196A	86205
7066870001	**BH-1 (7-8)**	Trivalent Chromium Calculation	86350		
7066870002	**BH-2 (1-3)**	Trivalent Chromium Calculation	86350		
7066870003	**BH-3 (1-4)**	Trivalent Chromium Calculation	86350		
7066870004	**BH-4 (0-4)**	Trivalent Chromium Calculation	86350		
7066870005	**BH-6 (0-4)**	Trivalent Chromium Calculation	86350		
7066870006	**BH-5 (8-12)**	Trivalent Chromium Calculation	86350		
7066870007	**BH-7 (0-4)**	Trivalent Chromium Calculation	86350		
7066870008	**BH-8 (8-12)**	Trivalent Chromium Calculation	86350		
7066870009	**BH-9 (4-7)**	Trivalent Chromium Calculation	86350		
7066870010	**BH-9 (13-14)**	Trivalent Chromium Calculation	86350		
7066870011	**BH-11 (0-4)**	Trivalent Chromium Calculation	86350		
7066870012	**BH-12 (0-4)**	Trivalent Chromium Calculation	86350		
7066870001	**BH-1 (7-8)**	EPA 9010C	86178	EPA 9014 Total Cyanide	86234

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575 Broad Hollow Road
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(631)694-3040

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
7066870002	**BH-2 (1-3)**	EPA 9010C	86178	EPA 9014 Total Cyanide	86234
7066870003	**BH-3 (1-4)**	EPA 9010C	86178	EPA 9014 Total Cyanide	86234
7066870004	**BH-4 (0-4)**	EPA 9010C	86178	EPA 9014 Total Cyanide	86234
7066870005	**BH-6 (0-4)**	EPA 9010C	86178	EPA 9014 Total Cyanide	86234
7066870006	**BH-5 (8-12)**	EPA 9010C	86178	EPA 9014 Total Cyanide	86234
7066870007	**BH-7 (0-4)**	EPA 9010C	86323	EPA 9014 Total Cyanide	86336
7066870008	**BH-8 (8-12)**	EPA 9010C	86323	EPA 9014 Total Cyanide	86336
7066870009	**BH-9 (4-7)**	EPA 9010C	86323	EPA 9014 Total Cyanide	86336
7066870010	**BH-9 (13-14)**	EPA 9010C	86323	EPA 9014 Total Cyanide	86336
7066870011	**BH-11 (0-4)**	EPA 9010C	86323	EPA 9014 Total Cyanide	86336
7066870012	**BH-12 (0-4)**	EPA 9010C	86323	EPA 9014 Total Cyanide	86336

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CHAIN-OF-CUSTODY Analytical Request Document

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Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix W... List Pace Workorder Number or

WO#: 7066870

7066870

ALL SH...

Container Preservat...

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Company: BE3 Corp	Billing Information: ← Same
Address: 1270 Niagara St Buffalo, NY 14213	
Report To: Jbrydges@be3corp.com	Email To: Jason Brydges
Copy To: abrennen@be3corp.com	Site Collection Info/Address: 31 Water St, Jamestown
Customer Project Name/Number: 31 WATER ST RI	State: NY / County/City: Jamestown / Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: ~~716-9[illegible]~~ Email: 716-249-6880	Site/Facility ID #: / Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [ ] No / Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: Part 375 VOC+TICs; 375 SVOC+TICs, Metal, PCB, Pest; 375 Herb

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Part 375 VOC+TICs	375 SVOC+TICs, Metal, PCB, Pest	375 Herb	Lab Sample # / Comments
BH-1 (7-8)	SO	C	10/3	0830				2	X	X		001
BH-2 (1-3)		C	10/3	0930					X	X	X	002
BH-3 (1-4)		C	10/3	1000					X	X		003
BH-4 (0-4)		C	10/3	1100					X	X	X	004
BH-6 (0-4		C	10/3	1145					X	X	X	005
BH-5 (8-12)		C	10/3	1215					X	X		006
BH-7 (0-4)		C	10/3	1330					X	X	X	007
BH-8 (8-12)		C	10/3	1400					X	X		008
BH-9 (4-7)		G	10/3	1445					X	X	X	009
BH-9 (13-14)		G	10/3	1500					X	X		010

Lab Profile/Line:

Lab Sample Receipt Checklist:	
Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips: _____	
Sample pH Acceptable	Y N NA
pH Strips: _____	
Sulfide Present	Y N NA
Lead Acetate Strips: _____	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: BUBBLE WRAP/BAG

Radchem sample(s) screened (<500 cpm): Y N (NA)

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #: 7830 7483 3457

Samples received via: (FEDEX) UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: (Y) N NA
Therm ID#: TH091
Cooler 1 Temp Upon Receipt: 5.3 oC
Cooler 1 Therm Corr. Factor: +0.2 oC
Cooler 1 Corrected Temp: 5.5 oC
Comments:

Relinquished by/Company: (Signature) BE3	Date/Time: 10/3 / 1730	Received by/Company: (Signature) Pace	Date/Time: 10/4/18 1030	MTJL LAB USE ONLY Table #:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	PM: PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 2

CHAIN-OF-CUSTODY Analytical Request Document

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LAB USE ONLY- Af

WO#: 7066870

PM: JM2 Due Date: 10/11/18

CLIENT: BE3

ALL

Company: BE3 Corp	Billing Information: ← Same
Address: 1270 Niagara St Buffalo, NY 14213	
Report To: Jason Brydges	Email To: Jbrydges@be3corp.com
Copy To: abrennen@be3corp.com	Site Collection Info/Address: 31 Water St
Customer Project Name/Number: 31 WATER ST RI	State: NY / County/City: Jamestown / Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 716-249-6880 Email:	Site/Facility ID #: / Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [X] No / Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: Part 375 VOC + TICs	Analyses: 375 SVOC + TICs, Metals, PCBs, Pest	Analyses: 375 Herb	Lab Profile/Line:
BH-10 (0-4)	SO	C	10/3	1550				2	X	X	X	011
BH-12 (0-4)				1620				2	X	X	X	012

Lab Profile/Line:

Lab Sample Receipt Checklist:
- Custody Seals Present/Intact: Y N NA
- Custody Signatures Present: Y N NA
- Collector Signature Present: Y N NA
- Bottles Intact: Y N NA
- Correct Bottles: Y N NA
- Sufficient Volume: Y N NA
- Samples Received on Ice: Y N NA
- VOA - Headspace Acceptable: Y N NA
- USDA Regulated Soils: Y N NA
- Samples in Holding Time: Y N NA
- Residual Chlorine Present: Y N NA
- Cl Strips: _____
- Sample pH Acceptable: Y N NA
- pH Strips: _____
- Sulfide Present: Y N NA
- Lead Acetate Strips: _____

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: Bubble wrap

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 7830 7483 3587

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
- Temp Blank Received: Y N NA
- Therm ID#: T1091
- Cooler 1 Temp Upon Receipt: 5.2 °C
- Cooler 1 Therm Corr. Factor: 0.0 °C
- Cooler 1 Corrected Temp: 5.2 °C
- Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
BE3	10/3/1730		10/4/18 10:30
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
- Table #:
- Acctnum:
- Template:
- Prelogin:
- PM:
- PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 2 of: 2

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

October 22, 2018

Jason Brydes
BE3 Environmental
1270 Niagara St
Buffalo, NY 14213

RE: Project: 31 WATER ST
Pace Project No.: 7067073

Dear Jason Brydes:
Enclosed are the analytical results for sample(s) received by the laboratory on October 05, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Murphy
james.murphy@pacelabs.com
(518)860-9724
Project Manager

Enclosures

cc: Alex Brennen, BE3 Corp

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

CERTIFICATIONS

Project: 31 WATER ST
Pace Project No.: 7067073

Long Island Certification IDs

575 Broad Hollow Rd, Melville, NY 11747
New York Certification #: 10478 Primary Accrediting Body
New Jersey Certification #: NY158
Pennsylvania Certification #: 68-00350
Connecticut Certification #: PH-0435
Maryland Certification #: 208
Rhode Island Certification #: LAO00340
Massachusetts Certification #: M-NY026
New Hampshire Certification #: 2987

REPORT OF LABORATORY ANALYSIS

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE SUMMARY

Project: 31 WATER ST
Pace Project No.: 7067073

Lab ID	Sample ID	Matrix	Date Collected	Date Received
7067073001	**BH-14 (18-20)**	Solid	10/04/18 08:30	10/05/18 10:45
7067073002	**BH-14 (15-16)**	Solid	10/04/18 08:40	10/05/18 10:45
7067073003	**BH-16 (10-11)**	Solid	10/04/18 10:07	10/05/18 10:45
7067073004	**BH-18 (0-4)**	Solid	10/04/18 11:10	10/05/18 10:45
7067073005	**BH-18 (14-15)**	Solid	10/04/18 11:10	10/05/18 10:45
7067073006	**BH-19 (0-9)**	Solid	10/04/18 13:05	10/05/18 10:45
7067073007	**BH-15 (12-16)**	Solid	10/04/18 13:50	10/05/18 10:45
7067073008	**BH-21 (0-4)**	Solid	10/04/18 15:15	10/05/18 10:45
7067073009	**BH-20 (0-4)**	Solid	10/04/18 14:30	10/05/18 10:45
7067073010	**BH-20 (6-7')**	Solid	10/04/18 14:40	10/05/18 10:45
7067073011	**BMW-91 (24.2-25)**	Solid	10/04/18 15:15	10/05/18 10:45

REPORT OF LABORATORY ANALYSIS

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(631)694-3040

SAMPLE ANALYTE COUNT

Project: 31 WATER ST
Pace Project No.: 7067073

Lab ID	Sample ID	Method	Analysts	Analytes Reported
7067073001	**BH-14 (18-20)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	RP1	42
		EPA 8260C	KGG	35
		EPA 8260	MJF	1
		ASTM D2216-92M	KM1	1
7067073002	**BH-14 (15-16)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	RP1	47
		EPA 8260C	KGG	35
		EPA 8260	MJF	1
		ASTM D2216-92M	KM1	1
7067073003	**BH-16 (10-11)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	RP1	40
		EPA 8260C	BBL	34
		EPA 8260	MJF	1
		ASTM D2216-92M	KM1	1
7067073004	**BH-18 (0-4)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	RP1	41
		EPA 8260C	BBL	36
		EPA 8260	MJF	1
		ASTM D2216-92M	KM1	1
7067073005	**BH-18 (14-15)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 6010C	JMW	12

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 31 WATER ST
Pace Project No.: 7067073

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 7471B	SK2	1
		EPA 8270D	RP1	41
		EPA 8260C	KGG	35
		EPA 8260	MJF	1
		ASTM D2216-92M	KM1	1
7067073006	**BH-19 (0-9)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	RP1	39
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
7067073007	**BH-15 (12-16)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	RP1	40
		EPA 8260C	BBL	48
		ASTM D2216-92M	KM1	1
7067073008	**BH-21 (0-4)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	RP1	36
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
7067073009	**BH-20 (0-4)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	RP1	50
		EPA 8260C	BBL	36
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1

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SAMPLE ANALYTE COUNT

Project: 31 WATER ST
Pace Project No.: 7067073

Lab ID	Sample ID	Method	Analysts	Analytes Reported
7067073010	**BH-20 (6-7')**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	RP1	35
		EPA 8260C	BBL	34
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
7067073011	**BMW-91 (24.2-25)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	RP1	39
		EPA 8260C	BBL	38
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Date: October 22, 2018

BH-14 (18-20) (Lab ID: 7067073001)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-14 (15-16) (Lab ID: 7067073002)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-16 (10-11) (Lab ID: 7067073003)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-18 (0-4) (Lab ID: 7067073004)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-18 (14-15) (Lab ID: 7067073005)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-19 (0-9) (Lab ID: 7067073006)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-15 (12-16) (Lab ID: 7067073007)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-20 (0-4) (Lab ID: 7067073009)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-20 (6-7') (Lab ID: 7067073010)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BMW-91 (24.2-25) (Lab ID: 7067073011)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: October 22, 2018

General Information:
11 samples were analyzed for EPA 8081B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86092

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-15 (12-16) (Lab ID: 7067073007)
  - 4,4'-DDE
- BH-20 (6-7') (Lab ID: 7067073010)
  - 4,4'-DDE
- MS (Lab ID: 396127)
  - 4,4'-DDD
  - 4,4'-DDE
  - Dieldrin
  - delta-BHC
- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - 4,4'-DDE
  - Dieldrin
  - delta-BHC

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BH-14 (15-16) (Lab ID: 7067073002)
  - 4,4'-DDT
- BH-14 (18-20) (Lab ID: 7067073001)
  - 4,4'-DDT
- BH-15 (12-16) (Lab ID: 7067073007)
  - 4,4'-DDT
- BH-16 (10-11) (Lab ID: 7067073003)
  - 4,4'-DDT
- BH-18 (0-4) (Lab ID: 7067073004)
  - 4,4'-DDT
- BH-18 (14-15) (Lab ID: 7067073005)
  - 4,4'-DDT

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: October 22, 2018

QC Batch: 86092

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BH-19 (0-9) (Lab ID: 7067073006)
  - 4,4'-DDT
- BH-20 (6-7') (Lab ID: 7067073010)
  - 4,4'-DDT
- MS (Lab ID: 396127)
  - 4,4'-DDT
- MSD (Lab ID: 396128)
  - 4,4'-DDT

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 86092

S0: Surrogate recovery outside laboratory control limits.

- BH-15 (12-16) (Lab ID: 7067073007)
  - Decachlorobiphenyl (S)
- BH-20 (0-4) (Lab ID: 7067073009)
  - Decachlorobiphenyl (S)
- BH-20 (6-7') (Lab ID: 7067073010)
  - Decachlorobiphenyl (S)
- MS (Lab ID: 396127)
  - Decachlorobiphenyl (S)
- MSD (Lab ID: 396128)
  - Decachlorobiphenyl (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86092

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067135003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 396127)
  - 4,4'-DDD
  - 4,4'-DDE
  - 4,4'-DDT
  - Aldrin
  - Dieldrin

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: October 22, 2018

QC Batch: 86092

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067135003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Endosulfan I
- Endosulfan II
- Endosulfan sulfate
- Heptachlor
- alpha-Chlordane
- delta-BHC
- gamma-BHC (Lindane)

- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - 4,4'-DDE
  - 4,4'-DDT
  - Aldrin
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endrin
  - Heptachlor
  - alpha-BHC
  - alpha-Chlordane
  - beta-BHC
  - delta-BHC
  - gamma-BHC (Lindane)

R1: RPD value was outside control limits.

- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - 4,4'-DDE
  - 4,4'-DDT
  - Aldrin
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endosulfan sulfate
  - Endrin
  - Heptachlor
  - alpha-BHC
  - alpha-Chlordane
  - beta-BHC
  - delta-BHC
  - gamma-BHC (Lindane)

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: October 22, 2018

Analyte Comments:

QC Batch: 86092

1j: Surrogate recovery high due to unresolved interferences.
- BH-15 (12-16) (Lab ID: 7067073007)
  - Decachlorobiphenyl (S)
- BH-20 (0-4) (Lab ID: 7067073009)
  - Decachlorobiphenyl (S)
- BH-20 (6-7') (Lab ID: 7067073010)
  - Decachlorobiphenyl (S)

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- BH-15 (12-16) (Lab ID: 7067073007)
  - Decachlorobiphenyl (S)
- BH-20 (0-4) (Lab ID: 7067073009)
  - Decachlorobiphenyl (S)
- BH-20 (6-7') (Lab ID: 7067073010)
  - Decachlorobiphenyl (S)
- MS (Lab ID: 396127)
  - 4,4'-DDE
  - 4,4'-DDT
  - Decachlorobiphenyl (S)
  - Aldrin
  - gamma-BHC (Lindane)
  - alpha-Chlordane
  - Dieldrin
  - Endosulfan I
  - Heptachlor
- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - 4,4'-DDE
  - 4,4'-DDT
  - Decachlorobiphenyl (S)
  - Aldrin
  - beta-BHC
  - delta-BHC
  - gamma-BHC (Lindane)
  - alpha-Chlordane
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endrin
  - Heptachlor

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8082A**
Description: 8082 GCS PCB
Client: BE3 Environmental
Date: October 22, 2018

General Information:
11 samples were analyzed for EPA 8082A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8151A**
Description: 8151 Chlorinated Herbicides
Client: BE3 Environmental
Date: October 22, 2018

General Information:
3 samples were analyzed for EPA 8151A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 8151A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 6010C**
Description: 6010 MET ICP
Client: BE3 Environmental
Date: October 22, 2018

General Information:
11 samples were analyzed for EPA 6010C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 85986

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 395657)
  - Copper
  - Manganese

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 7471B**
Description: 7471 Mercury
Client: BE3 Environmental
Date: October 22, 2018

General Information:
11 samples were analyzed for EPA 7471B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8270D**
Description: 8270 MSSV
Client: BE3 Environmental
Date: October 22, 2018

General Information:
11 samples were analyzed for EPA 8270D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3545A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86032

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-14 (15-16) (Lab ID: 7067073002)
  - 2-Fluorophenol (S)
- BH-14 (18-20) (Lab ID: 7067073001)
  - 2-Fluorophenol (S)
- BH-15 (12-16) (Lab ID: 7067073007)
  - 2-Fluorophenol (S)
- BH-16 (10-11) (Lab ID: 7067073003)
  - 2-Fluorophenol (S)
- BH-18 (0-4) (Lab ID: 7067073004)
  - 2-Fluorophenol (S)
- BH-18 (14-15) (Lab ID: 7067073005)
  - 2-Fluorophenol (S)
- BH-19 (0-9) (Lab ID: 7067073006)
  - 2-Fluorophenol (S)
- BH-20 (0-4) (Lab ID: 7067073009)
  - 2-Fluorophenol (S)
  - Fluoranthene
- BH-20 (6-7') (Lab ID: 7067073010)
  - 2-Fluorophenol (S)
  - Fluoranthene
- BH-21 (0-4) (Lab ID: 7067073008)
  - 2-Fluorophenol (S)
  - Fluoranthene
- BLANK (Lab ID: 395824)
  - 2-Fluorophenol (S)
- BMW-91 (24.2-25) (Lab ID: 7067073011)
  - 2-Fluorophenol (S)

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8270D**
Description: 8270 MSSV
Client: BE3 Environmental
Date: October 22, 2018

QC Batch: 86032

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 395825)
  - 2-Fluorophenol (S)
  - Fluoranthene
- MS (Lab ID: 395866)
  - 2-Fluorophenol (S)
  - Fluoranthene
- MSD (Lab ID: 395867)
  - 2-Fluorophenol (S)
  - Fluoranthene

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 86032

S0: Surrogate recovery outside laboratory control limits.

- BH-19 (0-9) (Lab ID: 7067073006)
  - 2-Fluorophenol (S)
- MS (Lab ID: 395866)
  - Nitrobenzene-d5 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8260C**
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: October 22, 2018

General Information:
8 samples were analyzed for EPA 8260C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A-L with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86669

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-18 (0-4) (Lab ID: 7067073004)
  - Tetrachloroethene
- DUP (Lab ID: 398792)
  - Acetone
- LCS (Lab ID: 398789)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride
  - Tetrachloroethene
- MS (Lab ID: 401714)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride
  - Tetrachloroethene

QC Batch: 87239

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-15 (12-16) (Lab ID: 7067073007)
  - Acetone
- BH-20 (0-4) (Lab ID: 7067073009)
  - 2-Butanone (MEK)
  - Acetone
- BH-20 (6-7') (Lab ID: 7067073010)

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(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8260C**
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: October 22, 2018

QC Batch: 87239

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
- 2-Butanone (MEK)
- Acetone

- LCS (Lab ID: 401843)
  - 2-Butanone (MEK)
  - Acetone
- MS (Lab ID: 401844)
  - 2-Butanone (MEK)
  - Acetone

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
- BLANK (Lab ID: 401842)
  - Chlorodifluoromethane
- BMW-91 (24.2-25) (Lab ID: 7067073011)
  - Chlorodifluoromethane
- DUP (Lab ID: 401845)
  - Chlorodifluoromethane
- LCS (Lab ID: 401843)
  - Chlorodifluoromethane
- MS (Lab ID: 401844)
  - Chlorodifluoromethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 86669

S1: Surrogate recovery outside laboratory control limits (confirmed by re-analysis).
- BH-16 (10-11) (Lab ID: 7067073003)
  - 1,2-Dichloroethane-d4 (S)
- DUP (Lab ID: 398792)
  - 1,2-Dichloroethane-d4 (S)

S7: Surrogate recovery outside control limits (not confirmed by re-analysis).
- BH-18 (0-4) (Lab ID: 7067073004)
  - 1,2-Dichloroethane-d4 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8260C**
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: October 22, 2018

QC Batch: 87239

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 401843)
  - n-Butylbenzene
  - n-Propylbenzene
  - sec-Butylbenzene

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 86669

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 398792)
  - Acetone
  - Methylene Chloride
  - Trichloroethene
  - o-Xylene

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8260C**
Description: 8260 MSV 5035A-H Med Level
Client: BE3 Environmental
Date: October 22, 2018

General Information:
3 samples were analyzed for EPA 8260C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A-H/5030C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86646

IH: This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.

- BH-14 (15-16) (Lab ID: 7067073002)
  - Acetone
- LCS (Lab ID: 398743)
  - Acetone
- MS (Lab ID: 401911)
  - Acetone

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86646

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-14 (15-16) (Lab ID: 7067073002)
  - 1,4-Dioxane (p-Dioxane)
- LCS (Lab ID: 398743)
  - 1,4-Dioxane (p-Dioxane)
- MS (Lab ID: 401911)
  - 1,4-Dioxane (p-Dioxane)

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BH-14 (15-16) (Lab ID: 7067073002)
  - 2-Butanone (MEK)
- BH-14 (18-20) (Lab ID: 7067073001)
  - 2-Butanone (MEK)
- BH-18 (14-15) (Lab ID: 7067073005)
  - Acetone
- BLANK (Lab ID: 398742)
  - 2-Butanone (MEK)
- DUP (Lab ID: 401910)
  - 2-Butanone (MEK)

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8260C**
Description: 8260 MSV 5035A-H Med Level
Client: BE3 Environmental
Date: October 22, 2018

QC Batch: 86646

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- LCS (Lab ID: 398743)
  - 2-Butanone (MEK)
- MS (Lab ID: 401911)
  - 2-Butanone (MEK)

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86646

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067073002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 401911)
  - Tetrachloroethene
  - cis-1,2-Dichloroethene

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 86646

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 401910)
  - Trichloroethene
  - cis-1,2-Dichloroethene

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8260**
Description: TIC MSV Soil
Client: BE3 Environmental
Date: October 22, 2018

General Information:
10 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-14 (18-20) **Lab ID: 7067073001** Collected: 10/04/18 08:30 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/13/18 05:54	309-00-2	
alpha-BHC	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/13/18 05:54	319-84-6	
beta-BHC	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/13/18 05:54	319-85-7	
delta-BHC	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/13/18 05:54	319-86-8	
gamma-BHC (Lindane)	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/13/18 05:54	58-89-9	
alpha-Chlordane	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/13/18 05:54	5103-71-9	
4,4'-DDD	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:54	72-54-8	
4,4'-DDE	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:54	72-55-9	
4,4'-DDT	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:54	50-29-3	CL
Dieldrin	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:54	60-57-1	
Endosulfan I	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/13/18 05:54	959-98-8	
Endosulfan II	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:54	33213-65-9	
Endosulfan sulfate	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:54	1031-07-8	
Endrin	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:54	72-20-8	
Heptachlor	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/13/18 05:54	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	97	%	30-150		1	10/08/18 17:25	10/13/18 05:54	877-09-8	
Decachlorobiphenyl (S)	139	%	30-150		1	10/08/18 17:25	10/13/18 05:54	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<40.0**	ug/kg	40.0	20.0	1	10/08/18 17:25	10/12/18 02:17	12674-11-2	
PCB-1221 (Aroclor 1221)	**<81.3**	ug/kg	81.3	40.6	1	10/08/18 17:25	10/12/18 02:17	11104-28-2	
PCB-1232 (Aroclor 1232)	**<40.0**	ug/kg	40.0	20.0	1	10/08/18 17:25	10/12/18 02:17	11141-16-5	
PCB-1242 (Aroclor 1242)	**<40.0**	ug/kg	40.0	20.0	1	10/08/18 17:25	10/12/18 02:17	53469-21-9	
PCB-1248 (Aroclor 1248)	**<40.0**	ug/kg	40.0	20.0	1	10/08/18 17:25	10/12/18 02:17	12672-29-6	
PCB-1254 (Aroclor 1254)	**<40.0**	ug/kg	40.0	20.0	1	10/08/18 17:25	10/12/18 02:17	11097-69-1	
PCB-1260 (Aroclor 1260)	**<40.0**	ug/kg	40.0	20.0	1	10/08/18 17:25	10/12/18 02:17	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	71	%	30-150		1	10/08/18 17:25	10/12/18 02:17	877-09-8	
Decachlorobiphenyl (S)	80	%	30-150		1	10/08/18 17:25	10/12/18 02:17	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**16.2**	mg/kg	0.63	0.19	1	10/06/18 15:14	10/08/18 13:17	7440-38-2	
Barium	**64.0**	mg/kg	12.6	0.96	1	10/06/18 15:14	10/08/18 13:17	7440-39-3	
Beryllium	**0.42**	mg/kg	0.31	0.040	1	10/06/18 15:14	10/08/18 13:17	7440-41-7	
Cadmium	**0.53**	mg/kg	0.16	0.019	1	10/06/18 15:14	10/08/18 13:17	7440-43-9	
Chromium	**22.3**	mg/kg	0.63	0.060	1	10/06/18 15:14	10/08/18 13:17	7440-47-3	
Copper	**23.0**	mg/kg	1.6	0.11	1	10/06/18 15:14	10/08/18 13:17	7440-50-8	
Lead	**10.7**	mg/kg	0.31	0.15	1	10/06/18 15:14	10/08/18 13:17	7439-92-1	
Manganese	**534**	mg/kg	0.94	0.054	1	10/06/18 15:14	10/08/18 13:17	7439-96-5	
Nickel	**30.3**	mg/kg	2.5	0.22	1	10/06/18 15:14	10/08/18 13:17	7440-02-0	
Selenium	**<0.63**	mg/kg	0.63	0.33	1	10/06/18 15:14	10/08/18 13:17	7782-49-2	
Silver	**<0.63**	mg/kg	0.63	0.079	1	10/06/18 15:14	10/08/18 13:17	7440-22-4	
Zinc	**63.4**	mg/kg	1.3	0.080	1	10/06/18 15:14	10/08/18 13:17	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-14 (18-20) **Lab ID: 7067073001** Collected: 10/04/18 08:30 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.041**	mg/kg	0.041	0.025	1	10/06/18 15:40	10/09/18 12:00	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<80.4**	ug/kg	80.4	11.9	1	10/08/18 10:12	10/10/18 16:44	83-32-9	
Acenaphthylene	**<80.4**	ug/kg	80.4	16.1	1	10/08/18 10:12	10/10/18 16:44	208-96-8	
Anthracene	**<80.4**	ug/kg	80.4	23.5	1	10/08/18 10:12	10/10/18 16:44	120-12-7	
Benzo(a)anthracene	**<80.4**	ug/kg	80.4	18.4	1	10/08/18 10:12	10/10/18 16:44	56-55-3	
Benzo(a)pyrene	**<80.4**	ug/kg	80.4	34.0	1	10/08/18 10:12	10/10/18 16:44	50-32-8	
Benzo(b)fluoranthene	**<80.4**	ug/kg	80.4	27.9	1	10/08/18 10:12	10/10/18 16:44	205-99-2	
Benzo(g,h,i)perylene	**<80.4**	ug/kg	80.4	38.9	1	10/08/18 10:12	10/10/18 16:44	191-24-2	
Benzo(k)fluoranthene	**<80.4**	ug/kg	80.4	24.9	1	10/08/18 10:12	10/10/18 16:44	207-08-9	
Chrysene	**<80.4**	ug/kg	80.4	36.0	1	10/08/18 10:12	10/10/18 16:44	218-01-9	
Dibenz(a,h)anthracene	**<80.4**	ug/kg	80.4	26.3	1	10/08/18 10:12	10/10/18 16:44	53-70-3	
Dibenzofuran	**<80.4**	ug/kg	80.4	14.6	1	10/08/18 10:12	10/10/18 16:44	132-64-9	
Fluoranthene	**<80.4**	ug/kg	80.4	67.6	1	10/08/18 10:12	10/10/18 16:44	206-44-0	
Fluorene	**<80.4**	ug/kg	80.4	20.4	1	10/08/18 10:12	10/10/18 16:44	86-73-7	
Hexachlorobenzene	**<80.4**	ug/kg	80.4	15.9	1	10/08/18 10:12	10/10/18 16:44	118-74-1	
Indeno(1,2,3-cd)pyrene	**<80.4**	ug/kg	80.4	30.7	1	10/08/18 10:12	10/10/18 16:44	193-39-5	
2-Methylphenol(o-Cresol)	**<80.4**	ug/kg	80.4	44.5	1	10/08/18 10:12	10/10/18 16:44	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<80.4**	ug/kg	80.4	29.0	1	10/08/18 10:12	10/10/18 16:44		
Naphthalene	**<80.4**	ug/kg	80.4	8.9	1	10/08/18 10:12	10/10/18 16:44	91-20-3	
Pentachlorophenol	**<804**	ug/kg	804	8.1	1	10/08/18 10:12	10/10/18 16:44	87-86-5	
Phenanthrene	**90.8**	ug/kg	80.4	25.9	1	10/08/18 10:12	10/10/18 16:44	85-01-8	
Phenol	**<80.4**	ug/kg	80.4	15.3	1	10/08/18 10:12	10/10/18 16:44	108-95-2	
Pyrene	**52.0J**	ug/kg	80.4	38.1	1	10/08/18 10:12	10/10/18 16:44	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	50	%	23-120		1	10/08/18 10:12	10/10/18 16:44	4165-60-0	
2-Fluorobiphenyl (S)	56	%	30-115		1	10/08/18 10:12	10/10/18 16:44	321-60-8	
p-Terphenyl-d14 (S)	83	%	18-137		1	10/08/18 10:12	10/10/18 16:44	1718-51-0	
Phenol-d5 (S)	67	%	24-113		1	10/08/18 10:12	10/10/18 16:44	4165-62-2	
2-Fluorophenol (S)	74	%	25-121		1	10/08/18 10:12	10/10/18 16:44	367-12-4	CH
2,4,6-Tribromophenol (S)	45	%	19-122		1	10/08/18 10:12	10/10/18 16:44	118-79-6	
2-Chlorophenol-d4 (S)	49	%	20-130		1	10/08/18 10:12	10/10/18 16:44	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	36	%	20-130		1	10/08/18 10:12	10/10/18 16:44	2199-69-1	
Tentatively Identified Compounds									
Unknown	**164J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44		
Unknown Ketone	**176J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44		
Unknown Ketone	**6130J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44		
Unknown Ketone	**181J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44		
Unknown Ketone	**51800J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44		
Unknown Aldol Condensate	**1880J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44		
Unknown Alcohol	**1960J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44		
Benzophenone	**217J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44	119-61-9	N
Unknown Petroleum Alkane	**257J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44		
Unknown Petroleum Alkane	**276J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44		

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-14 (18-20) **Lab ID: 7067073001** Collected: 10/04/18 08:30 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Organic Acid	**645J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44		
Unknown Amide	**252J**	ug/kg			1	10/08/18 10:12	10/10/18 16:44		
8260 MSV 5035A-H Med Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-H/5030C								
Acetone	**<107**	ug/kg	107	38.5	0.98	10/11/18 08:40	10/11/18 15:58	67-64-1	
Benzene	**<107**	ug/kg	107	6.2	0.98	10/11/18 08:40	10/11/18 15:58	71-43-2	
2-Butanone (MEK)	**<107**	ug/kg	107	10.6	0.98	10/11/18 08:40	10/11/18 15:58	78-93-3	CL
n-Butylbenzene	**<107**	ug/kg	107	10.2	0.98	10/11/18 08:40	10/11/18 15:58	104-51-8	
sec-Butylbenzene	**<107**	ug/kg	107	5.5	0.98	10/11/18 08:40	10/11/18 15:58	135-98-8	
tert-Butylbenzene	**<107**	ug/kg	107	5.6	0.98	10/11/18 08:40	10/11/18 15:58	98-06-6	
Carbon tetrachloride	**<107**	ug/kg	107	29.9	0.98	10/11/18 08:40	10/11/18 15:58	56-23-5	
Chlorobenzene	**<107**	ug/kg	107	6.7	0.98	10/11/18 08:40	10/11/18 15:58	108-90-7	
Chloroform	**<107**	ug/kg	107	7.1	0.98	10/11/18 08:40	10/11/18 15:58	67-66-3	
1,2-Dichlorobenzene	**<107**	ug/kg	107	5.4	0.98	10/11/18 08:40	10/11/18 15:58	95-50-1	
1,3-Dichlorobenzene	**<107**	ug/kg	107	8.8	0.98	10/11/18 08:40	10/11/18 15:58	541-73-1	
1,4-Dichlorobenzene	**<107**	ug/kg	107	7.7	0.98	10/11/18 08:40	10/11/18 15:58	106-46-7	
1,1-Dichloroethane	**<107**	ug/kg	107	5.7	0.98	10/11/18 08:40	10/11/18 15:58	75-34-3	
1,2-Dichloroethane	**<107**	ug/kg	107	53.7	0.98	10/11/18 08:40	10/11/18 15:58	107-06-2	
1,1-Dichloroethene	**<107**	ug/kg	107	15.8	0.98	10/11/18 08:40	10/11/18 15:58	75-35-4	
cis-1,2-Dichloroethene	**789**	ug/kg	107	9.3	0.98	10/11/18 08:40	10/11/18 15:58	156-59-2	D6
trans-1,2-Dichloroethene	**<107**	ug/kg	107	18.2	0.98	10/11/18 08:40	10/11/18 15:58	156-60-5	
1,4-Dioxane (p-Dioxane)	**<2690**	ug/kg	2690	1340	0.98	10/11/18 08:40	10/11/18 15:58	123-91-1	
Ethylbenzene	**<107**	ug/kg	107	9.7	0.98	10/11/18 08:40	10/11/18 15:58	100-41-4	
Methylene Chloride	**<107**	ug/kg	107	25.6	0.98	10/11/18 08:40	10/11/18 15:58	75-09-2	
Methyl-tert-butyl ether	**<107**	ug/kg	107	10.6	0.98	10/11/18 08:40	10/11/18 15:58	1634-04-4	
n-Propylbenzene	**<107**	ug/kg	107	6.4	0.98	10/11/18 08:40	10/11/18 15:58	103-65-1	
Tetrachloroethene	**<107**	ug/kg	107	12.2	0.98	10/11/18 08:40	10/11/18 15:58	127-18-4	
Toluene	**<107**	ug/kg	107	8.1	0.98	10/11/18 08:40	10/11/18 15:58	108-88-3	
1,1,1-Trichloroethane	**<107**	ug/kg	107	24.9	0.98	10/11/18 08:40	10/11/18 15:58	71-55-6	
Trichloroethene	**325**	ug/kg	107	10.0	0.98	10/11/18 08:40	10/11/18 15:58	79-01-6	D6
1,2,4-Trimethylbenzene	**<107**	ug/kg	107	8.5	0.98	10/11/18 08:40	10/11/18 15:58	95-63-6	
1,3,5-Trimethylbenzene	**<107**	ug/kg	107	5.6	0.98	10/11/18 08:40	10/11/18 15:58	108-67-8	
Vinyl chloride	**<107**	ug/kg	107	12.1	0.98	10/11/18 08:40	10/11/18 15:58	75-01-4	
Xylene (Total)	**<215**	ug/kg	215	107	0.98	10/11/18 08:40	10/11/18 15:58	1330-20-7	
m&p-Xylene	**<215**	ug/kg	215	12.6	0.98	10/11/18 08:40	10/11/18 15:58	179601-23-1	
o-Xylene	**<107**	ug/kg	107	7.3	0.98	10/11/18 08:40	10/11/18 15:58	95-47-6	
Surrogates									
Toluene-d8 (S)	102	%	43-157		0.98	10/11/18 08:40	10/11/18 15:58	2037-26-5	
4-Bromofluorobenzene (S)	99	%	34-145		0.98	10/11/18 08:40	10/11/18 15:58	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	33-150		0.98	10/11/18 08:40	10/11/18 15:58	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TICs Found**				1		10/16/18 15:55		

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-14 (18-20) **Lab ID: 7067073001** Collected: 10/04/18 08:30 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**17.6**	%	0.10	0.10	1		10/08/18 13:04		

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Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-14 (15-16) **Lab ID: 7067073002** Collected: 10/04/18 08:40 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.3**	ug/kg	2.3	1.1	1	10/08/18 17:25	10/13/18 06:24	309-00-2	
alpha-BHC	**<2.3**	ug/kg	2.3	1.1	1	10/08/18 17:25	10/13/18 06:24	319-84-6	
beta-BHC	**<2.3**	ug/kg	2.3	1.1	1	10/08/18 17:25	10/13/18 06:24	319-85-7	
delta-BHC	**<2.3**	ug/kg	2.3	1.1	1	10/08/18 17:25	10/13/18 06:24	319-86-8	
gamma-BHC (Lindane)	**<2.3**	ug/kg	2.3	1.1	1	10/08/18 17:25	10/13/18 06:24	58-89-9	
alpha-Chlordane	**<2.3**	ug/kg	2.3	1.1	1	10/08/18 17:25	10/13/18 06:24	5103-71-9	
4,4'-DDD	**<4.4**	ug/kg	4.4	2.2	1	10/08/18 17:25	10/13/18 06:24	72-54-8	
4,4'-DDE	**<4.4**	ug/kg	4.4	2.2	1	10/08/18 17:25	10/13/18 06:24	72-55-9	
4,4'-DDT	**<4.4**	ug/kg	4.4	2.2	1	10/08/18 17:25	10/13/18 06:24	50-29-3	CL
Dieldrin	**<4.4**	ug/kg	4.4	2.2	1	10/08/18 17:25	10/13/18 06:24	60-57-1	
Endosulfan I	**<2.3**	ug/kg	2.3	1.1	1	10/08/18 17:25	10/13/18 06:24	959-98-8	
Endosulfan II	**<4.4**	ug/kg	4.4	2.2	1	10/08/18 17:25	10/13/18 06:24	33213-65-9	
Endosulfan sulfate	**<4.4**	ug/kg	4.4	2.2	1	10/08/18 17:25	10/13/18 06:24	1031-07-8	
Endrin	**<4.4**	ug/kg	4.4	2.2	1	10/08/18 17:25	10/13/18 06:24	72-20-8	
Heptachlor	**<2.3**	ug/kg	2.3	1.1	1	10/08/18 17:25	10/13/18 06:24	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	56	%	30-150		1	10/08/18 17:25	10/13/18 06:24	877-09-8	
Decachlorobiphenyl (S)	67	%	30-150		1	10/08/18 17:25	10/13/18 06:24	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<44.2**	ug/kg	44.2	22.1	1	10/08/18 17:25	10/12/18 02:30	12674-11-2	
PCB-1221 (Aroclor 1221)	**<89.8**	ug/kg	89.8	44.9	1	10/08/18 17:25	10/12/18 02:30	11104-28-2	
PCB-1232 (Aroclor 1232)	**<44.2**	ug/kg	44.2	22.1	1	10/08/18 17:25	10/12/18 02:30	11141-16-5	
PCB-1242 (Aroclor 1242)	**<44.2**	ug/kg	44.2	22.1	1	10/08/18 17:25	10/12/18 02:30	53469-21-9	
PCB-1248 (Aroclor 1248)	**<44.2**	ug/kg	44.2	22.1	1	10/08/18 17:25	10/12/18 02:30	12672-29-6	
PCB-1254 (Aroclor 1254)	**<44.2**	ug/kg	44.2	22.1	1	10/08/18 17:25	10/12/18 02:30	11097-69-1	
PCB-1260 (Aroclor 1260)	**<44.2**	ug/kg	44.2	22.1	1	10/08/18 17:25	10/12/18 02:30	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	46	%	30-150		1	10/08/18 17:25	10/12/18 02:30	877-09-8	
Decachlorobiphenyl (S)	45	%	30-150		1	10/08/18 17:25	10/12/18 02:30	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**7.0**	mg/kg	0.66	0.20	1	10/06/18 15:14	10/08/18 13:18	7440-38-2	
Barium	**103**	mg/kg	13.2	1.0	1	10/06/18 15:14	10/08/18 13:18	7440-39-3	
Beryllium	**0.71**	mg/kg	0.33	0.042	1	10/06/18 15:14	10/08/18 13:18	7440-41-7	
Cadmium	**0.93**	mg/kg	0.17	0.020	1	10/06/18 15:14	10/08/18 13:18	7440-43-9	
Chromium	**23.1**	mg/kg	0.66	0.064	1	10/06/18 15:14	10/08/18 13:18	7440-47-3	
Copper	**39.1**	mg/kg	1.7	0.12	1	10/06/18 15:14	10/08/18 13:18	7440-50-8	
Lead	**12.2**	mg/kg	0.33	0.15	1	10/06/18 15:14	10/08/18 13:18	7439-92-1	
Manganese	**469**	mg/kg	0.99	0.057	1	10/06/18 15:14	10/08/18 13:18	7439-96-5	
Nickel	**32.5**	mg/kg	2.6	0.24	1	10/06/18 15:14	10/08/18 13:18	7440-02-0	
Selenium	**<0.66**	mg/kg	0.66	0.35	1	10/06/18 15:14	10/08/18 13:18	7782-49-2	
Silver	**<0.66**	mg/kg	0.66	0.083	1	10/06/18 15:14	10/08/18 13:18	7440-22-4	
Zinc	**76.1**	mg/kg	1.3	0.085	1	10/06/18 15:14	10/08/18 13:18	7440-66-6	

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-14 (15-16) **Lab ID: 7067073002** Collected: 10/04/18 08:40 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.040**	mg/kg	0.040	0.025	1	10/06/18 15:40	10/09/18 12:01	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<89.1**	ug/kg	89.1	13.2	1	10/08/18 10:12	10/10/18 17:12	83-32-9	
Acenaphthylene	**<89.1**	ug/kg	89.1	17.8	1	10/08/18 10:12	10/10/18 17:12	208-96-8	
Anthracene	**<89.1**	ug/kg	89.1	26.0	1	10/08/18 10:12	10/10/18 17:12	120-12-7	
Benzo(a)anthracene	**<89.1**	ug/kg	89.1	20.4	1	10/08/18 10:12	10/10/18 17:12	56-55-3	
Benzo(a)pyrene	**<89.1**	ug/kg	89.1	37.6	1	10/08/18 10:12	10/10/18 17:12	50-32-8	
Benzo(b)fluoranthene	**<89.1**	ug/kg	89.1	30.9	1	10/08/18 10:12	10/10/18 17:12	205-99-2	
Benzo(g,h,i)perylene	**<89.1**	ug/kg	89.1	43.1	1	10/08/18 10:12	10/10/18 17:12	191-24-2	
Benzo(k)fluoranthene	**<89.1**	ug/kg	89.1	27.6	1	10/08/18 10:12	10/10/18 17:12	207-08-9	
Chrysene	**<89.1**	ug/kg	89.1	39.9	1	10/08/18 10:12	10/10/18 17:12	218-01-9	
Dibenz(a,h)anthracene	**<89.1**	ug/kg	89.1	29.1	1	10/08/18 10:12	10/10/18 17:12	53-70-3	
Dibenzofuran	**<89.1**	ug/kg	89.1	16.1	1	10/08/18 10:12	10/10/18 17:12	132-64-9	
Fluoranthene	**<89.1**	ug/kg	89.1	74.9	1	10/08/18 10:12	10/10/18 17:12	206-44-0	
Fluorene	**<89.1**	ug/kg	89.1	22.6	1	10/08/18 10:12	10/10/18 17:12	86-73-7	
Hexachlorobenzene	**<89.1**	ug/kg	89.1	17.6	1	10/08/18 10:12	10/10/18 17:12	118-74-1	
Indeno(1,2,3-cd)pyrene	**<89.1**	ug/kg	89.1	34.1	1	10/08/18 10:12	10/10/18 17:12	193-39-5	
2-Methylphenol(o-Cresol)	**<89.1**	ug/kg	89.1	49.4	1	10/08/18 10:12	10/10/18 17:12	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<89.1**	ug/kg	89.1	32.1	1	10/08/18 10:12	10/10/18 17:12		
Naphthalene	**<89.1**	ug/kg	89.1	9.8	1	10/08/18 10:12	10/10/18 17:12	91-20-3	
Pentachlorophenol	**<891**	ug/kg	891	9.0	1	10/08/18 10:12	10/10/18 17:12	87-86-5	
Phenanthrene	**<89.1**	ug/kg	89.1	28.7	1	10/08/18 10:12	10/10/18 17:12	85-01-8	
Phenol	**<89.1**	ug/kg	89.1	17.0	1	10/08/18 10:12	10/10/18 17:12	108-95-2	
Pyrene	**<89.1**	ug/kg	89.1	42.3	1	10/08/18 10:12	10/10/18 17:12	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	65	%	23-120		1	10/08/18 10:12	10/10/18 17:12	4165-60-0	
2-Fluorobiphenyl (S)	60	%	30-115		1	10/08/18 10:12	10/10/18 17:12	321-60-8	
p-Terphenyl-d14 (S)	76	%	18-137		1	10/08/18 10:12	10/10/18 17:12	1718-51-0	
Phenol-d5 (S)	58	%	24-113		1	10/08/18 10:12	10/10/18 17:12	4165-62-2	
2-Fluorophenol (S)	93	%	25-121		1	10/08/18 10:12	10/10/18 17:12	367-12-4	CH
2,4,6-Tribromophenol (S)	84	%	19-122		1	10/08/18 10:12	10/10/18 17:12	118-79-6	
2-Chlorophenol-d4 (S)	59	%	20-130		1	10/08/18 10:12	10/10/18 17:12	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	54	%	20-130		1	10/08/18 10:12	10/10/18 17:12	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**6780J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
Unknown Ketone	**56600J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
Unknown Aldol Condensate	**1980J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
Unknown Aldol Condensate	**277J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
Benzaldehyde	**280J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12	100-52-7	N
Unknown Petroleum Alkane	**1560J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
Vanillin	**337J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12	121-33-5	N
Unknown PAH	**273J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
n-Hexadecanoic acid	**838J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12	57-10-3	N
Unknown Alkane	**369J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-14 (15-16) **Lab ID: 7067073002** Collected: 10/04/18 08:40 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown	**270J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
Unknown Organic Acid	**253J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
Unknown PAH	**446J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
Unknown Organic Acid	**425J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
Unknown Amide	**462J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
Unknown	**696J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
Unknown PAH	**199J**	ug/kg			1	10/08/18 10:12	10/10/18 17:12		
8260 MSV 5035A-H Med Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-H/5030C								
Acetone	**<119**	ug/kg	119	42.7	0.95	10/11/18 08:40	10/11/18 16:16	67-64-1	IH
Benzene	**<119**	ug/kg	119	6.8	0.95	10/11/18 08:40	10/11/18 16:16	71-43-2	
2-Butanone (MEK)	**<119**	ug/kg	119	11.8	0.95	10/11/18 08:40	10/11/18 16:16	78-93-3	CL
n-Butylbenzene	**<119**	ug/kg	119	11.3	0.95	10/11/18 08:40	10/11/18 16:16	104-51-8	
sec-Butylbenzene	**<119**	ug/kg	119	6.1	0.95	10/11/18 08:40	10/11/18 16:16	135-98-8	
tert-Butylbenzene	**<119**	ug/kg	119	6.2	0.95	10/11/18 08:40	10/11/18 16:16	98-06-6	
Carbon tetrachloride	**<119**	ug/kg	119	33.2	0.95	10/11/18 08:40	10/11/18 16:16	56-23-5	
Chlorobenzene	**<119**	ug/kg	119	7.5	0.95	10/11/18 08:40	10/11/18 16:16	108-90-7	
Chloroform	**<119**	ug/kg	119	7.9	0.95	10/11/18 08:40	10/11/18 16:16	67-66-3	
1,2-Dichlorobenzene	**<119**	ug/kg	119	6.0	0.95	10/11/18 08:40	10/11/18 16:16	95-50-1	
1,3-Dichlorobenzene	**<119**	ug/kg	119	9.7	0.95	10/11/18 08:40	10/11/18 16:16	541-73-1	
1,4-Dichlorobenzene	**<119**	ug/kg	119	8.5	0.95	10/11/18 08:40	10/11/18 16:16	106-46-7	
1,1-Dichloroethane	**<119**	ug/kg	119	6.3	0.95	10/11/18 08:40	10/11/18 16:16	75-34-3	
1,2-Dichloroethane	**<119**	ug/kg	119	59.6	0.95	10/11/18 08:40	10/11/18 16:16	107-06-2	
1,1-Dichloroethene	**<119**	ug/kg	119	17.5	0.95	10/11/18 08:40	10/11/18 16:16	75-35-4	
cis-1,2-Dichloroethene	**3380**	ug/kg	119	10.3	0.95	10/11/18 08:40	10/11/18 16:16	156-59-2	M1
trans-1,2-Dichloroethene	**<119**	ug/kg	119	20.1	0.95	10/11/18 08:40	10/11/18 16:16	156-60-5	
1,4-Dioxane (p-Dioxane)	**<2980**	ug/kg	2980	1490	0.95	10/11/18 08:40	10/11/18 16:16	123-91-1	CH
Ethylbenzene	**<119**	ug/kg	119	10.8	0.95	10/11/18 08:40	10/11/18 16:16	100-41-4	
Methylene Chloride	**<119**	ug/kg	119	28.4	0.95	10/11/18 08:40	10/11/18 16:16	75-09-2	
Methyl-tert-butyl ether	**<119**	ug/kg	119	11.8	0.95	10/11/18 08:40	10/11/18 16:16	1634-04-4	
n-Propylbenzene	**<119**	ug/kg	119	7.1	0.95	10/11/18 08:40	10/11/18 16:16	103-65-1	
Tetrachloroethene	**<119**	ug/kg	119	13.5	0.95	10/11/18 08:40	10/11/18 16:16	127-18-4	M1
Toluene	**138**	ug/kg	119	8.9	0.95	10/11/18 08:40	10/11/18 16:16	108-88-3	
1,1,1-Trichloroethane	**<119**	ug/kg	119	27.7	0.95	10/11/18 08:40	10/11/18 16:16	71-55-6	
Trichloroethene	**<119**	ug/kg	119	11.1	0.95	10/11/18 08:40	10/11/18 16:16	79-01-6	
1,2,4-Trimethylbenzene	**<119**	ug/kg	119	9.4	0.95	10/11/18 08:40	10/11/18 16:16	95-63-6	
1,3,5-Trimethylbenzene	**<119**	ug/kg	119	6.3	0.95	10/11/18 08:40	10/11/18 16:16	108-67-8	
Vinyl chloride	**122**	ug/kg	119	13.4	0.95	10/11/18 08:40	10/11/18 16:16	75-01-4	
Xylene (Total)	**<238**	ug/kg	238	119	0.95	10/11/18 08:40	10/11/18 16:16	1330-20-7	
m&p-Xylene	**<238**	ug/kg	238	13.9	0.95	10/11/18 08:40	10/11/18 16:16	179601-23-1	
o-Xylene	**<119**	ug/kg	119	8.1	0.95	10/11/18 08:40	10/11/18 16:16	95-47-6	
Surrogates									
Toluene-d8 (S)	104	%	43-157		0.95	10/11/18 08:40	10/11/18 16:16	2037-26-5	
4-Bromofluorobenzene (S)	98	%	34-145		0.95	10/11/18 08:40	10/11/18 16:16	460-00-4	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-14 (15-16) **Lab ID: 7067073002** Collected: 10/04/18 08:40 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A-H Med Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-H/5030C								
Surrogates									
1,2-Dichloroethane-d4 (S)	93	%	33-150		0.95	10/11/18 08:40	10/11/18 16:16	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TICs Found**				1		10/16/18 15:55		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**25.6**	%	0.10	0.10	1		10/08/18 13:05		

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-16 (10-11) **Lab ID: 7067073003** Collected: 10/04/18 10:07 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/13/18 05:39	309-00-2	
alpha-BHC	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/13/18 05:39	319-84-6	
beta-BHC	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/13/18 05:39	319-85-7	
delta-BHC	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/13/18 05:39	319-86-8	
gamma-BHC (Lindane)	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/13/18 05:39	58-89-9	
alpha-Chlordane	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/13/18 05:39	5103-71-9	
4,4'-DDD	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/13/18 05:39	72-54-8	
4,4'-DDE	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/13/18 05:39	72-55-9	
4,4'-DDT	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/13/18 05:39	50-29-3	CL
Dieldrin	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/13/18 05:39	60-57-1	
Endosulfan I	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/13/18 05:39	959-98-8	
Endosulfan II	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/13/18 05:39	33213-65-9	
Endosulfan sulfate	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/13/18 05:39	1031-07-8	
Endrin	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/13/18 05:39	72-20-8	
Heptachlor	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/13/18 05:39	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	92	%	30-150		1	10/08/18 17:25	10/13/18 05:39	877-09-8	
Decachlorobiphenyl (S)	127	%	30-150		1	10/08/18 17:25	10/13/18 05:39	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<42.1**	ug/kg	42.1	21.0	1	10/08/18 17:25	10/12/18 02:43	12674-11-2	
PCB-1221 (Aroclor 1221)	**<85.4**	ug/kg	85.4	42.7	1	10/08/18 17:25	10/12/18 02:43	11104-28-2	
PCB-1232 (Aroclor 1232)	**<42.1**	ug/kg	42.1	21.0	1	10/08/18 17:25	10/12/18 02:43	11141-16-5	
PCB-1242 (Aroclor 1242)	**<42.1**	ug/kg	42.1	21.0	1	10/08/18 17:25	10/12/18 02:43	53469-21-9	
PCB-1248 (Aroclor 1248)	**21.4J**	ug/kg	42.1	21.0	1	10/08/18 17:25	10/12/18 02:43	12672-29-6	
PCB-1254 (Aroclor 1254)	**<42.1**	ug/kg	42.1	21.0	1	10/08/18 17:25	10/12/18 02:43	11097-69-1	
PCB-1260 (Aroclor 1260)	**<42.1**	ug/kg	42.1	21.0	1	10/08/18 17:25	10/12/18 02:43	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	76	%	30-150		1	10/08/18 17:25	10/12/18 02:43	877-09-8	
Decachlorobiphenyl (S)	89	%	30-150		1	10/08/18 17:25	10/12/18 02:43	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<6.4**	ug/kg	6.4	0.34	1	10/09/18 11:02	10/11/18 23:17	93-72-1	
Surrogates									
2,4-DCAA (S)	68	%	29-136		1	10/09/18 11:02	10/11/18 23:17	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**21.5**	mg/kg	0.61	0.19	1	10/06/18 15:14	10/08/18 13:19	7440-38-2	
Barium	**170**	mg/kg	12.3	0.94	1	10/06/18 15:14	10/08/18 13:19	7440-39-3	
Beryllium	**0.55**	mg/kg	0.31	0.039	1	10/06/18 15:14	10/08/18 13:19	7440-41-7	
Cadmium	**0.51**	mg/kg	0.15	0.018	1	10/06/18 15:14	10/08/18 13:19	7440-43-9	
Chromium	**17.1**	mg/kg	0.61	0.059	1	10/06/18 15:14	10/08/18 13:19	7440-47-3	
Copper	**27.9**	mg/kg	1.5	0.11	1	10/06/18 15:14	10/08/18 13:19	7440-50-8	
Lead	**15.0**	mg/kg	0.31	0.14	1	10/06/18 15:14	10/08/18 13:19	7439-92-1	
Manganese	**816**	mg/kg	0.92	0.053	1	10/06/18 15:14	10/08/18 13:19	7439-96-5	

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Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-16 (10-11) **Lab ID: 7067073003** Collected: 10/04/18 10:07 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**28.0**	mg/kg	2.5	0.22	1	10/06/18 15:14	10/08/18 13:19	7440-02-0	
Selenium	**<0.61**	mg/kg	0.61	0.32	1	10/06/18 15:14	10/08/18 13:19	7782-49-2	
Silver	**<0.61**	mg/kg	0.61	0.077	1	10/06/18 15:14	10/08/18 13:19	7440-22-4	
Zinc	**66.3**	mg/kg	1.2	0.079	1	10/06/18 15:14	10/08/18 13:19	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.049**	mg/kg	0.049	0.030	1	10/06/18 15:40	10/09/18 12:03	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<85.5**	ug/kg	85.5	12.7	1	10/08/18 10:12	10/10/18 17:41	83-32-9	
Acenaphthylene	**<85.5**	ug/kg	85.5	17.1	1	10/08/18 10:12	10/10/18 17:41	208-96-8	
Anthracene	**<85.5**	ug/kg	85.5	25.0	1	10/08/18 10:12	10/10/18 17:41	120-12-7	
Benzo(a)anthracene	**<85.5**	ug/kg	85.5	19.6	1	10/08/18 10:12	10/10/18 17:41	56-55-3	
Benzo(a)pyrene	**<85.5**	ug/kg	85.5	36.1	1	10/08/18 10:12	10/10/18 17:41	50-32-8	
Benzo(b)fluoranthene	**<85.5**	ug/kg	85.5	29.6	1	10/08/18 10:12	10/10/18 17:41	205-99-2	
Benzo(g,h,i)perylene	**<85.5**	ug/kg	85.5	41.4	1	10/08/18 10:12	10/10/18 17:41	191-24-2	
Benzo(k)fluoranthene	**<85.5**	ug/kg	85.5	26.5	1	10/08/18 10:12	10/10/18 17:41	207-08-9	
Chrysene	**<85.5**	ug/kg	85.5	38.3	1	10/08/18 10:12	10/10/18 17:41	218-01-9	
Dibenz(a,h)anthracene	**<85.5**	ug/kg	85.5	27.9	1	10/08/18 10:12	10/10/18 17:41	53-70-3	
Dibenzofuran	**<85.5**	ug/kg	85.5	15.5	1	10/08/18 10:12	10/10/18 17:41	132-64-9	
Fluoranthene	**<85.5**	ug/kg	85.5	71.9	1	10/08/18 10:12	10/10/18 17:41	206-44-0	
Fluorene	**<85.5**	ug/kg	85.5	21.7	1	10/08/18 10:12	10/10/18 17:41	86-73-7	
Hexachlorobenzene	**<85.5**	ug/kg	85.5	16.9	1	10/08/18 10:12	10/10/18 17:41	118-74-1	
Indeno(1,2,3-cd)pyrene	**<85.5**	ug/kg	85.5	32.7	1	10/08/18 10:12	10/10/18 17:41	193-39-5	
2-Methylphenol(o-Cresol)	**<85.5**	ug/kg	85.5	47.4	1	10/08/18 10:12	10/10/18 17:41	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<85.5**	ug/kg	85.5	30.8	1	10/08/18 10:12	10/10/18 17:41		
Naphthalene	**<85.5**	ug/kg	85.5	9.4	1	10/08/18 10:12	10/10/18 17:41	91-20-3	
Pentachlorophenol	**<855**	ug/kg	855	8.6	1	10/08/18 10:12	10/10/18 17:41	87-86-5	
Phenanthrene	**<85.5**	ug/kg	85.5	27.5	1	10/08/18 10:12	10/10/18 17:41	85-01-8	
Phenol	**<85.5**	ug/kg	85.5	16.3	1	10/08/18 10:12	10/10/18 17:41	108-95-2	
Pyrene	**<85.5**	ug/kg	85.5	40.6	1	10/08/18 10:12	10/10/18 17:41	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	59	%	23-120		1	10/08/18 10:12	10/10/18 17:41	4165-60-0	
2-Fluorobiphenyl (S)	64	%	30-115		1	10/08/18 10:12	10/10/18 17:41	321-60-8	
p-Terphenyl-d14 (S)	81	%	18-137		1	10/08/18 10:12	10/10/18 17:41	1718-51-0	
Phenol-d5 (S)	63	%	24-113		1	10/08/18 10:12	10/10/18 17:41	4165-62-2	
2-Fluorophenol (S)	62	%	25-121		1	10/08/18 10:12	10/10/18 17:41	367-12-4	CH
2,4,6-Tribromophenol (S)	82	%	19-122		1	10/08/18 10:12	10/10/18 17:41	118-79-6	
2-Chlorophenol-d4 (S)	63	%	20-130		1	10/08/18 10:12	10/10/18 17:41	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	47	%	20-130		1	10/08/18 10:12	10/10/18 17:41	2199-69-1	
Tentatively Identified Compounds									
Unknown Alcohol	**208J**	ug/kg			1	10/08/18 10:12	10/10/18 17:41		
Unknown Aromatic Hydroca	**832J**	ug/kg			1	10/08/18 10:12	10/10/18 17:41		
Unknown Ketone	**177J**	ug/kg			1	10/08/18 10:12	10/10/18 17:41		
Unknown Ketone	**6930J**	ug/kg			1	10/08/18 10:12	10/10/18 17:41		

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-16 (10-11) **Lab ID: 7067073003** Collected: 10/04/18 10:07 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Ketone	**187J**	ug/kg			1	10/08/18 10:12	10/10/18 17:41		
Unknown Alcohol	**47700J**	ug/kg			1	10/08/18 10:12	10/10/18 17:41		
Benzophenone	**284J**	ug/kg			1	10/08/18 10:12	10/10/18 17:41	119-61-9	N
Unknown Organic Acid	**582J**	ug/kg			1	10/08/18 10:12	10/10/18 17:41		
Unknown Ketone	**473J**	ug/kg			1	10/08/18 10:12	10/10/18 17:41		
Unknown Amide	**693J**	ug/kg			1	10/08/18 10:12	10/10/18 17:41		
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<9.8**	ug/kg	9.8	9.6	1	10/11/18 08:27	10/11/18 15:51	67-64-1	
Benzene	**<9.8**	ug/kg	9.8	3.8	1	10/11/18 08:27	10/11/18 15:51	71-43-2	
2-Butanone (MEK)	**<9.8**	ug/kg	9.8	6.1	1	10/11/18 08:27	10/11/18 15:51	78-93-3	
n-Butylbenzene	**<9.8**	ug/kg	9.8	3.9	1	10/11/18 08:27	10/11/18 15:51	104-51-8	
sec-Butylbenzene	**<9.8**	ug/kg	9.8	3.9	1	10/11/18 08:27	10/11/18 15:51	135-98-8	
tert-Butylbenzene	**<9.8**	ug/kg	9.8	4.8	1	10/11/18 08:27	10/11/18 15:51	98-06-6	
Carbon tetrachloride	**<9.8**	ug/kg	9.8	6.1	1	10/11/18 08:27	10/11/18 15:51	56-23-5	
Chlorobenzene	**<9.8**	ug/kg	9.8	4.0	1	10/11/18 08:27	10/11/18 15:51	108-90-7	
Chloroform	**<9.8**	ug/kg	9.8	2.7	1	10/11/18 08:27	10/11/18 15:51	67-66-3	
1,2-Dichlorobenzene	**<9.8**	ug/kg	9.8	4.0	1	10/11/18 08:27	10/11/18 15:51	95-50-1	
1,3-Dichlorobenzene	**<9.8**	ug/kg	9.8	4.0	1	10/11/18 08:27	10/11/18 15:51	541-73-1	
1,4-Dichlorobenzene	**<9.8**	ug/kg	9.8	4.0	1	10/11/18 08:27	10/11/18 15:51	106-46-7	
1,1-Dichloroethane	**<9.8**	ug/kg	9.8	3.9	1	10/11/18 08:27	10/11/18 15:51	75-34-3	
1,2-Dichloroethane	**<9.8**	ug/kg	9.8	2.4	1	10/11/18 08:27	10/11/18 15:51	107-06-2	
1,1-Dichloroethene	**<9.8**	ug/kg	9.8	3.8	1	10/11/18 08:27	10/11/18 15:51	75-35-4	
cis-1,2-Dichloroethene	**60.2**	ug/kg	9.8	3.6	1	10/11/18 08:27	10/11/18 15:51	156-59-2	
trans-1,2-Dichloroethene	**<9.8**	ug/kg	9.8	2.8	1	10/11/18 08:27	10/11/18 15:51	156-60-5	
1,4-Dioxane (p-Dioxane)	**<244**	ug/kg	244	144	1	10/11/18 08:27	10/11/18 15:51	123-91-1	
Ethylbenzene	**<9.8**	ug/kg	9.8	3.7	1	10/11/18 08:27	10/11/18 15:51	100-41-4	
Methylene Chloride	**<9.8**	ug/kg	9.8	4.4	1	10/11/18 08:27	10/11/18 15:51	75-09-2	
Methyl-tert-butyl ether	**<9.8**	ug/kg	9.8	2.2	1	10/11/18 08:27	10/11/18 15:51	1634-04-4	
n-Propylbenzene	**<9.8**	ug/kg	9.8	4.0	1	10/11/18 08:27	10/11/18 15:51	103-65-1	
Tetrachloroethene	**<9.8**	ug/kg	9.8	5.0	1	10/11/18 08:27	10/11/18 15:51	127-18-4	
Toluene	**<9.8**	ug/kg	9.8	4.5	1	10/11/18 08:27	10/11/18 15:51	108-88-3	
1,2,4-Trichlorobenzene	**<9.8**	ug/kg	9.8	3.9	1	10/11/18 08:27	10/11/18 15:51	120-82-1	
1,1,1-Trichloroethane	**<9.8**	ug/kg	9.8	5.1	1	10/11/18 08:27	10/11/18 15:51	71-55-6	
Trichloroethene	**180**	ug/kg	9.8	4.0	1	10/11/18 08:27	10/11/18 15:51	79-01-6	
1,2,4-Trimethylbenzene	**<9.8**	ug/kg	9.8	4.2	1	10/11/18 08:27	10/11/18 15:51	95-63-6	
1,3,5-Trimethylbenzene	**<9.8**	ug/kg	9.8	3.7	1	10/11/18 08:27	10/11/18 15:51	108-67-8	
Vinyl chloride	**<9.8**	ug/kg	9.8	2.1	1	10/11/18 08:27	10/11/18 15:51	75-01-4	
Xylene (Total)	**<19.5**	ug/kg	19.5	9.8	1	10/11/18 08:27	10/11/18 15:51	1330-20-7	
Surrogates									
Toluene-d8 (S)	97	%	43-157		1	10/11/18 08:27	10/11/18 15:51	2037-26-5	
4-Bromofluorobenzene (S)	103	%	34-145		1	10/11/18 08:27	10/11/18 15:51	460-00-4	
1,2-Dichloroethane-d4 (S)	158	%	33-150		1	10/11/18 08:27	10/11/18 15:51	17060-07-0	S1

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-16 (10-11) **Lab ID: 7067073003** Collected: 10/04/18 10:07 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TICs Found**				1		10/16/18 12:56		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**22.3**	%	0.10	0.10	1		10/08/18 13:05		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-18 (0-4) **Lab ID: 7067073004** Collected: 10/04/18 11:10 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 06:09	309-00-2	
alpha-BHC	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 06:09	319-84-6	
beta-BHC	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 06:09	319-85-7	
delta-BHC	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 06:09	319-86-8	
gamma-BHC (Lindane)	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 06:09	58-89-9	
alpha-Chlordane	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 06:09	5103-71-9	
4,4'-DDD	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 06:09	72-54-8	
4,4'-DDE	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 06:09	72-55-9	
4,4'-DDT	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 06:09	50-29-3	CL
Dieldrin	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 06:09	60-57-1	
Endosulfan I	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 06:09	959-98-8	
Endosulfan II	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 06:09	33213-65-9	
Endosulfan sulfate	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 06:09	1031-07-8	
Endrin	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 06:09	72-20-8	
Heptachlor	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 06:09	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	101	%	30-150		1	10/08/18 17:25	10/13/18 06:09	877-09-8	
Decachlorobiphenyl (S)	135	%	30-150		1	10/08/18 17:25	10/13/18 06:09	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<36.2**	ug/kg	36.2	18.1	1	10/08/18 17:25	10/12/18 02:56	12674-11-2	
PCB-1221 (Aroclor 1221)	**<73.4**	ug/kg	73.4	36.7	1	10/08/18 17:25	10/12/18 02:56	11104-28-2	
PCB-1232 (Aroclor 1232)	**<36.2**	ug/kg	36.2	18.1	1	10/08/18 17:25	10/12/18 02:56	11141-16-5	
PCB-1242 (Aroclor 1242)	**<36.2**	ug/kg	36.2	18.1	1	10/08/18 17:25	10/12/18 02:56	53469-21-9	
PCB-1248 (Aroclor 1248)	**<36.2**	ug/kg	36.2	18.1	1	10/08/18 17:25	10/12/18 02:56	12672-29-6	
PCB-1254 (Aroclor 1254)	**<36.2**	ug/kg	36.2	18.1	1	10/08/18 17:25	10/12/18 02:56	11097-69-1	
PCB-1260 (Aroclor 1260)	**<36.2**	ug/kg	36.2	18.1	1	10/08/18 17:25	10/12/18 02:56	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	78	%	30-150		1	10/08/18 17:25	10/12/18 02:56	877-09-8	
Decachlorobiphenyl (S)	91	%	30-150		1	10/08/18 17:25	10/12/18 02:56	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<5.5**	ug/kg	5.5	0.29	1	10/09/18 11:02	10/11/18 23:39	93-72-1	
Surrogates									
2,4-DCAA (S)	61	%	29-136		1	10/09/18 11:02	10/11/18 23:39	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**7.1**	mg/kg	0.53	0.16	1	10/06/18 15:14	10/08/18 13:20	7440-38-2	
Barium	**50.3**	mg/kg	10.6	0.81	1	10/06/18 15:14	10/08/18 13:20	7440-39-3	
Beryllium	**0.28**	mg/kg	0.26	0.034	1	10/06/18 15:14	10/08/18 13:20	7440-41-7	
Cadmium	**0.31**	mg/kg	0.13	0.016	1	10/06/18 15:14	10/08/18 13:20	7440-43-9	
Chromium	**11.4**	mg/kg	0.53	0.051	1	10/06/18 15:14	10/08/18 13:20	7440-47-3	
Copper	**105**	mg/kg	1.3	0.096	1	10/06/18 15:14	10/08/18 13:20	7440-50-8	
Lead	**26.0**	mg/kg	0.26	0.12	1	10/06/18 15:14	10/08/18 13:20	7439-92-1	
Manganese	**539**	mg/kg	0.79	0.045	1	10/06/18 15:14	10/08/18 13:20	7439-96-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-18 (0-4) **Lab ID: 7067073004** Collected: 10/04/18 11:10 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**36.8**	mg/kg	2.1	0.19	1	10/06/18 15:14	10/08/18 13:20	7440-02-0	
Selenium	**1.8**	mg/kg	0.53	0.28	1	10/06/18 15:14	10/08/18 13:20	7782-49-2	
Silver	**<0.53**	mg/kg	0.53	0.067	1	10/06/18 15:14	10/08/18 13:20	7440-22-4	
Zinc	**62.8**	mg/kg	1.1	0.068	1	10/06/18 15:14	10/08/18 13:20	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.053**	mg/kg	0.044	0.026	1	10/06/18 15:40	10/09/18 12:05	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<73.9**	ug/kg	73.9	11.0	1	10/08/18 10:12	10/10/18 18:10	83-32-9	
Acenaphthylene	**<73.9**	ug/kg	73.9	14.8	1	10/08/18 10:12	10/10/18 18:10	208-96-8	
Anthracene	**<73.9**	ug/kg	73.9	21.6	1	10/08/18 10:12	10/10/18 18:10	120-12-7	
Benzo(a)anthracene	**<73.9**	ug/kg	73.9	16.9	1	10/08/18 10:12	10/10/18 18:10	56-55-3	
Benzo(a)pyrene	**<73.9**	ug/kg	73.9	31.2	1	10/08/18 10:12	10/10/18 18:10	50-32-8	
Benzo(b)fluoranthene	**<73.9**	ug/kg	73.9	25.6	1	10/08/18 10:12	10/10/18 18:10	205-99-2	
Benzo(g,h,i)perylene	**<73.9**	ug/kg	73.9	35.8	1	10/08/18 10:12	10/10/18 18:10	191-24-2	
Benzo(k)fluoranthene	**<73.9**	ug/kg	73.9	22.9	1	10/08/18 10:12	10/10/18 18:10	207-08-9	
Chrysene	**<73.9**	ug/kg	73.9	33.1	1	10/08/18 10:12	10/10/18 18:10	218-01-9	
Dibenz(a,h)anthracene	**<73.9**	ug/kg	73.9	24.2	1	10/08/18 10:12	10/10/18 18:10	53-70-3	
Dibenzofuran	**<73.9**	ug/kg	73.9	13.4	1	10/08/18 10:12	10/10/18 18:10	132-64-9	
Fluoranthene	**<73.9**	ug/kg	73.9	62.2	1	10/08/18 10:12	10/10/18 18:10	206-44-0	
Fluorene	**<73.9**	ug/kg	73.9	18.8	1	10/08/18 10:12	10/10/18 18:10	86-73-7	
Hexachlorobenzene	**<73.9**	ug/kg	73.9	14.6	1	10/08/18 10:12	10/10/18 18:10	118-74-1	
Indeno(1,2,3-cd)pyrene	**<73.9**	ug/kg	73.9	28.3	1	10/08/18 10:12	10/10/18 18:10	193-39-5	
2-Methylphenol(o-Cresol)	**<73.9**	ug/kg	73.9	41.0	1	10/08/18 10:12	10/10/18 18:10	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<73.9**	ug/kg	73.9	26.6	1	10/08/18 10:12	10/10/18 18:10		
Naphthalene	**<73.9**	ug/kg	73.9	8.2	1	10/08/18 10:12	10/10/18 18:10	91-20-3	
Pentachlorophenol	**<739**	ug/kg	739	7.4	1	10/08/18 10:12	10/10/18 18:10	87-86-5	
Phenanthrene	**59.9J**	ug/kg	73.9	23.8	1	10/08/18 10:12	10/10/18 18:10	85-01-8	
Phenol	**<73.9**	ug/kg	73.9	14.1	1	10/08/18 10:12	10/10/18 18:10	108-95-2	
Pyrene	**<73.9**	ug/kg	73.9	35.1	1	10/08/18 10:12	10/10/18 18:10	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	63	%	23-120		1	10/08/18 10:12	10/10/18 18:10	4165-60-0	
2-Fluorobiphenyl (S)	71	%	30-115		1	10/08/18 10:12	10/10/18 18:10	321-60-8	
p-Terphenyl-d14 (S)	89	%	18-137		1	10/08/18 10:12	10/10/18 18:10	1718-51-0	
Phenol-d5 (S)	87	%	24-113		1	10/08/18 10:12	10/10/18 18:10	4165-62-2	
2-Fluorophenol (S)	59	%	25-121		1	10/08/18 10:12	10/10/18 18:10	367-12-4	CH
2,4,6-Tribromophenol (S)	87	%	19-122		1	10/08/18 10:12	10/10/18 18:10	118-79-6	
2-Chlorophenol-d4 (S)	65	%	20-130		1	10/08/18 10:12	10/10/18 18:10	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	59	%	20-130		1	10/08/18 10:12	10/10/18 18:10	2199-69-1	
Tentatively Identified Compounds									
Unknown	**254J**	ug/kg			1	10/08/18 10:12	10/10/18 18:10		
Unknown Ketone	**181J**	ug/kg			1	10/08/18 10:12	10/10/18 18:10		
Unknown Ketone	**4530J**	ug/kg			1	10/08/18 10:12	10/10/18 18:10		
Unknown Ketone	**286J**	ug/kg			1	10/08/18 10:12	10/10/18 18:10		

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-18 (0-4) **Lab ID: 7067073004** Collected: 10/04/18 11:10 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Alcohol	**32000J**	ug/kg			1	10/08/18 10:12	10/10/18 18:10		
Unknown Aldol Condensate	**1260J**	ug/kg			1	10/08/18 10:12	10/10/18 18:10		
Benzophenone	**148J**	ug/kg			1	10/08/18 10:12	10/10/18 18:10	119-61-9	N
Unknown Organic Acid	**983J**	ug/kg			1	10/08/18 10:12	10/10/18 18:10		
Unknown Organic Acid	**410J**	ug/kg			1	10/08/18 10:12	10/10/18 18:10		
Unknown Amide	**271J**	ug/kg			1	10/08/18 10:12	10/10/18 18:10		
Unknown Petroleum Alkan	**291J**	ug/kg			1	10/08/18 10:12	10/10/18 18:10		
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<3.5**	ug/kg	3.5	3.5	1	10/11/18 08:27	10/11/18 16:15	67-64-1	
Benzene	**<3.5**	ug/kg	3.5	1.4	1	10/11/18 08:27	10/11/18 16:15	71-43-2	
2-Butanone (MEK)	**<3.5**	ug/kg	3.5	2.2	1	10/11/18 08:27	10/11/18 16:15	78-93-3	
n-Butylbenzene	**<3.5**	ug/kg	3.5	1.4	1	10/11/18 08:27	10/11/18 16:15	104-51-8	
sec-Butylbenzene	**<3.5**	ug/kg	3.5	1.4	1	10/11/18 08:27	10/11/18 16:15	135-98-8	
tert-Butylbenzene	**<3.5**	ug/kg	3.5	1.8	1	10/11/18 08:27	10/11/18 16:15	98-06-6	
Carbon tetrachloride	**<3.5**	ug/kg	3.5	2.2	1	10/11/18 08:27	10/11/18 16:15	56-23-5	
Chlorobenzene	**<3.5**	ug/kg	3.5	1.5	1	10/11/18 08:27	10/11/18 16:15	108-90-7	
Chloroform	**<3.5**	ug/kg	3.5	0.97	1	10/11/18 08:27	10/11/18 16:15	67-66-3	
1,2-Dichlorobenzene	**<3.5**	ug/kg	3.5	1.5	1	10/11/18 08:27	10/11/18 16:15	95-50-1	
1,3-Dichlorobenzene	**<3.5**	ug/kg	3.5	1.4	1	10/11/18 08:27	10/11/18 16:15	541-73-1	
1,4-Dichlorobenzene	**<3.5**	ug/kg	3.5	1.5	1	10/11/18 08:27	10/11/18 16:15	106-46-7	
1,1-Dichloroethane	**<3.5**	ug/kg	3.5	1.4	1	10/11/18 08:27	10/11/18 16:15	75-34-3	
1,2-Dichloroethane	**<3.5**	ug/kg	3.5	0.86	1	10/11/18 08:27	10/11/18 16:15	107-06-2	
1,1-Dichloroethene	**<3.5**	ug/kg	3.5	1.4	1	10/11/18 08:27	10/11/18 16:15	75-35-4	
cis-1,2-Dichloroethene	**<3.5**	ug/kg	3.5	1.3	1	10/11/18 08:27	10/11/18 16:15	156-59-2	
trans-1,2-Dichloroethene	**<3.5**	ug/kg	3.5	1.0	1	10/11/18 08:27	10/11/18 16:15	156-60-5	
1,4-Dioxane (p-Dioxane)	**<88.7**	ug/kg	88.7	52.4	1	10/11/18 08:27	10/11/18 16:15	123-91-1	
Ethylbenzene	**<3.5**	ug/kg	3.5	1.4	1	10/11/18 08:27	10/11/18 16:15	100-41-4	
Methylene Chloride	**<3.5**	ug/kg	3.5	1.6	1	10/11/18 08:27	10/11/18 16:15	75-09-2	
Methyl-tert-butyl ether	**<3.5**	ug/kg	3.5	0.79	1	10/11/18 08:27	10/11/18 16:15	1634-04-4	
n-Propylbenzene	**<3.5**	ug/kg	3.5	1.5	1	10/11/18 08:27	10/11/18 16:15	103-65-1	
Tetrachloroethene	**3.6**	ug/kg	3.5	1.8	1	10/11/18 08:27	10/11/18 16:15	127-18-4	CH
Toluene	**<3.5**	ug/kg	3.5	1.7	1	10/11/18 08:27	10/11/18 16:15	108-88-3	
1,2,4-Trichlorobenzene	**<3.5**	ug/kg	3.5	1.4	1	10/11/18 08:27	10/11/18 16:15	120-82-1	
1,1,1-Trichloroethane	**<3.5**	ug/kg	3.5	1.9	1	10/11/18 08:27	10/11/18 16:15	71-55-6	
Trichloroethene	**21.0**	ug/kg	3.5	1.5	1	10/11/18 08:27	10/11/18 16:15	79-01-6	
1,2,4-Trimethylbenzene	**<3.5**	ug/kg	3.5	1.5	1	10/11/18 08:27	10/11/18 16:15	95-63-6	
1,3,5-Trimethylbenzene	**<3.5**	ug/kg	3.5	1.4	1	10/11/18 08:27	10/11/18 16:15	108-67-8	
Vinyl chloride	**<3.5**	ug/kg	3.5	0.78	1	10/11/18 08:27	10/11/18 16:15	75-01-4	
Xylene (Total)	**<7.1**	ug/kg	7.1	3.5	1	10/11/18 08:27	10/11/18 16:15	1330-20-7	
m&p-Xylene	**<7.1**	ug/kg	7.1	3.4	1	10/11/18 08:27	10/11/18 16:15	179601-23-1	
o-Xylene	**<3.5**	ug/kg	3.5	1.5	1	10/11/18 08:27	10/11/18 16:15	95-47-6	
Surrogates									
Toluene-d8 (S)	102	%	43-157		1	10/11/18 08:27	10/11/18 16:15	2037-26-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-18 (0-4) **Lab ID: 7067073004** Collected: 10/04/18 11:10 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Surrogates									
4-Bromofluorobenzene (S)	107	%	34-145		1	10/11/18 08:27	10/11/18 16:15	460-00-4	
1,2-Dichloroethane-d4 (S)	153	%	33-150		1	10/11/18 08:27	10/11/18 16:15	17060-07-0	S7
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TICs Found**				1		10/16/18 12:56		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**9.9**	%	0.10	0.10	1		10/08/18 13:05		

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-18 (14-15) **Lab ID: 7067073005** Collected: 10/04/18 11:10 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.0**	ug/kg	2.0	1.0	1	10/08/18 17:25	10/13/18 05:10	309-00-2	
alpha-BHC	**<2.0**	ug/kg	2.0	1.0	1	10/08/18 17:25	10/13/18 05:10	319-84-6	
beta-BHC	**<2.0**	ug/kg	2.0	1.0	1	10/08/18 17:25	10/13/18 05:10	319-85-7	
delta-BHC	**<2.0**	ug/kg	2.0	1.0	1	10/08/18 17:25	10/13/18 05:10	319-86-8	
gamma-BHC (Lindane)	**<2.0**	ug/kg	2.0	1.0	1	10/08/18 17:25	10/13/18 05:10	58-89-9	
alpha-Chlordane	**<2.0**	ug/kg	2.0	1.0	1	10/08/18 17:25	10/13/18 05:10	5103-71-9	
4,4'-DDD	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:10	72-54-8	
4,4'-DDE	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:10	72-55-9	
4,4'-DDT	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:10	50-29-3	CL
Dieldrin	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:10	60-57-1	
Endosulfan I	**<2.0**	ug/kg	2.0	1.0	1	10/08/18 17:25	10/13/18 05:10	959-98-8	
Endosulfan II	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:10	33213-65-9	
Endosulfan sulfate	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:10	1031-07-8	
Endrin	**<4.0**	ug/kg	4.0	2.0	1	10/08/18 17:25	10/13/18 05:10	72-20-8	
Heptachlor	**<2.0**	ug/kg	2.0	1.0	1	10/08/18 17:25	10/13/18 05:10	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	51	%	30-150		1	10/08/18 17:25	10/13/18 05:10	877-09-8	
Decachlorobiphenyl (S)	54	%	30-150		1	10/08/18 17:25	10/13/18 05:10	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<39.6**	ug/kg	39.6	19.8	1	10/08/18 17:25	10/12/18 03:34	12674-11-2	
PCB-1221 (Aroclor 1221)	**<80.5**	ug/kg	80.5	40.2	1	10/08/18 17:25	10/12/18 03:34	11104-28-2	
PCB-1232 (Aroclor 1232)	**<39.6**	ug/kg	39.6	19.8	1	10/08/18 17:25	10/12/18 03:34	11141-16-5	
PCB-1242 (Aroclor 1242)	**<39.6**	ug/kg	39.6	19.8	1	10/08/18 17:25	10/12/18 03:34	53469-21-9	
PCB-1248 (Aroclor 1248)	**<39.6**	ug/kg	39.6	19.8	1	10/08/18 17:25	10/12/18 03:34	12672-29-6	
PCB-1254 (Aroclor 1254)	**<39.6**	ug/kg	39.6	19.8	1	10/08/18 17:25	10/12/18 03:34	11097-69-1	
PCB-1260 (Aroclor 1260)	**<39.6**	ug/kg	39.6	19.8	1	10/08/18 17:25	10/12/18 03:34	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	48	%	30-150		1	10/08/18 17:25	10/12/18 03:34	877-09-8	
Decachlorobiphenyl (S)	44	%	30-150		1	10/08/18 17:25	10/12/18 03:34	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**10**	mg/kg	0.61	0.18	1	10/06/18 15:14	10/08/18 13:22	7440-38-2	
Barium	**37.6**	mg/kg	12.2	0.93	1	10/06/18 15:14	10/08/18 13:22	7440-39-3	
Beryllium	**0.29J**	mg/kg	0.30	0.039	1	10/06/18 15:14	10/08/18 13:22	7440-41-7	
Cadmium	**0.26**	mg/kg	0.15	0.018	1	10/06/18 15:14	10/08/18 13:22	7440-43-9	
Chromium	**12.0**	mg/kg	0.61	0.058	1	10/06/18 15:14	10/08/18 13:22	7440-47-3	
Copper	**14.7**	mg/kg	1.5	0.11	1	10/06/18 15:14	10/08/18 13:22	7440-50-8	
Lead	**8.3**	mg/kg	0.30	0.14	1	10/06/18 15:14	10/08/18 13:22	7439-92-1	
Manganese	**489**	mg/kg	0.91	0.052	1	10/06/18 15:14	10/08/18 13:22	7439-96-5	
Nickel	**18.8**	mg/kg	2.4	0.22	1	10/06/18 15:14	10/08/18 13:22	7440-02-0	
Selenium	**<0.61**	mg/kg	0.61	0.32	1	10/06/18 15:14	10/08/18 13:22	7782-49-2	
Silver	**<0.61**	mg/kg	0.61	0.077	1	10/06/18 15:14	10/08/18 13:22	7440-22-4	
Zinc	**47.6**	mg/kg	1.2	0.078	1	10/06/18 15:14	10/08/18 13:22	7440-66-6	

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-18 (14-15) **Lab ID: 7067073005** Collected: 10/04/18 11:10 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.043**	mg/kg	0.043	0.026	1	10/06/18 15:40	10/09/18 12:06	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<79.8**	ug/kg	79.8	11.8	1	10/08/18 10:12	10/10/18 18:39	83-32-9	
Acenaphthylene	**<79.8**	ug/kg	79.8	16.0	1	10/08/18 10:12	10/10/18 18:39	208-96-8	
Anthracene	**<79.8**	ug/kg	79.8	23.3	1	10/08/18 10:12	10/10/18 18:39	120-12-7	
Benzo(a)anthracene	**<79.8**	ug/kg	79.8	18.3	1	10/08/18 10:12	10/10/18 18:39	56-55-3	
Benzo(a)pyrene	**<79.8**	ug/kg	79.8	33.7	1	10/08/18 10:12	10/10/18 18:39	50-32-8	
Benzo(b)fluoranthene	**<79.8**	ug/kg	79.8	27.7	1	10/08/18 10:12	10/10/18 18:39	205-99-2	
Benzo(g,h,i)perylene	**<79.8**	ug/kg	79.8	38.6	1	10/08/18 10:12	10/10/18 18:39	191-24-2	
Benzo(k)fluoranthene	**<79.8**	ug/kg	79.8	24.8	1	10/08/18 10:12	10/10/18 18:39	207-08-9	
Chrysene	**<79.8**	ug/kg	79.8	35.8	1	10/08/18 10:12	10/10/18 18:39	218-01-9	
Dibenz(a,h)anthracene	**<79.8**	ug/kg	79.8	26.1	1	10/08/18 10:12	10/10/18 18:39	53-70-3	
Dibenzofuran	**<79.8**	ug/kg	79.8	14.5	1	10/08/18 10:12	10/10/18 18:39	132-64-9	
Fluoranthene	**<79.8**	ug/kg	79.8	67.1	1	10/08/18 10:12	10/10/18 18:39	206-44-0	
Fluorene	**<79.8**	ug/kg	79.8	20.3	1	10/08/18 10:12	10/10/18 18:39	86-73-7	
Hexachlorobenzene	**<79.8**	ug/kg	79.8	15.8	1	10/08/18 10:12	10/10/18 18:39	118-74-1	
Indeno(1,2,3-cd)pyrene	**<79.8**	ug/kg	79.8	30.5	1	10/08/18 10:12	10/10/18 18:39	193-39-5	
2-Methylphenol(o-Cresol)	**<79.8**	ug/kg	79.8	44.2	1	10/08/18 10:12	10/10/18 18:39	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<79.8**	ug/kg	79.8	28.8	1	10/08/18 10:12	10/10/18 18:39		
Naphthalene	**<79.8**	ug/kg	79.8	8.8	1	10/08/18 10:12	10/10/18 18:39	91-20-3	
Pentachlorophenol	**<798**	ug/kg	798	8.0	1	10/08/18 10:12	10/10/18 18:39	87-86-5	
Phenanthrene	**<79.8**	ug/kg	79.8	25.7	1	10/08/18 10:12	10/10/18 18:39	85-01-8	
Phenol	**<79.8**	ug/kg	79.8	15.2	1	10/08/18 10:12	10/10/18 18:39	108-95-2	
Pyrene	**<79.8**	ug/kg	79.8	37.9	1	10/08/18 10:12	10/10/18 18:39	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	91	%	23-120		1	10/08/18 10:12	10/10/18 18:39	4165-60-0	
2-Fluorobiphenyl (S)	61	%	30-115		1	10/08/18 10:12	10/10/18 18:39	321-60-8	
p-Terphenyl-d14 (S)	72	%	18-137		1	10/08/18 10:12	10/10/18 18:39	1718-51-0	
Phenol-d5 (S)	47	%	24-113		1	10/08/18 10:12	10/10/18 18:39	4165-62-2	
2-Fluorophenol (S)	49	%	25-121		1	10/08/18 10:12	10/10/18 18:39	367-12-4	CH
2,4,6-Tribromophenol (S)	72	%	19-122		1	10/08/18 10:12	10/10/18 18:39	118-79-6	
2-Chlorophenol-d4 (S)	43	%	20-130		1	10/08/18 10:12	10/10/18 18:39	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	52	%	20-130		1	10/08/18 10:12	10/10/18 18:39	2199-69-1	
Tentatively Identified Compounds									
Unknown	**208J**	ug/kg			1	10/08/18 10:12	10/10/18 18:39		
Unknown Aromatic Hydroca	**469J**	ug/kg			1	10/08/18 10:12	10/10/18 18:39		
Unknown Ketone	**161J**	ug/kg			1	10/08/18 10:12	10/10/18 18:39		
Unknown Ketone	**3430J**	ug/kg			1	10/08/18 10:12	10/10/18 18:39		
Unknown Petroleum Alkane	**23600J**	ug/kg			1	10/08/18 10:12	10/10/18 18:39		
Unknown	**268J**	ug/kg			1	10/08/18 10:12	10/10/18 18:39		
Unknown	**1000J**	ug/kg			1	10/08/18 10:12	10/10/18 18:39		
Benzophenone	**186J**	ug/kg			1	10/08/18 10:12	10/10/18 18:39	119-61-9	N
Unknown Organic Acid	**604J**	ug/kg			1	10/08/18 10:12	10/10/18 18:39		
Unknown Organic Acid	**501J**	ug/kg			1	10/08/18 10:12	10/10/18 18:39		

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-18 (14-15) **Lab ID: 7067073005** Collected: 10/04/18 11:10 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Amide	**409J**	ug/kg			1	10/08/18 10:12	10/10/18 18:39		
8260 MSV 5035A-H Med Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-H/5030C								
Acetone	**<116**	ug/kg	116	41.6	0.97	10/11/18 08:40	10/11/18 17:23	67-64-1	CL
Benzene	**<116**	ug/kg	116	6.6	0.97	10/11/18 08:40	10/11/18 17:23	71-43-2	
2-Butanone (MEK)	**<116**	ug/kg	116	11.5	0.97	10/11/18 08:40	10/11/18 17:23	78-93-3	
n-Butylbenzene	**<116**	ug/kg	116	11.0	0.97	10/11/18 08:40	10/11/18 17:23	104-51-8	
sec-Butylbenzene	**<116**	ug/kg	116	5.9	0.97	10/11/18 08:40	10/11/18 17:23	135-98-8	
tert-Butylbenzene	**<116**	ug/kg	116	6.0	0.97	10/11/18 08:40	10/11/18 17:23	98-06-6	
Carbon tetrachloride	**<116**	ug/kg	116	32.3	0.97	10/11/18 08:40	10/11/18 17:23	56-23-5	
Chlorobenzene	**<116**	ug/kg	116	7.3	0.97	10/11/18 08:40	10/11/18 17:23	108-90-7	
Chloroform	**<116**	ug/kg	116	7.7	0.97	10/11/18 08:40	10/11/18 17:23	67-66-3	
1,2-Dichlorobenzene	**<116**	ug/kg	116	5.9	0.97	10/11/18 08:40	10/11/18 17:23	95-50-1	
1,3-Dichlorobenzene	**<116**	ug/kg	116	9.5	0.97	10/11/18 08:40	10/11/18 17:23	541-73-1	
1,4-Dichlorobenzene	**<116**	ug/kg	116	8.3	0.97	10/11/18 08:40	10/11/18 17:23	106-46-7	
1,1-Dichloroethane	**<116**	ug/kg	116	6.1	0.97	10/11/18 08:40	10/11/18 17:23	75-34-3	
1,2-Dichloroethane	**<116**	ug/kg	116	58.0	0.97	10/11/18 08:40	10/11/18 17:23	107-06-2	
1,1-Dichloroethene	**<116**	ug/kg	116	17.0	0.97	10/11/18 08:40	10/11/18 17:23	75-35-4	
cis-1,2-Dichloroethene	**5020**	ug/kg	116	10.0	0.97	10/11/18 08:40	10/11/18 17:23	156-59-2	
trans-1,2-Dichloroethene	**<116**	ug/kg	116	19.6	0.97	10/11/18 08:40	10/11/18 17:23	156-60-5	
1,4-Dioxane (p-Dioxane)	**<2900**	ug/kg	2900	1450	0.97	10/11/18 08:40	10/11/18 17:23	123-91-1	
Ethylbenzene	**<116**	ug/kg	116	10.5	0.97	10/11/18 08:40	10/11/18 17:23	100-41-4	
Methylene Chloride	**<116**	ug/kg	116	27.6	0.97	10/11/18 08:40	10/11/18 17:23	75-09-2	
Methyl-tert-butyl ether	**<116**	ug/kg	116	11.5	0.97	10/11/18 08:40	10/11/18 17:23	1634-04-4	
n-Propylbenzene	**<116**	ug/kg	116	6.9	0.97	10/11/18 08:40	10/11/18 17:23	103-65-1	
Tetrachloroethene	**<116**	ug/kg	116	13.2	0.97	10/11/18 08:40	10/11/18 17:23	127-18-4	
Toluene	**<116**	ug/kg	116	8.7	0.97	10/11/18 08:40	10/11/18 17:23	108-88-3	
1,1,1-Trichloroethane	**<116**	ug/kg	116	26.9	0.97	10/11/18 08:40	10/11/18 17:23	71-55-6	
Trichloroethene	**29200**	ug/kg	1160	108	9.7	10/11/18 08:40	10/11/18 17:45	79-01-6	
1,2,4-Trimethylbenzene	**<116**	ug/kg	116	9.2	0.97	10/11/18 08:40	10/11/18 17:23	95-63-6	
1,3,5-Trimethylbenzene	**<116**	ug/kg	116	6.1	0.97	10/11/18 08:40	10/11/18 17:23	108-67-8	
Vinyl chloride	**<116**	ug/kg	116	13.1	0.97	10/11/18 08:40	10/11/18 17:23	75-01-4	
Xylene (Total)	**<232**	ug/kg	232	116	0.97	10/11/18 08:40	10/11/18 17:23	1330-20-7	
m&p-Xylene	**<232**	ug/kg	232	13.6	0.97	10/11/18 08:40	10/11/18 17:23	179601-23-1	
o-Xylene	**<116**	ug/kg	116	7.9	0.97	10/11/18 08:40	10/11/18 17:23	95-47-6	
Surrogates									
Toluene-d8 (S)	102	%	43-157		0.97	10/11/18 08:40	10/11/18 17:23	2037-26-5	
4-Bromofluorobenzene (S)	99	%	34-145		0.97	10/11/18 08:40	10/11/18 17:23	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	33-150		0.97	10/11/18 08:40	10/11/18 17:23	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TICs Found**				1		10/16/18 15:55		

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-18 (14-15) **Lab ID: 7067073005** Collected: 10/04/18 11:10 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**16.7**	%	0.10	0.10	1		10/08/18 13:06		

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-19 (0-9) **Lab ID: 7067073006** Collected: 10/04/18 13:05 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 05:25	309-00-2	
alpha-BHC	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 05:25	319-84-6	
beta-BHC	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 05:25	319-85-7	
delta-BHC	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 05:25	319-86-8	
gamma-BHC (Lindane)	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 05:25	58-89-9	
alpha-Chlordane	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 05:25	5103-71-9	
4,4'-DDD	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 05:25	72-54-8	
4,4'-DDE	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 05:25	72-55-9	
4,4'-DDT	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 05:25	50-29-3	CL
Dieldrin	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 05:25	60-57-1	
Endosulfan I	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 05:25	959-98-8	
Endosulfan II	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 05:25	33213-65-9	
Endosulfan sulfate	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 05:25	1031-07-8	
Endrin	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/13/18 05:25	72-20-8	
Heptachlor	**<1.9**	ug/kg	1.9	0.93	1	10/08/18 17:25	10/13/18 05:25	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	78	%	30-150		1	10/08/18 17:25	10/13/18 05:25	877-09-8	
Decachlorobiphenyl (S)	108	%	30-150		1	10/08/18 17:25	10/13/18 05:25	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<36.0**	ug/kg	36.0	18.0	1	10/08/18 17:25	10/12/18 03:47	12674-11-2	
PCB-1221 (Aroclor 1221)	**<73.0**	ug/kg	73.0	36.5	1	10/08/18 17:25	10/12/18 03:47	11104-28-2	
PCB-1232 (Aroclor 1232)	**<36.0**	ug/kg	36.0	18.0	1	10/08/18 17:25	10/12/18 03:47	11141-16-5	
PCB-1242 (Aroclor 1242)	**<36.0**	ug/kg	36.0	18.0	1	10/08/18 17:25	10/12/18 03:47	53469-21-9	
PCB-1248 (Aroclor 1248)	**<36.0**	ug/kg	36.0	18.0	1	10/08/18 17:25	10/12/18 03:47	12672-29-6	
PCB-1254 (Aroclor 1254)	**<36.0**	ug/kg	36.0	18.0	1	10/08/18 17:25	10/12/18 03:47	11097-69-1	
PCB-1260 (Aroclor 1260)	**<36.0**	ug/kg	36.0	18.0	1	10/08/18 17:25	10/12/18 03:47	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	78	%	30-150		1	10/08/18 17:25	10/12/18 03:47	877-09-8	
Decachlorobiphenyl (S)	88	%	30-150		1	10/08/18 17:25	10/12/18 03:47	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**8.7**	mg/kg	0.57	0.17	1	10/06/18 15:14	10/08/18 13:23	7440-38-2	
Barium	**130**	mg/kg	11.5	0.88	1	10/06/18 15:14	10/08/18 13:23	7440-39-3	
Beryllium	**0.21J**	mg/kg	0.29	0.037	1	10/06/18 15:14	10/08/18 13:23	7440-41-7	
Cadmium	**0.29**	mg/kg	0.14	0.017	1	10/06/18 15:14	10/08/18 13:23	7440-43-9	
Chromium	**10.2**	mg/kg	0.57	0.055	1	10/06/18 15:14	10/08/18 13:23	7440-47-3	
Copper	**31.5**	mg/kg	1.4	0.10	1	10/06/18 15:14	10/08/18 13:23	7440-50-8	
Lead	**14.8**	mg/kg	0.29	0.13	1	10/06/18 15:14	10/08/18 13:23	7439-92-1	
Manganese	**729**	mg/kg	0.86	0.049	1	10/06/18 15:14	10/08/18 13:23	7439-96-5	
Nickel	**14.7**	mg/kg	2.3	0.21	1	10/06/18 15:14	10/08/18 13:23	7440-02-0	
Selenium	**0.40J**	mg/kg	0.57	0.30	1	10/06/18 15:14	10/08/18 13:23	7782-49-2	
Silver	**<0.57**	mg/kg	0.57	0.072	1	10/06/18 15:14	10/08/18 13:23	7440-22-4	
Zinc	**46.5**	mg/kg	1.1	0.073	1	10/06/18 15:14	10/08/18 13:23	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-19 (0-9) **Lab ID: 7067073006** Collected: 10/04/18 13:05 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.030J**	mg/kg	0.035	0.021	1	10/06/18 15:40	10/09/18 12:13	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<72.5**	ug/kg	72.5	10.8	1	10/08/18 10:12	10/10/18 19:07	83-32-9	
Acenaphthylene	**<72.5**	ug/kg	72.5	14.5	1	10/08/18 10:12	10/10/18 19:07	208-96-8	
Anthracene	**<72.5**	ug/kg	72.5	21.2	1	10/08/18 10:12	10/10/18 19:07	120-12-7	
Benzo(a)anthracene	**<72.5**	ug/kg	72.5	16.6	1	10/08/18 10:12	10/10/18 19:07	56-55-3	
Benzo(a)pyrene	**<72.5**	ug/kg	72.5	30.6	1	10/08/18 10:12	10/10/18 19:07	50-32-8	
Benzo(b)fluoranthene	**<72.5**	ug/kg	72.5	25.1	1	10/08/18 10:12	10/10/18 19:07	205-99-2	
Benzo(g,h,i)perylene	**<72.5**	ug/kg	72.5	35.1	1	10/08/18 10:12	10/10/18 19:07	191-24-2	
Benzo(k)fluoranthene	**<72.5**	ug/kg	72.5	22.5	1	10/08/18 10:12	10/10/18 19:07	207-08-9	
Chrysene	**<72.5**	ug/kg	72.5	32.5	1	10/08/18 10:12	10/10/18 19:07	218-01-9	
Dibenz(a,h)anthracene	**<72.5**	ug/kg	72.5	23.7	1	10/08/18 10:12	10/10/18 19:07	53-70-3	
Dibenzofuran	**<72.5**	ug/kg	72.5	13.1	1	10/08/18 10:12	10/10/18 19:07	132-64-9	
Fluoranthene	**<72.5**	ug/kg	72.5	61.0	1	10/08/18 10:12	10/10/18 19:07	206-44-0	
Fluorene	**<72.5**	ug/kg	72.5	18.4	1	10/08/18 10:12	10/10/18 19:07	86-73-7	
Hexachlorobenzene	**<72.5**	ug/kg	72.5	14.4	1	10/08/18 10:12	10/10/18 19:07	118-74-1	
Indeno(1,2,3-cd)pyrene	**<72.5**	ug/kg	72.5	27.7	1	10/08/18 10:12	10/10/18 19:07	193-39-5	
2-Methylphenol(o-Cresol)	**<72.5**	ug/kg	72.5	40.2	1	10/08/18 10:12	10/10/18 19:07	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<72.5**	ug/kg	72.5	26.1	1	10/08/18 10:12	10/10/18 19:07		
Naphthalene	**<72.5**	ug/kg	72.5	8.0	1	10/08/18 10:12	10/10/18 19:07	91-20-3	
Pentachlorophenol	**<725**	ug/kg	725	7.3	1	10/08/18 10:12	10/10/18 19:07	87-86-5	
Phenanthrene	**<72.5**	ug/kg	72.5	23.4	1	10/08/18 10:12	10/10/18 19:07	85-01-8	
Phenol	**<72.5**	ug/kg	72.5	13.8	1	10/08/18 10:12	10/10/18 19:07	108-95-2	
Pyrene	**<72.5**	ug/kg	72.5	34.4	1	10/08/18 10:12	10/10/18 19:07	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	91	%	23-120		1	10/08/18 10:12	10/10/18 19:07	4165-60-0	
2-Fluorobiphenyl (S)	63	%	30-115		1	10/08/18 10:12	10/10/18 19:07	321-60-8	
p-Terphenyl-d14 (S)	81	%	18-137		1	10/08/18 10:12	10/10/18 19:07	1718-51-0	
Phenol-d5 (S)	48	%	24-113		1	10/08/18 10:12	10/10/18 19:07	4165-62-2	
2-Fluorophenol (S)	24	%	25-121		1	10/08/18 10:12	10/10/18 19:07	367-12-4	CH,S0
2,4,6-Tribromophenol (S)	53	%	19-122		1	10/08/18 10:12	10/10/18 19:07	118-79-6	
2-Chlorophenol-d4 (S)	42	%	20-130		1	10/08/18 10:12	10/10/18 19:07	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	50	%	20-130		1	10/08/18 10:12	10/10/18 19:07	2199-69-1	
Tentatively Identified Compounds									
Unknown Aromatic Hydroca	**355J**	ug/kg			1	10/08/18 10:12	10/10/18 19:07		
Unknown Ketone	**2780J**	ug/kg			1	10/08/18 10:12	10/10/18 19:07		
Unknown Ketone	**12700J**	ug/kg			1	10/08/18 10:12	10/10/18 19:07		
Unknown Aldol Condensate	**163J**	ug/kg			1	10/08/18 10:12	10/10/18 19:07		
Unknown Aldol Condensate	**566J**	ug/kg			1	10/08/18 10:12	10/10/18 19:07		
Benzophenone	**185J**	ug/kg			1	10/08/18 10:12	10/10/18 19:07	119-61-9	N
Unknown Organic Acid	**553J**	ug/kg			1	10/08/18 10:12	10/10/18 19:07		
Unknown Organic Acid	**275J**	ug/kg			1	10/08/18 10:12	10/10/18 19:07		
Unknown Amide	**404J**	ug/kg			1	10/08/18 10:12	10/10/18 19:07		

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-19 (0-9) **Lab ID: 7067073006** Collected: 10/04/18 13:05 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<7.8**	ug/kg	7.8	7.7	1	10/15/18 14:13	10/16/18 03:00	67-64-1	
Benzene	**<7.8**	ug/kg	7.8	3.1	1	10/15/18 14:13	10/16/18 03:00	71-43-2	
2-Butanone (MEK)	**<7.8**	ug/kg	7.8	4.8	1	10/15/18 14:13	10/16/18 03:00	78-93-3	
n-Butylbenzene	**<7.8**	ug/kg	7.8	3.1	1	10/15/18 14:13	10/16/18 03:00	104-51-8	L1
sec-Butylbenzene	**<7.8**	ug/kg	7.8	3.1	1	10/15/18 14:13	10/16/18 03:00	135-98-8	L1
tert-Butylbenzene	**<7.8**	ug/kg	7.8	3.9	1	10/15/18 14:13	10/16/18 03:00	98-06-6	
Carbon tetrachloride	**<7.8**	ug/kg	7.8	4.9	1	10/15/18 14:13	10/16/18 03:00	56-23-5	
Chlorobenzene	**<7.8**	ug/kg	7.8	3.2	1	10/15/18 14:13	10/16/18 03:00	108-90-7	
Chloroform	**<7.8**	ug/kg	7.8	2.1	1	10/15/18 14:13	10/16/18 03:00	67-66-3	
1,2-Dichlorobenzene	**<7.8**	ug/kg	7.8	3.2	1	10/15/18 14:13	10/16/18 03:00	95-50-1	
1,3-Dichlorobenzene	**<7.8**	ug/kg	7.8	3.2	1	10/15/18 14:13	10/16/18 03:00	541-73-1	
1,4-Dichlorobenzene	**<7.8**	ug/kg	7.8	3.2	1	10/15/18 14:13	10/16/18 03:00	106-46-7	
1,1-Dichloroethane	**<7.8**	ug/kg	7.8	3.1	1	10/15/18 14:13	10/16/18 03:00	75-34-3	
1,2-Dichloroethane	**<7.8**	ug/kg	7.8	1.9	1	10/15/18 14:13	10/16/18 03:00	107-06-2	
1,1-Dichloroethene	**<7.8**	ug/kg	7.8	3.0	1	10/15/18 14:13	10/16/18 03:00	75-35-4	
cis-1,2-Dichloroethene	**<7.8**	ug/kg	7.8	2.9	1	10/15/18 14:13	10/16/18 03:00	156-59-2	
trans-1,2-Dichloroethene	**<7.8**	ug/kg	7.8	2.2	1	10/15/18 14:13	10/16/18 03:00	156-60-5	
1,4-Dioxane (p-Dioxane)	**<195**	ug/kg	195	115	1	10/15/18 14:13	10/16/18 03:00	123-91-1	
Ethylbenzene	**<7.8**	ug/kg	7.8	3.0	1	10/15/18 14:13	10/16/18 03:00	100-41-4	
Methylene Chloride	**<7.8**	ug/kg	7.8	3.5	1	10/15/18 14:13	10/16/18 03:00	75-09-2	
Methyl-tert-butyl ether	**<7.8**	ug/kg	7.8	1.7	1	10/15/18 14:13	10/16/18 03:00	1634-04-4	
n-Propylbenzene	**<7.8**	ug/kg	7.8	3.2	1	10/15/18 14:13	10/16/18 03:00	103-65-1	L1
Tetrachloroethene	**<7.8**	ug/kg	7.8	4.0	1	10/15/18 14:13	10/16/18 03:00	127-18-4	
Toluene	**<7.8**	ug/kg	7.8	3.6	1	10/15/18 14:13	10/16/18 03:00	108-88-3	
1,2,4-Trichlorobenzene	**<7.8**	ug/kg	7.8	3.1	1	10/15/18 14:13	10/16/18 03:00	120-82-1	
1,1,1-Trichloroethane	**<7.8**	ug/kg	7.8	4.1	1	10/15/18 14:13	10/16/18 03:00	71-55-6	
Trichloroethene	**<7.8**	ug/kg	7.8	3.2	1	10/15/18 14:13	10/16/18 03:00	79-01-6	
1,2,4-Trimethylbenzene	**<7.8**	ug/kg	7.8	3.4	1	10/15/18 14:13	10/16/18 03:00	95-63-6	
1,3,5-Trimethylbenzene	**<7.8**	ug/kg	7.8	3.0	1	10/15/18 14:13	10/16/18 03:00	108-67-8	
Vinyl chloride	**<7.8**	ug/kg	7.8	1.7	1	10/15/18 14:13	10/16/18 03:00	75-01-4	
Xylene (Total)	**<15.6**	ug/kg	15.6	7.8	1	10/15/18 14:13	10/16/18 03:00	1330-20-7	
m&p-Xylene	**<15.6**	ug/kg	15.6	7.5	1	10/15/18 14:13	10/16/18 03:00	179601-23-1	
o-Xylene	**<7.8**	ug/kg	7.8	3.4	1	10/15/18 14:13	10/16/18 03:00	95-47-6	
Surrogates									
Toluene-d8 (S)	106	%	43-157		1	10/15/18 14:13	10/16/18 03:00	2037-26-5	
4-Bromofluorobenzene (S)	102	%	34-145		1	10/15/18 14:13	10/16/18 03:00	460-00-4	
1,2-Dichloroethane-d4 (S)	122	%	33-150		1	10/15/18 14:13	10/16/18 03:00	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/16/18 16:57		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**8.3**	%	0.10	0.10	1		10/08/18 13:06		

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-15 (12-16) **Lab ID: 7067073007** Collected: 10/04/18 13:50 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.5**	ug/kg	2.5	1.2	1	10/08/18 17:25	10/16/18 16:13	309-00-2	
alpha-BHC	**<2.5**	ug/kg	2.5	1.2	1	10/08/18 17:25	10/16/18 16:13	319-84-6	
beta-BHC	**<2.5**	ug/kg	2.5	1.2	1	10/08/18 17:25	10/16/18 16:13	319-85-7	
delta-BHC	**<2.5**	ug/kg	2.5	1.2	1	10/08/18 17:25	10/16/18 16:13	319-86-8	
gamma-BHC (Lindane)	**<2.5**	ug/kg	2.5	1.2	1	10/08/18 17:25	10/16/18 16:13	58-89-9	
alpha-Chlordane	**<2.5**	ug/kg	2.5	1.2	1	10/08/18 17:25	10/16/18 16:13	5103-71-9	
4,4'-DDD	**<4.8**	ug/kg	4.8	2.4	1	10/08/18 17:25	10/16/18 16:13	72-54-8	
4,4'-DDE	**7.8**	ug/kg	4.8	2.4	1	10/08/18 17:25	10/16/18 16:13	72-55-9	CH
4,4'-DDT	**15.0**	ug/kg	4.8	2.4	1	10/08/18 17:25	10/16/18 16:13	50-29-3	CL
Dieldrin	**<4.8**	ug/kg	4.8	2.4	1	10/08/18 17:25	10/16/18 16:13	60-57-1	
Endosulfan I	**<2.5**	ug/kg	2.5	1.2	1	10/08/18 17:25	10/16/18 16:13	959-98-8	
Endosulfan II	**<4.8**	ug/kg	4.8	2.4	1	10/08/18 17:25	10/16/18 16:13	33213-65-9	
Endosulfan sulfate	**<4.8**	ug/kg	4.8	2.4	1	10/08/18 17:25	10/16/18 16:13	1031-07-8	
Endrin	**<4.8**	ug/kg	4.8	2.4	1	10/08/18 17:25	10/16/18 16:13	72-20-8	
Heptachlor	**<2.5**	ug/kg	2.5	1.2	1	10/08/18 17:25	10/16/18 16:13	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	58	%	30-150		1	10/08/18 17:25	10/16/18 16:13	877-09-8	
Decachlorobiphenyl (S)	204	%	30-150		1	10/08/18 17:25	10/16/18 16:13	2051-24-3	1j,E,S0
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<47.6**	ug/kg	47.6	23.8	1	10/08/18 17:25	10/12/18 04:00	12674-11-2	
PCB-1221 (Aroclor 1221)	**<96.6**	ug/kg	96.6	48.3	1	10/08/18 17:25	10/12/18 04:00	11104-28-2	
PCB-1232 (Aroclor 1232)	**<47.6**	ug/kg	47.6	23.8	1	10/08/18 17:25	10/12/18 04:00	11141-16-5	
PCB-1242 (Aroclor 1242)	**<47.6**	ug/kg	47.6	23.8	1	10/08/18 17:25	10/12/18 04:00	53469-21-9	
PCB-1248 (Aroclor 1248)	**<47.6**	ug/kg	47.6	23.8	1	10/08/18 17:25	10/12/18 04:00	12672-29-6	
PCB-1254 (Aroclor 1254)	**224**	ug/kg	47.6	23.8	1	10/08/18 17:25	10/12/18 04:00	11097-69-1	
PCB-1260 (Aroclor 1260)	**<47.6**	ug/kg	47.6	23.8	1	10/08/18 17:25	10/12/18 04:00	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	57	%	30-150		1	10/08/18 17:25	10/12/18 04:00	877-09-8	
Decachlorobiphenyl (S)	71	%	30-150		1	10/08/18 17:25	10/12/18 04:00	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**8.7**	mg/kg	0.76	0.23	1	10/06/18 15:14	10/08/18 13:24	7440-38-2	
Barium	**68.3**	mg/kg	15.2	1.2	1	10/06/18 15:14	10/08/18 13:24	7440-39-3	
Beryllium	**0.23J**	mg/kg	0.38	0.049	1	10/06/18 15:14	10/08/18 13:24	7440-41-7	
Cadmium	**0.27**	mg/kg	0.19	0.023	1	10/06/18 15:14	10/08/18 13:24	7440-43-9	
Chromium	**15.2**	mg/kg	0.76	0.073	1	10/06/18 15:14	10/08/18 13:24	7440-47-3	
Copper	**65.4**	mg/kg	1.9	0.14	1	10/06/18 15:14	10/08/18 13:24	7440-50-8	
Lead	**14.5**	mg/kg	0.38	0.18	1	10/06/18 15:14	10/08/18 13:24	7439-92-1	
Manganese	**172**	mg/kg	1.1	0.065	1	10/06/18 15:14	10/08/18 13:24	7439-96-5	
Nickel	**16.7**	mg/kg	3.0	0.27	1	10/06/18 15:14	10/08/18 13:24	7440-02-0	
Selenium	**4.7**	mg/kg	0.76	0.40	1	10/06/18 15:14	10/08/18 13:24	7782-49-2	
Silver	**<0.76**	mg/kg	0.76	0.096	1	10/06/18 15:14	10/08/18 13:24	7440-22-4	
Zinc	**67.6**	mg/kg	1.5	0.097	1	10/06/18 15:14	10/08/18 13:24	7440-66-6	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-15 (12-16) **Lab ID: 7067073007** Collected: 10/04/18 13:50 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.044**	mg/kg	0.044	0.027	1	10/06/18 15:40	10/09/18 12:14	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<481**	ug/kg	481	71.4	5	10/08/18 10:12	10/10/18 21:59	83-32-9	
Acenaphthylene	**<481**	ug/kg	481	96.3	5	10/08/18 10:12	10/10/18 21:59	208-96-8	
Anthracene	**<481**	ug/kg	481	141	5	10/08/18 10:12	10/10/18 21:59	120-12-7	
Benzo(a)anthracene	**<481**	ug/kg	481	110	5	10/08/18 10:12	10/10/18 21:59	56-55-3	
Benzo(a)pyrene	**<481**	ug/kg	481	203	5	10/08/18 10:12	10/10/18 21:59	50-32-8	
Benzo(b)fluoranthene	**<481**	ug/kg	481	167	5	10/08/18 10:12	10/10/18 21:59	205-99-2	
Benzo(g,h,i)perylene	**<481**	ug/kg	481	233	5	10/08/18 10:12	10/10/18 21:59	191-24-2	
Benzo(k)fluoranthene	**<481**	ug/kg	481	149	5	10/08/18 10:12	10/10/18 21:59	207-08-9	
Chrysene	**<481**	ug/kg	481	216	5	10/08/18 10:12	10/10/18 21:59	218-01-9	
Dibenz(a,h)anthracene	**<481**	ug/kg	481	157	5	10/08/18 10:12	10/10/18 21:59	53-70-3	
Dibenzofuran	**<481**	ug/kg	481	87.2	5	10/08/18 10:12	10/10/18 21:59	132-64-9	
Fluoranthene	**<481**	ug/kg	481	405	5	10/08/18 10:12	10/10/18 21:59	206-44-0	
Fluorene	**<481**	ug/kg	481	122	5	10/08/18 10:12	10/10/18 21:59	86-73-7	
Hexachlorobenzene	**<481**	ug/kg	481	95.3	5	10/08/18 10:12	10/10/18 21:59	118-74-1	
Indeno(1,2,3-cd)pyrene	**<481**	ug/kg	481	184	5	10/08/18 10:12	10/10/18 21:59	193-39-5	
2-Methylphenol(o-Cresol)	**<481**	ug/kg	481	267	5	10/08/18 10:12	10/10/18 21:59	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<481**	ug/kg	481	173	5	10/08/18 10:12	10/10/18 21:59		
Naphthalene	**<481**	ug/kg	481	53.2	5	10/08/18 10:12	10/10/18 21:59	91-20-3	
Pentachlorophenol	**<4810**	ug/kg	4810	48.5	5	10/08/18 10:12	10/10/18 21:59	87-86-5	
Phenanthrene	**<481**	ug/kg	481	155	5	10/08/18 10:12	10/10/18 21:59	85-01-8	
Phenol	**<481**	ug/kg	481	91.8	5	10/08/18 10:12	10/10/18 21:59	108-95-2	
Pyrene	**<481**	ug/kg	481	228	5	10/08/18 10:12	10/10/18 21:59	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	42	%	23-120		5	10/08/18 10:12	10/10/18 21:59	4165-60-0	
2-Fluorobiphenyl (S)	62	%	30-115		5	10/08/18 10:12	10/10/18 21:59	321-60-8	
p-Terphenyl-d14 (S)	73	%	18-137		5	10/08/18 10:12	10/10/18 21:59	1718-51-0	
Phenol-d5 (S)	44	%	24-113		5	10/08/18 10:12	10/10/18 21:59	4165-62-2	
2-Fluorophenol (S)	78	%	25-121		5	10/08/18 10:12	10/10/18 21:59	367-12-4	CH
2,4,6-Tribromophenol (S)	59	%	19-122		5	10/08/18 10:12	10/10/18 21:59	118-79-6	
2-Chlorophenol-d4 (S)	45	%	20-130		5	10/08/18 10:12	10/10/18 21:59	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	45	%	20-130		5	10/08/18 10:12	10/10/18 21:59	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**7480J**	ug/kg			5	10/08/18 10:12	10/10/18 21:59		
Unknown Ketone	**99600J**	ug/kg			5	10/08/18 10:12	10/10/18 21:59		
Unknown Aldol Condensate	**2550J**	ug/kg			5	10/08/18 10:12	10/10/18 21:59		
Unknown Alcohol	**1820J**	ug/kg			5	10/08/18 10:12	10/10/18 21:59		
Unknown Alkane	**1640J**	ug/kg			5	10/08/18 10:12	10/10/18 21:59		
Unknown Alkane	**1180J**	ug/kg			5	10/08/18 10:12	10/10/18 21:59		
Unknown Alkane	**1280J**	ug/kg			5	10/08/18 10:12	10/10/18 21:59		
Unknown Alkane	**1240J**	ug/kg			5	10/08/18 10:12	10/10/18 21:59		
Unknown	**1130J**	ug/kg			5	10/08/18 10:12	10/10/18 21:59		
Unknown PAH	**1810J**	ug/kg			5	10/08/18 10:12	10/10/18 21:59		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-15 (12-16) **Lab ID: 7067073007** Collected: 10/04/18 13:50 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**62.4**	ug/kg	12.3	12.1	1	10/15/18 14:13	10/16/18 01:19	67-64-1	CH
Benzene	**<12.3**	ug/kg	12.3	4.8	1	10/15/18 14:13	10/16/18 01:19	71-43-2	
2-Butanone (MEK)	**<12.3**	ug/kg	12.3	7.6	1	10/15/18 14:13	10/16/18 01:19	78-93-3	
n-Butylbenzene	**263**	ug/kg	12.3	4.9	1	10/15/18 14:13	10/16/18 01:19	104-51-8	L1
sec-Butylbenzene	**122**	ug/kg	12.3	4.9	1	10/15/18 14:13	10/16/18 01:19	135-98-8	L1
tert-Butylbenzene	**<12.3**	ug/kg	12.3	6.1	1	10/15/18 14:13	10/16/18 01:19	98-06-6	
Carbon tetrachloride	**<12.3**	ug/kg	12.3	7.7	1	10/15/18 14:13	10/16/18 01:19	56-23-5	
Chlorobenzene	**<12.3**	ug/kg	12.3	5.1	1	10/15/18 14:13	10/16/18 01:19	108-90-7	
Chloroform	**<12.3**	ug/kg	12.3	3.4	1	10/15/18 14:13	10/16/18 01:19	67-66-3	
1,2-Dichlorobenzene	**<12.3**	ug/kg	12.3	5.0	1	10/15/18 14:13	10/16/18 01:19	95-50-1	
1,3-Dichlorobenzene	**<12.3**	ug/kg	12.3	5.0	1	10/15/18 14:13	10/16/18 01:19	541-73-1	
1,4-Dichlorobenzene	**<12.3**	ug/kg	12.3	5.0	1	10/15/18 14:13	10/16/18 01:19	106-46-7	
1,1-Dichloroethane	**<12.3**	ug/kg	12.3	4.8	1	10/15/18 14:13	10/16/18 01:19	75-34-3	
1,2-Dichloroethane	**<12.3**	ug/kg	12.3	3.0	1	10/15/18 14:13	10/16/18 01:19	107-06-2	
1,1-Dichloroethene	**6.3J**	ug/kg	12.3	4.7	1	10/15/18 14:13	10/16/18 01:19	75-35-4	
cis-1,2-Dichloroethene	**41.5**	ug/kg	12.3	4.5	1	10/15/18 14:13	10/16/18 01:19	156-59-2	
trans-1,2-Dichloroethene	**<12.3**	ug/kg	12.3	3.5	1	10/15/18 14:13	10/16/18 01:19	156-60-5	
1,4-Dioxane (p-Dioxane)	**<306**	ug/kg	306	181	1	10/15/18 14:13	10/16/18 01:19	123-91-1	
Ethylbenzene	**20.2**	ug/kg	12.3	4.7	1	10/15/18 14:13	10/16/18 01:19	100-41-4	
Methylene Chloride	**<12.3**	ug/kg	12.3	5.6	1	10/15/18 14:13	10/16/18 01:19	75-09-2	
Methyl-tert-butyl ether	**<12.3**	ug/kg	12.3	2.7	1	10/15/18 14:13	10/16/18 01:19	1634-04-4	
n-Propylbenzene	**73.4**	ug/kg	12.3	5.0	1	10/15/18 14:13	10/16/18 01:19	103-65-1	L1
Tetrachloroethene	**7.8J**	ug/kg	12.3	6.3	1	10/15/18 14:13	10/16/18 01:19	127-18-4	
Toluene	**6.3J**	ug/kg	12.3	5.7	1	10/15/18 14:13	10/16/18 01:19	108-88-3	
1,2,4-Trichlorobenzene	**<12.3**	ug/kg	12.3	4.9	1	10/15/18 14:13	10/16/18 01:19	120-82-1	
1,1,1-Trichloroethane	**<12.3**	ug/kg	12.3	6.4	1	10/15/18 14:13	10/16/18 01:19	71-55-6	
Trichloroethene	**164**	ug/kg	12.3	5.1	1	10/15/18 14:13	10/16/18 01:19	79-01-6	
1,2,4-Trimethylbenzene	**412**	ug/kg	12.3	5.3	1	10/15/18 14:13	10/16/18 01:19	95-63-6	
1,3,5-Trimethylbenzene	**250**	ug/kg	12.3	4.7	1	10/15/18 14:13	10/16/18 01:19	108-67-8	
Vinyl chloride	**41.1**	ug/kg	12.3	2.7	1	10/15/18 14:13	10/16/18 01:19	75-01-4	
Xylene (Total)	**51.8**	ug/kg	24.5	12.3	1	10/15/18 14:13	10/16/18 01:19	1330-20-7	
m&p-Xylene	**27.8**	ug/kg	24.5	11.9	1	10/15/18 14:13	10/16/18 01:19	179601-23-1	
o-Xylene	**24.0**	ug/kg	12.3	5.3	1	10/15/18 14:13	10/16/18 01:19	95-47-6	
Surrogates									
Toluene-d8 (S)	120	%	43-157		1	10/15/18 14:13	10/16/18 01:19	2037-26-5	
4-Bromofluorobenzene (S)	105	%	34-145		1	10/15/18 14:13	10/16/18 01:19	460-00-4	
1,2-Dichloroethane-d4 (S)	115	%	33-150		1	10/15/18 14:13	10/16/18 01:19	17060-07-0	
Tentatively Identified Compounds									
Unknown Petroleum Alkane	**461J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19		
Unknown Petroleum Alkane	**401J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19		
Unknown Cycloalkane	**285J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19		
Unknown Petroleum Alkane	**330J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19		
.alpha.-Pinene	**385J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19	80-56-8	N
Unknown Petroleum Alkane	**269J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19		
Unknown Cycloalkane	**512J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19		

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-15 (12-16) **Lab ID: 7067073007** Collected: 10/04/18 13:50 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Tentatively Identified Compounds									
Unknown Petroleum Alkane	**2230J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19		
Unknown Cycloalkane	**731J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19		
Unknown	**363J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19		
Unknown Petroleum Alkane	**372J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19		
Unknown Petroleum Alkane	**2250J**	ug/kg			1	10/15/18 14:13	10/16/18 01:19		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**30.8**	%	0.10	0.10	1		10/08/18 13:06		

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-21 (0-4) **Lab ID: 7067073008** Collected: 10/04/18 15:15 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.0**	ug/kg	2.0	0.99	1	10/08/18 17:25	10/19/18 20:08	309-00-2	
alpha-BHC	**<2.0**	ug/kg	2.0	0.99	1	10/08/18 17:25	10/19/18 20:08	319-84-6	
beta-BHC	**<2.0**	ug/kg	2.0	0.99	1	10/08/18 17:25	10/19/18 20:08	319-85-7	
delta-BHC	**<2.0**	ug/kg	2.0	0.99	1	10/08/18 17:25	10/19/18 20:08	319-86-8	
gamma-BHC (Lindane)	**2.2**	ug/kg	2.0	0.99	1	10/08/18 17:25	10/19/18 20:08	58-89-9	
alpha-Chlordane	**2.3**	ug/kg	2.0	0.99	1	10/08/18 17:25	10/19/18 20:08	5103-71-9	
4,4'-DDD	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 20:08	72-54-8	
4,4'-DDE	**44.1**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 20:08	72-55-9	
4,4'-DDT	**8.2**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 20:08	50-29-3	
Dieldrin	**11.5**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 20:08	60-57-1	
Endosulfan I	**<2.0**	ug/kg	2.0	0.99	1	10/08/18 17:25	10/19/18 20:08	959-98-8	
Endosulfan II	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 20:08	33213-65-9	
Endosulfan sulfate	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 20:08	1031-07-8	
Endrin	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 20:08	72-20-8	
Heptachlor	**18.1**	ug/kg	2.0	0.99	1	10/08/18 17:25	10/19/18 20:08	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	40	%	30-150		1	10/08/18 17:25	10/19/18 20:08	877-09-8	
Decachlorobiphenyl (S)	79	%	30-150		1	10/08/18 17:25	10/19/18 20:08	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<765**	ug/kg	765	383	20	10/08/18 17:25	10/12/18 15:27	12674-11-2	
PCB-1221 (Aroclor 1221)	**<1550**	ug/kg	1550	777	20	10/08/18 17:25	10/12/18 15:27	11104-28-2	
PCB-1232 (Aroclor 1232)	**<765**	ug/kg	765	383	20	10/08/18 17:25	10/12/18 15:27	11141-16-5	
PCB-1242 (Aroclor 1242)	**<765**	ug/kg	765	383	20	10/08/18 17:25	10/12/18 15:27	53469-21-9	
PCB-1248 (Aroclor 1248)	**4650**	ug/kg	765	383	20	10/08/18 17:25	10/12/18 15:27	12672-29-6	
PCB-1254 (Aroclor 1254)	**<765**	ug/kg	765	383	20	10/08/18 17:25	10/12/18 15:27	11097-69-1	
PCB-1260 (Aroclor 1260)	**<765**	ug/kg	765	383	20	10/08/18 17:25	10/12/18 15:27	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	59	%	30-150		1	10/08/18 17:25	10/12/18 04:13	877-09-8	
Decachlorobiphenyl (S)	77	%	30-150		1	10/08/18 17:25	10/12/18 04:13	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<5.8**	ug/kg	5.8	0.31	1	10/09/18 11:02	10/12/18 04:17	93-72-1	
Surrogates									
2,4-DCAA (S)	61	%	29-136		1	10/09/18 11:02	10/12/18 04:17	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**17.0**	mg/kg	0.64	0.19	1	10/06/18 15:14	10/08/18 13:27	7440-38-2	
Barium	**446**	mg/kg	12.8	0.97	1	10/06/18 15:14	10/08/18 13:27	7440-39-3	
Beryllium	**0.81**	mg/kg	0.32	0.041	1	10/06/18 15:14	10/08/18 13:27	7440-41-7	
Cadmium	**4.8**	mg/kg	0.16	0.019	1	10/06/18 15:14	10/08/18 13:27	7440-43-9	
Chromium	**35.3**	mg/kg	0.64	0.061	1	10/06/18 15:14	10/08/18 13:27	7440-47-3	
Copper	**7090**	mg/kg	15.9	1.2	10	10/06/18 15:14	10/09/18 18:39	7440-50-8	
Lead	**328**	mg/kg	0.32	0.15	1	10/06/18 15:14	10/08/18 13:27	7439-92-1	
Manganese	**306**	mg/kg	0.96	0.055	1	10/06/18 15:14	10/08/18 13:27	7439-96-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-21 (0-4) **Lab ID: 7067073008** Collected: 10/04/18 15:15 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**53.5**	mg/kg	2.6	0.23	1	10/06/18 15:14	10/08/18 13:27	7440-02-0	
Selenium	**2.0**	mg/kg	0.64	0.34	1	10/06/18 15:14	10/08/18 13:27	7782-49-2	
Silver	**2.7**	mg/kg	0.64	0.080	1	10/06/18 15:14	10/08/18 13:27	7440-22-4	
Zinc	**3240**	mg/kg	12.8	0.82	10	10/06/18 15:14	10/09/18 18:39	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**1.2**	mg/kg	0.036	0.022	1	10/06/18 15:40	10/09/18 12:16	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<391**	ug/kg	391	58.0	5	10/08/18 10:12	10/10/18 22:28	83-32-9	
Acenaphthylene	**<391**	ug/kg	391	78.2	5	10/08/18 10:12	10/10/18 22:28	208-96-8	
Anthracene	**368J**	ug/kg	391	114	5	10/08/18 10:12	10/10/18 22:28	120-12-7	
Benzo(a)anthracene	**1450**	ug/kg	391	89.6	5	10/08/18 10:12	10/10/18 22:28	56-55-3	
Benzo(a)pyrene	**1410**	ug/kg	391	165	5	10/08/18 10:12	10/10/18 22:28	50-32-8	
Benzo(b)fluoranthene	**1930**	ug/kg	391	136	5	10/08/18 10:12	10/10/18 22:28	205-99-2	
Benzo(g,h,i)perylene	**1100**	ug/kg	391	189	5	10/08/18 10:12	10/10/18 22:28	191-24-2	
Benzo(k)fluoranthene	**734**	ug/kg	391	121	5	10/08/18 10:12	10/10/18 22:28	207-08-9	
Chrysene	**1630**	ug/kg	391	175	5	10/08/18 10:12	10/10/18 22:28	218-01-9	
Dibenz(a,h)anthracene	**256J**	ug/kg	391	128	5	10/08/18 10:12	10/10/18 22:28	53-70-3	
Dibenzofuran	**213J**	ug/kg	391	70.9	5	10/08/18 10:12	10/10/18 22:28	132-64-9	
Fluoranthene	**2980**	ug/kg	391	329	5	10/08/18 10:12	10/10/18 22:28	206-44-0	CH
Fluorene	**<391**	ug/kg	391	99.3	5	10/08/18 10:12	10/10/18 22:28	86-73-7	
Hexachlorobenzene	**<391**	ug/kg	391	77.4	5	10/08/18 10:12	10/10/18 22:28	118-74-1	
Indeno(1,2,3-cd)pyrene	**1110**	ug/kg	391	150	5	10/08/18 10:12	10/10/18 22:28	193-39-5	
2-Methylphenol(o-Cresol)	**<391**	ug/kg	391	217	5	10/08/18 10:12	10/10/18 22:28	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<391**	ug/kg	391	141	5	10/08/18 10:12	10/10/18 22:28		
Naphthalene	**353J**	ug/kg	391	43.2	5	10/08/18 10:12	10/10/18 22:28	91-20-3	
Pentachlorophenol	**<3910**	ug/kg	3910	39.4	5	10/08/18 10:12	10/10/18 22:28	87-86-5	
Phenanthrene	**1640**	ug/kg	391	126	5	10/08/18 10:12	10/10/18 22:28	85-01-8	
Phenol	**<391**	ug/kg	391	74.6	5	10/08/18 10:12	10/10/18 22:28	108-95-2	
Pyrene	**2450**	ug/kg	391	186	5	10/08/18 10:12	10/10/18 22:28	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	63	%	23-120		5	10/08/18 10:12	10/10/18 22:28	4165-60-0	
2-Fluorobiphenyl (S)	100	%	30-115		5	10/08/18 10:12	10/10/18 22:28	321-60-8	
p-Terphenyl-d14 (S)	84	%	18-137		5	10/08/18 10:12	10/10/18 22:28	1718-51-0	
Phenol-d5 (S)	42	%	24-113		5	10/08/18 10:12	10/10/18 22:28	4165-62-2	
2-Fluorophenol (S)	37	%	25-121		5	10/08/18 10:12	10/10/18 22:28	367-12-4	CH
2,4,6-Tribromophenol (S)	64	%	19-122		5	10/08/18 10:12	10/10/18 22:28	118-79-6	
2-Chlorophenol-d4 (S)	44	%	20-130		5	10/08/18 10:12	10/10/18 22:28	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	55	%	20-130		5	10/08/18 10:12	10/10/18 22:28	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**5750J**	ug/kg			5	10/08/18 10:12	10/10/18 22:28		
Unknown	**72500J**	ug/kg			5	10/08/18 10:12	10/10/18 22:28		
Unknown Aldol Condensate	**1450J**	ug/kg			5	10/08/18 10:12	10/10/18 22:28		
Unknown	**2230J**	ug/kg			5	10/08/18 10:12	10/10/18 22:28		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-21 (0-4) **Lab ID: 7067073008** Collected: 10/04/18 15:15 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Petroleum Alkane	**1270J**	ug/kg			5	10/08/18 10:12	10/10/18 22:28		
Unknown	**952J**	ug/kg			5	10/08/18 10:12	10/10/18 22:28		
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<5.6**	ug/kg	5.6	5.5	1	10/15/18 14:13	10/16/18 01:44	67-64-1	
Benzene	**<5.6**	ug/kg	5.6	2.2	1	10/15/18 14:13	10/16/18 01:44	71-43-2	
2-Butanone (MEK)	**<5.6**	ug/kg	5.6	3.5	1	10/15/18 14:13	10/16/18 01:44	78-93-3	
n-Butylbenzene	**<5.6**	ug/kg	5.6	2.2	1	10/15/18 14:13	10/16/18 01:44	104-51-8	L1
sec-Butylbenzene	**<5.6**	ug/kg	5.6	2.2	1	10/15/18 14:13	10/16/18 01:44	135-98-8	L1
tert-Butylbenzene	**<5.6**	ug/kg	5.6	2.8	1	10/15/18 14:13	10/16/18 01:44	98-06-6	
Carbon tetrachloride	**<5.6**	ug/kg	5.6	3.5	1	10/15/18 14:13	10/16/18 01:44	56-23-5	
Chlorobenzene	**<5.6**	ug/kg	5.6	2.3	1	10/15/18 14:13	10/16/18 01:44	108-90-7	
Chloroform	**<5.6**	ug/kg	5.6	1.5	1	10/15/18 14:13	10/16/18 01:44	67-66-3	
1,2-Dichlorobenzene	**<5.6**	ug/kg	5.6	2.3	1	10/15/18 14:13	10/16/18 01:44	95-50-1	
1,3-Dichlorobenzene	**<5.6**	ug/kg	5.6	2.3	1	10/15/18 14:13	10/16/18 01:44	541-73-1	
1,4-Dichlorobenzene	**<5.6**	ug/kg	5.6	2.3	1	10/15/18 14:13	10/16/18 01:44	106-46-7	
1,1-Dichloroethane	**<5.6**	ug/kg	5.6	2.2	1	10/15/18 14:13	10/16/18 01:44	75-34-3	
1,2-Dichloroethane	**<5.6**	ug/kg	5.6	1.4	1	10/15/18 14:13	10/16/18 01:44	107-06-2	
1,1-Dichloroethene	**<5.6**	ug/kg	5.6	2.2	1	10/15/18 14:13	10/16/18 01:44	75-35-4	
cis-1,2-Dichloroethene	**9.3**	ug/kg	5.6	2.1	1	10/15/18 14:13	10/16/18 01:44	156-59-2	
trans-1,2-Dichloroethene	**<5.6**	ug/kg	5.6	1.6	1	10/15/18 14:13	10/16/18 01:44	156-60-5	
1,4-Dioxane (p-Dioxane)	**<140**	ug/kg	140	82.5	1	10/15/18 14:13	10/16/18 01:44	123-91-1	
Ethylbenzene	**<5.6**	ug/kg	5.6	2.1	1	10/15/18 14:13	10/16/18 01:44	100-41-4	
Methylene Chloride	**12.3**	ug/kg	5.6	2.5	1	10/15/18 14:13	10/16/18 01:44	75-09-2	
Methyl-tert-butyl ether	**<5.6**	ug/kg	5.6	1.2	1	10/15/18 14:13	10/16/18 01:44	1634-04-4	
n-Propylbenzene	**<5.6**	ug/kg	5.6	2.3	1	10/15/18 14:13	10/16/18 01:44	103-65-1	L1
Tetrachloroethene	**<5.6**	ug/kg	5.6	2.9	1	10/15/18 14:13	10/16/18 01:44	127-18-4	
Toluene	**<5.6**	ug/kg	5.6	2.6	1	10/15/18 14:13	10/16/18 01:44	108-88-3	
1,2,4-Trichlorobenzene	**<5.6**	ug/kg	5.6	2.2	1	10/15/18 14:13	10/16/18 01:44	120-82-1	
1,1,1-Trichloroethane	**<5.6**	ug/kg	5.6	2.9	1	10/15/18 14:13	10/16/18 01:44	71-55-6	
Trichloroethene	**365**	ug/kg	5.6	2.3	1	10/15/18 14:13	10/16/18 01:44	79-01-6	
1,2,4-Trimethylbenzene	**4.1J**	ug/kg	5.6	2.4	1	10/15/18 14:13	10/16/18 01:44	95-63-6	
1,3,5-Trimethylbenzene	**<5.6**	ug/kg	5.6	2.1	1	10/15/18 14:13	10/16/18 01:44	108-67-8	
Vinyl chloride	**<5.6**	ug/kg	5.6	1.2	1	10/15/18 14:13	10/16/18 01:44	75-01-4	
Xylene (Total)	**<11.2**	ug/kg	11.2	5.6	1	10/15/18 14:13	10/16/18 01:44	1330-20-7	
m&p-Xylene	**<11.2**	ug/kg	11.2	5.4	1	10/15/18 14:13	10/16/18 01:44	179601-23-1	
o-Xylene	**<5.6**	ug/kg	5.6	2.4	1	10/15/18 14:13	10/16/18 01:44	95-47-6	
Surrogates									
Toluene-d8 (S)	119	%	43-157		1	10/15/18 14:13	10/16/18 01:44	2037-26-5	
4-Bromofluorobenzene (S)	90	%	34-145		1	10/15/18 14:13	10/16/18 01:44	460-00-4	
1,2-Dichloroethane-d4 (S)	126	%	33-150		1	10/15/18 14:13	10/16/18 01:44	17060-07-0	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-21 (0-4) **Lab ID: 7067073008** Collected: 10/04/18 15:15 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/16/18 16:58		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**14.3**	%	0.10	0.10	1		10/08/18 13:07		

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-20 (0-4) **Lab ID: 7067073009** Collected: 10/04/18 14:30 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/16/18 19:39	309-00-2	
alpha-BHC	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/16/18 19:39	319-84-6	
beta-BHC	**4.0**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/16/18 19:39	319-85-7	
delta-BHC	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/16/18 19:39	319-86-8	
gamma-BHC (Lindane)	**309**	ug/kg	218	109	100	10/08/18 17:25	10/19/18 19:38	58-89-9	
alpha-Chlordane	**354**	ug/kg	218	109	100	10/08/18 17:25	10/19/18 19:38	5103-71-9	
4,4'-DDD	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/16/18 19:39	72-54-8	
4,4'-DDE	**4250**	ug/kg	423	211	100	10/08/18 17:25	10/19/18 19:38	72-55-9	
4,4'-DDT	**<423**	ug/kg	423	211	100	10/08/18 17:25	10/19/18 19:38	50-29-3	
Dieldrin	**1650**	ug/kg	423	211	100	10/08/18 17:25	10/19/18 19:38	60-57-1	
Endosulfan I	**<2.2**	ug/kg	2.2	1.1	1	10/08/18 17:25	10/16/18 19:39	959-98-8	
Endosulfan II	**45.6**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/16/18 19:39	33213-65-9	
Endosulfan sulfate	**7.4**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/16/18 19:39	1031-07-8	
Endrin	**42.7**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/16/18 19:39	72-20-8	
Heptachlor	**574**	ug/kg	218	109	100	10/08/18 17:25	10/19/18 19:38	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	104	%	30-150		1	10/08/18 17:25	10/16/18 19:39	877-09-8	
Decachlorobiphenyl (S)	311	%	30-150		1	10/08/18 17:25	10/16/18 19:39	2051-24-3	1j,E,S0
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<10600**	ug/kg	10600	5280	250	10/08/18 17:25	10/12/18 15:40	12674-11-2	
PCB-1221 (Aroclor 1221)	**<21500**	ug/kg	21500	10700	250	10/08/18 17:25	10/12/18 15:40	11104-28-2	
PCB-1232 (Aroclor 1232)	**<10600**	ug/kg	10600	5280	250	10/08/18 17:25	10/12/18 15:40	11141-16-5	
PCB-1242 (Aroclor 1242)	**<10600**	ug/kg	10600	5280	250	10/08/18 17:25	10/12/18 15:40	53469-21-9	
PCB-1248 (Aroclor 1248)	**104000**	ug/kg	10600	5280	250	10/08/18 17:25	10/12/18 15:40	12672-29-6	
PCB-1254 (Aroclor 1254)	**<10600**	ug/kg	10600	5280	250	10/08/18 17:25	10/12/18 15:40	11097-69-1	
PCB-1260 (Aroclor 1260)	**<10600**	ug/kg	10600	5280	250	10/08/18 17:25	10/12/18 15:40	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	64	%	30-150		1	10/08/18 17:25	10/12/18 04:26	877-09-8	
Decachlorobiphenyl (S)	101	%	30-150		1	10/08/18 17:25	10/12/18 04:26	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**31.1**	mg/kg	0.67	0.20	1	10/06/18 15:14	10/08/18 13:28	7440-38-2	
Barium	**157**	mg/kg	13.5	1.0	1	10/06/18 15:14	10/08/18 13:28	7440-39-3	
Beryllium	**0.24J**	mg/kg	0.34	0.043	1	10/06/18 15:14	10/08/18 13:28	7440-41-7	
Cadmium	**1.4**	mg/kg	0.17	0.020	1	10/06/18 15:14	10/08/18 13:28	7440-43-9	
Chromium	**20.5**	mg/kg	0.67	0.065	1	10/06/18 15:14	10/08/18 13:28	7440-47-3	
Copper	**1480**	mg/kg	1.7	0.12	1	10/06/18 15:14	10/08/18 13:28	7440-50-8	
Lead	**108**	mg/kg	0.34	0.16	1	10/06/18 15:14	10/08/18 13:28	7439-92-1	
Manganese	**355**	mg/kg	1.0	0.058	1	10/06/18 15:14	10/08/18 13:28	7439-96-5	
Nickel	**38.1**	mg/kg	2.7	0.24	1	10/06/18 15:14	10/08/18 13:28	7440-02-0	
Selenium	**0.84**	mg/kg	0.67	0.35	1	10/06/18 15:14	10/08/18 13:28	7782-49-2	
Silver	**0.85**	mg/kg	0.67	0.085	1	10/06/18 15:14	10/08/18 13:28	7440-22-4	
Zinc	**2520**	mg/kg	13.5	0.86	10	10/06/18 15:14	10/09/18 18:44	7440-66-6	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-20 (0-4) **Lab ID: 7067073009** Collected: 10/04/18 14:30 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.093**	mg/kg	0.040	0.025	1	10/06/18 15:40	10/09/18 12:18	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**404J**	ug/kg	429	63.7	5	10/08/18 10:12	10/10/18 21:02	83-32-9	
Acenaphthylene	**<429**	ug/kg	429	85.8	5	10/08/18 10:12	10/10/18 21:02	208-96-8	
Anthracene	**660**	ug/kg	429	125	5	10/08/18 10:12	10/10/18 21:02	120-12-7	
Benzo(a)anthracene	**1180**	ug/kg	429	98.3	5	10/08/18 10:12	10/10/18 21:02	56-55-3	
Benzo(a)pyrene	**1480**	ug/kg	429	181	5	10/08/18 10:12	10/10/18 21:02	50-32-8	
Benzo(b)fluoranthene	**1500**	ug/kg	429	149	5	10/08/18 10:12	10/10/18 21:02	205-99-2	
Benzo(g,h,i)perylene	**1010**	ug/kg	429	208	5	10/08/18 10:12	10/10/18 21:02	191-24-2	
Benzo(k)fluoranthene	**719**	ug/kg	429	133	5	10/08/18 10:12	10/10/18 21:02	207-08-9	
Chrysene	**1410**	ug/kg	429	192	5	10/08/18 10:12	10/10/18 21:02	218-01-9	
Dibenz(a,h)anthracene	**228J**	ug/kg	429	140	5	10/08/18 10:12	10/10/18 21:02	53-70-3	
Dibenzofuran	**333J**	ug/kg	429	77.7	5	10/08/18 10:12	10/10/18 21:02	132-64-9	
Fluoranthene	**3540**	ug/kg	429	361	5	10/08/18 10:12	10/10/18 21:02	206-44-0	CH
Fluorene	**218J**	ug/kg	429	109	5	10/08/18 10:12	10/10/18 21:02	86-73-7	
Hexachlorobenzene	**<429**	ug/kg	429	85.0	5	10/08/18 10:12	10/10/18 21:02	118-74-1	
Indeno(1,2,3-cd)pyrene	**1030**	ug/kg	429	164	5	10/08/18 10:12	10/10/18 21:02	193-39-5	
2-Methylphenol(o-Cresol)	**<429**	ug/kg	429	238	5	10/08/18 10:12	10/10/18 21:02	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<429**	ug/kg	429	155	5	10/08/18 10:12	10/10/18 21:02		
Naphthalene	**636**	ug/kg	429	47.4	5	10/08/18 10:12	10/10/18 21:02	91-20-3	
Pentachlorophenol	**<4290**	ug/kg	4290	43.2	5	10/08/18 10:12	10/10/18 21:02	87-86-5	
Phenanthrene	**2940**	ug/kg	429	138	5	10/08/18 10:12	10/10/18 21:02	85-01-8	
Phenol	**<429**	ug/kg	429	81.8	5	10/08/18 10:12	10/10/18 21:02	108-95-2	
Pyrene	**2720**	ug/kg	429	204	5	10/08/18 10:12	10/10/18 21:02	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	71	%	23-120		5	10/08/18 10:12	10/10/18 21:02	4165-60-0	
2-Fluorobiphenyl (S)	82	%	30-115		5	10/08/18 10:12	10/10/18 21:02	321-60-8	
p-Terphenyl-d14 (S)	92	%	18-137		5	10/08/18 10:12	10/10/18 21:02	1718-51-0	
Phenol-d5 (S)	53	%	24-113		5	10/08/18 10:12	10/10/18 21:02	4165-62-2	
2-Fluorophenol (S)	62	%	25-121		5	10/08/18 10:12	10/10/18 21:02	367-12-4	CH
2,4,6-Tribromophenol (S)	57	%	19-122		5	10/08/18 10:12	10/10/18 21:02	118-79-6	
2-Chlorophenol-d4 (S)	62	%	20-130		5	10/08/18 10:12	10/10/18 21:02	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	61	%	20-130		5	10/08/18 10:12	10/10/18 21:02	2199-69-1	
Tentatively Identified Compounds									
Unknown	**84400J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Column Bleed	**13100J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Biphenyl	**1160J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown	**8270J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Biphenyl	**1750J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Biphenyl	**909J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Biphenyl	**1780J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Biphenyl	**1430J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Biphenyl	**1140J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown	**12900J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-20 (0-4) **Lab ID: 7067073009** Collected: 10/04/18 14:30 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Biphenyl	**1650J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Biphenyl	**1430J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Biphenyl	**1420J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown	**9800J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Biphenyl	**1080J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown	**9410J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown	**7620J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Organic Acid	**2690J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown	**9710J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
Unknown Column Bleed	**6700J**	ug/kg			5	10/08/18 10:12	10/10/18 21:02		
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**116**	ug/kg	10.3	10.1	1	10/15/18 14:13	10/16/18 02:09	67-64-1	CH
Benzene	**<10.3**	ug/kg	10.3	4.0	1	10/15/18 14:13	10/16/18 02:09	71-43-2	
2-Butanone (MEK)	**19.6**	ug/kg	10.3	6.4	1	10/15/18 14:13	10/16/18 02:09	78-93-3	CH
n-Butylbenzene	**<10.3**	ug/kg	10.3	4.1	1	10/15/18 14:13	10/16/18 02:09	104-51-8	L1
sec-Butylbenzene	**<10.3**	ug/kg	10.3	4.1	1	10/15/18 14:13	10/16/18 02:09	135-98-8	L1
tert-Butylbenzene	**<10.3**	ug/kg	10.3	5.1	1	10/15/18 14:13	10/16/18 02:09	98-06-6	
Carbon tetrachloride	**<10.3**	ug/kg	10.3	6.4	1	10/15/18 14:13	10/16/18 02:09	56-23-5	
Chlorobenzene	**<10.3**	ug/kg	10.3	4.3	1	10/15/18 14:13	10/16/18 02:09	108-90-7	
Chloroform	**<10.3**	ug/kg	10.3	2.8	1	10/15/18 14:13	10/16/18 02:09	67-66-3	
1,2-Dichlorobenzene	**<10.3**	ug/kg	10.3	4.2	1	10/15/18 14:13	10/16/18 02:09	95-50-1	
1,3-Dichlorobenzene	**<10.3**	ug/kg	10.3	4.2	1	10/15/18 14:13	10/16/18 02:09	541-73-1	
1,4-Dichlorobenzene	**<10.3**	ug/kg	10.3	4.2	1	10/15/18 14:13	10/16/18 02:09	106-46-7	
1,1-Dichloroethane	**<10.3**	ug/kg	10.3	4.1	1	10/15/18 14:13	10/16/18 02:09	75-34-3	
1,2-Dichloroethane	**<10.3**	ug/kg	10.3	2.5	1	10/15/18 14:13	10/16/18 02:09	107-06-2	
1,1-Dichloroethene	**<10.3**	ug/kg	10.3	4.0	1	10/15/18 14:13	10/16/18 02:09	75-35-4	
cis-1,2-Dichloroethene	**5.7J**	ug/kg	10.3	3.8	1	10/15/18 14:13	10/16/18 02:09	156-59-2	
trans-1,2-Dichloroethene	**<10.3**	ug/kg	10.3	3.0	1	10/15/18 14:13	10/16/18 02:09	156-60-5	
1,4-Dioxane (p-Dioxane)	**<257**	ug/kg	257	152	1	10/15/18 14:13	10/16/18 02:09	123-91-1	
Ethylbenzene	**<10.3**	ug/kg	10.3	3.9	1	10/15/18 14:13	10/16/18 02:09	100-41-4	
Methylene Chloride	**13.1**	ug/kg	10.3	4.7	1	10/15/18 14:13	10/16/18 02:09	75-09-2	
Methyl-tert-butyl ether	**<10.3**	ug/kg	10.3	2.3	1	10/15/18 14:13	10/16/18 02:09	1634-04-4	
n-Propylbenzene	**<10.3**	ug/kg	10.3	4.2	1	10/15/18 14:13	10/16/18 02:09	103-65-1	L1
Tetrachloroethene	**<10.3**	ug/kg	10.3	5.3	1	10/15/18 14:13	10/16/18 02:09	127-18-4	
Toluene	**<10.3**	ug/kg	10.3	4.8	1	10/15/18 14:13	10/16/18 02:09	108-88-3	
1,2,4-Trichlorobenzene	**<10.3**	ug/kg	10.3	4.1	1	10/15/18 14:13	10/16/18 02:09	120-82-1	
1,1,1-Trichloroethane	**<10.3**	ug/kg	10.3	5.4	1	10/15/18 14:13	10/16/18 02:09	71-55-6	
Trichloroethene	**<10.3**	ug/kg	10.3	4.3	1	10/15/18 14:13	10/16/18 02:09	79-01-6	
1,2,4-Trimethylbenzene	**<10.3**	ug/kg	10.3	4.4	1	10/15/18 14:13	10/16/18 02:09	95-63-6	
1,3,5-Trimethylbenzene	**<10.3**	ug/kg	10.3	3.9	1	10/15/18 14:13	10/16/18 02:09	108-67-8	
Vinyl chloride	**<10.3**	ug/kg	10.3	2.3	1	10/15/18 14:13	10/16/18 02:09	75-01-4	
Xylene (Total)	**<20.5**	ug/kg	20.5	10.3	1	10/15/18 14:13	10/16/18 02:09	1330-20-7	
m&p-Xylene	**<20.5**	ug/kg	20.5	9.9	1	10/15/18 14:13	10/16/18 02:09	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-20 (0-4) **Lab ID: 7067073009** Collected: 10/04/18 14:30 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
o-Xylene	**<10.3**	ug/kg	10.3	4.4	1	10/15/18 14:13	10/16/18 02:09	95-47-6	
Surrogates									
Toluene-d8 (S)	108	%	43-157		1	10/15/18 14:13	10/16/18 02:09	2037-26-5	
4-Bromofluorobenzene (S)	104	%	34-145		1	10/15/18 14:13	10/16/18 02:09	460-00-4	
1,2-Dichloroethane-d4 (S)	128	%	33-150		1	10/15/18 14:13	10/16/18 02:09	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/16/18 16:58		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**22.1**	%	0.10	0.10	1		10/08/18 13:07		

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Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-20 (6-7') **Lab ID: 7067073010** Collected: 10/04/18 14:40 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.4**	ug/kg	2.4	1.2	1	10/08/18 17:25	10/16/18 17:56	309-00-2	
alpha-BHC	**<2.4**	ug/kg	2.4	1.2	1	10/08/18 17:25	10/16/18 17:56	319-84-6	
beta-BHC	**<2.4**	ug/kg	2.4	1.2	1	10/08/18 17:25	10/16/18 17:56	319-85-7	
delta-BHC	**<2.4**	ug/kg	2.4	1.2	1	10/08/18 17:25	10/16/18 17:56	319-86-8	
gamma-BHC (Lindane)	**<2.4**	ug/kg	2.4	1.2	1	10/08/18 17:25	10/16/18 17:56	58-89-9	
alpha-Chlordane	**<2.4**	ug/kg	2.4	1.2	1	10/08/18 17:25	10/16/18 17:56	5103-71-9	
4,4'-DDD	**<4.7**	ug/kg	4.7	2.4	1	10/08/18 17:25	10/16/18 17:56	72-54-8	
4,4'-DDE	**8.2**	ug/kg	4.7	2.4	1	10/08/18 17:25	10/16/18 17:56	72-55-9	CH
4,4'-DDT	**2.9J**	ug/kg	4.7	2.4	1	10/08/18 17:25	10/16/18 17:56	50-29-3	CL
Dieldrin	**<4.7**	ug/kg	4.7	2.4	1	10/08/18 17:25	10/16/18 17:56	60-57-1	
Endosulfan I	**<2.4**	ug/kg	2.4	1.2	1	10/08/18 17:25	10/16/18 17:56	959-98-8	
Endosulfan II	**4.7**	ug/kg	4.7	2.4	1	10/08/18 17:25	10/16/18 17:56	33213-65-9	
Endosulfan sulfate	**<4.7**	ug/kg	4.7	2.4	1	10/08/18 17:25	10/16/18 17:56	1031-07-8	
Endrin	**<4.7**	ug/kg	4.7	2.4	1	10/08/18 17:25	10/16/18 17:56	72-20-8	
Heptachlor	**2.6**	ug/kg	2.4	1.2	1	10/08/18 17:25	10/16/18 17:56	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	112	%	30-150		1	10/08/18 17:25	10/16/18 17:56	877-09-8	
Decachlorobiphenyl (S)	282	%	30-150		1	10/08/18 17:25	10/16/18 17:56	2051-24-3	1j,E,S0
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<47.0**	ug/kg	47.0	23.5	1	10/08/18 17:25	10/12/18 17:44	12674-11-2	
PCB-1221 (Aroclor 1221)	**<95.5**	ug/kg	95.5	47.7	1	10/08/18 17:25	10/12/18 17:44	11104-28-2	
PCB-1232 (Aroclor 1232)	**<47.0**	ug/kg	47.0	23.5	1	10/08/18 17:25	10/12/18 17:44	11141-16-5	
PCB-1242 (Aroclor 1242)	**<47.0**	ug/kg	47.0	23.5	1	10/08/18 17:25	10/12/18 17:44	53469-21-9	
PCB-1248 (Aroclor 1248)	**131**	ug/kg	47.0	23.5	1	10/08/18 17:25	10/12/18 17:44	12672-29-6	
PCB-1254 (Aroclor 1254)	**<47.0**	ug/kg	47.0	23.5	1	10/08/18 17:25	10/12/18 17:44	11097-69-1	
PCB-1260 (Aroclor 1260)	**<47.0**	ug/kg	47.0	23.5	1	10/08/18 17:25	10/12/18 17:44	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	72	%	30-150		1	10/08/18 17:25	10/12/18 17:44	877-09-8	
Decachlorobiphenyl (S)	76	%	30-150		1	10/08/18 17:25	10/12/18 17:44	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**6.5**	mg/kg	0.78	0.24	1	10/06/18 15:14	10/08/18 13:30	7440-38-2	
Barium	**150**	mg/kg	15.6	1.2	1	10/06/18 15:14	10/08/18 13:30	7440-39-3	
Beryllium	**0.43**	mg/kg	0.39	0.050	1	10/06/18 15:14	10/08/18 13:30	7440-41-7	
Cadmium	**0.26**	mg/kg	0.19	0.023	1	10/06/18 15:14	10/08/18 13:30	7440-43-9	
Chromium	**35.6**	mg/kg	0.78	0.075	1	10/06/18 15:14	10/08/18 13:30	7440-47-3	
Copper	**22.4**	mg/kg	1.9	0.14	1	10/06/18 15:14	10/08/18 13:30	7440-50-8	
Lead	**23.0**	mg/kg	0.39	0.18	1	10/06/18 15:14	10/08/18 13:30	7439-92-1	
Manganese	**217**	mg/kg	1.2	0.067	1	10/06/18 15:14	10/08/18 13:30	7439-96-5	
Nickel	**21.0**	mg/kg	3.1	0.28	1	10/06/18 15:14	10/08/18 13:30	7440-02-0	
Selenium	**0.72J**	mg/kg	0.78	0.41	1	10/06/18 15:14	10/08/18 13:30	7782-49-2	
Silver	**<0.78**	mg/kg	0.78	0.098	1	10/06/18 15:14	10/08/18 13:30	7440-22-4	
Zinc	**77.9**	mg/kg	1.6	0.10	1	10/06/18 15:14	10/08/18 13:30	7440-66-6	

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-20 (6-7') **Lab ID: 7067073010** Collected: 10/04/18 14:40 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.071**	mg/kg	0.049	0.030	1	10/06/18 15:40	10/09/18 12:21	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<476**	ug/kg	476	70.6	5	10/08/18 10:12	10/10/18 21:31	83-32-9	
Acenaphthylene	**<476**	ug/kg	476	95.2	5	10/08/18 10:12	10/10/18 21:31	208-96-8	
Anthracene	**<476**	ug/kg	476	139	5	10/08/18 10:12	10/10/18 21:31	120-12-7	
Benzo(a)anthracene	**671**	ug/kg	476	109	5	10/08/18 10:12	10/10/18 21:31	56-55-3	
Benzo(a)pyrene	**435J**	ug/kg	476	201	5	10/08/18 10:12	10/10/18 21:31	50-32-8	
Benzo(b)fluoranthene	**422J**	ug/kg	476	165	5	10/08/18 10:12	10/10/18 21:31	205-99-2	
Benzo(g,h,i)perylene	**<476**	ug/kg	476	230	5	10/08/18 10:12	10/10/18 21:31	191-24-2	
Benzo(k)fluoranthene	**254J**	ug/kg	476	148	5	10/08/18 10:12	10/10/18 21:31	207-08-9	
Chrysene	**617**	ug/kg	476	213	5	10/08/18 10:12	10/10/18 21:31	218-01-9	
Dibenz(a,h)anthracene	**<476**	ug/kg	476	156	5	10/08/18 10:12	10/10/18 21:31	53-70-3	
Dibenzofuran	**<476**	ug/kg	476	86.3	5	10/08/18 10:12	10/10/18 21:31	132-64-9	
Fluoranthene	**915**	ug/kg	476	400	5	10/08/18 10:12	10/10/18 21:31	206-44-0	CH
Fluorene	**<476**	ug/kg	476	121	5	10/08/18 10:12	10/10/18 21:31	86-73-7	
Hexachlorobenzene	**<476**	ug/kg	476	94.3	5	10/08/18 10:12	10/10/18 21:31	118-74-1	
Indeno(1,2,3-cd)pyrene	**<476**	ug/kg	476	182	5	10/08/18 10:12	10/10/18 21:31	193-39-5	
2-Methylphenol(o-Cresol)	**<476**	ug/kg	476	264	5	10/08/18 10:12	10/10/18 21:31	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<476**	ug/kg	476	172	5	10/08/18 10:12	10/10/18 21:31		
Naphthalene	**<476**	ug/kg	476	52.6	5	10/08/18 10:12	10/10/18 21:31	91-20-3	
Pentachlorophenol	**<4760**	ug/kg	4760	48.0	5	10/08/18 10:12	10/10/18 21:31	87-86-5	
Phenanthrene	**340J**	ug/kg	476	153	5	10/08/18 10:12	10/10/18 21:31	85-01-8	
Phenol	**<476**	ug/kg	476	90.8	5	10/08/18 10:12	10/10/18 21:31	108-95-2	
Pyrene	**845**	ug/kg	476	226	5	10/08/18 10:12	10/10/18 21:31	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	41	%	23-120		5	10/08/18 10:12	10/10/18 21:31	4165-60-0	
2-Fluorobiphenyl (S)	70	%	30-115		5	10/08/18 10:12	10/10/18 21:31	321-60-8	
p-Terphenyl-d14 (S)	85	%	18-137		5	10/08/18 10:12	10/10/18 21:31	1718-51-0	
Phenol-d5 (S)	49	%	24-113		5	10/08/18 10:12	10/10/18 21:31	4165-62-2	
2-Fluorophenol (S)	66	%	25-121		5	10/08/18 10:12	10/10/18 21:31	367-12-4	CH
2,4,6-Tribromophenol (S)	72	%	19-122		5	10/08/18 10:12	10/10/18 21:31	118-79-6	
2-Chlorophenol-d4 (S)	61	%	20-130		5	10/08/18 10:12	10/10/18 21:31	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	53	%	20-130		5	10/08/18 10:12	10/10/18 21:31	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**7240J**	ug/kg			5	10/08/18 10:12	10/10/18 21:31		
Unknown	**88700J**	ug/kg			5	10/08/18 10:12	10/10/18 21:31		
Unknown Aldol Condensate	**2530J**	ug/kg			5	10/08/18 10:12	10/10/18 21:31		
Unknown Alcohol	**2530J**	ug/kg			5	10/08/18 10:12	10/10/18 21:31		
Unknown Alkane	**1620J**	ug/kg			5	10/08/18 10:12	10/10/18 21:31		
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**234**	ug/kg	14.8	14.6	1	10/15/18 14:13	10/16/18 02:35	67-64-1	CH
Benzene	**<14.8**	ug/kg	14.8	5.8	1	10/15/18 14:13	10/16/18 02:35	71-43-2	
2-Butanone (MEK)	**84.5**	ug/kg	14.8	9.2	1	10/15/18 14:13	10/16/18 02:35	78-93-3	CH

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BH-20 (6-7') **Lab ID: 7067073010** Collected: 10/04/18 14:40 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
n-Butylbenzene	**<14.8**	ug/kg	14.8	6.0	1	10/15/18 14:13	10/16/18 02:35	104-51-8	L1
sec-Butylbenzene	**<14.8**	ug/kg	14.8	5.9	1	10/15/18 14:13	10/16/18 02:35	135-98-8	L1
tert-Butylbenzene	**<14.8**	ug/kg	14.8	7.4	1	10/15/18 14:13	10/16/18 02:35	98-06-6	
Carbon tetrachloride	**<14.8**	ug/kg	14.8	9.3	1	10/15/18 14:13	10/16/18 02:35	56-23-5	
Chlorobenzene	**<14.8**	ug/kg	14.8	6.1	1	10/15/18 14:13	10/16/18 02:35	108-90-7	
Chloroform	**<14.8**	ug/kg	14.8	4.1	1	10/15/18 14:13	10/16/18 02:35	67-66-3	
1,2-Dichlorobenzene	**<14.8**	ug/kg	14.8	6.1	1	10/15/18 14:13	10/16/18 02:35	95-50-1	
1,3-Dichlorobenzene	**<14.8**	ug/kg	14.8	6.1	1	10/15/18 14:13	10/16/18 02:35	541-73-1	
1,4-Dichlorobenzene	**<14.8**	ug/kg	14.8	6.1	1	10/15/18 14:13	10/16/18 02:35	106-46-7	
1,1-Dichloroethane	**<14.8**	ug/kg	14.8	5.9	1	10/15/18 14:13	10/16/18 02:35	75-34-3	
1,2-Dichloroethane	**<14.8**	ug/kg	14.8	3.6	1	10/15/18 14:13	10/16/18 02:35	107-06-2	
1,1-Dichloroethene	**<14.8**	ug/kg	14.8	5.8	1	10/15/18 14:13	10/16/18 02:35	75-35-4	
cis-1,2-Dichloroethene	**<14.8**	ug/kg	14.8	5.5	1	10/15/18 14:13	10/16/18 02:35	156-59-2	
trans-1,2-Dichloroethene	**<14.8**	ug/kg	14.8	4.3	1	10/15/18 14:13	10/16/18 02:35	156-60-5	
1,4-Dioxane (p-Dioxane)	**<371**	ug/kg	371	219	1	10/15/18 14:13	10/16/18 02:35	123-91-1	
Ethylbenzene	**<14.8**	ug/kg	14.8	5.7	1	10/15/18 14:13	10/16/18 02:35	100-41-4	
Methylene Chloride	**7.5J**	ug/kg	14.8	6.7	1	10/15/18 14:13	10/16/18 02:35	75-09-2	
Methyl-tert-butyl ether	**<14.8**	ug/kg	14.8	3.3	1	10/15/18 14:13	10/16/18 02:35	1634-04-4	
n-Propylbenzene	**<14.8**	ug/kg	14.8	6.1	1	10/15/18 14:13	10/16/18 02:35	103-65-1	L1
Tetrachloroethene	**<14.8**	ug/kg	14.8	7.6	1	10/15/18 14:13	10/16/18 02:35	127-18-4	
Toluene	**<14.8**	ug/kg	14.8	6.9	1	10/15/18 14:13	10/16/18 02:35	108-88-3	
1,2,4-Trichlorobenzene	**<14.8**	ug/kg	14.8	6.0	1	10/15/18 14:13	10/16/18 02:35	120-82-1	
1,1,1-Trichloroethane	**<14.8**	ug/kg	14.8	7.8	1	10/15/18 14:13	10/16/18 02:35	71-55-6	
Trichloroethene	**<14.8**	ug/kg	14.8	6.2	1	10/15/18 14:13	10/16/18 02:35	79-01-6	
1,2,4-Trimethylbenzene	**<14.8**	ug/kg	14.8	6.4	1	10/15/18 14:13	10/16/18 02:35	95-63-6	
1,3,5-Trimethylbenzene	**<14.8**	ug/kg	14.8	5.7	1	10/15/18 14:13	10/16/18 02:35	108-67-8	
Vinyl chloride	**<14.8**	ug/kg	14.8	3.3	1	10/15/18 14:13	10/16/18 02:35	75-01-4	
Xylene (Total)	**<29.7**	ug/kg	29.7	14.8	1	10/15/18 14:13	10/16/18 02:35	1330-20-7	
Surrogates									
Toluene-d8 (S)	106	%	43-157		1	10/15/18 14:13	10/16/18 02:35	2037-26-5	
4-Bromofluorobenzene (S)	105	%	34-145		1	10/15/18 14:13	10/16/18 02:35	460-00-4	
1,2-Dichloroethane-d4 (S)	124	%	33-150		1	10/15/18 14:13	10/16/18 02:35	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/16/18 16:58		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**29.8**	%	0.10	0.10	1		10/08/18 13:07		

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BMW-91 (24.2-25) **Lab ID: 7067073011** Collected: 10/04/18 15:15 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/13/18 06:38	309-00-2	
alpha-BHC	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/13/18 06:38	319-84-6	
beta-BHC	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/13/18 06:38	319-85-7	
delta-BHC	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/13/18 06:38	319-86-8	
gamma-BHC (Lindane)	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/13/18 06:38	58-89-9	
alpha-Chlordane	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/13/18 06:38	5103-71-9	
4,4'-DDD	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/13/18 06:38	72-54-8	
4,4'-DDE	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/13/18 06:38	72-55-9	
4,4'-DDT	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/13/18 06:38	50-29-3	
Dieldrin	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/13/18 06:38	60-57-1	
Endosulfan I	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/13/18 06:38	959-98-8	
Endosulfan II	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/13/18 06:38	33213-65-9	
Endosulfan sulfate	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/13/18 06:38	1031-07-8	
Endrin	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/13/18 06:38	72-20-8	
Heptachlor	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/13/18 06:38	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	88	%	30-150		1	10/08/18 17:25	10/13/18 06:38	877-09-8	
Decachlorobiphenyl (S)	125	%	30-150		1	10/08/18 17:25	10/13/18 06:38	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<37.8**	ug/kg	37.8	18.9	1	10/08/18 17:25	10/12/18 17:31	12674-11-2	
PCB-1221 (Aroclor 1221)	**<76.7**	ug/kg	76.7	38.4	1	10/08/18 17:25	10/12/18 17:31	11104-28-2	
PCB-1232 (Aroclor 1232)	**<37.8**	ug/kg	37.8	18.9	1	10/08/18 17:25	10/12/18 17:31	11141-16-5	
PCB-1242 (Aroclor 1242)	**<37.8**	ug/kg	37.8	18.9	1	10/08/18 17:25	10/12/18 17:31	53469-21-9	
PCB-1248 (Aroclor 1248)	**<37.8**	ug/kg	37.8	18.9	1	10/08/18 17:25	10/12/18 17:31	12672-29-6	
PCB-1254 (Aroclor 1254)	**<37.8**	ug/kg	37.8	18.9	1	10/08/18 17:25	10/12/18 17:31	11097-69-1	
PCB-1260 (Aroclor 1260)	**<37.8**	ug/kg	37.8	18.9	1	10/08/18 17:25	10/12/18 17:31	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	78	%	30-150		1	10/08/18 17:25	10/12/18 17:31	877-09-8	
Decachlorobiphenyl (S)	85	%	30-150		1	10/08/18 17:25	10/12/18 17:31	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**7.2**	mg/kg	0.61	0.19	1	10/06/18 15:14	10/08/18 13:31	7440-38-2	
Barium	**88.5**	mg/kg	12.2	0.93	1	10/06/18 15:14	10/08/18 13:31	7440-39-3	
Beryllium	**0.27J**	mg/kg	0.31	0.039	1	10/06/18 15:14	10/08/18 13:31	7440-41-7	
Cadmium	**0.24**	mg/kg	0.15	0.018	1	10/06/18 15:14	10/08/18 13:31	7440-43-9	
Chromium	**12.1**	mg/kg	0.61	0.059	1	10/06/18 15:14	10/08/18 13:31	7440-47-3	
Copper	**13.2**	mg/kg	1.5	0.11	1	10/06/18 15:14	10/08/18 13:31	7440-50-8	
Lead	**9.2**	mg/kg	0.31	0.14	1	10/06/18 15:14	10/08/18 13:31	7439-92-1	
Manganese	**388**	mg/kg	0.92	0.053	1	10/06/18 15:14	10/08/18 13:31	7439-96-5	
Nickel	**18.7**	mg/kg	2.4	0.22	1	10/06/18 15:14	10/08/18 13:31	7440-02-0	
Selenium	**<0.61**	mg/kg	0.61	0.32	1	10/06/18 15:14	10/08/18 13:31	7782-49-2	
Silver	**<0.61**	mg/kg	0.61	0.077	1	10/06/18 15:14	10/08/18 13:31	7440-22-4	
Zinc	**46.9**	mg/kg	1.2	0.078	1	10/06/18 15:14	10/08/18 13:31	7440-66-6	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BMW-91 (24.2-25) **Lab ID: 7067073011** Collected: 10/04/18 15:15 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.040**	mg/kg	0.040	0.024	1	10/06/18 15:40	10/09/18 12:22	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<76.6**	ug/kg	76.6	11.4	1	10/08/18 10:12	10/10/18 19:36	83-32-9	
Acenaphthylene	**<76.6**	ug/kg	76.6	15.3	1	10/08/18 10:12	10/10/18 19:36	208-96-8	
Anthracene	**<76.6**	ug/kg	76.6	22.4	1	10/08/18 10:12	10/10/18 19:36	120-12-7	
Benzo(a)anthracene	**<76.6**	ug/kg	76.6	17.5	1	10/08/18 10:12	10/10/18 19:36	56-55-3	
Benzo(a)pyrene	**<76.6**	ug/kg	76.6	32.4	1	10/08/18 10:12	10/10/18 19:36	50-32-8	
Benzo(b)fluoranthene	**<76.6**	ug/kg	76.6	26.6	1	10/08/18 10:12	10/10/18 19:36	205-99-2	
Benzo(g,h,i)perylene	**<76.6**	ug/kg	76.6	37.1	1	10/08/18 10:12	10/10/18 19:36	191-24-2	
Benzo(k)fluoranthene	**<76.6**	ug/kg	76.6	23.8	1	10/08/18 10:12	10/10/18 19:36	207-08-9	
Chrysene	**<76.6**	ug/kg	76.6	34.3	1	10/08/18 10:12	10/10/18 19:36	218-01-9	
Dibenz(a,h)anthracene	**<76.6**	ug/kg	76.6	25.0	1	10/08/18 10:12	10/10/18 19:36	53-70-3	
Dibenzofuran	**<76.6**	ug/kg	76.6	13.9	1	10/08/18 10:12	10/10/18 19:36	132-64-9	
Fluoranthene	**<76.6**	ug/kg	76.6	64.4	1	10/08/18 10:12	10/10/18 19:36	206-44-0	
Fluorene	**<76.6**	ug/kg	76.6	19.5	1	10/08/18 10:12	10/10/18 19:36	86-73-7	
Hexachlorobenzene	**<76.6**	ug/kg	76.6	15.2	1	10/08/18 10:12	10/10/18 19:36	118-74-1	
Indeno(1,2,3-cd)pyrene	**<76.6**	ug/kg	76.6	29.3	1	10/08/18 10:12	10/10/18 19:36	193-39-5	
2-Methylphenol(o-Cresol)	**<76.6**	ug/kg	76.6	42.4	1	10/08/18 10:12	10/10/18 19:36	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<76.6**	ug/kg	76.6	27.6	1	10/08/18 10:12	10/10/18 19:36		
Naphthalene	**<76.6**	ug/kg	76.6	8.5	1	10/08/18 10:12	10/10/18 19:36	91-20-3	
Pentachlorophenol	**<766**	ug/kg	766	7.7	1	10/08/18 10:12	10/10/18 19:36	87-86-5	
Phenanthrene	**<76.6**	ug/kg	76.6	24.7	1	10/08/18 10:12	10/10/18 19:36	85-01-8	
Phenol	**<76.6**	ug/kg	76.6	14.6	1	10/08/18 10:12	10/10/18 19:36	108-95-2	
Pyrene	**<76.6**	ug/kg	76.6	36.3	1	10/08/18 10:12	10/10/18 19:36	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	77	%	23-120		1	10/08/18 10:12	10/10/18 19:36	4165-60-0	
2-Fluorobiphenyl (S)	62	%	30-115		1	10/08/18 10:12	10/10/18 19:36	321-60-8	
p-Terphenyl-d14 (S)	82	%	18-137		1	10/08/18 10:12	10/10/18 19:36	1718-51-0	
Phenol-d5 (S)	59	%	24-113		1	10/08/18 10:12	10/10/18 19:36	4165-62-2	
2-Fluorophenol (S)	40	%	25-121		1	10/08/18 10:12	10/10/18 19:36	367-12-4	CH
2,4,6-Tribromophenol (S)	75	%	19-122		1	10/08/18 10:12	10/10/18 19:36	118-79-6	
2-Chlorophenol-d4 (S)	57	%	20-130		1	10/08/18 10:12	10/10/18 19:36	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	50	%	20-130		1	10/08/18 10:12	10/10/18 19:36	2199-69-1	
Tentatively Identified Compounds									
Unknown Column Bleed	**182J**	ug/kg			1	10/08/18 10:12	10/10/18 19:36		
Unknown Aromatic Hydroca	**525J**	ug/kg			1	10/08/18 10:12	10/10/18 19:36		
Unknown Ketone	**2790J**	ug/kg			1	10/08/18 10:12	10/10/18 19:36		
Unknown Ketone	**157J**	ug/kg			1	10/08/18 10:12	10/10/18 19:36		
Unknown	**13100J**	ug/kg			1	10/08/18 10:12	10/10/18 19:36		
Unknown Ketone	**167J**	ug/kg			1	10/08/18 10:12	10/10/18 19:36		
Benzophenone	**193J**	ug/kg			1	10/08/18 10:12	10/10/18 19:36	119-61-9	N
Unknown Organic Acid	**470J**	ug/kg			1	10/08/18 10:12	10/10/18 19:36		
Unknown Amide	**553J**	ug/kg			1	10/08/18 10:12	10/10/18 19:36		

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BMW-91 (24.2-25) **Lab ID: 7067073011** Collected: 10/04/18 15:15 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**<10.9**	ug/kg	10.9	10.7	1	10/15/18 14:13	10/16/18 00:53	67-64-1	
Benzene	**<10.9**	ug/kg	10.9	4.3	1	10/15/18 14:13	10/16/18 00:53	71-43-2	
2-Butanone (MEK)	**<10.9**	ug/kg	10.9	6.8	1	10/15/18 14:13	10/16/18 00:53	78-93-3	
n-Butylbenzene	**<10.9**	ug/kg	10.9	4.4	1	10/15/18 14:13	10/16/18 00:53	104-51-8	L1
sec-Butylbenzene	**<10.9**	ug/kg	10.9	4.3	1	10/15/18 14:13	10/16/18 00:53	135-98-8	L1
tert-Butylbenzene	**<10.9**	ug/kg	10.9	5.4	1	10/15/18 14:13	10/16/18 00:53	98-06-6	
Carbon tetrachloride	**<10.9**	ug/kg	10.9	6.9	1	10/15/18 14:13	10/16/18 00:53	56-23-5	
Chlorobenzene	**<10.9**	ug/kg	10.9	4.5	1	10/15/18 14:13	10/16/18 00:53	108-90-7	
Chlorodifluoromethane	**<10.9**	ug/kg	10.9	1.5	1	10/15/18 14:13	10/16/18 00:53	75-45-6	CL,N3
Chloroform	**<10.9**	ug/kg	10.9	3.0	1	10/15/18 14:13	10/16/18 00:53	67-66-3	
1,2-Dichlorobenzene	**<10.9**	ug/kg	10.9	4.5	1	10/15/18 14:13	10/16/18 00:53	95-50-1	
1,3-Dichlorobenzene	**<10.9**	ug/kg	10.9	4.5	1	10/15/18 14:13	10/16/18 00:53	541-73-1	
1,4-Dichlorobenzene	**<10.9**	ug/kg	10.9	4.5	1	10/15/18 14:13	10/16/18 00:53	106-46-7	
1,1-Dichloroethane	**<10.9**	ug/kg	10.9	4.3	1	10/15/18 14:13	10/16/18 00:53	75-34-3	
1,2-Dichloroethane	**<10.9**	ug/kg	10.9	2.7	1	10/15/18 14:13	10/16/18 00:53	107-06-2	
1,1-Dichloroethene	**<10.9**	ug/kg	10.9	4.2	1	10/15/18 14:13	10/16/18 00:53	75-35-4	
cis-1,2-Dichloroethene	**55.1**	ug/kg	10.9	4.0	1	10/15/18 14:13	10/16/18 00:53	156-59-2	
trans-1,2-Dichloroethene	**<10.9**	ug/kg	10.9	3.1	1	10/15/18 14:13	10/16/18 00:53	156-60-5	
1,4-Dioxane (p-Dioxane)	**<273**	ug/kg	273	161	1	10/15/18 14:13	10/16/18 00:53	123-91-1	
Ethylbenzene	**<10.9**	ug/kg	10.9	4.2	1	10/15/18 14:13	10/16/18 00:53	100-41-4	
Methylene Chloride	**<10.9**	ug/kg	10.9	5.0	1	10/15/18 14:13	10/16/18 00:53	75-09-2	
Methyl-tert-butyl ether	**<10.9**	ug/kg	10.9	2.4	1	10/15/18 14:13	10/16/18 00:53	1634-04-4	
n-Propylbenzene	**<10.9**	ug/kg	10.9	4.5	1	10/15/18 14:13	10/16/18 00:53	103-65-1	L1
Tetrachloroethene	**<10.9**	ug/kg	10.9	5.6	1	10/15/18 14:13	10/16/18 00:53	127-18-4	
1,2,4,5-tetramethylbenzene	**<10.9**	ug/kg	10.9	4.3	1	10/15/18 14:13	10/16/18 00:53	95-93-2	N3
Toluene	**<10.9**	ug/kg	10.9	5.1	1	10/15/18 14:13	10/16/18 00:53	108-88-3	
1,2,4-Trichlorobenzene	**<10.9**	ug/kg	10.9	4.4	1	10/15/18 14:13	10/16/18 00:53	120-82-1	
1,1,1-Trichloroethane	**<10.9**	ug/kg	10.9	5.7	1	10/15/18 14:13	10/16/18 00:53	71-55-6	
Trichloroethene	**59.7**	ug/kg	10.9	4.5	1	10/15/18 14:13	10/16/18 00:53	79-01-6	
1,2,4-Trimethylbenzene	**<10.9**	ug/kg	10.9	4.7	1	10/15/18 14:13	10/16/18 00:53	95-63-6	
1,3,5-Trimethylbenzene	**<10.9**	ug/kg	10.9	4.2	1	10/15/18 14:13	10/16/18 00:53	108-67-8	
Vinyl chloride	**<10.9**	ug/kg	10.9	2.4	1	10/15/18 14:13	10/16/18 00:53	75-01-4	
Xylene (Total)	**<21.8**	ug/kg	21.8	10.9	1	10/15/18 14:13	10/16/18 00:53	1330-20-7	
m&p-Xylene	**<21.8**	ug/kg	21.8	10.6	1	10/15/18 14:13	10/16/18 00:53	179601-23-1	
o-Xylene	**<10.9**	ug/kg	10.9	4.7	1	10/15/18 14:13	10/16/18 00:53	95-47-6	
Surrogates									
Toluene-d8 (S)	107	%	43-157		1	10/15/18 14:13	10/16/18 00:53	2037-26-5	
4-Bromofluorobenzene (S)	105	%	34-145		1	10/15/18 14:13	10/16/18 00:53	460-00-4	
1,2-Dichloroethane-d4 (S)	122	%	33-150		1	10/15/18 14:13	10/16/18 00:53	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/16/18 16:59		

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067073

Sample: BMW-91 (24.2-25) **Lab ID: 7067073011** Collected: 10/04/18 15:15 Received: 10/05/18 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**12.7**	%	0.10	0.10	1		10/08/18 13:03		

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

QC Batch: 85987 Analysis Method: EPA 7471B
QC Batch Method: EPA 7471B Analysis Description: 7471 Mercury
Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

METHOD BLANK: 395672 Matrix: Solid
Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	<0.033	0.033	0.020	10/09/18 11:51	

LABORATORY CONTROL SAMPLE: 395673

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.17	0.17	99	80-120	

MATRIX SPIKE SAMPLE: 395674

Parameter	Units	7067021004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	<0.040	.19	0.20	102	80-120	

SAMPLE DUPLICATE: 395675

Parameter	Units	7067021004 Result	Dup Result	RPD	Max RPD	Qualifiers
Mercury	mg/kg	<0.040	<0.039		20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

QC Batch: 85986 Analysis Method: EPA 6010C
QC Batch Method: EPA 3050B Analysis Description: 6010 MET
Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

METHOD BLANK: 395655 Matrix: Solid
Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	0.31J	0.50	0.15	10/08/18 13:00	
Barium	mg/kg	<9.9	9.9	0.76	10/08/18 13:00	
Beryllium	mg/kg	<0.25	0.25	0.032	10/08/18 13:00	
Cadmium	mg/kg	<0.12	0.12	0.015	10/08/18 13:00	
Chromium	mg/kg	<0.50	0.50	0.048	10/08/18 13:00	
Copper	mg/kg	<1.2	1.2	0.090	10/08/18 13:00	
Lead	mg/kg	<0.25	0.25	0.12	10/08/18 13:00	
Manganese	mg/kg	0.056J	0.74	0.043	10/08/18 13:00	
Nickel	mg/kg	<2.0	2.0	0.18	10/08/18 13:00	
Selenium	mg/kg	<0.50	0.50	0.26	10/08/18 13:00	
Silver	mg/kg	<0.50	0.50	0.062	10/08/18 13:00	
Zinc	mg/kg	0.26J	0.99	0.063	10/08/18 13:00	

LABORATORY CONTROL SAMPLE: 395656

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	161	145	90	80-120	
Barium	mg/kg	259	233	90	80-120	
Beryllium	mg/kg	97.3	86.7	89	80-120	
Cadmium	mg/kg	210	184	88	80-120	
Chromium	mg/kg	136	126	93	80-120	
Copper	mg/kg	166	147	89	80-120	
Lead	mg/kg	111	101	91	80-120	
Manganese	mg/kg	227	209	92	80-120	
Nickel	mg/kg	91.6	82.3	90	80-120	
Selenium	mg/kg	190	163	86	80-120	
Silver	mg/kg	43.2	40.2	93	80-120	
Zinc	mg/kg	198	178	90	80-120	

MATRIX SPIKE SAMPLE: 395658

Parameter	Units	7067021004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	2.5	24.6	23.6	86	75-125	
Barium	mg/kg	12.0	24.6	37.9	106	75-125	
Beryllium	mg/kg	<0.26	2.5	2.3	91	75-125	
Cadmium	mg/kg	<0.13	2.5	2.3	91	75-125	
Chromium	mg/kg	8.9	12.2	22.8	112	75-125	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

MATRIX SPIKE SAMPLE: 395658

Parameter	Units	7067021004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Copper	mg/kg	2.2	12.2	13.3	90	75-125	
Lead	mg/kg	3.1	24.6	26.7	96	75-125	
Manganese	mg/kg	146	12.2	155	75	75-125	
Nickel	mg/kg	4.3	12.2	17.6	109	75-125	
Selenium	mg/kg	<0.51	36.9	30.9	82	75-125	
Silver	mg/kg	<0.51	12.2	10.4	85	75-125	
Zinc	mg/kg	7.8	49.1	53.6	93	75-125	

SAMPLE DUPLICATE: 395657

Parameter	Units	7067021004 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic	mg/kg	2.5	2.7	6	20	
Barium	mg/kg	12.0	13.1	9	20	
Beryllium	mg/kg	<0.26	<0.27		20	
Cadmium	mg/kg	<0.13	0.065J		20	
Chromium	mg/kg	8.9	8.4	6	20	
Copper	mg/kg	2.2	1.8	23	20	D6
Lead	mg/kg	3.1	2.9	8	20	
Manganese	mg/kg	146	184	23	20	D6
Nickel	mg/kg	4.3	4.2	3	20	
Selenium	mg/kg	<0.51	0.44J		20	
Silver	mg/kg	<0.51	<0.54		20	
Zinc	mg/kg	7.8	7.3	7	20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

QC Batch: 86669
QC Batch Method: EPA 5035A-L
Analysis Method: EPA 8260C
Analysis Description: 8260 MSV 5035A-L Low Level
Associated Lab Samples: 7067073003, 7067073004

METHOD BLANK: 398788
Matrix: Solid
Associated Lab Samples: 7067073003, 7067073004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<2.0	2.0	1.0	10/11/18 08:33	
1,1-Dichloroethane	ug/kg	<2.0	2.0	0.78	10/11/18 08:33	
1,1-Dichloroethene	ug/kg	<2.0	2.0	0.76	10/11/18 08:33	
1,2,4-Trichlorobenzene	ug/kg	<2.0	2.0	0.79	10/11/18 08:33	
1,2,4-Trimethylbenzene	ug/kg	<2.0	2.0	0.85	10/11/18 08:33	
1,2-Dichlorobenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
1,2-Dichloroethane	ug/kg	<2.0	2.0	0.48	10/11/18 08:33	
1,3,5-Trimethylbenzene	ug/kg	<2.0	2.0	0.75	10/11/18 08:33	
1,3-Dichlorobenzene	ug/kg	<2.0	2.0	0.80	10/11/18 08:33	
1,4-Dichlorobenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
1,4-Dioxane (p-Dioxane)	ug/kg	<49.2	49.2	29.1	10/11/18 08:33	
2-Butanone (MEK)	ug/kg	<2.0	2.0	1.2	10/11/18 08:33	
Acetone	ug/kg	<2.0	2.0	1.9	10/11/18 08:33	
Benzene	ug/kg	<2.0	2.0	0.77	10/11/18 08:33	
Carbon tetrachloride	ug/kg	<2.0	2.0	1.2	10/11/18 08:33	
Chlorobenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
Chloroform	ug/kg	<2.0	2.0	0.54	10/11/18 08:33	
cis-1,2-Dichloroethene	ug/kg	<2.0	2.0	0.73	10/11/18 08:33	
Ethylbenzene	ug/kg	<2.0	2.0	0.75	10/11/18 08:33	
m&p-Xylene	ug/kg	<3.9	3.9	1.9	10/11/18 08:33	
Methyl-tert-butyl ether	ug/kg	<2.0	2.0	0.44	10/11/18 08:33	
Methylene Chloride	ug/kg	<2.0	2.0	0.89	10/11/18 08:33	
n-Butylbenzene	ug/kg	<2.0	2.0	0.79	10/11/18 08:33	
n-Propylbenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
o-Xylene	ug/kg	<2.0	2.0	0.85	10/11/18 08:33	
sec-Butylbenzene	ug/kg	<2.0	2.0	0.78	10/11/18 08:33	
tert-Butylbenzene	ug/kg	<2.0	2.0	0.98	10/11/18 08:33	
Tetrachloroethene	ug/kg	<2.0	2.0	1.0	10/11/18 08:33	
Toluene	ug/kg	<2.0	2.0	0.92	10/11/18 08:33	
trans-1,2-Dichloroethene	ug/kg	<2.0	2.0	0.57	10/11/18 08:33	
Trichloroethene	ug/kg	<2.0	2.0	0.82	10/11/18 08:33	
Vinyl chloride	ug/kg	<2.0	2.0	0.43	10/11/18 08:33	
Xylene (Total)	ug/kg	<3.9	3.9	2.0	10/11/18 08:33	
1,2-Dichloroethane-d4 (S)	%	146	33-150		10/11/18 08:33	
4-Bromofluorobenzene (S)	%	105	34-145		10/11/18 08:33	
Toluene-d8 (S)	%	100	43-157		10/11/18 08:33	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

LABORATORY CONTROL SAMPLE: 398789

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	50.2	60.7	121	59-134	CH
1,1-Dichloroethane	ug/kg	50.2	45.2	90	53-160	
1,1-Dichloroethene	ug/kg	50.2	40.8	81	47-152	
1,2,4-Trichlorobenzene	ug/kg	50.2	60.0	119	52-140	CH
1,2,4-Trimethylbenzene	ug/kg	50.2	44.2	88	59-126	
1,2-Dichlorobenzene	ug/kg	50.2	50.6	101	67-125	
1,2-Dichloroethane	ug/kg	50.2	56.2	112	65-143	
1,3,5-Trimethylbenzene	ug/kg	50.2	48.1	96	49-134	
1,3-Dichlorobenzene	ug/kg	50.2	52.7	105	64-124	
1,4-Dichlorobenzene	ug/kg	50.2	51.1	102	61-127	
1,4-Dioxane (p-Dioxane)	ug/kg	1260	1200	96	10-205	
2-Butanone (MEK)	ug/kg	50.2	50.7	101	52-164	CH
Acetone	ug/kg	50.2	47.2	94	23-196	CH
Benzene	ug/kg	50.2	48.7	97	65-129	
Carbon tetrachloride	ug/kg	50.2	65.2	130	57-135	CH
Chlorobenzene	ug/kg	50.2	50.6	101	62-136	
Chloroform	ug/kg	50.2	50.1	100	71-135	
cis-1,2-Dichloroethene	ug/kg	50.2	43.5	87	75-130	
Ethylbenzene	ug/kg	50.2	49.5	99	59-135	
m&p-Xylene	ug/kg	100	94.6	94	69-133	
Methyl-tert-butyl ether	ug/kg	50.2	47.8	95	25-171	
Methylene Chloride	ug/kg	50.2	38.9	78	50-164	
n-Butylbenzene	ug/kg	50.2	51.8	103	54-121	
n-Propylbenzene	ug/kg	50.2	47.0	94	56-125	
o-Xylene	ug/kg	50.2	50.1	100	71-135	
sec-Butylbenzene	ug/kg	50.2	50.8	101	50-126	
tert-Butylbenzene	ug/kg	50.2	50.1	100	56-127	
Tetrachloroethene	ug/kg	50.2	57.2	114	10-176	CH
Toluene	ug/kg	50.2	47.8	95	66-131	
trans-1,2-Dichloroethene	ug/kg	50.2	43.1	86	53-157	
Trichloroethene	ug/kg	50.2	52.8	105	62-130	
Vinyl chloride	ug/kg	50.2	42.3	84	45-137	
Xylene (Total)	ug/kg	151	145	96	62-135	
1,2-Dichloroethane-d4 (S)	%			132	33-150	
4-Bromofluorobenzene (S)	%			106	34-145	
Toluene-d8 (S)	%			102	43-157	

MATRIX SPIKE SAMPLE: 401714

Parameter	Units	7067073004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	<3.5	96	112	117	59-134	CH
1,1-Dichloroethane	ug/kg	<3.5	96	82.1	86	53-160	
1,1-Dichloroethene	ug/kg	<3.5	96	77.4	81	47-152	
1,2,4-Trichlorobenzene	ug/kg	<3.5	96	93.1	97	52-140	CH
1,2,4-Trimethylbenzene	ug/kg	<3.5	96	78.4	82	59-126	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

MATRIX SPIKE SAMPLE: 401714

Parameter	Units	7067073004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichlorobenzene	ug/kg	<3.5	96	86.8	90	67-125	
1,2-Dichloroethane	ug/kg	<3.5	96	101	105	65-143	
1,3,5-Trimethylbenzene	ug/kg	<3.5	96	85.2	89	49-134	
1,3-Dichlorobenzene	ug/kg	<3.5	96	91.1	95	64-124	
1,4-Dichlorobenzene	ug/kg	<3.5	96	89.4	93	61-127	
1,4-Dioxane (p-Dioxane)	ug/kg	<88.7	2400	2410	100	10-205	
2-Butanone (MEK)	ug/kg	<3.5	96	95.3	99	52-164	CH
Acetone	ug/kg	<3.5	96	120	125	23-196	CH
Benzene	ug/kg	<3.5	96	82.7	86	65-129	
Carbon tetrachloride	ug/kg	<3.5	96	122	127	57-135	CH
Chlorobenzene	ug/kg	<3.5	96	84.6	88	62-136	
Chloroform	ug/kg	<3.5	96	88.0	92	71-135	
cis-1,2-Dichloroethene	ug/kg	<3.5	96	77.8	81	75-130	
Ethylbenzene	ug/kg	<3.5	96	84.2	88	59-135	
m&p-Xylene	ug/kg	<7.1	192	162	84	69-133	
Methyl-tert-butyl ether	ug/kg	<3.5	96	80.0	83	25-171	
Methylene Chloride	ug/kg	<3.5	96	66.7	69	50-164	
n-Butylbenzene	ug/kg	<3.5	96	92.6	96	54-121	
n-Propylbenzene	ug/kg	<3.5	96	86.1	90	56-125	
o-Xylene	ug/kg	<3.5	96	82.3	86	71-135	
sec-Butylbenzene	ug/kg	<3.5	96	90.9	95	50-126	
tert-Butylbenzene	ug/kg	<3.5	96	88.5	92	56-127	
Tetrachloroethene	ug/kg	3.6	96	123	124	10-176	CH
Toluene	ug/kg	<3.5	96	83.7	87	66-131	
trans-1,2-Dichloroethene	ug/kg	<3.5	96	77.0	80	53-157	
Trichloroethene	ug/kg	21.0	96	116	99	62-130	
Vinyl chloride	ug/kg	<3.5	96	71.9	75	45-137	
Xylene (Total)	ug/kg	<7.1	289	245	85	62-135	
1,2-Dichloroethane-d4 (S)	%				145	33-150	
4-Bromofluorobenzene (S)	%				109	34-145	
Toluene-d8 (S)	%				101	43-157	

SAMPLE DUPLICATE: 398792

Parameter	Units	7067135001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	<9.7	<8.2		20	
1,1-Dichloroethane	ug/kg	<9.7	<8.2		20	
1,1-Dichloroethene	ug/kg	<9.7	<8.2		20	
1,2,4-Trichlorobenzene	ug/kg	<9.7	<8.2		20	
1,2,4-Trimethylbenzene	ug/kg	<9.7	<8.2		20	
1,2-Dichlorobenzene	ug/kg	<9.7	<8.2		20	
1,2-Dichloroethane	ug/kg	<9.7	<8.2		20	
1,3,5-Trimethylbenzene	ug/kg	<9.7	<8.2		20	
1,3-Dichlorobenzene	ug/kg	<9.7	<8.2		20	
1,4-Dichlorobenzene	ug/kg	<9.7	<8.2		20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

SAMPLE DUPLICATE: 398792

Parameter	Units	7067135001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/kg	<242	<204		20	
2-Butanone (MEK)	ug/kg	<9.7	<8.2		20	
Acetone	ug/kg	44.4	80.0	57	20	CH,D6
Benzene	ug/kg	<9.7	<8.2		20	
Carbon tetrachloride	ug/kg	<9.7	<8.2		20	
Chlorobenzene	ug/kg	<9.7	<8.2		20	
Chloroform	ug/kg	<9.7	<8.2		20	
cis-1,2-Dichloroethene	ug/kg	7.3J	11.4		20	
Ethylbenzene	ug/kg	6.1J	7.2J		20	
m&p-Xylene	ug/kg	29.4	35.5	19	20	
Methyl-tert-butyl ether	ug/kg	<9.7	<8.2		20	
Methylene Chloride	ug/kg	35.5	74.0	70	20	D6
n-Butylbenzene	ug/kg	<9.7	<8.2		20	
n-Propylbenzene	ug/kg	<9.7	<8.2		20	
o-Xylene	ug/kg	13.9	21.1	41	20	D6
sec-Butylbenzene	ug/kg	<9.7	<8.2		20	
tert-Butylbenzene	ug/kg	<9.7	<8.2		20	
Tetrachloroethene	ug/kg	<9.7	<8.2		20	
Toluene	ug/kg	<9.7	<8.2		20	
trans-1,2-Dichloroethene	ug/kg	<9.7	<8.2		20	
Trichloroethene	ug/kg	233	347	39	20	D6
Vinyl chloride	ug/kg	<9.7	<8.2		20	
Xylene (Total)	ug/kg	43.3	56.6	26	20	
1,2-Dichloroethane-d4 (S)	%	145	152	12	20	S1
4-Bromofluorobenzene (S)	%	103	101	19	20	
Toluene-d8 (S)	%	106	111	13	20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

QC Batch: 87239 Analysis Method: EPA 8260C
QC Batch Method: EPA 5035A-L Analysis Description: 8260 MSV 5035A-L Low Level
Associated Lab Samples: 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

METHOD BLANK: 401842 Matrix: Solid
Associated Lab Samples: 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<2.0	2.0	1.0	10/15/18 17:50	
1,1-Dichloroethane	ug/kg	<2.0	2.0	0.79	10/15/18 17:50	
1,1-Dichloroethene	ug/kg	<2.0	2.0	0.77	10/15/18 17:50	
1,2,4,5-tetramethylbenzene	ug/kg	<2.0	2.0	0.78	10/15/18 17:50	N3
1,2,4-Trichlorobenzene	ug/kg	<2.0	2.0	0.80	10/15/18 17:50	
1,2,4-Trimethylbenzene	ug/kg	<2.0	2.0	0.86	10/15/18 17:50	
1,2-Dichlorobenzene	ug/kg	<2.0	2.0	0.82	10/15/18 17:50	
1,2-Dichloroethane	ug/kg	<2.0	2.0	0.48	10/15/18 17:50	
1,3,5-Trimethylbenzene	ug/kg	<2.0	2.0	0.76	10/15/18 17:50	
1,3-Dichlorobenzene	ug/kg	<2.0	2.0	0.81	10/15/18 17:50	
1,4-Dichlorobenzene	ug/kg	<2.0	2.0	0.82	10/15/18 17:50	
1,4-Dioxane (p-Dioxane)	ug/kg	<49.7	49.7	29.4	10/15/18 17:50	
2-Butanone (MEK)	ug/kg	<2.0	2.0	1.2	10/15/18 17:50	
Acetone	ug/kg	<2.0	2.0	2.0	10/15/18 17:50	
Benzene	ug/kg	<2.0	2.0	0.78	10/15/18 17:50	
Carbon tetrachloride	ug/kg	<2.0	2.0	1.2	10/15/18 17:50	
Chlorobenzene	ug/kg	<2.0	2.0	0.82	10/15/18 17:50	
Chlorodifluoromethane	ug/kg	<2.0	2.0	0.27	10/15/18 17:50	CL,N3
Chloroform	ug/kg	<2.0	2.0	0.54	10/15/18 17:50	
cis-1,2-Dichloroethene	ug/kg	<2.0	2.0	0.74	10/15/18 17:50	
Ethylbenzene	ug/kg	<2.0	2.0	0.76	10/15/18 17:50	
m&p-Xylene	ug/kg	<4.0	4.0	1.9	10/15/18 17:50	
Methyl-tert-butyl ether	ug/kg	<2.0	2.0	0.44	10/15/18 17:50	
Methylene Chloride	ug/kg	<2.0	2.0	0.90	10/15/18 17:50	
n-Butylbenzene	ug/kg	<2.0	2.0	0.80	10/15/18 17:50	
n-Propylbenzene	ug/kg	<2.0	2.0	0.82	10/15/18 17:50	
o-Xylene	ug/kg	<2.0	2.0	0.86	10/15/18 17:50	
sec-Butylbenzene	ug/kg	<2.0	2.0	0.79	10/15/18 17:50	
tert-Butylbenzene	ug/kg	<2.0	2.0	0.99	10/15/18 17:50	
Tetrachloroethene	ug/kg	<2.0	2.0	1.0	10/15/18 17:50	
Toluene	ug/kg	<2.0	2.0	0.93	10/15/18 17:50	
trans-1,2-Dichloroethene	ug/kg	<2.0	2.0	0.57	10/15/18 17:50	
Trichloroethene	ug/kg	<2.0	2.0	0.82	10/15/18 17:50	
Vinyl chloride	ug/kg	<2.0	2.0	0.44	10/15/18 17:50	
Xylene (Total)	ug/kg	<4.0	4.0	2.0	10/15/18 17:50	
1,2-Dichloroethane-d4 (S)	%	119	33-150		10/15/18 17:50	
4-Bromofluorobenzene (S)	%	107	34-145		10/15/18 17:50	
Toluene-d8 (S)	%	109	43-157		10/15/18 17:50	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

LABORATORY CONTROL SAMPLE: 401843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	40.2	44.9	112	59-134	
1,1-Dichloroethane	ug/kg	40.2	40.7	101	53-160	
1,1-Dichloroethene	ug/kg	40.2	40.8	101	47-152	
1,2,4,5-tetramethylbenzene	ug/kg	40.2	53.2	132	60-142	N3
1,2,4-Trichlorobenzene	ug/kg	40.2	50.0	124	52-140	
1,2,4-Trimethylbenzene	ug/kg	40.2	43.6	108	59-126	
1,2-Dichlorobenzene	ug/kg	40.2	46.8	116	67-125	
1,2-Dichloroethane	ug/kg	40.2	47.2	117	65-143	
1,3,5-Trimethylbenzene	ug/kg	40.2	48.1	119	49-134	
1,3-Dichlorobenzene	ug/kg	40.2	48.5	120	64-124	
1,4-Dichlorobenzene	ug/kg	40.2	46.1	114	61-127	
1,4-Dioxane (p-Dioxane)	ug/kg	1010	918	91	10-205	
2-Butanone (MEK)	ug/kg	40.2	44.1	110	52-164	CH
Acetone	ug/kg	40.2	44.5	111	23-196	CH
Benzene	ug/kg	40.2	43.8	109	65-129	
Carbon tetrachloride	ug/kg	40.2	44.5	111	57-135	
Chlorobenzene	ug/kg	40.2	43.0	107	62-136	
Chlorodifluoromethane	ug/kg	40.2	34.1	85	14-161	CL,N3
Chloroform	ug/kg	40.2	44.4	110	71-135	
cis-1,2-Dichloroethene	ug/kg	40.2	43.3	108	75-130	
Ethylbenzene	ug/kg	40.2	42.6	106	59-135	
m&p-Xylene	ug/kg	80.5	82.6	103	69-133	
Methyl-tert-butyl ether	ug/kg	40.2	42.9	107	25-171	
Methylene Chloride	ug/kg	40.2	36.6	91	50-164	
n-Butylbenzene	ug/kg	40.2	53.1	132	54-121	L1
n-Propylbenzene	ug/kg	40.2	50.6	126	56-125	L1
o-Xylene	ug/kg	40.2	43.0	107	71-135	
sec-Butylbenzene	ug/kg	40.2	52.8	131	50-126	L1
tert-Butylbenzene	ug/kg	40.2	50.0	124	56-127	
Tetrachloroethene	ug/kg	40.2	41.5	103	10-176	
Toluene	ug/kg	40.2	42.7	106	66-131	
trans-1,2-Dichloroethene	ug/kg	40.2	43.1	107	53-157	
Trichloroethene	ug/kg	40.2	45.0	112	62-130	
Vinyl chloride	ug/kg	40.2	35.9	89	45-137	
Xylene (Total)	ug/kg	121	126	104	62-135	
1,2-Dichloroethane-d4 (S)	%			121	33-150	
4-Bromofluorobenzene (S)	%			104	34-145	
Toluene-d8 (S)	%			109	43-157	

MATRIX SPIKE SAMPLE: 401844

Parameter	Units	7067073006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	<7.8	123	102	83	59-134	
1,1-Dichloroethane	ug/kg	<7.8	123	100	81	53-160	
1,1-Dichloroethene	ug/kg	<7.8	123	94.0	76	47-152	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

MATRIX SPIKE SAMPLE: 401844

Parameter	Units	7067073006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4,5-tetramethylbenzene	ug/kg	<7.8	123	103	83	60-142	N3
1,2,4-Trichlorobenzene	ug/kg	<7.8	123	83.0	67	52-140	
1,2,4-Trimethylbenzene	ug/kg	<7.8	123	94.5	77	59-126	
1,2-Dichlorobenzene	ug/kg	<7.8	123	102	83	67-125	
1,2-Dichloroethane	ug/kg	<7.8	123	124	101	65-143	
1,3,5-Trimethylbenzene	ug/kg	<7.8	123	102	83	49-134	
1,3-Dichlorobenzene	ug/kg	<7.8	123	98.7	80	64-124	
1,4-Dichlorobenzene	ug/kg	<7.8	123	95.1	77	61-127	
1,4-Dioxane (p-Dioxane)	ug/kg	<195	3080	3220	104	10-205	
2-Butanone (MEK)	ug/kg	<7.8	123	113	92	52-164	CH
Acetone	ug/kg	<7.8	123	167	135	23-196	CH
Benzene	ug/kg	<7.8	123	105	85	65-129	
Carbon tetrachloride	ug/kg	<7.8	123	97.6	79	57-135	
Chlorobenzene	ug/kg	<7.8	123	99.6	81	62-136	
Chlorodifluoromethane	ug/kg	<7.8	123	82.6	67	14-161	CL,N3
Chloroform	ug/kg	<7.8	123	112	91	71-135	
cis-1,2-Dichloroethene	ug/kg	<7.8	123	106	86	75-130	
Ethylbenzene	ug/kg	<7.8	123	94.4	77	59-135	
m&p-Xylene	ug/kg	<15.6	246	178	72	69-133	
Methyl-tert-butyl ether	ug/kg	<7.8	123	116	94	25-171	
Methylene Chloride	ug/kg	<7.8	123	102	82	50-164	
n-Butylbenzene	ug/kg	<7.8	123	94.0	76	54-121	
n-Propylbenzene	ug/kg	<7.8	123	104	84	56-125	
o-Xylene	ug/kg	<7.8	123	98.9	80	71-135	
sec-Butylbenzene	ug/kg	<7.8	123	105	85	50-126	
tert-Butylbenzene	ug/kg	<7.8	123	98.2	80	56-127	
Tetrachloroethene	ug/kg	<7.8	123	139	113	10-176	
Toluene	ug/kg	<7.8	123	101	82	66-131	
trans-1,2-Dichloroethene	ug/kg	<7.8	123	102	83	53-157	
Trichloroethene	ug/kg	<7.8	123	106	86	62-130	
Vinyl chloride	ug/kg	<7.8	123	83.1	67	45-137	
Xylene (Total)	ug/kg	<15.6	370	277	75	62-135	
1,2-Dichloroethane-d4 (S)	%				118	33-150	
4-Bromofluorobenzene (S)	%				107	34-145	
Toluene-d8 (S)	%				110	43-157	

SAMPLE DUPLICATE: 401845

Parameter	Units	7066887002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	<2.1	<2.0		20	
1,1-Dichloroethane	ug/kg	<2.1	<2.0		20	
1,1-Dichloroethene	ug/kg	<2.1	<2.0		20	
1,2,4,5-tetramethylbenzene	ug/kg	<2.1	<2.0		20	N3
1,2,4-Trichlorobenzene	ug/kg	<2.1	<2.0		20	
1,2,4-Trimethylbenzene	ug/kg	<2.1	<2.0		20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

SAMPLE DUPLICATE: 401845

Parameter	Units	7066887002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichlorobenzene	ug/kg	<2.1	<2.0		20	
1,2-Dichloroethane	ug/kg	<2.1	<2.0		20	
1,3,5-Trimethylbenzene	ug/kg	<2.1	<2.0		20	
1,3-Dichlorobenzene	ug/kg	<2.1	<2.0		20	
1,4-Dichlorobenzene	ug/kg	<2.1	<2.0		20	
1,4-Dioxane (p-Dioxane)	ug/kg	<51.9	<49.7		20	
2-Butanone (MEK)	ug/kg	<2.1	<2.0		20	
Acetone	ug/kg	<2.1	<2.0		20	
Benzene	ug/kg	<2.1	<2.0		20	
Carbon tetrachloride	ug/kg	<2.1	<2.0		20	
Chlorobenzene	ug/kg	<2.1	<2.0		20	
Chlorodifluoromethane	ug/kg	<2.1	<2.0		20	CL,N3
Chloroform	ug/kg	<2.1	<2.0		20	
cis-1,2-Dichloroethene	ug/kg	<2.1	<2.0		20	
Ethylbenzene	ug/kg	<2.1	<2.0		20	
m&p-Xylene	ug/kg	<4.1	<4.0		20	
Methyl-tert-butyl ether	ug/kg	<2.1	<2.0		20	
Methylene Chloride	ug/kg	<2.1	<2.0		20	
n-Butylbenzene	ug/kg	<2.1	<2.0		20	
n-Propylbenzene	ug/kg	<2.1	<2.0		20	
o-Xylene	ug/kg	<2.1	<2.0		20	
sec-Butylbenzene	ug/kg	<2.1	<2.0		20	
tert-Butylbenzene	ug/kg	<2.1	<2.0		20	
Tetrachloroethene	ug/kg	<2.1	<2.0		20	
Toluene	ug/kg	<2.1	<2.0		20	
trans-1,2-Dichloroethene	ug/kg	<2.1	<2.0		20	
Trichloroethene	ug/kg	<2.1	<2.0		20	
Vinyl chloride	ug/kg	<2.1	<2.0		20	
Xylene (Total)	ug/kg	<4.1	<4.0		20	
1,2-Dichloroethane-d4 (S)	%	121	121	4	20	
4-Bromofluorobenzene (S)	%	104	102	5	20	
Toluene-d8 (S)	%	106	102	8	20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

QC Batch: 86646 Analysis Method: EPA 8260C
QC Batch Method: EPA 5035A-H/5030C Analysis Description: 8260 MSV 5035A-H Med
Associated Lab Samples: 7067073001, 7067073002, 7067073005

METHOD BLANK: 398742 Matrix: Solid
Associated Lab Samples: 7067073001, 7067073002, 7067073005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<98.8	98.8	22.9	10/11/18 10:47	
1,1-Dichloroethane	ug/kg	<98.8	98.8	5.2	10/11/18 10:47	
1,1-Dichloroethene	ug/kg	<98.8	98.8	14.5	10/11/18 10:47	
1,2,4-Trimethylbenzene	ug/kg	<98.8	98.8	7.8	10/11/18 10:47	
1,2-Dichlorobenzene	ug/kg	<98.8	98.8	5.0	10/11/18 10:47	
1,2-Dichloroethane	ug/kg	<98.8	98.8	49.4	10/11/18 10:47	
1,3,5-Trimethylbenzene	ug/kg	<98.8	98.8	5.2	10/11/18 10:47	
1,3-Dichlorobenzene	ug/kg	<98.8	98.8	8.1	10/11/18 10:47	
1,4-Dichlorobenzene	ug/kg	<98.8	98.8	7.1	10/11/18 10:47	
1,4-Dioxane (p-Dioxane)	ug/kg	<2470	2470	1240	10/11/18 10:47	
2-Butanone (MEK)	ug/kg	<98.8	98.8	9.8	10/11/18 10:47	CL
Acetone	ug/kg	<98.8	98.8	35.4	10/11/18 10:47	
Benzene	ug/kg	<98.8	98.8	5.7	10/11/18 10:47	
Carbon tetrachloride	ug/kg	<98.8	98.8	27.5	10/11/18 10:47	
Chlorobenzene	ug/kg	<98.8	98.8	6.2	10/11/18 10:47	
Chloroform	ug/kg	<98.8	98.8	6.5	10/11/18 10:47	
cis-1,2-Dichloroethene	ug/kg	<98.8	98.8	8.5	10/11/18 10:47	
Ethylbenzene	ug/kg	<98.8	98.8	9.0	10/11/18 10:47	
m&p-Xylene	ug/kg	<198	198	11.6	10/11/18 10:47	
Methyl-tert-butyl ether	ug/kg	<98.8	98.8	9.8	10/11/18 10:47	
Methylene Chloride	ug/kg	<98.8	98.8	23.5	10/11/18 10:47	
n-Butylbenzene	ug/kg	<98.8	98.8	9.4	10/11/18 10:47	
n-Propylbenzene	ug/kg	<98.8	98.8	5.9	10/11/18 10:47	
o-Xylene	ug/kg	<98.8	98.8	6.7	10/11/18 10:47	
sec-Butylbenzene	ug/kg	<98.8	98.8	5.0	10/11/18 10:47	
tert-Butylbenzene	ug/kg	<98.8	98.8	5.1	10/11/18 10:47	
Tetrachloroethene	ug/kg	<98.8	98.8	11.2	10/11/18 10:47	
Toluene	ug/kg	<98.8	98.8	7.4	10/11/18 10:47	
trans-1,2-Dichloroethene	ug/kg	<98.8	98.8	16.7	10/11/18 10:47	
Trichloroethene	ug/kg	<98.8	98.8	9.2	10/11/18 10:47	
Vinyl chloride	ug/kg	<98.8	98.8	11.2	10/11/18 10:47	
Xylene (Total)	ug/kg	<198	198	98.8	10/11/18 10:47	
1,2-Dichloroethane-d4 (S)	%	93	33-150		10/11/18 10:47	
4-Bromofluorobenzene (S)	%	100	34-145		10/11/18 10:47	
Toluene-d8 (S)	%	104	43-157		10/11/18 10:47	

LABORATORY CONTROL SAMPLE: 398743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	2510	2680	107	59-134	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

LABORATORY CONTROL SAMPLE: 398743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/kg	2510	2420	97	53-160	
1,1-Dichloroethene	ug/kg	2510	2470	99	47-152	
1,2,4-Trimethylbenzene	ug/kg	2510	2620	105	59-126	
1,2-Dichlorobenzene	ug/kg	2510	2750	110	67-125	
1,2-Dichloroethane	ug/kg	2510	2600	104	65-143	
1,3,5-Trimethylbenzene	ug/kg	2510	2570	103	49-134	
1,3-Dichlorobenzene	ug/kg	2510	2750	110	64-124	
1,4-Dichlorobenzene	ug/kg	2510	2710	108	61-127	
1,4-Dioxane (p-Dioxane)	ug/kg	62600	77300	123	10-205	CH
2-Butanone (MEK)	ug/kg	2510	2260	90	52-164	CL
Acetone	ug/kg	2510	2860	114	23-196	IH
Benzene	ug/kg	2510	2550	102	65-129	
Carbon tetrachloride	ug/kg	2510	2690	107	57-135	
Chlorobenzene	ug/kg	2510	2980	119	62-136	
Chloroform	ug/kg	2510	2610	104	71-135	
cis-1,2-Dichloroethene	ug/kg	2510	2580	103	75-130	
Ethylbenzene	ug/kg	2510	2890	115	59-135	
m&p-Xylene	ug/kg	5010	5860	117	69-133	
Methyl-tert-butyl ether	ug/kg	2510	2530	101	25-171	
Methylene Chloride	ug/kg	2510	2310	92	50-164	
n-Butylbenzene	ug/kg	2510	2660	106	54-121	
n-Propylbenzene	ug/kg	2510	2490	99	56-125	
o-Xylene	ug/kg	2510	2920	117	71-135	
sec-Butylbenzene	ug/kg	2510	2570	103	50-126	
tert-Butylbenzene	ug/kg	2510	2620	105	56-127	
Tetrachloroethene	ug/kg	2510	3130	125	10-176	
Toluene	ug/kg	2510	2620	105	66-131	
trans-1,2-Dichloroethene	ug/kg	2510	2400	96	53-157	
Trichloroethene	ug/kg	2510	2660	106	62-130	
Vinyl chloride	ug/kg	2510	2350	94	45-137	
Xylene (Total)	ug/kg	7520	8780	117	62-135	
1,2-Dichloroethane-d4 (S)	%			104	33-150	
4-Bromofluorobenzene (S)	%			106	34-145	
Toluene-d8 (S)	%			102	43-157	

MATRIX SPIKE SAMPLE: 401911

Parameter	Units	7067073002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	<119	2920	2550	87	59-134	
1,1-Dichloroethane	ug/kg	<119	2920	2390	82	53-160	
1,1-Dichloroethene	ug/kg	<119	2920	2520	86	47-152	
1,2,4-Trimethylbenzene	ug/kg	<119	2920	2560	88	59-126	
1,2-Dichlorobenzene	ug/kg	<119	2920	2560	88	67-125	
1,2-Dichloroethane	ug/kg	<119	2920	2390	82	65-143	
1,3,5-Trimethylbenzene	ug/kg	<119	2920	2540	87	49-134	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

MATRIX SPIKE SAMPLE: 401911

Parameter	Units	7067073002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,3-Dichlorobenzene	ug/kg	<119	2920	2610	90	64-124	
1,4-Dichlorobenzene	ug/kg	<119	2920	2540	87	61-127	
1,4-Dioxane (p-Dioxane)	ug/kg	<2980	73000	65100	89	10-205	CH
2-Butanone (MEK)	ug/kg	<119	2920	2480	85	52-164	CL
Acetone	ug/kg	<119	2920	4670	160	23-196	IH
Benzene	ug/kg	<119	2920	2510	86	65-129	
Carbon tetrachloride	ug/kg	<119	2920	2460	84	57-135	
Chlorobenzene	ug/kg	<119	2920	2800	96	62-136	
Chloroform	ug/kg	<119	2920	2480	85	71-135	
cis-1,2-Dichloroethene	ug/kg	3380	2920	7840	153	75-130	M1
Ethylbenzene	ug/kg	<119	2920	2860	98	59-135	
m&p-Xylene	ug/kg	<238	5830	5790	99	69-133	
Methyl-tert-butyl ether	ug/kg	<119	2920	2260	78	25-171	
Methylene Chloride	ug/kg	<119	2920	2160	74	50-164	
n-Butylbenzene	ug/kg	<119	2920	2640	90	54-121	
n-Propylbenzene	ug/kg	<119	2920	2480	85	56-125	
o-Xylene	ug/kg	<119	2920	2800	96	71-135	
sec-Butylbenzene	ug/kg	<119	2920	2550	87	50-126	
tert-Butylbenzene	ug/kg	<119	2920	2610	89	56-127	
Tetrachloroethene	ug/kg	<119	2920	5450	187	10-176	M1
Toluene	ug/kg	138	2920	2810	92	66-131	
trans-1,2-Dichloroethene	ug/kg	<119	2920	2460	84	53-157	
Trichloroethene	ug/kg	<119	2920	2830	97	62-130	
Vinyl chloride	ug/kg	122	2920	2530	83	45-137	
Xylene (Total)	ug/kg	<238	8750	8600	98	62-135	
1,2-Dichloroethane-d4 (S)	%				98	33-150	
4-Bromofluorobenzene (S)	%				102	34-145	
Toluene-d8 (S)	%				104	43-157	

SAMPLE DUPLICATE: 401910

Parameter	Units	7067073001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	<107	<107		20	
1,1-Dichloroethane	ug/kg	<107	<107		20	
1,1-Dichloroethene	ug/kg	<107	<107		20	
1,2,4-Trimethylbenzene	ug/kg	<107	<107		20	
1,2-Dichlorobenzene	ug/kg	<107	<107		20	
1,2-Dichloroethane	ug/kg	<107	<107		20	
1,3,5-Trimethylbenzene	ug/kg	<107	<107		20	
1,3-Dichlorobenzene	ug/kg	<107	<107		20	
1,4-Dichlorobenzene	ug/kg	<107	<107		20	
1,4-Dioxane (p-Dioxane)	ug/kg	<2690	<2690		20	
2-Butanone (MEK)	ug/kg	<107	<107		20	CL
Acetone	ug/kg	<107	<107		20	
Benzene	ug/kg	<107	<107		20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

SAMPLE DUPLICATE: 401910

Parameter	Units	7067073001 Result	Dup Result	RPD	Max RPD	Qualifiers
Carbon tetrachloride	ug/kg	<107	<107		20	
Chlorobenzene	ug/kg	<107	<107		20	
Chloroform	ug/kg	<107	<107		20	
cis-1,2-Dichloroethene	ug/kg	789	1200	41	20	D6
Ethylbenzene	ug/kg	<107	<107		20	
m&p-Xylene	ug/kg	<215	<215		20	
Methyl-tert-butyl ether	ug/kg	<107	<107		20	
Methylene Chloride	ug/kg	<107	<107		20	
n-Butylbenzene	ug/kg	<107	<107		20	
n-Propylbenzene	ug/kg	<107	<107		20	
o-Xylene	ug/kg	<107	<107		20	
sec-Butylbenzene	ug/kg	<107	<107		20	
tert-Butylbenzene	ug/kg	<107	<107		20	
Tetrachloroethene	ug/kg	<107	<107		20	
Toluene	ug/kg	<107	<107		20	
trans-1,2-Dichloroethene	ug/kg	<107	<107		20	
Trichloroethene	ug/kg	325	499	42	20	D6
Vinyl chloride	ug/kg	<107	<107		20	
Xylene (Total)	ug/kg	<215	<215		20	
1,2-Dichloroethane-d4 (S)	%	93	93	1	20	
4-Bromofluorobenzene (S)	%	99	99	0	20	
Toluene-d8 (S)	%	102	104	1	20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

QC Batch: 86092 Analysis Method: EPA 8081B
QC Batch Method: EPA 3546 Analysis Description: 8081 GCS Pesticides
Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

METHOD BLANK: 396089 Matrix: Solid
Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
4,4'-DDD	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
4,4'-DDE	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
4,4'-DDT	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
Aldrin	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
alpha-BHC	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
alpha-Chlordane	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
beta-BHC	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
delta-BHC	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
Dieldrin	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
Endosulfan I	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
Endosulfan II	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
Endosulfan sulfate	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
Endrin	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
gamma-BHC (Lindane)	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
Heptachlor	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
Decachlorobiphenyl (S)	%	117	30-150		10/13/18 03:42	
Tetrachloro-m-xylene (S)	%	87	30-150		10/13/18 03:42	

LABORATORY CONTROL SAMPLE: 396090

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/kg	13.3	11.1	83	57-156	
4,4'-DDE	ug/kg	13.3	9.9	74	52-135	
4,4'-DDT	ug/kg	13.3	10.6	79	64-127	
Aldrin	ug/kg	13.3	8.5	64	35-147	
alpha-BHC	ug/kg	13.3	9.9	74	41-135	
alpha-Chlordane	ug/kg	13.3	8.3	62	43-128	
beta-BHC	ug/kg	13.3	10	75	42-158	
delta-BHC	ug/kg	13.3	9.5	71	48-142	
Dieldrin	ug/kg	13.3	10.4	78	47-134	
Endosulfan I	ug/kg	13.3	8.6	64	54-145	
Endosulfan II	ug/kg	13.3	9.0	68	61-137	
Endosulfan sulfate	ug/kg	13.3	11.9	89	51-154	
Endrin	ug/kg	13.3	10.7	80	37-146	
gamma-BHC (Lindane)	ug/kg	13.3	9.7	73	44-139	
Heptachlor	ug/kg	13.3	9.7	73	57-148	
Decachlorobiphenyl (S)	%			108	30-150	
Tetrachloro-m-xylene (S)	%			67	30-150	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

LABORATORY CONTROL SAMPLE: 396091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Decachlorobiphenyl (S)	%			119	30-150	
Tetrachloro-m-xylene (S)	%			90	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 396127 396128

Parameter	Units	7067135003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4,4'-DDD	ug/kg	<4.1	16.6	16.7	59.0	168	356	1010	57-156	96	30	CH,E, M1,R1
4,4'-DDE	ug/kg	3530	16.6	16.7	3390	5730	-862	13200	52-135	51	30	CH,E, M1,R1
4,4'-DDT	ug/kg	<414	16.6	16.7	3100	5510	18700	33000	64-127	56	27	CL,E, M1,R1
Aldrin	ug/kg	<2.1	16.6	16.7	1850	2990	11200	17900	35-147	47	43	E,M1, R1
alpha-BHC	ug/kg	<2.1	16.6	16.7	19.0	26.2	115	157	41-135	32	30	M1,R1
alpha-Chlordane	ug/kg	329	16.6	16.7	193	368	-822	230	43-128	62	30	E,M1, R1
beta-BHC	ug/kg	<2.1	16.6	16.7	9.1	8990	55	53900	42-158	200	30	E,M1, R1
delta-BHC	ug/kg	<2.1	16.6	16.7	27.7	41.1	167	246	48-142	39	30	CH,E, M1,R1
Dieldrin	ug/kg	1310	16.6	16.7	990	1580	-1940	1610	47-134	46	38	CH,E, M1,R1
Endosulfan I	ug/kg	<2.1	16.6	16.7	42.6	104	257	622	54-145	84	30	E,M1, R1
Endosulfan II	ug/kg	30.3	16.6	16.7	21.6	92.6	-53	373	61-137	124	30	E,M1, R1
Endosulfan sulfate	ug/kg	15.8	16.6	16.7	18.4	31.9	16	97	51-154	54	30	M1,R1
Endrin	ug/kg	35.9	16.6	16.7	50.7	125	90	536	37-146	85	45	E,M1, R1
gamma-BHC (Lindane)	ug/kg	172J	16.6	16.7	150	225	-133	312	44-139	40	31	E,M1, R1
Heptachlor	ug/kg	496	16.6	16.7	434	673	-373	1060	57-148	43	20	E,M1, R1
Decachlorobiphenyl (S)	%						225	503	30-150		30	E,S0
Tetrachloro-m-xylene (S)	%						87	128	30-150		30	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

QC Batch: 86094 Analysis Method: EPA 8082A
QC Batch Method: EPA 3546 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

METHOD BLANK: 396095 Matrix: Solid
Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
PCB-1221 (Aroclor 1221)	ug/kg	<67.0	67.0	33.5	10/12/18 01:52	
PCB-1232 (Aroclor 1232)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
PCB-1242 (Aroclor 1242)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
PCB-1248 (Aroclor 1248)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
PCB-1254 (Aroclor 1254)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
PCB-1260 (Aroclor 1260)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
Decachlorobiphenyl (S)	%	90	30-150		10/12/18 01:52	
Tetrachloro-m-xylene (S)	%	80	30-150		10/12/18 01:52	

LABORATORY CONTROL SAMPLE: 396096

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	134	81	50-136	
PCB-1260 (Aroclor 1260)	ug/kg	167	143	86	45-154	
Decachlorobiphenyl (S)	%			87	30-150	
Tetrachloro-m-xylene (S)	%			79	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 396110 396111

Parameter	Units	7067073004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<36.2	184	183	156	163	85	89	28-173	4	30	
PCB-1221 (Aroclor 1221)	ug/kg	<73.4			<74.1	<73.7					30	
PCB-1232 (Aroclor 1232)	ug/kg	<36.2			<36.5	<36.3					30	
PCB-1242 (Aroclor 1242)	ug/kg	<36.2			<36.5	<36.3					30	
PCB-1248 (Aroclor 1248)	ug/kg	<36.2			<36.5	<36.3					30	
PCB-1254 (Aroclor 1254)	ug/kg	<36.2			<36.5	<36.3					30	
PCB-1260 (Aroclor 1260)	ug/kg	<36.2	184	183	174	188	95	102	43-138	7	30	
Decachlorobiphenyl (S)	%						90	95	30-150		30	
Tetrachloro-m-xylene (S)	%						75	78	30-150		30	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

QC Batch: 86197 Analysis Method: EPA 8151A
QC Batch Method: EPA 8151A Analysis Description: 8151 GCS Herbicides
Associated Lab Samples: 7067073003, 7067073004, 7067073008

METHOD BLANK: 396413 Matrix: Solid
Associated Lab Samples: 7067073003, 7067073004, 7067073008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2,4,5-TP (Silvex)	ug/kg	<5.0	5.0	0.26	10/11/18 22:13	
2,4-DCAA (S)	%	66	29-136		10/11/18 22:13	

LABORATORY CONTROL SAMPLE: 396414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4,5-TP (Silvex)	ug/kg	19.9	11.9	60	12-146	
2,4-DCAA (S)	%			65	29-136	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 396415 396416

Parameter	Units	7067073004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4,5-TP (Silvex)	ug/kg	<5.5	22.2	22.1	12.6	10.9	57	49	12-146	15	30	
2,4-DCAA (S)	%						69	59	29-136		30	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

QC Batch: 86032 Analysis Method: EPA 8270D
QC Batch Method: EPA 3545A Analysis Description: 8270 Solid MSSV
Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

METHOD BLANK: 395824 Matrix: Solid
Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2-Methylphenol(o-Cresol)	ug/kg	<67.0	67.0	37.1	10/10/18 12:25	
3&4-Methylphenol(m&p Cresol)	ug/kg	<67.0	67.0	24.1	10/10/18 12:25	
Acenaphthene	ug/kg	<67.0	67.0	9.9	10/10/18 12:25	
Acenaphthylene	ug/kg	<67.0	67.0	13.4	10/10/18 12:25	
Anthracene	ug/kg	<67.0	67.0	19.6	10/10/18 12:25	
Benzo(a)anthracene	ug/kg	<67.0	67.0	15.4	10/10/18 12:25	
Benzo(a)pyrene	ug/kg	<67.0	67.0	28.3	10/10/18 12:25	
Benzo(b)fluoranthene	ug/kg	<67.0	67.0	23.2	10/10/18 12:25	
Benzo(g,h,i)perylene	ug/kg	<67.0	67.0	32.4	10/10/18 12:25	
Benzo(k)fluoranthene	ug/kg	<67.0	67.0	20.8	10/10/18 12:25	
Chrysene	ug/kg	<67.0	67.0	30.0	10/10/18 12:25	
Dibenz(a,h)anthracene	ug/kg	<67.0	67.0	21.9	10/10/18 12:25	
Dibenzofuran	ug/kg	<67.0	67.0	12.1	10/10/18 12:25	
Fluoranthene	ug/kg	<67.0	67.0	56.3	10/10/18 12:25	
Fluorene	ug/kg	<67.0	67.0	17.0	10/10/18 12:25	
Hexachlorobenzene	ug/kg	<67.0	67.0	13.3	10/10/18 12:25	
Indeno(1,2,3-cd)pyrene	ug/kg	<67.0	67.0	25.6	10/10/18 12:25	
Naphthalene	ug/kg	<67.0	67.0	7.4	10/10/18 12:25	
Pentachlorophenol	ug/kg	<670	670	6.8	10/10/18 12:25	
Phenanthrene	ug/kg	<67.0	67.0	21.6	10/10/18 12:25	
Phenol	ug/kg	<67.0	67.0	12.8	10/10/18 12:25	
Pyrene	ug/kg	<67.0	67.0	31.8	10/10/18 12:25	
2.436:Unknown Alcohol	ug/kg	282			10/10/18 12:25	
2.479:Unknown Petroleum Alkane	ug/kg	296			10/10/18 12:25	
2.749:Unknown Aromatic Hydroca	ug/kg	1190			10/10/18 12:25	
2.943:Unknown Ketone	ug/kg	293			10/10/18 12:25	
3.019:Unknown Ketone	ug/kg	156			10/10/18 12:25	
3.342:Unknown Ketone	ug/kg	6600			10/10/18 12:25	
3.553:Unknown Ketone	ug/kg	1200			10/10/18 12:25	
3.752:Unknown Ketone	ug/kg	53100			10/10/18 12:25	
4.200:Unknown	ug/kg	141			10/10/18 12:25	
4.378:Unknown Aldol Condensate	ug/kg	140			10/10/18 12:25	
4.686:Unknown Amine	ug/kg	140			10/10/18 12:25	
8.544:Benzophenone	ug/kg	227			10/10/18 12:25	N
9.860:Unknown Organic Acid	ug/kg	226			10/10/18 12:25	
13.481:Unknown Amide	ug/kg	178			10/10/18 12:25	
1,2-Dichlorobenzene-d4 (S)	%	73	20-130		10/10/18 12:25	
2,4,6-Tribromophenol (S)	%	63	19-122		10/10/18 12:25	
2-Chlorophenol-d4 (S)	%	69	20-130		10/10/18 12:25	
2-Fluorobiphenyl (S)	%	68	30-115		10/10/18 12:25	

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REPORT OF LABORATORY ANALYSIS

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

METHOD BLANK: 395824 Matrix: Solid

Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010, 7067073011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2-Fluorophenol (S)	%	108	25-121		10/10/18 12:25	CH
Nitrobenzene-d5 (S)	%	75	23-120		10/10/18 12:25	
p-Terphenyl-d14 (S)	%	92	18-137		10/10/18 12:25	
Phenol-d5 (S)	%	63	24-113		10/10/18 12:25	

LABORATORY CONTROL SAMPLE: 395825

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylphenol(o-Cresol)	ug/kg	1670	1290	78	36-104	
3&4-Methylphenol(m&p Cresol)	ug/kg	1670	1320	79	37-137	
Acenaphthene	ug/kg	1670	1440	86	45-109	
Acenaphthylene	ug/kg	1670	1440	87	43-107	
Anthracene	ug/kg	1670	1520	91	50-117	
Benzo(a)anthracene	ug/kg	1670	1490	89	52-116	
Benzo(a)pyrene	ug/kg	1670	1600	96	56-119	
Benzo(b)fluoranthene	ug/kg	1670	1560	94	45-122	
Benzo(g,h,i)perylene	ug/kg	1670	1700	102	30-107	
Benzo(k)fluoranthene	ug/kg	1670	1630	98	54-124	
Chrysene	ug/kg	1670	1540	93	48-121	
Dibenz(a,h)anthracene	ug/kg	1670	1730	104	52-109	
Dibenzofuran	ug/kg	1670	1550	93	48-112	
Fluoranthene	ug/kg	1670	1160	70	45-126	CH
Fluorene	ug/kg	1670	1480	89	47-108	
Hexachlorobenzene	ug/kg	1670	1410	85	51-110	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	1700	102	50-108	
Naphthalene	ug/kg	1670	1360	82	18-142	
Pentachlorophenol	ug/kg	1670	1120	67	22-115	
Phenanthrene	ug/kg	1670	1490	90	47-124	
Phenol	ug/kg	1670	982	59	38-104	
Pyrene	ug/kg	1670	1560	93	49-132	
1,2-Dichlorobenzene-d4 (S)	%			71	20-130	
2,4,6-Tribromophenol (S)	%			96	19-122	
2-Chlorophenol-d4 (S)	%			64	20-130	
2-Fluorobiphenyl (S)	%			80	30-115	
2-Fluorophenol (S)	%			104	25-121	CH
Nitrobenzene-d5 (S)	%			72	23-120	
p-Terphenyl-d14 (S)	%			90	18-137	
Phenol-d5 (S)	%			61	24-113	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395866 395867

Parameter	Units	7067021003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Methylphenol(o-Cresol)	ug/kg	<68.3	1690	1690	1070	953	63	56	36-104	11	30	
3&4-Methylphenol(m&p Cresol)	ug/kg	<68.3	1690	1690	1180	1080	70	64	37-137	8	30	
Acenaphthene	ug/kg	<68.3	1690	1690	1350	1280	80	76	45-109	5	30	
Acenaphthylene	ug/kg	<68.3	1690	1690	1410	1330	83	79	43-107	5	30	
Anthracene	ug/kg	<68.3	1690	1690	1490	1390	88	82	50-117	7	30	
Benzo(a)anthracene	ug/kg	<68.3	1690	1690	1430	1310	84	78	52-116	8	30	
Benzo(a)pyrene	ug/kg	<68.3	1690	1690	1550	1850	92	109	56-119	17	30	
Benzo(b)fluoranthene	ug/kg	<68.3	1690	1690	1450	1790	86	106	45-122	21	30	
Benzo(g,h,i)perylene	ug/kg	<68.3	1690	1690	1670	1510	99	89	30-107	10	30	
Benzo(k)fluoranthene	ug/kg	<68.3	1690	1690	1700	1990	101	118	54-124	16	30	
Chrysene	ug/kg	<68.3	1690	1690	1510	1370	89	81	48-121	9	30	
Dibenz(a,h)anthracene	ug/kg	<68.3	1690	1690	1660	1500	98	89	52-109	10	30	
Dibenzofuran	ug/kg	<68.3	1690	1690	1410	1330	84	78	48-112	6	30	
Fluoranthene	ug/kg	<68.3	1690	1690	1560	1440	92	85	45-126	8	30	CH
Fluorene	ug/kg	<68.3	1690	1690	1380	1290	81	76	47-108	7	30	
Hexachlorobenzene	ug/kg	<68.3	1690	1690	1480	1370	87	81	51-110	8	30	
Indeno(1,2,3-cd)pyrene	ug/kg	<68.3	1690	1690	1620	1390	96	82	50-108	15	30	
Naphthalene	ug/kg	<68.3	1690	1690	1340	1310	79	77	18-142	2	30	
Pentachlorophenol	ug/kg	<683	1690	1690	1370	1290	81	76	22-115	6	30	
Phenanthrene	ug/kg	<68.3	1690	1690	1490	1370	88	81	47-124	8	30	
Phenol	ug/kg	<68.3	1690	1690	951	819	56	48	38-104	15	30	
Pyrene	ug/kg	<68.3	1690	1690	1510	1390	89	82	49-132	8	30	
1,2-Dichlorobenzene-d4 (S)	%						78	72	20-130			
2,4,6-Tribromophenol (S)	%						96	85	19-122			
2-Chlorophenol-d4 (S)	%						75	62	20-130			
2-Fluorobiphenyl (S)	%						86	79	30-115			
2-Fluorophenol (S)	%						73	97	25-121			CH
Nitrobenzene-d5 (S)	%						128	74	23-120			S0
p-Terphenyl-d14 (S)	%						89	81	18-137			
Phenol-d5 (S)	%						69	58	24-113			

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REPORT OF LABORATORY ANALYSIS

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

QC Batch: 86077 Analysis Method: ASTM D2216-92M
QC Batch Method: ASTM D2216-92M Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 7067073001, 7067073002, 7067073003, 7067073004, 7067073005, 7067073006, 7067073007, 7067073008, 7067073009, 7067073010

SAMPLE DUPLICATE: 395937

Parameter	Units	7067073001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.6	17.8	2	20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067073

QC Batch: 86080
QC Batch Method: ASTM D2216-92M
Associated Lab Samples: 7067073011

Analysis Method: ASTM D2216-92M
Analysis Description: Dry Weight/Percent Moisture

SAMPLE DUPLICATE: 395950

Parameter	Units	30267263001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	24.8	24.8	0	20	

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QUALIFIERS

Project: 31 WATER ST
Pace Project No.: 7067073

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

SAMPLE QUALIFIERS

Sample: 7067073001
- [1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix
- [2] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.

Sample: 7067073002
- [1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix
- [2] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.

Sample: 7067073003
- [1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix
- [2] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.

Sample: 7067073004
- [1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix
- [2] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.

Sample: 7067073005
- [1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix
- [2] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.

Sample: 7067073006
- [1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix
- [2] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.

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QUALIFIERS

Project: 31 WATER ST
Pace Project No.: 7067073

SAMPLE QUALIFIERS

Sample: 7067073007
[1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
[2] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

Sample: 7067073008
[1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.

Sample: 7067073009
[1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
[2] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

Sample: 7067073010
[1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.
[2] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

Sample: 7067073011
[1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix
[2] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.

ANALYTE QUALIFIERS

1j	Surrogate recovery high due to unresolved interferences.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
IH	This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N	The reported TIC has an 85% or higher match on a mass spectral library search.
N3	Accreditation is not offered by the relevant laboratory accrediting body for this parameter.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S1	Surrogate recovery outside laboratory control limits (confirmed by re-analysis).
S7	Surrogate recovery outside control limits (not confirmed by re-analysis).

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575 Broad Hollow Road
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31 WATER ST
Pace Project No.: 7067073

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
7067073001	**BH-14 (18-20)**	EPA 3546	86092	EPA 8081B	86514
7067073002	**BH-14 (15-16)**	EPA 3546	86092	EPA 8081B	86514
7067073003	**BH-16 (10-11)**	EPA 3546	86092	EPA 8081B	86514
7067073004	**BH-18 (0-4)**	EPA 3546	86092	EPA 8081B	86514
7067073005	**BH-18 (14-15)**	EPA 3546	86092	EPA 8081B	86514
7067073006	**BH-19 (0-9)**	EPA 3546	86092	EPA 8081B	86514
7067073007	**BH-15 (12-16)**	EPA 3546	86092	EPA 8081B	86514
7067073008	**BH-21 (0-4)**	EPA 3546	86092	EPA 8081B	86514
7067073009	**BH-20 (0-4)**	EPA 3546	86092	EPA 8081B	86514
7067073010	**BH-20 (6-7')**	EPA 3546	86092	EPA 8081B	86514
7067073011	**BMW-91 (24.2-25)**	EPA 3546	86092	EPA 8081B	86514
7067073001	**BH-14 (18-20)**	EPA 3546	86094	EPA 8082A	86515
7067073002	**BH-14 (15-16)**	EPA 3546	86094	EPA 8082A	86515
7067073003	**BH-16 (10-11)**	EPA 3546	86094	EPA 8082A	86515
7067073004	**BH-18 (0-4)**	EPA 3546	86094	EPA 8082A	86515
7067073005	**BH-18 (14-15)**	EPA 3546	86094	EPA 8082A	86515
7067073006	**BH-19 (0-9)**	EPA 3546	86094	EPA 8082A	86515
7067073007	**BH-15 (12-16)**	EPA 3546	86094	EPA 8082A	86515
7067073008	**BH-21 (0-4)**	EPA 3546	86094	EPA 8082A	86515
7067073009	**BH-20 (0-4)**	EPA 3546	86094	EPA 8082A	86515
7067073010	**BH-20 (6-7')**	EPA 3546	86094	EPA 8082A	86515
7067073011	**BMW-91 (24.2-25)**	EPA 3546	86094	EPA 8082A	86515
7067073003	**BH-16 (10-11)**	EPA 8151A	86197	EPA 8151A	86442
7067073004	**BH-18 (0-4)**	EPA 8151A	86197	EPA 8151A	86442
7067073008	**BH-21 (0-4)**	EPA 8151A	86197	EPA 8151A	86442
7067073001	**BH-14 (18-20)**	EPA 3050B	85986	EPA 6010C	85994
7067073002	**BH-14 (15-16)**	EPA 3050B	85986	EPA 6010C	85994
7067073003	**BH-16 (10-11)**	EPA 3050B	85986	EPA 6010C	85994
7067073004	**BH-18 (0-4)**	EPA 3050B	85986	EPA 6010C	85994
7067073005	**BH-18 (14-15)**	EPA 3050B	85986	EPA 6010C	85994
7067073006	**BH-19 (0-9)**	EPA 3050B	85986	EPA 6010C	85994
7067073007	**BH-15 (12-16)**	EPA 3050B	85986	EPA 6010C	85994
7067073008	**BH-21 (0-4)**	EPA 3050B	85986	EPA 6010C	85994
7067073009	**BH-20 (0-4)**	EPA 3050B	85986	EPA 6010C	85994
7067073010	**BH-20 (6-7')**	EPA 3050B	85986	EPA 6010C	85994
7067073011	**BMW-91 (24.2-25)**	EPA 3050B	85986	EPA 6010C	85994
7067073001	**BH-14 (18-20)**	EPA 7471B	85987	EPA 7471B	86000
7067073002	**BH-14 (15-16)**	EPA 7471B	85987	EPA 7471B	86000
7067073003	**BH-16 (10-11)**	EPA 7471B	85987	EPA 7471B	86000
7067073004	**BH-18 (0-4)**	EPA 7471B	85987	EPA 7471B	86000
7067073005	**BH-18 (14-15)**	EPA 7471B	85987	EPA 7471B	86000
7067073006	**BH-19 (0-9)**	EPA 7471B	85987	EPA 7471B	86000
7067073007	**BH-15 (12-16)**	EPA 7471B	85987	EPA 7471B	86000
7067073008	**BH-21 (0-4)**	EPA 7471B	85987	EPA 7471B	86000
7067073009	**BH-20 (0-4)**	EPA 7471B	85987	EPA 7471B	86000
7067073010	**BH-20 (6-7')**	EPA 7471B	85987	EPA 7471B	86000
7067073011	**BMW-91 (24.2-25)**	EPA 7471B	85987	EPA 7471B	86000

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31 WATER ST
Pace Project No.: 7067073

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
7067073001	**BH-14 (18-20)**	EPA 3545A	86032	EPA 8270D	86278
7067073002	**BH-14 (15-16)**	EPA 3545A	86032	EPA 8270D	86278
7067073003	**BH-16 (10-11)**	EPA 3545A	86032	EPA 8270D	86278
7067073004	**BH-18 (0-4)**	EPA 3545A	86032	EPA 8270D	86278
7067073005	**BH-18 (14-15)**	EPA 3545A	86032	EPA 8270D	86278
7067073006	**BH-19 (0-9)**	EPA 3545A	86032	EPA 8270D	86278
7067073007	**BH-15 (12-16)**	EPA 3545A	86032	EPA 8270D	86278
7067073008	**BH-21 (0-4)**	EPA 3545A	86032	EPA 8270D	86278
7067073009	**BH-20 (0-4)**	EPA 3545A	86032	EPA 8270D	86278
7067073010	**BH-20 (6-7')**	EPA 3545A	86032	EPA 8270D	86278
7067073011	**BMW-91 (24.2-25)**	EPA 3545A	86032	EPA 8270D	86278
7067073003	**BH-16 (10-11)**	EPA 5035A-L	86669	EPA 8260C	86670
7067073004	**BH-18 (0-4)**	EPA 5035A-L	86669	EPA 8260C	86670
7067073006	**BH-19 (0-9)**	EPA 5035A-L	87239	EPA 8260C	87265
7067073007	**BH-15 (12-16)**	EPA 5035A-L	87239	EPA 8260C	87265
7067073008	**BH-21 (0-4)**	EPA 5035A-L	87239	EPA 8260C	87265
7067073009	**BH-20 (0-4)**	EPA 5035A-L	87239	EPA 8260C	87265
7067073010	**BH-20 (6-7')**	EPA 5035A-L	87239	EPA 8260C	87265
7067073011	**BMW-91 (24.2-25)**	EPA 5035A-L	87239	EPA 8260C	87265
7067073001	**BH-14 (18-20)**	EPA 5035A-H/5030C	86646	EPA 8260C	86648
7067073002	**BH-14 (15-16)**	EPA 5035A-H/5030C	86646	EPA 8260C	86648
7067073005	**BH-18 (14-15)**	EPA 5035A-H/5030C	86646	EPA 8260C	86648
7067073001	**BH-14 (18-20)**	EPA 8260			
7067073002	**BH-14 (15-16)**	EPA 8260			
7067073003	**BH-16 (10-11)**	EPA 8260			
7067073004	**BH-18 (0-4)**	EPA 8260			
7067073005	**BH-18 (14-15)**	EPA 8260			
7067073006	**BH-19 (0-9)**	EPA 8260			
7067073008	**BH-21 (0-4)**	EPA 8260			
7067073009	**BH-20 (0-4)**	EPA 8260			
7067073010	**BH-20 (6-7')**	EPA 8260			
7067073011	**BMW-91 (24.2-25)**	EPA 8260			
7067073001	**BH-14 (18-20)**	ASTM D2216-92M	86077		
7067073002	**BH-14 (15-16)**	ASTM D2216-92M	86077		
7067073003	**BH-16 (10-11)**	ASTM D2216-92M	86077		
7067073004	**BH-18 (0-4)**	ASTM D2216-92M	86077		
7067073005	**BH-18 (14-15)**	ASTM D2216-92M	86077		
7067073006	**BH-19 (0-9)**	ASTM D2216-92M	86077		
7067073007	**BH-15 (12-16)**	ASTM D2216-92M	86077		
7067073008	**BH-21 (0-4)**	ASTM D2216-92M	86077		
7067073009	**BH-20 (0-4)**	ASTM D2216-92M	86077		
7067073010	**BH-20 (6-7')**	ASTM D2216-92M	86077		
7067073011	**BMW-91 (24.2-25)**	ASTM D2216-92M	86080		

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CHAIN-OF-CUSTODY Analytical Request Document

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LAB USE ONLY- WO#: 7067073

7067073

Company: BE3 Corp	Billing Information: ← Same
Address: 1270 Niagara St Buffalo, NY 14213	
Report To: Jason Brydges	Email To: Jbrydges@be3corp.com
Copy To: abrennen@be3corp.com	Site Collection Info/Address: 31 Water St.
Customer Project Name/Number: 31 WATER ST RI	State: NY County/City: Jamestown Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 716-249-6880 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order # : Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day (Expedite Charges Apply)
	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

Container Preservative Type: JM2

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: Part 375 VOCs + TIC	Part 375 Metals, PCB, Pest, SVOCs	375 Herb	Lab Sample # / Comments
BH-14 (18-20)	SO	G	10/14	0830				2	X	X		001
BH-14 (15-16)				0840				2	X	X		002
BH-16 (10-11')				1007				2	X	X	X	003
BH-18 (0-4)				1110				2	X	X	X	004
BH-18 (14-15)				1110				2	X	X		005
BH-19 (0-3)				1305				2	X	X		006
BH-15 (12-16)				1350				2	X	X		007
BH-21 (0-4')				1515				2	X	X	X	008
BH-20 (0-4')				1430				2	X	X		009
BH-20 (6-7')	↓	↓	↓	1440				2	X	X		010

Customer Remarks / Special Conditions / Possible Hazards:
BMW-01 (24.2-25) @ 1515
375 VOC, 375 INORG + ORG
*NOT HERBS

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: Bubble Bags

Radchem sample(s) screened (<500 cpm): Y N (NA)

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 8112 9937851

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Profile/Line:

Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y (N) NA
Custody Signatures Present (Y) N NA
Collector Signature Present (Y) N NA
Bottles Intact (Y) N NA
Correct Bottles (Y) N NA
Sufficient Volume (Y) N NA
Samples Received on Ice (Y) N NA
VOA - Headspace Acceptable (Y) N (NA)
USDA Regulated Soils Y (N) NA
Samples in Holding Time (Y) N NA
Residual Chlorine Present Y N (NA)
Cl Strips: _____
Sample pH Acceptable Y N (NA)
pH Strips: _____
Sulfide Present Y N (NA)
Lead Acetate Strips: _____

LAB USE ONLY:
Lab Sample # / Comments:

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: ___oC
Cooler 1 Therm Corr. Factor: ___oC
Cooler 1 Corrected Temp: ___oC
Comments:

Relinquished by/Company: (Signature)	Date/Time: 10/14 / 1700	Received by/Company: (Signature)	Date/Time: 10/15/18 1024
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

October 22, 2018

Jason Brydes
BE3 Environmental
1270 Niagara St
Buffalo, NY 14213

RE: Project: 31 WATER ST
Pace Project No.: 7067135

Dear Jason Brydes:
Enclosed are the analytical results for sample(s) received by the laboratory on October 06, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Murphy
james.murphy@pacelabs.com
(518)860-9724
Project Manager

Enclosures

cc: Alex Brennen, BE3 Corp

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CERTIFICATIONS

Project: 31 WATER ST
Pace Project No.: 7067135

Long Island Certification IDs

575 Broad Hollow Rd, Melville, NY 11747
New York Certification #: 10478 Primary Accrediting Body
New Jersey Certification #: NY158
Pennsylvania Certification #: 68-00350
Connecticut Certification #: PH-0435
Maryland Certification #: 208
Rhode Island Certification #: LAO00340
Massachusetts Certification #: M-NY026
New Hampshire Certification #: 2987

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 31 WATER ST
Pace Project No.: 7067135

Lab ID	Sample ID	Matrix	Date Collected	Date Received
7067135001	**BH-22 (0-1)**	Solid	10/05/18 09:15	10/06/18 10:00
7067135002	**BH-22 (6-7.2)**	Solid	10/05/18 09:45	10/06/18 10:00
7067135003	**S-01 (0-0.5)**	Solid	10/05/18 10:25	10/06/18 10:00
7067135004	**S-02 (0-0.5)**	Solid	10/05/18 10:45	10/06/18 10:00
7067135005	**S-03 (0.5-1)**	Solid	10/05/18 10:55	10/06/18 10:00
7067135006	**S-07 (0.2-0.5)**	Solid	10/05/18 11:15	10/06/18 10:00
7067135007	**S-05 (0-0.5)**	Solid	10/05/18 11:30	10/06/18 10:00
7067135008	**S-04 (0.5-1)**	Solid	10/05/18 11:40	10/06/18 10:00
7067135009	**S-06 (0.2-0.5)**	Solid	10/05/18 12:00	10/06/18 10:00

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SAMPLE ANALYTE COUNT

Project: 31 WATER ST
Pace Project No.: 7067135

Lab ID	Sample ID	Method	Analysts	Analytes Reported
7067135001	**BH-22 (0-1)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	MLM	34
		EPA 8260C	BBL	34
		EPA 8260	BBL	1
		ASTM D2216-92M	KM1	1
7067135002	**BH-22 (6-7.2)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	MLM	35
		ASTM D2216-92M	KM1	1
7067135003	**S-01 (0-0.5)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	MLM	50
		ASTM D2216-92M	KM1	1
7067135004	**S-02 (0-0.5)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	MLM	37
		ASTM D2216-92M	KM1	1
7067135005	**S-03 (0.5-1)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	MLM	34
		ASTM D2216-92M	KM1	1
7067135006	**S-07 (0.2-0.5)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 31 WATER ST
Pace Project No.: 7067135

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	MLM	32
		ASTM D2216-92M	KM1	1
7067135007	**S-05 (0-0.5)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	MLM	40
		ASTM D2216-92M	KM1	1
7067135008	**S-04 (0.5-1)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	MLM	39
		ASTM D2216-92M	KM1	1
7067135009	**S-06 (0.2-0.5)**	EPA 8081B	JMD	17
		EPA 8082A	JMD	9
		EPA 8151A	MJM	2
		EPA 6010C	JMW	12
		EPA 7471B	SK2	1
		EPA 8270D	MLM	36
		ASTM D2216-92M	KM1	1

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Date: October 22, 2018

BH-22 (6-7.2) (Lab ID: 7067135002)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

S-01 (0-0.5) (Lab ID: 7067135003)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

S-02 (0-0.5) (Lab ID: 7067135004)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

S-03 (0.5-1) (Lab ID: 7067135005)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

S-07 (0.2-0.5) (Lab ID: 7067135006)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: October 22, 2018

General Information:
9 samples were analyzed for EPA 8081B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86092

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-22 (6-7.2) (Lab ID: 7067135002)
  - 4,4'-DDE
- MS (Lab ID: 396127)
  - 4,4'-DDD
  - 4,4'-DDE
  - Dieldrin
  - delta-BHC
- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - 4,4'-DDE
  - Dieldrin
  - delta-BHC
- S-01 (0-0.5) (Lab ID: 7067135003)
  - 4,4'-DDD
  - 4,4'-DDE
  - Dieldrin
  - delta-BHC
- S-02 (0-0.5) (Lab ID: 7067135004)
  - 4,4'-DDE
- S-07 (0.2-0.5) (Lab ID: 7067135006)
  - 4,4'-DDE

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BH-22 (6-7.2) (Lab ID: 7067135002)
  - 4,4'-DDT
- MS (Lab ID: 396127)
  - 4,4'-DDT
- MSD (Lab ID: 396128)

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: October 22, 2018

QC Batch: 86092

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- 4,4'-DDT
- S-01 (0-0.5) (Lab ID: 7067135003)
  - 4,4'-DDT
- S-02 (0-0.5) (Lab ID: 7067135004)
  - 4,4'-DDT
- S-03 (0.5-1) (Lab ID: 7067135005)
  - 4,4'-DDT
- S-07 (0.2-0.5) (Lab ID: 7067135006)
  - 4,4'-DDT

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 86092

S0: Surrogate recovery outside laboratory control limits.

- MS (Lab ID: 396127)
  - Decachlorobiphenyl (S)
- MSD (Lab ID: 396128)
  - Decachlorobiphenyl (S)
- S-04 (0.5-1) (Lab ID: 7067135008)
  - Decachlorobiphenyl (S)
- S-07 (0.2-0.5) (Lab ID: 7067135006)
  - Decachlorobiphenyl (S)

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

- S-03 (0.5-1) (Lab ID: 7067135005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86092

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067135003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 396127)
  - 4,4'-DDD
  - 4,4'-DDE

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: October 22, 2018

QC Batch: 86092

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067135003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- 4,4'-DDT
- Aldrin
- Dieldrin
- Endosulfan I
- Endosulfan II
- Endosulfan sulfate
- Heptachlor
- alpha-Chlordane
- delta-BHC
- gamma-BHC (Lindane)

- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - 4,4'-DDE
  - 4,4'-DDT
  - Aldrin
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endrin
  - Heptachlor
  - alpha-BHC
  - alpha-Chlordane
  - beta-BHC
  - delta-BHC
  - gamma-BHC (Lindane)

R1: RPD value was outside control limits.

- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - 4,4'-DDE
  - 4,4'-DDT
  - Aldrin
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endosulfan sulfate
  - Endrin
  - Heptachlor
  - alpha-BHC
  - alpha-Chlordane
  - beta-BHC
  - delta-BHC
  - gamma-BHC (Lindane)

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: October 22, 2018

Additional Comments:

Analyte Comments:

QC Batch: 86092

1j: Surrogate recovery high due to unresolved interferences.

- S-04 (0.5-1) (Lab ID: 7067135008)
  - Decachlorobiphenyl (S)
- S-07 (0.2-0.5) (Lab ID: 7067135006)
  - Decachlorobiphenyl (S)

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 396127)
  - 4,4'-DDE
  - 4,4'-DDT
  - Decachlorobiphenyl (S)
  - Aldrin
  - gamma-BHC (Lindane)
  - alpha-Chlordane
  - Dieldrin
  - Endosulfan I
  - Heptachlor
- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - 4,4'-DDE
  - 4,4'-DDT
  - Decachlorobiphenyl (S)
  - Aldrin
  - beta-BHC
  - delta-BHC
  - gamma-BHC (Lindane)
  - alpha-Chlordane
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endrin
  - Heptachlor
- S-03 (0.5-1) (Lab ID: 7067135005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- S-04 (0.5-1) (Lab ID: 7067135008)
  - Decachlorobiphenyl (S)
- S-07 (0.2-0.5) (Lab ID: 7067135006)
  - Decachlorobiphenyl (S)

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 8082A**
Description: 8082 GCS PCB
Client: BE3 Environmental
Date: October 22, 2018

General Information:
9 samples were analyzed for EPA 8082A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 8151A**
Description: 8151 Chlorinated Herbicides
Client: BE3 Environmental
Date: October 22, 2018

General Information:
6 samples were analyzed for EPA 8151A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 8151A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 6010C**
Description: 6010 MET ICP
Client: BE3 Environmental
Date: October 22, 2018

General Information:
9 samples were analyzed for EPA 6010C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86079

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067135001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 395949)
  - Barium
  - Copper
  - Lead
  - Manganese
  - Nickel

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 395949)
  - Zinc

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 7471B**
Description: 7471 Mercury
Client: BE3 Environmental
Date: October 22, 2018

General Information:
9 samples were analyzed for EPA 7471B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 86083

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 395966)
  - Mercury

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 8270D**
Description: 8270 MSSV
Client: BE3 Environmental
Date: October 22, 2018

General Information:
9 samples were analyzed for EPA 8270D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3545A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86340

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-22 (0-1) (Lab ID: 7067135001)
  - 2,4,6-Tribromophenol (S)
- BH-22 (6-7.2) (Lab ID: 7067135002)
  - 2,4,6-Tribromophenol (S)
- BLANK (Lab ID: 397368)
  - 2,4,6-Tribromophenol (S)
- LCS (Lab ID: 397369)
  - 2,4,6-Tribromophenol (S)
- MS (Lab ID: 397476)
  - 2,4,6-Tribromophenol (S)
- MSD (Lab ID: 397477)
  - 2,4,6-Tribromophenol (S)
- S-01 (0-0.5) (Lab ID: 7067135003)
  - 2,4,6-Tribromophenol (S)
- S-02 (0-0.5) (Lab ID: 7067135004)
  - 2,4,6-Tribromophenol (S)
- S-03 (0.5-1) (Lab ID: 7067135005)
  - 2,4,6-Tribromophenol (S)
- S-04 (0.5-1) (Lab ID: 7067135008)
  - 2,4,6-Tribromophenol (S)
- S-05 (0-0.5) (Lab ID: 7067135007)
  - 2,4,6-Tribromophenol (S)
- S-06 (0.2-0.5) (Lab ID: 7067135009)
  - 2,4,6-Tribromophenol (S)
- S-07 (0.2-0.5) (Lab ID: 7067135006)
  - 2,4,6-Tribromophenol (S)

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 8270D**
Description: 8270 MSSV
Client: BE3 Environmental
Date: October 22, 2018

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86340

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067135009

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MSD (Lab ID: 397477)
  - Indeno(1,2,3-cd)pyrene

R1: RPD value was outside control limits.

- MSD (Lab ID: 397477)
  - Phenanthrene

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 8260C**
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: October 22, 2018

General Information:
1 sample was analyzed for EPA 8260C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A-L with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86669

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-22 (0-1) (Lab ID: 7067135001)
  - Acetone
- DUP (Lab ID: 398792)
  - Acetone
- LCS (Lab ID: 398789)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride
  - Tetrachloroethene
- MS (Lab ID: 401714)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride
  - Tetrachloroethene

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 8260C**
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: October 22, 2018

QC Batch: 86669

S1: Surrogate recovery outside laboratory control limits (confirmed by re-analysis).
- DUP (Lab ID: 398792)
  - 1,2-Dichloroethane-d4 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 86669

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.
- DUP (Lab ID: 398792)
  - Acetone
  - Methylene Chloride
  - Trichloroethene

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 8260**
Description: TIC MSV Soil
Client: BE3 Environmental
Date: October 22, 2018

General Information:
1 sample was analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: BH-22 (0-1) **Lab ID: 7067135001** Collected: 10/05/18 09:15 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<1.9**	ug/kg	1.9	0.94	1	10/08/18 17:25	10/19/18 21:36	309-00-2	
alpha-BHC	**<1.9**	ug/kg	1.9	0.94	1	10/08/18 17:25	10/19/18 21:36	319-84-6	
beta-BHC	**<1.9**	ug/kg	1.9	0.94	1	10/08/18 17:25	10/19/18 21:36	319-85-7	
delta-BHC	**<1.9**	ug/kg	1.9	0.94	1	10/08/18 17:25	10/19/18 21:36	319-86-8	
gamma-BHC (Lindane)	**<1.9**	ug/kg	1.9	0.94	1	10/08/18 17:25	10/19/18 21:36	58-89-9	
alpha-Chlordane	**<1.9**	ug/kg	1.9	0.94	1	10/08/18 17:25	10/19/18 21:36	5103-71-9	
4,4'-DDD	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/19/18 21:36	72-54-8	
4,4'-DDE	**32.4**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/19/18 21:36	72-55-9	
4,4'-DDT	**3.8**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/19/18 21:36	50-29-3	
Dieldrin	**7.0**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/19/18 21:36	60-57-1	
Endosulfan I	**<1.9**	ug/kg	1.9	0.94	1	10/08/18 17:25	10/19/18 21:36	959-98-8	
Endosulfan II	**2.9J**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/19/18 21:36	33213-65-9	
Endosulfan sulfate	**6.2**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/19/18 21:36	1031-07-8	
Endrin	**<3.6**	ug/kg	3.6	1.8	1	10/08/18 17:25	10/19/18 21:36	72-20-8	
Heptachlor	**6.5**	ug/kg	1.9	0.94	1	10/08/18 17:25	10/19/18 21:36	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	63	%	30-150		1	10/08/18 17:25	10/19/18 21:36	877-09-8	
Decachlorobiphenyl (S)	123	%	30-150		1	10/08/18 17:25	10/19/18 21:36	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<182**	ug/kg	182	91.0	5	10/08/18 17:25	10/12/18 16:40	12674-11-2	
PCB-1221 (Aroclor 1221)	**<370**	ug/kg	370	185	5	10/08/18 17:25	10/12/18 16:40	11104-28-2	
PCB-1232 (Aroclor 1232)	**<182**	ug/kg	182	91.0	5	10/08/18 17:25	10/12/18 16:40	11141-16-5	
PCB-1242 (Aroclor 1242)	**<182**	ug/kg	182	91.0	5	10/08/18 17:25	10/12/18 16:40	53469-21-9	
PCB-1248 (Aroclor 1248)	**1730**	ug/kg	182	91.0	5	10/08/18 17:25	10/12/18 16:40	12672-29-6	
PCB-1254 (Aroclor 1254)	**<182**	ug/kg	182	91.0	5	10/08/18 17:25	10/12/18 16:40	11097-69-1	
PCB-1260 (Aroclor 1260)	**<182**	ug/kg	182	91.0	5	10/08/18 17:25	10/12/18 16:40	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	63	%	30-150		1	10/08/18 17:25	10/12/18 05:04	877-09-8	
Decachlorobiphenyl (S)	71	%	30-150		1	10/08/18 17:25	10/12/18 05:04	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<5.5**	ug/kg	5.5	0.29	1	10/09/18 11:02	10/12/18 04:39	93-72-1	
Surrogates									
2,4-DCAA (S)	65	%	29-136		1	10/09/18 11:02	10/12/18 04:39	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**40.5**	mg/kg	0.60	0.18	1	10/08/18 12:40	10/09/18 14:55	7440-38-2	
Barium	**186**	mg/kg	12.0	0.91	1	10/08/18 12:40	10/09/18 14:55	7440-39-3	M1
Beryllium	**0.83**	mg/kg	0.30	0.038	1	10/08/18 12:40	10/09/18 14:55	7440-41-7	
Cadmium	**2.5**	mg/kg	0.15	0.018	1	10/08/18 12:40	10/09/18 14:55	7440-43-9	
Chromium	**58.4**	mg/kg	0.60	0.057	1	10/08/18 12:40	10/09/18 14:55	7440-47-3	
Copper	**1800**	mg/kg	1.5	0.11	1	10/08/18 12:40	10/09/18 14:55	7440-50-8	M1
Lead	**181**	mg/kg	0.30	0.14	1	10/08/18 12:40	10/09/18 14:55	7439-92-1	M1
Manganese	**512**	mg/kg	0.90	0.051	1	10/08/18 12:40	10/09/18 14:55	7439-96-5	M1

REPORT OF LABORATORY ANALYSIS

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: BH-22 (0-1) **Lab ID: 7067135001** Collected: 10/05/18 09:15 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**50.8**	mg/kg	2.4	0.21	1	10/08/18 12:40	10/09/18 14:55	7440-02-0	M1
Selenium	**2.0**	mg/kg	0.60	0.31	1	10/08/18 12:40	10/09/18 14:55	7782-49-2	
Silver	**0.67**	mg/kg	0.60	0.075	1	10/08/18 12:40	10/09/18 14:55	7440-22-4	
Zinc	**3810**	mg/kg	12.0	0.77	10	10/08/18 12:40	10/10/18 15:42	7440-66-6	M6
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.14**	mg/kg	0.038	0.023	1	10/08/18 13:26	10/09/18 12:50	7439-97-6	D6
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<737**	ug/kg	737	109	10	10/10/18 10:01	10/12/18 14:04	83-32-9	
Acenaphthylene	**<737**	ug/kg	737	147	10	10/10/18 10:01	10/12/18 14:04	208-96-8	
Anthracene	**836**	ug/kg	737	215	10	10/10/18 10:01	10/12/18 14:04	120-12-7	
Benzo(a)anthracene	**3810**	ug/kg	737	169	10	10/10/18 10:01	10/12/18 14:04	56-55-3	
Benzo(a)pyrene	**3680**	ug/kg	737	311	10	10/10/18 10:01	10/12/18 14:04	50-32-8	
Benzo(b)fluoranthene	**4820**	ug/kg	737	256	10	10/10/18 10:01	10/12/18 14:04	205-99-2	
Benzo(g,h,i)perylene	**1630**	ug/kg	737	357	10	10/10/18 10:01	10/12/18 14:04	191-24-2	
Benzo(k)fluoranthene	**1970**	ug/kg	737	229	10	10/10/18 10:01	10/12/18 14:04	207-08-9	
Chrysene	**3870**	ug/kg	737	330	10	10/10/18 10:01	10/12/18 14:04	218-01-9	
Dibenz(a,h)anthracene	**499J**	ug/kg	737	241	10	10/10/18 10:01	10/12/18 14:04	53-70-3	
Dibenzofuran	**<737**	ug/kg	737	134	10	10/10/18 10:01	10/12/18 14:04	132-64-9	
Fluoranthene	**7140**	ug/kg	737	620	10	10/10/18 10:01	10/12/18 14:04	206-44-0	
Fluorene	**<737**	ug/kg	737	187	10	10/10/18 10:01	10/12/18 14:04	86-73-7	
Hexachlorobenzene	**<737**	ug/kg	737	146	10	10/10/18 10:01	10/12/18 14:04	118-74-1	
Indeno(1,2,3-cd)pyrene	**1880**	ug/kg	737	282	10	10/10/18 10:01	10/12/18 14:04	193-39-5	
2-Methylphenol(o-Cresol)	**<737**	ug/kg	737	408	10	10/10/18 10:01	10/12/18 14:04	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<737**	ug/kg	737	266	10	10/10/18 10:01	10/12/18 14:04		
Naphthalene	**<737**	ug/kg	737	81.4	10	10/10/18 10:01	10/12/18 14:04	91-20-3	
Pentachlorophenol	**<7370**	ug/kg	7370	74.3	10	10/10/18 10:01	10/12/18 14:04	87-86-5	
Phenanthrene	**3150**	ug/kg	737	238	10	10/10/18 10:01	10/12/18 14:04	85-01-8	
Phenol	**<737**	ug/kg	737	141	10	10/10/18 10:01	10/12/18 14:04	108-95-2	
Pyrene	**5450**	ug/kg	737	350	10	10/10/18 10:01	10/12/18 14:04	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	62	%	23-120		10	10/10/18 10:01	10/12/18 14:04	4165-60-0	
2-Fluorobiphenyl (S)	77	%	30-115		10	10/10/18 10:01	10/12/18 14:04	321-60-8	
p-Terphenyl-d14 (S)	87	%	18-137		10	10/10/18 10:01	10/12/18 14:04	1718-51-0	
Phenol-d5 (S)	66	%	24-113		10	10/10/18 10:01	10/12/18 14:04	4165-62-2	
2-Fluorophenol (S)	62	%	25-121		10	10/10/18 10:01	10/12/18 14:04	367-12-4	
2,4,6-Tribromophenol (S)	87	%	19-122		10	10/10/18 10:01	10/12/18 14:04	118-79-6	CH
2-Chlorophenol-d4 (S)	65	%	20-130		10	10/10/18 10:01	10/12/18 14:04	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	65	%	20-130		10	10/10/18 10:01	10/12/18 14:04	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**4390J**	ug/kg			10	10/10/18 10:01	10/12/18 14:04		
Unknown Ketone	**70200J**	ug/kg			10	10/10/18 10:01	10/12/18 14:04		
Unknown PAH	**1730J**	ug/kg			10	10/10/18 10:01	10/12/18 14:04		
Perylene	**2770J**	ug/kg			10	10/10/18 10:01	10/12/18 14:04	198-55-0	N

REPORT OF LABORATORY ANALYSIS

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: BH-22 (0-1) **Lab ID: 7067135001** Collected: 10/05/18 09:15 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV 5035A-L Low Level	Analytical Method: EPA 8260C Preparation Method: EPA 5035A-L								
Acetone	**44.4**	ug/kg	9.7	9.5	1	10/11/18 08:27	10/11/18 13:17	67-64-1	CH,D6
Benzene	**<9.7**	ug/kg	9.7	3.8	1	10/11/18 08:27	10/11/18 13:17	71-43-2	
2-Butanone (MEK)	**<9.7**	ug/kg	9.7	6.0	1	10/11/18 08:27	10/11/18 13:17	78-93-3	
n-Butylbenzene	**<9.7**	ug/kg	9.7	3.9	1	10/11/18 08:27	10/11/18 13:17	104-51-8	
sec-Butylbenzene	**<9.7**	ug/kg	9.7	3.8	1	10/11/18 08:27	10/11/18 13:17	135-98-8	
tert-Butylbenzene	**<9.7**	ug/kg	9.7	4.8	1	10/11/18 08:27	10/11/18 13:17	98-06-6	
Carbon tetrachloride	**<9.7**	ug/kg	9.7	6.1	1	10/11/18 08:27	10/11/18 13:17	56-23-5	
Chlorobenzene	**<9.7**	ug/kg	9.7	4.0	1	10/11/18 08:27	10/11/18 13:17	108-90-7	
Chloroform	**<9.7**	ug/kg	9.7	2.6	1	10/11/18 08:27	10/11/18 13:17	67-66-3	
1,2-Dichlorobenzene	**<9.7**	ug/kg	9.7	4.0	1	10/11/18 08:27	10/11/18 13:17	95-50-1	
1,3-Dichlorobenzene	**<9.7**	ug/kg	9.7	3.9	1	10/11/18 08:27	10/11/18 13:17	541-73-1	
1,4-Dichlorobenzene	**<9.7**	ug/kg	9.7	4.0	1	10/11/18 08:27	10/11/18 13:17	106-46-7	
1,1-Dichloroethane	**<9.7**	ug/kg	9.7	3.8	1	10/11/18 08:27	10/11/18 13:17	75-34-3	
1,2-Dichloroethane	**<9.7**	ug/kg	9.7	2.4	1	10/11/18 08:27	10/11/18 13:17	107-06-2	
1,1-Dichloroethene	**<9.7**	ug/kg	9.7	3.7	1	10/11/18 08:27	10/11/18 13:17	75-35-4	
cis-1,2-Dichloroethene	**7.3J**	ug/kg	9.7	3.6	1	10/11/18 08:27	10/11/18 13:17	156-59-2	
trans-1,2-Dichloroethene	**<9.7**	ug/kg	9.7	2.8	1	10/11/18 08:27	10/11/18 13:17	156-60-5	
1,4-Dioxane (p-Dioxane)	**<242**	ug/kg	242	143	1	10/11/18 08:27	10/11/18 13:17	123-91-1	
Ethylbenzene	**6.1J**	ug/kg	9.7	3.7	1	10/11/18 08:27	10/11/18 13:17	100-41-4	
Methylene Chloride	**35.5**	ug/kg	9.7	4.4	1	10/11/18 08:27	10/11/18 13:17	75-09-2	D6
Methyl-tert-butyl ether	**<9.7**	ug/kg	9.7	2.2	1	10/11/18 08:27	10/11/18 13:17	1634-04-4	
n-Propylbenzene	**<9.7**	ug/kg	9.7	4.0	1	10/11/18 08:27	10/11/18 13:17	103-65-1	
Tetrachloroethene	**<9.7**	ug/kg	9.7	5.0	1	10/11/18 08:27	10/11/18 13:17	127-18-4	
Toluene	**<9.7**	ug/kg	9.7	4.5	1	10/11/18 08:27	10/11/18 13:17	108-88-3	
1,2,4-Trichlorobenzene	**<9.7**	ug/kg	9.7	3.9	1	10/11/18 08:27	10/11/18 13:17	120-82-1	
1,1,1-Trichloroethane	**<9.7**	ug/kg	9.7	5.1	1	10/11/18 08:27	10/11/18 13:17	71-55-6	
Trichloroethene	**233**	ug/kg	9.7	4.0	1	10/11/18 08:27	10/11/18 13:17	79-01-6	D6
1,2,4-Trimethylbenzene	**<9.7**	ug/kg	9.7	4.2	1	10/11/18 08:27	10/11/18 13:17	95-63-6	
1,3,5-Trimethylbenzene	**<9.7**	ug/kg	9.7	3.7	1	10/11/18 08:27	10/11/18 13:17	108-67-8	
Vinyl chloride	**<9.7**	ug/kg	9.7	2.1	1	10/11/18 08:27	10/11/18 13:17	75-01-4	
Xylene (Total)	**43.3**	ug/kg	19.4	9.7	1	10/11/18 08:27	10/11/18 13:17	1330-20-7	
Surrogates									
Toluene-d8 (S)	106	%	43-157		1	10/11/18 08:27	10/11/18 13:17	2037-26-5	
4-Bromofluorobenzene (S)	103	%	34-145		1	10/11/18 08:27	10/11/18 13:17	460-00-4	
1,2-Dichloroethane-d4 (S)	145	%	33-150		1	10/11/18 08:27	10/11/18 13:17	17060-07-0	
TIC MSV Soil	Analytical Method: EPA 8260								
TIC Search	**No TIC's Found**				1		10/11/18 16:25		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**9.3**	%	0.10	0.10	1		10/10/18 16:21		

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: BH-22 (6-7.2) **Lab ID: 7067135002** Collected: 10/05/18 09:45 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.5**	ug/kg	2.5	1.3	1	10/08/18 17:25	10/16/18 16:28	309-00-2	
alpha-BHC	**<2.5**	ug/kg	2.5	1.3	1	10/08/18 17:25	10/16/18 16:28	319-84-6	
beta-BHC	**9.4**	ug/kg	2.5	1.3	1	10/08/18 17:25	10/16/18 16:28	319-85-7	
delta-BHC	**<2.5**	ug/kg	2.5	1.3	1	10/08/18 17:25	10/16/18 16:28	319-86-8	
gamma-BHC (Lindane)	**<2.5**	ug/kg	2.5	1.3	1	10/08/18 17:25	10/16/18 16:28	58-89-9	
alpha-Chlordane	**<2.5**	ug/kg	2.5	1.3	1	10/08/18 17:25	10/16/18 16:28	5103-71-9	
4,4'-DDD	**<4.9**	ug/kg	4.9	2.4	1	10/08/18 17:25	10/16/18 16:28	72-54-8	
4,4'-DDE	**16.3**	ug/kg	4.9	2.4	1	10/08/18 17:25	10/16/18 16:28	72-55-9	CH
4,4'-DDT	**<4.9**	ug/kg	4.9	2.4	1	10/08/18 17:25	10/16/18 16:28	50-29-3	CL
Dieldrin	**<4.9**	ug/kg	4.9	2.4	1	10/08/18 17:25	10/16/18 16:28	60-57-1	
Endosulfan I	**<2.5**	ug/kg	2.5	1.3	1	10/08/18 17:25	10/16/18 16:28	959-98-8	
Endosulfan II	**<4.9**	ug/kg	4.9	2.4	1	10/08/18 17:25	10/16/18 16:28	33213-65-9	
Endosulfan sulfate	**<4.9**	ug/kg	4.9	2.4	1	10/08/18 17:25	10/16/18 16:28	1031-07-8	
Endrin	**<4.9**	ug/kg	4.9	2.4	1	10/08/18 17:25	10/16/18 16:28	72-20-8	
Heptachlor	**<2.5**	ug/kg	2.5	1.3	1	10/08/18 17:25	10/16/18 16:28	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	97	%	30-150		1	10/08/18 17:25	10/16/18 16:28	877-09-8	
Decachlorobiphenyl (S)	124	%	30-150		1	10/08/18 17:25	10/16/18 16:28	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<48.6**	ug/kg	48.6	24.3	1	10/08/18 17:25	10/12/18 05:17	12674-11-2	
PCB-1221 (Aroclor 1221)	**<98.6**	ug/kg	98.6	49.3	1	10/08/18 17:25	10/12/18 05:17	11104-28-2	
PCB-1232 (Aroclor 1232)	**<48.6**	ug/kg	48.6	24.3	1	10/08/18 17:25	10/12/18 05:17	11141-16-5	
PCB-1242 (Aroclor 1242)	**<48.6**	ug/kg	48.6	24.3	1	10/08/18 17:25	10/12/18 05:17	53469-21-9	
PCB-1248 (Aroclor 1248)	**695**	ug/kg	48.6	24.3	1	10/08/18 17:25	10/12/18 05:17	12672-29-6	
PCB-1254 (Aroclor 1254)	**<48.6**	ug/kg	48.6	24.3	1	10/08/18 17:25	10/12/18 05:17	11097-69-1	
PCB-1260 (Aroclor 1260)	**<48.6**	ug/kg	48.6	24.3	1	10/08/18 17:25	10/12/18 05:17	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	68	%	30-150		1	10/08/18 17:25	10/12/18 05:17	877-09-8	
Decachlorobiphenyl (S)	88	%	30-150		1	10/08/18 17:25	10/12/18 05:17	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**6.5**	mg/kg	0.74	0.23	1	10/08/18 12:40	10/09/18 15:22	7440-38-2	
Barium	**112**	mg/kg	14.9	1.1	1	10/08/18 12:40	10/09/18 15:22	7440-39-3	
Beryllium	**0.40**	mg/kg	0.37	0.048	1	10/08/18 12:40	10/09/18 15:22	7440-41-7	
Cadmium	**0.76**	mg/kg	0.19	0.022	1	10/08/18 12:40	10/09/18 15:22	7440-43-9	
Chromium	**20.8**	mg/kg	0.74	0.071	1	10/08/18 12:40	10/09/18 15:22	7440-47-3	
Copper	**274**	mg/kg	1.9	0.14	1	10/08/18 12:40	10/09/18 15:22	7440-50-8	
Lead	**34.3**	mg/kg	0.37	0.17	1	10/08/18 12:40	10/09/18 15:22	7439-92-1	
Manganese	**376**	mg/kg	1.1	0.064	1	10/08/18 12:40	10/09/18 15:22	7439-96-5	
Nickel	**19.0**	mg/kg	3.0	0.27	1	10/08/18 12:40	10/09/18 15:22	7440-02-0	
Selenium	**0.58J**	mg/kg	0.74	0.39	1	10/08/18 12:40	10/09/18 15:22	7782-49-2	
Silver	**0.13J**	mg/kg	0.74	0.094	1	10/08/18 12:40	10/09/18 15:22	7440-22-4	
Zinc	**669**	mg/kg	1.5	0.095	1	10/08/18 12:40	10/09/18 15:22	7440-66-6	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: BH-22 (6-7.2) **Lab ID: 7067135002** Collected: 10/05/18 09:45 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.039J**	mg/kg	0.051	0.031	1	10/08/18 13:26	10/09/18 12:56	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<983**	ug/kg	983	146	10	10/10/18 10:01	10/12/18 13:36	83-32-9	
Acenaphthylene	**<983**	ug/kg	983	197	10	10/10/18 10:01	10/12/18 13:36	208-96-8	
Anthracene	**<983**	ug/kg	983	287	10	10/10/18 10:01	10/12/18 13:36	120-12-7	
Benzo(a)anthracene	**536J**	ug/kg	983	225	10	10/10/18 10:01	10/12/18 13:36	56-55-3	
Benzo(a)pyrene	**666J**	ug/kg	983	416	10	10/10/18 10:01	10/12/18 13:36	50-32-8	
Benzo(b)fluoranthene	**899J**	ug/kg	983	341	10	10/10/18 10:01	10/12/18 13:36	205-99-2	
Benzo(g,h,i)perylene	**508J**	ug/kg	983	476	10	10/10/18 10:01	10/12/18 13:36	191-24-2	
Benzo(k)fluoranthene	**458J**	ug/kg	983	305	10	10/10/18 10:01	10/12/18 13:36	207-08-9	
Chrysene	**747J**	ug/kg	983	441	10	10/10/18 10:01	10/12/18 13:36	218-01-9	
Dibenz(a,h)anthracene	**<983**	ug/kg	983	321	10	10/10/18 10:01	10/12/18 13:36	53-70-3	
Dibenzofuran	**<983**	ug/kg	983	178	10	10/10/18 10:01	10/12/18 13:36	132-64-9	
Fluoranthene	**1530**	ug/kg	983	827	10	10/10/18 10:01	10/12/18 13:36	206-44-0	
Fluorene	**<983**	ug/kg	983	250	10	10/10/18 10:01	10/12/18 13:36	86-73-7	
Hexachlorobenzene	**<983**	ug/kg	983	195	10	10/10/18 10:01	10/12/18 13:36	118-74-1	
Indeno(1,2,3-cd)pyrene	**528J**	ug/kg	983	376	10	10/10/18 10:01	10/12/18 13:36	193-39-5	
2-Methylphenol(o-Cresol)	**<983**	ug/kg	983	545	10	10/10/18 10:01	10/12/18 13:36	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<983**	ug/kg	983	354	10	10/10/18 10:01	10/12/18 13:36		
Naphthalene	**<983**	ug/kg	983	109	10	10/10/18 10:01	10/12/18 13:36	91-20-3	
Pentachlorophenol	**<9830**	ug/kg	9830	99.1	10	10/10/18 10:01	10/12/18 13:36	87-86-5	
Phenanthrene	**726J**	ug/kg	983	317	10	10/10/18 10:01	10/12/18 13:36	85-01-8	
Phenol	**<983**	ug/kg	983	188	10	10/10/18 10:01	10/12/18 13:36	108-95-2	
Pyrene	**1100**	ug/kg	983	467	10	10/10/18 10:01	10/12/18 13:36	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	55	%	23-120		10	10/10/18 10:01	10/12/18 13:36	4165-60-0	
2-Fluorobiphenyl (S)	71	%	30-115		10	10/10/18 10:01	10/12/18 13:36	321-60-8	
p-Terphenyl-d14 (S)	84	%	18-137		10	10/10/18 10:01	10/12/18 13:36	1718-51-0	
Phenol-d5 (S)	63	%	24-113		10	10/10/18 10:01	10/12/18 13:36	4165-62-2	
2-Fluorophenol (S)	60	%	25-121		10	10/10/18 10:01	10/12/18 13:36	367-12-4	
2,4,6-Tribromophenol (S)	91	%	19-122		10	10/10/18 10:01	10/12/18 13:36	118-79-6	CH
2-Chlorophenol-d4 (S)	62	%	20-130		10	10/10/18 10:01	10/12/18 13:36	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	52	%	20-130		10	10/10/18 10:01	10/12/18 13:36	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**5640J**	ug/kg			10	10/10/18 10:01	10/12/18 13:36		
Unknown Ketone	**90700J**	ug/kg			10	10/10/18 10:01	10/12/18 13:36		
Unknown Aldol Condensate	**2200J**	ug/kg			10	10/10/18 10:01	10/12/18 13:36		
Unknown Ketone	**9530J**	ug/kg			10	10/10/18 10:01	10/12/18 13:36		
Unknown Alcohol	**2400J**	ug/kg			10	10/10/18 10:01	10/12/18 13:36		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**32.1**	%	0.10	0.10	1		10/10/18 16:21		

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-01 (0-0.5) **Lab ID: 7067135003** Collected: 10/05/18 10:25 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/16/18 18:55	309-00-2	M1,R1
alpha-BHC	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/16/18 18:55	319-84-6	M1,R1
beta-BHC	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/16/18 18:55	319-85-7	M1,R1
delta-BHC	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/16/18 18:55	319-86-8	CH,M1,R1
gamma-BHC (Lindane)	**172J**	ug/kg	213	107	100	10/08/18 17:25	10/19/18 19:53	58-89-9	M1,R1
alpha-Chlordane	**329**	ug/kg	213	107	100	10/08/18 17:25	10/19/18 19:53	5103-71-9	M1,R1
4,4'-DDD	**<4.1**	ug/kg	4.1	2.1	1	10/08/18 17:25	10/16/18 18:55	72-54-8	CH,M1,R1
4,4'-DDE	**3530**	ug/kg	414	207	100	10/08/18 17:25	10/19/18 19:53	72-55-9	CH,M1,R1
4,4'-DDT	**<414**	ug/kg	414	207	100	10/08/18 17:25	10/19/18 19:53	50-29-3	CL,M1,R1
Dieldrin	**1310**	ug/kg	414	207	100	10/08/18 17:25	10/19/18 19:53	60-57-1	CH,M1,R1
Endosulfan I	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/16/18 18:55	959-98-8	M1,R1
Endosulfan II	**30.3**	ug/kg	4.1	2.1	1	10/08/18 17:25	10/16/18 18:55	33213-65-9	M1,R1
Endosulfan sulfate	**15.8**	ug/kg	4.1	2.1	1	10/08/18 17:25	10/16/18 18:55	1031-07-8	M1,R1
Endrin	**35.9**	ug/kg	4.1	2.1	1	10/08/18 17:25	10/16/18 18:55	72-20-8	M1,R1
Heptachlor	**496**	ug/kg	213	107	100	10/08/18 17:25	10/19/18 19:53	76-44-8	M1,R1
Surrogates									
Tetrachloro-m-xylene (S)	103	%	30-150		1	10/08/18 17:25	10/16/18 18:55	877-09-8	
Decachlorobiphenyl (S)	144	%	30-150		1	10/08/18 17:25	10/16/18 18:55	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<10400**	ug/kg	10400	5180	250	10/08/18 17:25	10/12/18 16:53	12674-11-2	
PCB-1221 (Aroclor 1221)	**<21000**	ug/kg	21000	10500	250	10/08/18 17:25	10/12/18 16:53	11104-28-2	
PCB-1232 (Aroclor 1232)	**<10400**	ug/kg	10400	5180	250	10/08/18 17:25	10/12/18 16:53	11141-16-5	
PCB-1242 (Aroclor 1242)	**<10400**	ug/kg	10400	5180	250	10/08/18 17:25	10/12/18 16:53	53469-21-9	
PCB-1248 (Aroclor 1248)	**78600**	ug/kg	10400	5180	250	10/08/18 17:25	10/12/18 16:53	12672-29-6	
PCB-1254 (Aroclor 1254)	**<10400**	ug/kg	10400	5180	250	10/08/18 17:25	10/12/18 16:53	11097-69-1	
PCB-1260 (Aroclor 1260)	**<10400**	ug/kg	10400	5180	250	10/08/18 17:25	10/12/18 16:53	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	55	%	30-150		1	10/08/18 17:25	10/12/18 05:30	877-09-8	
Decachlorobiphenyl (S)	81	%	30-150		1	10/08/18 17:25	10/12/18 05:30	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**40.0**	mg/kg	0.64	0.19	1	10/08/18 12:40	10/09/18 15:27	7440-38-2	
Barium	**212**	mg/kg	12.8	0.98	1	10/08/18 12:40	10/09/18 15:27	7440-39-3	
Beryllium	**0.75**	mg/kg	0.32	0.041	1	10/08/18 12:40	10/09/18 15:27	7440-41-7	
Cadmium	**1.5**	mg/kg	0.16	0.019	1	10/08/18 12:40	10/09/18 15:27	7440-43-9	
Chromium	**27.7**	mg/kg	0.64	0.061	1	10/08/18 12:40	10/09/18 15:27	7440-47-3	
Copper	**6850**	mg/kg	16.0	1.2	10	10/08/18 12:40	10/10/18 15:50	7440-50-8	
Lead	**284**	mg/kg	0.32	0.15	1	10/08/18 12:40	10/09/18 15:27	7439-92-1	
Manganese	**718**	mg/kg	0.96	0.055	1	10/08/18 12:40	10/09/18 15:27	7439-96-5	
Nickel	**94.0**	mg/kg	2.6	0.23	1	10/08/18 12:40	10/09/18 15:27	7440-02-0	
Selenium	**2.7**	mg/kg	0.64	0.34	1	10/08/18 12:40	10/09/18 15:27	7782-49-2	

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-01 (0-0.5) **Lab ID: 7067135003** Collected: 10/05/18 10:25 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Silver	**2.2**	mg/kg	0.64	0.081	1	10/08/18 12:40	10/09/18 15:27	7440-22-4	
Zinc	**5080**	mg/kg	12.8	0.82	10	10/08/18 12:40	10/10/18 15:50	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.14**	mg/kg	0.042	0.026	1	10/08/18 13:26	10/09/18 13:03	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<839**	ug/kg	839	124	10	10/10/18 10:01	10/12/18 13:08	83-32-9	
Acenaphthylene	**<839**	ug/kg	839	168	10	10/10/18 10:01	10/12/18 13:08	208-96-8	
Anthracene	**631J**	ug/kg	839	245	10	10/10/18 10:01	10/12/18 13:08	120-12-7	
Benzo(a)anthracene	**1560**	ug/kg	839	192	10	10/10/18 10:01	10/12/18 13:08	56-55-3	
Benzo(a)pyrene	**1610**	ug/kg	839	354	10	10/10/18 10:01	10/12/18 13:08	50-32-8	
Benzo(b)fluoranthene	**1970**	ug/kg	839	291	10	10/10/18 10:01	10/12/18 13:08	205-99-2	
Benzo(g,h,i)perylene	**1220**	ug/kg	839	406	10	10/10/18 10:01	10/12/18 13:08	191-24-2	
Benzo(k)fluoranthene	**940**	ug/kg	839	260	10	10/10/18 10:01	10/12/18 13:08	207-08-9	
Chrysene	**1740**	ug/kg	839	376	10	10/10/18 10:01	10/12/18 13:08	218-01-9	
Dibenz(a,h)anthracene	**<839**	ug/kg	839	274	10	10/10/18 10:01	10/12/18 13:08	53-70-3	
Dibenzofuran	**<839**	ug/kg	839	152	10	10/10/18 10:01	10/12/18 13:08	132-64-9	
Fluoranthene	**3930**	ug/kg	839	705	10	10/10/18 10:01	10/12/18 13:08	206-44-0	
Fluorene	**<839**	ug/kg	839	213	10	10/10/18 10:01	10/12/18 13:08	86-73-7	
Hexachlorobenzene	**<839**	ug/kg	839	166	10	10/10/18 10:01	10/12/18 13:08	118-74-1	
Indeno(1,2,3-cd)pyrene	**1240**	ug/kg	839	321	10	10/10/18 10:01	10/12/18 13:08	193-39-5	
2-Methylphenol(o-Cresol)	**<839**	ug/kg	839	465	10	10/10/18 10:01	10/12/18 13:08	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<839**	ug/kg	839	302	10	10/10/18 10:01	10/12/18 13:08		
Naphthalene	**430J**	ug/kg	839	92.6	10	10/10/18 10:01	10/12/18 13:08	91-20-3	
Pentachlorophenol	**<8390**	ug/kg	8390	84.5	10	10/10/18 10:01	10/12/18 13:08	87-86-5	
Phenanthrene	**2990**	ug/kg	839	270	10	10/10/18 10:01	10/12/18 13:08	85-01-8	
Phenol	**<839**	ug/kg	839	160	10	10/10/18 10:01	10/12/18 13:08	108-95-2	
Pyrene	**2930**	ug/kg	839	398	10	10/10/18 10:01	10/12/18 13:08	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	61	%	23-120		10	10/10/18 10:01	10/12/18 13:08	4165-60-0	
2-Fluorobiphenyl (S)	73	%	30-115		10	10/10/18 10:01	10/12/18 13:08	321-60-8	
p-Terphenyl-d14 (S)	91	%	18-137		10	10/10/18 10:01	10/12/18 13:08	1718-51-0	
Phenol-d5 (S)	67	%	24-113		10	10/10/18 10:01	10/12/18 13:08	4165-62-2	
2-Fluorophenol (S)	63	%	25-121		10	10/10/18 10:01	10/12/18 13:08	367-12-4	
2,4,6-Tribromophenol (S)	94	%	19-122		10	10/10/18 10:01	10/12/18 13:08	118-79-6	CH
2-Chlorophenol-d4 (S)	65	%	20-130		10	10/10/18 10:01	10/12/18 13:08	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	61	%	20-130		10	10/10/18 10:01	10/12/18 13:08	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**5630J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Ketone	**89800J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**4860J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**8900J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**4380J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**3340J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-01 (0-0.5) **Lab ID: 7067135003** Collected: 10/05/18 10:25 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Biphenyl	**8150J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**3290J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**6300J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**5480J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**12900J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**14700J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**7600J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**6370J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**4760J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Biphenyl	**4120J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Organic Acid	**4500J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Aromatic Hydroc	**8110J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown PAH	**4290J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Unknown Aromatic Hydroc	**4900J**	ug/kg			10	10/10/18 10:01	10/12/18 13:08		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**20.4**	%	0.10	0.10	1		10/10/18 16:21		

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-02 (0-0.5) **Lab ID: 7067135004** Collected: 10/05/18 10:45 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.8**	ug/kg	2.8	1.4	1	10/08/18 17:25	10/16/18 16:43	309-00-2	
alpha-BHC	**<2.8**	ug/kg	2.8	1.4	1	10/08/18 17:25	10/16/18 16:43	319-84-6	
beta-BHC	**<2.8**	ug/kg	2.8	1.4	1	10/08/18 17:25	10/16/18 16:43	319-85-7	
delta-BHC	**<2.8**	ug/kg	2.8	1.4	1	10/08/18 17:25	10/16/18 16:43	319-86-8	
gamma-BHC (Lindane)	**<2.8**	ug/kg	2.8	1.4	1	10/08/18 17:25	10/16/18 16:43	58-89-9	
alpha-Chlordane	**<2.8**	ug/kg	2.8	1.4	1	10/08/18 17:25	10/16/18 16:43	5103-71-9	
4,4'-DDD	**<5.5**	ug/kg	5.5	2.7	1	10/08/18 17:25	10/16/18 16:43	72-54-8	
4,4'-DDE	**5.9**	ug/kg	5.5	2.7	1	10/08/18 17:25	10/16/18 16:43	72-55-9	CH
4,4'-DDT	**<5.5**	ug/kg	5.5	2.7	1	10/08/18 17:25	10/16/18 16:43	50-29-3	CL
Dieldrin	**<5.5**	ug/kg	5.5	2.7	1	10/08/18 17:25	10/16/18 16:43	60-57-1	
Endosulfan I	**<2.8**	ug/kg	2.8	1.4	1	10/08/18 17:25	10/16/18 16:43	959-98-8	
Endosulfan II	**<5.5**	ug/kg	5.5	2.7	1	10/08/18 17:25	10/16/18 16:43	33213-65-9	
Endosulfan sulfate	**<5.5**	ug/kg	5.5	2.7	1	10/08/18 17:25	10/16/18 16:43	1031-07-8	
Endrin	**<5.5**	ug/kg	5.5	2.7	1	10/08/18 17:25	10/16/18 16:43	72-20-8	
Heptachlor	**<2.8**	ug/kg	2.8	1.4	1	10/08/18 17:25	10/16/18 16:43	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	32	%	30-150		1	10/08/18 17:25	10/16/18 16:43	877-09-8	
Decachlorobiphenyl (S)	85	%	30-150		1	10/08/18 17:25	10/16/18 16:43	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<55.0**	ug/kg	55.0	27.5	1	10/08/18 17:25	10/12/18 17:57	12674-11-2	
PCB-1221 (Aroclor 1221)	**<112**	ug/kg	112	55.8	1	10/08/18 17:25	10/12/18 17:57	11104-28-2	
PCB-1232 (Aroclor 1232)	**<55.0**	ug/kg	55.0	27.5	1	10/08/18 17:25	10/12/18 17:57	11141-16-5	
PCB-1242 (Aroclor 1242)	**<55.0**	ug/kg	55.0	27.5	1	10/08/18 17:25	10/12/18 17:57	53469-21-9	
PCB-1248 (Aroclor 1248)	**157**	ug/kg	55.0	27.5	1	10/08/18 17:25	10/12/18 17:57	12672-29-6	
PCB-1254 (Aroclor 1254)	**<55.0**	ug/kg	55.0	27.5	1	10/08/18 17:25	10/12/18 17:57	11097-69-1	
PCB-1260 (Aroclor 1260)	**<55.0**	ug/kg	55.0	27.5	1	10/08/18 17:25	10/12/18 17:57	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	31	%	30-150		1	10/08/18 17:25	10/12/18 17:57	877-09-8	
Decachlorobiphenyl (S)	41	%	30-150		1	10/08/18 17:25	10/12/18 17:57	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<8.4**	ug/kg	8.4	0.44	1	10/09/18 11:02	10/12/18 05:00	93-72-1	
Surrogates									
2,4-DCAA (S)	66	%	29-136		1	10/09/18 11:02	10/12/18 05:00	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**34.2**	mg/kg	0.78	0.24	1	10/08/18 12:40	10/09/18 15:33	7440-38-2	
Barium	**202**	mg/kg	15.5	1.2	1	10/08/18 12:40	10/09/18 15:33	7440-39-3	
Beryllium	**0.84**	mg/kg	0.39	0.050	1	10/08/18 12:40	10/09/18 15:33	7440-41-7	
Cadmium	**1.5**	mg/kg	0.19	0.023	1	10/08/18 12:40	10/09/18 15:33	7440-43-9	
Chromium	**59.6**	mg/kg	0.78	0.075	1	10/08/18 12:40	10/09/18 15:33	7440-47-3	
Copper	**940**	mg/kg	1.9	0.14	1	10/08/18 12:40	10/09/18 15:33	7440-50-8	
Lead	**338**	mg/kg	0.39	0.18	1	10/08/18 12:40	10/09/18 15:33	7439-92-1	
Manganese	**721**	mg/kg	1.2	0.067	1	10/08/18 12:40	10/09/18 15:33	7439-96-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-02 (0-0.5) **Lab ID: 7067135004** Collected: 10/05/18 10:45 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**63.1**	mg/kg	3.1	0.28	1	10/08/18 12:40	10/09/18 15:33	7440-02-0	
Selenium	**1.8**	mg/kg	0.78	0.41	1	10/08/18 12:40	10/09/18 15:33	7782-49-2	
Silver	**0.39J**	mg/kg	0.78	0.098	1	10/08/18 12:40	10/09/18 15:33	7440-22-4	
Zinc	**1880**	mg/kg	15.5	0.99	10	10/08/18 12:40	10/10/18 15:51	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.59**	mg/kg	0.058	0.035	1	10/08/18 13:26	10/09/18 13:05	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<1120**	ug/kg	1120	167	10	10/10/18 10:01	10/12/18 14:31	83-32-9	
Acenaphthylene	**<1120**	ug/kg	1120	225	10	10/10/18 10:01	10/12/18 14:31	208-96-8	
Anthracene	**<1120**	ug/kg	1120	328	10	10/10/18 10:01	10/12/18 14:31	120-12-7	
Benzo(a)anthracene	**2210**	ug/kg	1120	258	10	10/10/18 10:01	10/12/18 14:31	56-55-3	
Benzo(a)pyrene	**1960**	ug/kg	1120	475	10	10/10/18 10:01	10/12/18 14:31	50-32-8	
Benzo(b)fluoranthene	**2780**	ug/kg	1120	390	10	10/10/18 10:01	10/12/18 14:31	205-99-2	
Benzo(g,h,i)perylene	**893J**	ug/kg	1120	544	10	10/10/18 10:01	10/12/18 14:31	191-24-2	
Benzo(k)fluoranthene	**1460**	ug/kg	1120	349	10	10/10/18 10:01	10/12/18 14:31	207-08-9	
Chrysene	**2330**	ug/kg	1120	504	10	10/10/18 10:01	10/12/18 14:31	218-01-9	
Dibenz(a,h)anthracene	**<1120**	ug/kg	1120	367	10	10/10/18 10:01	10/12/18 14:31	53-70-3	
Dibenzofuran	**<1120**	ug/kg	1120	204	10	10/10/18 10:01	10/12/18 14:31	132-64-9	
Fluoranthene	**4950**	ug/kg	1120	945	10	10/10/18 10:01	10/12/18 14:31	206-44-0	
Fluorene	**<1120**	ug/kg	1120	286	10	10/10/18 10:01	10/12/18 14:31	86-73-7	
Hexachlorobenzene	**<1120**	ug/kg	1120	223	10	10/10/18 10:01	10/12/18 14:31	118-74-1	
Indeno(1,2,3-cd)pyrene	**961J**	ug/kg	1120	430	10	10/10/18 10:01	10/12/18 14:31	193-39-5	
2-Methylphenol(o-Cresol)	**<1120**	ug/kg	1120	623	10	10/10/18 10:01	10/12/18 14:31	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<1120**	ug/kg	1120	405	10	10/10/18 10:01	10/12/18 14:31		
Naphthalene	**<1120**	ug/kg	1120	124	10	10/10/18 10:01	10/12/18 14:31	91-20-3	
Pentachlorophenol	**<11200**	ug/kg	11200	113	10	10/10/18 10:01	10/12/18 14:31	87-86-5	
Phenanthrene	**2800**	ug/kg	1120	362	10	10/10/18 10:01	10/12/18 14:31	85-01-8	
Phenol	**565J**	ug/kg	1120	214	10	10/10/18 10:01	10/12/18 14:31	108-95-2	
Pyrene	**3740**	ug/kg	1120	533	10	10/10/18 10:01	10/12/18 14:31	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	56	%	23-120		10	10/10/18 10:01	10/12/18 14:31	4165-60-0	
2-Fluorobiphenyl (S)	71	%	30-115		10	10/10/18 10:01	10/12/18 14:31	321-60-8	
p-Terphenyl-d14 (S)	88	%	18-137		10	10/10/18 10:01	10/12/18 14:31	1718-51-0	
Phenol-d5 (S)	62	%	24-113		10	10/10/18 10:01	10/12/18 14:31	4165-62-2	
2-Fluorophenol (S)	53	%	25-121		10	10/10/18 10:01	10/12/18 14:31	367-12-4	
2,4,6-Tribromophenol (S)	90	%	19-122		10	10/10/18 10:01	10/12/18 14:31	118-79-6	CH
2-Chlorophenol-d4 (S)	60	%	20-130		10	10/10/18 10:01	10/12/18 14:31	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	53	%	20-130		10	10/10/18 10:01	10/12/18 14:31	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**7260J**	ug/kg			10	10/10/18 10:01	10/12/18 14:31		
Unknown Ketone	**117000J**	ug/kg			10	10/10/18 10:01	10/12/18 14:31		
Unknown Aldol Condensate	**2950J**	ug/kg			10	10/10/18 10:01	10/12/18 14:31		
Unknown Organic Acid	**2270J**	ug/kg			10	10/10/18 10:01	10/12/18 14:31		

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-02 (0-0.5) **Lab ID: 7067135004** Collected: 10/05/18 10:45 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Alkane	**7740J**	ug/kg			10	10/10/18 10:01	10/12/18 14:31		
Unknown Hydrocarbon	**7270J**	ug/kg			10	10/10/18 10:01	10/12/18 14:31		
Unknown Alkane	**2590J**	ug/kg			10	10/10/18 10:01	10/12/18 14:31		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**40.7**	%	0.10	0.10	1		10/10/18 16:22		

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-03 (0.5-1) **Lab ID: 7067135005** Collected: 10/05/18 10:55 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.0**	ug/kg	2.0	0.98	1	10/08/18 17:25	10/16/18 18:26	309-00-2	
alpha-BHC	**<2.0**	ug/kg	2.0	0.98	1	10/08/18 17:25	10/16/18 18:26	319-84-6	
beta-BHC	**<2.0**	ug/kg	2.0	0.98	1	10/08/18 17:25	10/16/18 18:26	319-85-7	
delta-BHC	**<2.0**	ug/kg	2.0	0.98	1	10/08/18 17:25	10/16/18 18:26	319-86-8	
gamma-BHC (Lindane)	**<2.0**	ug/kg	2.0	0.98	1	10/08/18 17:25	10/16/18 18:26	58-89-9	
alpha-Chlordane	**<2.0**	ug/kg	2.0	0.98	1	10/08/18 17:25	10/16/18 18:26	5103-71-9	
4,4'-DDD	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/16/18 18:26	72-54-8	
4,4'-DDE	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/16/18 18:26	72-55-9	
4,4'-DDT	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/16/18 18:26	50-29-3	CL
Dieldrin	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/16/18 18:26	60-57-1	
Endosulfan I	**<2.0**	ug/kg	2.0	0.98	1	10/08/18 17:25	10/16/18 18:26	959-98-8	
Endosulfan II	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/16/18 18:26	33213-65-9	
Endosulfan sulfate	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/16/18 18:26	1031-07-8	
Endrin	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/16/18 18:26	72-20-8	
Heptachlor	**<2.0**	ug/kg	2.0	0.98	1	10/08/18 17:25	10/16/18 18:26	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	395	%	30-150		1	10/08/18 17:25	10/16/18 18:26	877-09-8	E,S3
Decachlorobiphenyl (S)	235	%	30-150		1	10/08/18 17:25	10/16/18 18:26	2051-24-3	E,S3
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<38.1**	ug/kg	38.1	19.0	1	10/08/18 17:25	10/12/18 18:10	12674-11-2	
PCB-1221 (Aroclor 1221)	**<77.3**	ug/kg	77.3	38.7	1	10/08/18 17:25	10/12/18 18:10	11104-28-2	
PCB-1232 (Aroclor 1232)	**<38.1**	ug/kg	38.1	19.0	1	10/08/18 17:25	10/12/18 18:10	11141-16-5	
PCB-1242 (Aroclor 1242)	**<38.1**	ug/kg	38.1	19.0	1	10/08/18 17:25	10/12/18 18:10	53469-21-9	
PCB-1248 (Aroclor 1248)	**<38.1**	ug/kg	38.1	19.0	1	10/08/18 17:25	10/12/18 18:10	12672-29-6	
PCB-1254 (Aroclor 1254)	**<38.1**	ug/kg	38.1	19.0	1	10/08/18 17:25	10/12/18 18:10	11097-69-1	
PCB-1260 (Aroclor 1260)	**<38.1**	ug/kg	38.1	19.0	1	10/08/18 17:25	10/12/18 18:10	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	65	%	30-150		1	10/08/18 17:25	10/12/18 18:10	877-09-8	
Decachlorobiphenyl (S)	74	%	30-150		1	10/08/18 17:25	10/12/18 18:10	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**12.4**	mg/kg	0.57	0.17	1	10/08/18 12:40	10/09/18 15:51	7440-38-2	
Barium	**159**	mg/kg	11.4	0.87	1	10/08/18 12:40	10/09/18 15:51	7440-39-3	
Beryllium	**0.85**	mg/kg	0.28	0.036	1	10/08/18 12:40	10/09/18 15:51	7440-41-7	
Cadmium	**0.29**	mg/kg	0.14	0.017	1	10/08/18 12:40	10/09/18 15:51	7440-43-9	
Chromium	**9.0**	mg/kg	0.57	0.055	1	10/08/18 12:40	10/09/18 15:51	7440-47-3	
Copper	**77.8**	mg/kg	1.4	0.10	1	10/08/18 12:40	10/09/18 15:51	7440-50-8	
Lead	**88.8**	mg/kg	0.28	0.13	1	10/08/18 12:40	10/09/18 15:51	7439-92-1	
Manganese	**350**	mg/kg	0.85	0.049	1	10/08/18 12:40	10/09/18 15:51	7439-96-5	
Nickel	**10.8**	mg/kg	2.3	0.20	1	10/08/18 12:40	10/09/18 15:51	7440-02-0	
Selenium	**1.2**	mg/kg	0.57	0.30	1	10/08/18 12:40	10/09/18 15:51	7782-49-2	
Silver	**0.075J**	mg/kg	0.57	0.072	1	10/08/18 12:40	10/09/18 15:51	7440-22-4	
Zinc	**47.0**	mg/kg	1.1	0.073	1	10/08/18 12:40	10/09/18 15:51	7440-66-6	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-03 (0.5-1) **Lab ID: 7067135005** Collected: 10/05/18 10:55 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.034**	mg/kg	0.034	0.020	1	10/08/18 13:26	10/09/18 13:06	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<773**	ug/kg	773	115	10	10/10/18 10:01	10/12/18 12:41	83-32-9	
Acenaphthylene	**<773**	ug/kg	773	155	10	10/10/18 10:01	10/12/18 12:41	208-96-8	
Anthracene	**<773**	ug/kg	773	226	10	10/10/18 10:01	10/12/18 12:41	120-12-7	
Benzo(a)anthracene	**<773**	ug/kg	773	177	10	10/10/18 10:01	10/12/18 12:41	56-55-3	
Benzo(a)pyrene	**<773**	ug/kg	773	326	10	10/10/18 10:01	10/12/18 12:41	50-32-8	
Benzo(b)fluoranthene	**366J**	ug/kg	773	268	10	10/10/18 10:01	10/12/18 12:41	205-99-2	
Benzo(g,h,i)perylene	**<773**	ug/kg	773	374	10	10/10/18 10:01	10/12/18 12:41	191-24-2	
Benzo(k)fluoranthene	**<773**	ug/kg	773	240	10	10/10/18 10:01	10/12/18 12:41	207-08-9	
Chrysene	**479J**	ug/kg	773	346	10	10/10/18 10:01	10/12/18 12:41	218-01-9	
Dibenz(a,h)anthracene	**<773**	ug/kg	773	252	10	10/10/18 10:01	10/12/18 12:41	53-70-3	
Dibenzofuran	**<773**	ug/kg	773	140	10	10/10/18 10:01	10/12/18 12:41	132-64-9	
Fluoranthene	**<773**	ug/kg	773	650	10	10/10/18 10:01	10/12/18 12:41	206-44-0	
Fluorene	**<773**	ug/kg	773	196	10	10/10/18 10:01	10/12/18 12:41	86-73-7	
Hexachlorobenzene	**<773**	ug/kg	773	153	10	10/10/18 10:01	10/12/18 12:41	118-74-1	
Indeno(1,2,3-cd)pyrene	**<773**	ug/kg	773	296	10	10/10/18 10:01	10/12/18 12:41	193-39-5	
2-Methylphenol(o-Cresol)	**<773**	ug/kg	773	428	10	10/10/18 10:01	10/12/18 12:41	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<773**	ug/kg	773	278	10	10/10/18 10:01	10/12/18 12:41		
Naphthalene	**589J**	ug/kg	773	85.3	10	10/10/18 10:01	10/12/18 12:41	91-20-3	
Pentachlorophenol	**<7730**	ug/kg	7730	77.8	10	10/10/18 10:01	10/12/18 12:41	87-86-5	
Phenanthrene	**876**	ug/kg	773	249	10	10/10/18 10:01	10/12/18 12:41	85-01-8	
Phenol	**<773**	ug/kg	773	147	10	10/10/18 10:01	10/12/18 12:41	108-95-2	
Pyrene	**385J**	ug/kg	773	367	10	10/10/18 10:01	10/12/18 12:41	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	58	%	23-120		10	10/10/18 10:01	10/12/18 12:41	4165-60-0	
2-Fluorobiphenyl (S)	73	%	30-115		10	10/10/18 10:01	10/12/18 12:41	321-60-8	
p-Terphenyl-d14 (S)	84	%	18-137		10	10/10/18 10:01	10/12/18 12:41	1718-51-0	
Phenol-d5 (S)	54	%	24-113		10	10/10/18 10:01	10/12/18 12:41	4165-62-2	
2-Fluorophenol (S)	45	%	25-121		10	10/10/18 10:01	10/12/18 12:41	367-12-4	
2,4,6-Tribromophenol (S)	83	%	19-122		10	10/10/18 10:01	10/12/18 12:41	118-79-6	CH
2-Chlorophenol-d4 (S)	51	%	20-130		10	10/10/18 10:01	10/12/18 12:41	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	56	%	20-130		10	10/10/18 10:01	10/12/18 12:41	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**4630J**	ug/kg			10	10/10/18 10:01	10/12/18 12:41		
Unknown Ketone	**72900J**	ug/kg			10	10/10/18 10:01	10/12/18 12:41		
Unknown	**1630J**	ug/kg			10	10/10/18 10:01	10/12/18 12:41		
Unknown Ketone	**1730J**	ug/kg			10	10/10/18 10:01	10/12/18 12:41		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**14.0**	%	0.10	0.10	1		10/10/18 16:22		

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575 Broad Hollow Road
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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-07 (0.2-0.5) **Lab ID: 7067135006** Collected: 10/05/18 11:15 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/16/18 17:27	309-00-2	
alpha-BHC	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/16/18 17:27	319-84-6	
beta-BHC	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/16/18 17:27	319-85-7	
delta-BHC	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/16/18 17:27	319-86-8	
gamma-BHC (Lindane)	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/16/18 17:27	58-89-9	
alpha-Chlordane	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/16/18 17:27	5103-71-9	
4,4'-DDD	**<4.1**	ug/kg	4.1	2.0	1	10/08/18 17:25	10/16/18 17:27	72-54-8	
4,4'-DDE	**4.6**	ug/kg	4.1	2.0	1	10/08/18 17:25	10/16/18 17:27	72-55-9	CH
4,4'-DDT	**5.8**	ug/kg	4.1	2.0	1	10/08/18 17:25	10/16/18 17:27	50-29-3	CL
Dieldrin	**<4.1**	ug/kg	4.1	2.0	1	10/08/18 17:25	10/16/18 17:27	60-57-1	
Endosulfan I	**4.7**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/16/18 17:27	959-98-8	
Endosulfan II	**<4.1**	ug/kg	4.1	2.0	1	10/08/18 17:25	10/16/18 17:27	33213-65-9	
Endosulfan sulfate	**<4.1**	ug/kg	4.1	2.0	1	10/08/18 17:25	10/16/18 17:27	1031-07-8	
Endrin	**<4.1**	ug/kg	4.1	2.0	1	10/08/18 17:25	10/16/18 17:27	72-20-8	
Heptachlor	**<2.1**	ug/kg	2.1	1.0	1	10/08/18 17:25	10/16/18 17:27	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	67	%	30-150		1	10/08/18 17:25	10/16/18 17:27	877-09-8	
Decachlorobiphenyl (S)	205	%	30-150		1	10/08/18 17:25	10/16/18 17:27	2051-24-3	1j,E,S0
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<40.5**	ug/kg	40.5	20.3	1	10/08/18 17:25	10/12/18 18:36	12674-11-2	
PCB-1221 (Aroclor 1221)	**<82.2**	ug/kg	82.2	41.1	1	10/08/18 17:25	10/12/18 18:36	11104-28-2	
PCB-1232 (Aroclor 1232)	**<40.5**	ug/kg	40.5	20.3	1	10/08/18 17:25	10/12/18 18:36	11141-16-5	
PCB-1242 (Aroclor 1242)	**<40.5**	ug/kg	40.5	20.3	1	10/08/18 17:25	10/12/18 18:36	53469-21-9	
PCB-1248 (Aroclor 1248)	**67.7**	ug/kg	40.5	20.3	1	10/08/18 17:25	10/12/18 18:36	12672-29-6	
PCB-1254 (Aroclor 1254)	**61.7**	ug/kg	40.5	20.3	1	10/08/18 17:25	10/12/18 18:36	11097-69-1	
PCB-1260 (Aroclor 1260)	**<40.5**	ug/kg	40.5	20.3	1	10/08/18 17:25	10/12/18 18:36	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	47	%	30-150		1	10/08/18 17:25	10/12/18 18:36	877-09-8	
Decachlorobiphenyl (S)	50	%	30-150		1	10/08/18 17:25	10/12/18 18:36	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<6.1**	ug/kg	6.1	0.32	1	10/09/18 11:02	10/12/18 05:21	93-72-1	
Surrogates									
2,4-DCAA (S)	59	%	29-136		1	10/09/18 11:02	10/12/18 05:21	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**7.4**	mg/kg	0.61	0.19	1	10/08/18 12:40	10/09/18 15:56	7440-38-2	
Barium	**65.9**	mg/kg	12.2	0.93	1	10/08/18 12:40	10/09/18 15:56	7440-39-3	
Beryllium	**0.31**	mg/kg	0.30	0.039	1	10/08/18 12:40	10/09/18 15:56	7440-41-7	
Cadmium	**0.70**	mg/kg	0.15	0.018	1	10/08/18 12:40	10/09/18 15:56	7440-43-9	
Chromium	**23.6**	mg/kg	0.61	0.058	1	10/08/18 12:40	10/09/18 15:56	7440-47-3	
Copper	**124**	mg/kg	1.5	0.11	1	10/08/18 12:40	10/09/18 15:56	7440-50-8	
Lead	**38.5**	mg/kg	0.30	0.14	1	10/08/18 12:40	10/09/18 15:56	7439-92-1	
Manganese	**488**	mg/kg	0.91	0.052	1	10/08/18 12:40	10/09/18 15:56	7439-96-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-07 (0.2-0.5) **Lab ID: 7067135006** Collected: 10/05/18 11:15 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**19.4**	mg/kg	2.4	0.22	1	10/08/18 12:40	10/09/18 15:56	7440-02-0	
Selenium	**<0.61**	mg/kg	0.61	0.32	1	10/08/18 12:40	10/09/18 15:56	7782-49-2	
Silver	**<0.61**	mg/kg	0.61	0.077	1	10/08/18 12:40	10/09/18 15:56	7440-22-4	
Zinc	**214**	mg/kg	1.2	0.078	1	10/08/18 12:40	10/09/18 15:56	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**<0.035**	mg/kg	0.035	0.021	1	10/08/18 13:26	10/09/18 13:08	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<822**	ug/kg	822	122	10	10/10/18 10:01	10/11/18 21:44	83-32-9	
Acenaphthylene	**<822**	ug/kg	822	164	10	10/10/18 10:01	10/11/18 21:44	208-96-8	
Anthracene	**<822**	ug/kg	822	240	10	10/10/18 10:01	10/11/18 21:44	120-12-7	
Benzo(a)anthracene	**<822**	ug/kg	822	188	10	10/10/18 10:01	10/11/18 21:44	56-55-3	
Benzo(a)pyrene	**<822**	ug/kg	822	347	10	10/10/18 10:01	10/11/18 21:44	50-32-8	
Benzo(b)fluoranthene	**386J**	ug/kg	822	285	10	10/10/18 10:01	10/11/18 21:44	205-99-2	
Benzo(g,h,i)perylene	**<822**	ug/kg	822	398	10	10/10/18 10:01	10/11/18 21:44	191-24-2	
Benzo(k)fluoranthene	**<822**	ug/kg	822	255	10	10/10/18 10:01	10/11/18 21:44	207-08-9	
Chrysene	**420J**	ug/kg	822	369	10	10/10/18 10:01	10/11/18 21:44	218-01-9	
Dibenz(a,h)anthracene	**<822**	ug/kg	822	269	10	10/10/18 10:01	10/11/18 21:44	53-70-3	
Dibenzofuran	**<822**	ug/kg	822	149	10	10/10/18 10:01	10/11/18 21:44	132-64-9	
Fluoranthene	**<822**	ug/kg	822	691	10	10/10/18 10:01	10/11/18 21:44	206-44-0	
Fluorene	**<822**	ug/kg	822	209	10	10/10/18 10:01	10/11/18 21:44	86-73-7	
Hexachlorobenzene	**<822**	ug/kg	822	163	10	10/10/18 10:01	10/11/18 21:44	118-74-1	
Indeno(1,2,3-cd)pyrene	**<822**	ug/kg	822	315	10	10/10/18 10:01	10/11/18 21:44	193-39-5	
2-Methylphenol(o-Cresol)	**<822**	ug/kg	822	456	10	10/10/18 10:01	10/11/18 21:44	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<822**	ug/kg	822	296	10	10/10/18 10:01	10/11/18 21:44		
Naphthalene	**416J**	ug/kg	822	90.8	10	10/10/18 10:01	10/11/18 21:44	91-20-3	
Pentachlorophenol	**<8220**	ug/kg	8220	82.8	10	10/10/18 10:01	10/11/18 21:44	87-86-5	
Phenanthrene	**732J**	ug/kg	822	265	10	10/10/18 10:01	10/11/18 21:44	85-01-8	
Phenol	**<822**	ug/kg	822	157	10	10/10/18 10:01	10/11/18 21:44	108-95-2	
Pyrene	**<822**	ug/kg	822	390	10	10/10/18 10:01	10/11/18 21:44	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	56	%	23-120		10	10/10/18 10:01	10/11/18 21:44	4165-60-0	
2-Fluorobiphenyl (S)	71	%	30-115		10	10/10/18 10:01	10/11/18 21:44	321-60-8	
p-Terphenyl-d14 (S)	81	%	18-137		10	10/10/18 10:01	10/11/18 21:44	1718-51-0	
Phenol-d5 (S)	57	%	24-113		10	10/10/18 10:01	10/11/18 21:44	4165-62-2	
2-Fluorophenol (S)	52	%	25-121		10	10/10/18 10:01	10/11/18 21:44	367-12-4	
2,4,6-Tribromophenol (S)	84	%	19-122		10	10/10/18 10:01	10/11/18 21:44	118-79-6	CH
2-Chlorophenol-d4 (S)	57	%	20-130		10	10/10/18 10:01	10/11/18 21:44	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	56	%	20-130		10	10/10/18 10:01	10/11/18 21:44	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**5240J**	ug/kg			10	10/10/18 10:01	10/11/18 21:44		
Unknown Ketone	**86200J**	ug/kg			10	10/10/18 10:01	10/11/18 21:44		

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-07 (0.2-0.5) **Lab ID: 7067135006** Collected: 10/05/18 11:15 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**18.5**	%	0.10	0.10	1		10/10/18 16:22		

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-05 (0-0.5) **Lab ID: 7067135007** Collected: 10/05/18 11:30 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 20:37	309-00-2	
alpha-BHC	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 20:37	319-84-6	
beta-BHC	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 20:37	319-85-7	
delta-BHC	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 20:37	319-86-8	
gamma-BHC (Lindane)	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 20:37	58-89-9	
alpha-Chlordane	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 20:37	5103-71-9	
4,4'-DDD	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/19/18 20:37	72-54-8	
4,4'-DDE	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/19/18 20:37	72-55-9	
4,4'-DDT	**9.9**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/19/18 20:37	50-29-3	
Dieldrin	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/19/18 20:37	60-57-1	
Endosulfan I	**2.8**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 20:37	959-98-8	
Endosulfan II	**2.2J**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/19/18 20:37	33213-65-9	
Endosulfan sulfate	**20.3**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/19/18 20:37	1031-07-8	
Endrin	**<4.2**	ug/kg	4.2	2.1	1	10/08/18 17:25	10/19/18 20:37	72-20-8	
Heptachlor	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 20:37	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	69	%	30-150		1	10/08/18 17:25	10/19/18 20:37	877-09-8	
Decachlorobiphenyl (S)	30	%	30-150		1	10/08/18 17:25	10/19/18 20:37	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<41.7**	ug/kg	41.7	20.9	1	10/16/18 11:18	10/16/18 23:24	12674-11-2	
PCB-1221 (Aroclor 1221)	**<84.8**	ug/kg	84.8	42.4	1	10/16/18 11:18	10/16/18 23:24	11104-28-2	
PCB-1232 (Aroclor 1232)	**<41.7**	ug/kg	41.7	20.9	1	10/16/18 11:18	10/16/18 23:24	11141-16-5	
PCB-1242 (Aroclor 1242)	**<41.7**	ug/kg	41.7	20.9	1	10/16/18 11:18	10/16/18 23:24	53469-21-9	
PCB-1248 (Aroclor 1248)	**74.4**	ug/kg	41.7	20.9	1	10/16/18 11:18	10/16/18 23:24	12672-29-6	
PCB-1254 (Aroclor 1254)	**<41.7**	ug/kg	41.7	20.9	1	10/16/18 11:18	10/16/18 23:24	11097-69-1	
PCB-1260 (Aroclor 1260)	**<41.7**	ug/kg	41.7	20.9	1	10/16/18 11:18	10/16/18 23:24	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	45	%	30-150		1	10/16/18 11:18	10/16/18 23:24	877-09-8	
Decachlorobiphenyl (S)	65	%	30-150		1	10/16/18 11:18	10/16/18 23:24	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<6.3**	ug/kg	6.3	0.33	1	10/09/18 11:02	10/12/18 05:43	93-72-1	
Surrogates									
2,4-DCAA (S)	37	%	29-136		1	10/09/18 11:02	10/12/18 05:43	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**27.7**	mg/kg	0.61	0.19	1	10/08/18 12:40	10/09/18 16:02	7440-38-2	
Barium	**271**	mg/kg	12.2	0.93	1	10/08/18 12:40	10/09/18 16:02	7440-39-3	
Beryllium	**1.1**	mg/kg	0.31	0.039	1	10/08/18 12:40	10/09/18 16:02	7440-41-7	
Cadmium	**12.9**	mg/kg	0.15	0.018	1	10/08/18 12:40	10/09/18 16:02	7440-43-9	
Chromium	**35.0**	mg/kg	0.61	0.059	1	10/08/18 12:40	10/09/18 16:02	7440-47-3	
Copper	**24000**	mg/kg	15.3	1.1	10	10/08/18 12:40	10/10/18 15:52	7440-50-8	
Lead	**1390**	mg/kg	0.31	0.14	1	10/08/18 12:40	10/09/18 16:02	7439-92-1	
Manganese	**624**	mg/kg	0.92	0.053	1	10/08/18 12:40	10/09/18 16:02	7439-96-5	

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-05 (0-0.5) **Lab ID: 7067135007** Collected: 10/05/18 11:30 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**220**	mg/kg	2.4	0.22	1	10/08/18 12:40	10/09/18 16:02	7440-02-0	
Selenium	**3.2**	mg/kg	0.61	0.32	1	10/08/18 12:40	10/09/18 16:02	7782-49-2	
Silver	**6.3**	mg/kg	0.61	0.077	1	10/08/18 12:40	10/09/18 16:02	7440-22-4	
Zinc	**43600**	mg/kg	61.2	3.9	50	10/08/18 12:40	10/11/18 03:12	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.33**	mg/kg	0.037	0.023	1	10/08/18 13:26	10/09/18 13:10	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**27900**	ug/kg	4250	630	50	10/10/18 10:01	10/12/18 15:26	83-32-9	
Acenaphthylene	**<4250**	ug/kg	4250	850	50	10/10/18 10:01	10/12/18 15:26	208-96-8	
Anthracene	**61400**	ug/kg	4250	1240	50	10/10/18 10:01	10/12/18 15:26	120-12-7	
Benzo(a)anthracene	**126000**	ug/kg	4250	974	50	10/10/18 10:01	10/12/18 15:26	56-55-3	
Benzo(a)pyrene	**103000**	ug/kg	4250	1800	50	10/10/18 10:01	10/12/18 15:26	50-32-8	
Benzo(b)fluoranthene	**155000**	ug/kg	4250	1470	50	10/10/18 10:01	10/12/18 15:26	205-99-2	
Benzo(g,h,i)perylene	**34600**	ug/kg	4250	2060	50	10/10/18 10:01	10/12/18 15:26	191-24-2	
Benzo(k)fluoranthene	**70600**	ug/kg	4250	1320	50	10/10/18 10:01	10/12/18 15:26	207-08-9	
Chrysene	**112000**	ug/kg	4250	1900	50	10/10/18 10:01	10/12/18 15:26	218-01-9	
Dibenz(a,h)anthracene	**4180J**	ug/kg	4250	1390	50	10/10/18 10:01	10/12/18 15:26	53-70-3	
Dibenzofuran	**20400**	ug/kg	4250	770	50	10/10/18 10:01	10/12/18 15:26	132-64-9	
Fluoranthene	**292000**	ug/kg	4250	3570	50	10/10/18 10:01	10/12/18 15:26	206-44-0	
Fluorene	**32000**	ug/kg	4250	1080	50	10/10/18 10:01	10/12/18 15:26	86-73-7	
Hexachlorobenzene	**<4250**	ug/kg	4250	842	50	10/10/18 10:01	10/12/18 15:26	118-74-1	
Indeno(1,2,3-cd)pyrene	**43900**	ug/kg	4250	1630	50	10/10/18 10:01	10/12/18 15:26	193-39-5	
2-Methylphenol(o-Cresol)	**<4250**	ug/kg	4250	2360	50	10/10/18 10:01	10/12/18 15:26	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<4250**	ug/kg	4250	1530	50	10/10/18 10:01	10/12/18 15:26		
Naphthalene	**28000**	ug/kg	4250	469	50	10/10/18 10:01	10/12/18 15:26	91-20-3	
Pentachlorophenol	**<42500**	ug/kg	42500	428	50	10/10/18 10:01	10/12/18 15:26	87-86-5	
Phenanthrene	**249000**	ug/kg	4250	1370	50	10/10/18 10:01	10/12/18 15:26	85-01-8	
Phenol	**<4250**	ug/kg	4250	811	50	10/10/18 10:01	10/12/18 15:26	108-95-2	
Pyrene	**206000**	ug/kg	4250	2020	50	10/10/18 10:01	10/12/18 15:26	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	60	%	23-120		50	10/10/18 10:01	10/12/18 15:26	4165-60-0	
2-Fluorobiphenyl (S)	74	%	30-115		50	10/10/18 10:01	10/12/18 15:26	321-60-8	
p-Terphenyl-d14 (S)	90	%	18-137		50	10/10/18 10:01	10/12/18 15:26	1718-51-0	
Phenol-d5 (S)	67	%	24-113		50	10/10/18 10:01	10/12/18 15:26	4165-62-2	
2-Fluorophenol (S)	61	%	25-121		50	10/10/18 10:01	10/12/18 15:26	367-12-4	
2,4,6-Tribromophenol (S)	80	%	19-122		50	10/10/18 10:01	10/12/18 15:26	118-79-6	CH
2-Chlorophenol-d4 (S)	66	%	20-130		50	10/10/18 10:01	10/12/18 15:26	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	55	%	20-130		50	10/10/18 10:01	10/12/18 15:26	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**117000J**	ug/kg			50	10/10/18 10:01	10/12/18 15:26		
Unknown Amine	**25900J**	ug/kg			50	10/10/18 10:01	10/12/18 15:26		
Unknown PAH	**18700J**	ug/kg			50	10/10/18 10:01	10/12/18 15:26		
Phenanthrene, 2-methyl-	**25300J**	ug/kg			50	10/10/18 10:01	10/12/18 15:26	2531-84-2	N

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-05 (0-0.5) **Lab ID: 7067135007** Collected: 10/05/18 11:30 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown PAH	**42800J**	ug/kg			50	10/10/18 10:01	10/12/18 15:26		
Naphthalene, 2-phenyl-	**12700J**	ug/kg			50	10/10/18 10:01	10/12/18 15:26	612-94-2	N
Unknown PAH	**13900J**	ug/kg			50	10/10/18 10:01	10/12/18 15:26		
Unknown PAH	**11800J**	ug/kg			50	10/10/18 10:01	10/12/18 15:26		
Benzo[ghi]fluoranthene	**9110J**	ug/kg			50	10/10/18 10:01	10/12/18 15:26	203-12-3	N
Perylene	**79000J**	ug/kg			50	10/10/18 10:01	10/12/18 15:26	198-55-0	N
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**21.2**	%	0.10	0.10	1		10/10/18 16:22		

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Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-04 (0.5-1) **Lab ID: 7067135008** Collected: 10/05/18 11:40 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 22:35	309-00-2	
alpha-BHC	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 22:35	319-84-6	
beta-BHC	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 22:35	319-85-7	
delta-BHC	**2.5**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 22:35	319-86-8	
gamma-BHC (Lindane)	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 22:35	58-89-9	
alpha-Chlordane	**71.8**	ug/kg	6.4	3.2	3	10/08/18 17:25	10/16/18 15:58	5103-71-9	
4,4'-DDD	**2.2J**	ug/kg	4.1	2.1	1	10/08/18 17:25	10/19/18 22:35	72-54-8	
4,4'-DDE	**27.7**	ug/kg	4.1	2.1	1	10/08/18 17:25	10/19/18 22:35	72-55-9	
4,4'-DDT	**34.3**	ug/kg	4.1	2.1	1	10/08/18 17:25	10/19/18 22:35	50-29-3	
Dieldrin	**<4.1**	ug/kg	4.1	2.1	1	10/08/18 17:25	10/19/18 22:35	60-57-1	
Endosulfan I	**2.2**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 22:35	959-98-8	
Endosulfan II	**5.8**	ug/kg	4.1	2.1	1	10/08/18 17:25	10/19/18 22:35	33213-65-9	
Endosulfan sulfate	**6.7**	ug/kg	4.1	2.1	1	10/08/18 17:25	10/19/18 22:35	1031-07-8	
Endrin	**<4.1**	ug/kg	4.1	2.1	1	10/08/18 17:25	10/19/18 22:35	72-20-8	
Heptachlor	**<2.1**	ug/kg	2.1	1.1	1	10/08/18 17:25	10/19/18 22:35	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	61	%	30-150		1	10/08/18 17:25	10/19/18 22:35	877-09-8	
Decachlorobiphenyl (S)	478	%	30-150		1	10/08/18 17:25	10/19/18 22:35	2051-24-3	1j,E,S0
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<124**	ug/kg	124	61.9	3	10/08/18 17:25	10/12/18 17:06	12674-11-2	
PCB-1221 (Aroclor 1221)	**<251**	ug/kg	251	126	3	10/08/18 17:25	10/12/18 17:06	11104-28-2	
PCB-1232 (Aroclor 1232)	**<124**	ug/kg	124	61.9	3	10/08/18 17:25	10/12/18 17:06	11141-16-5	
PCB-1242 (Aroclor 1242)	**<124**	ug/kg	124	61.9	3	10/08/18 17:25	10/12/18 17:06	53469-21-9	
PCB-1248 (Aroclor 1248)	**1160**	ug/kg	124	61.9	3	10/08/18 17:25	10/12/18 17:06	12672-29-6	
PCB-1254 (Aroclor 1254)	**<124**	ug/kg	124	61.9	3	10/08/18 17:25	10/12/18 17:06	11097-69-1	
PCB-1260 (Aroclor 1260)	**<124**	ug/kg	124	61.9	3	10/08/18 17:25	10/12/18 17:06	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	65	%	30-150		1	10/08/18 17:25	10/12/18 06:35	877-09-8	
Decachlorobiphenyl (S)	82	%	30-150		1	10/08/18 17:25	10/12/18 06:35	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<6.3**	ug/kg	6.3	0.33	1	10/09/18 11:02	10/12/18 06:04	93-72-1	
Surrogates									
2,4-DCAA (S)	47	%	29-136		1	10/09/18 11:02	10/12/18 06:04	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**16.6**	mg/kg	0.58	0.18	1	10/08/18 12:40	10/09/18 16:08	7440-38-2	
Barium	**125**	mg/kg	11.7	0.89	1	10/08/18 12:40	10/09/18 16:08	7440-39-3	
Beryllium	**0.60**	mg/kg	0.29	0.037	1	10/08/18 12:40	10/09/18 16:08	7440-41-7	
Cadmium	**5.6**	mg/kg	0.15	0.017	1	10/08/18 12:40	10/09/18 16:08	7440-43-9	
Chromium	**40.2**	mg/kg	0.58	0.056	1	10/08/18 12:40	10/09/18 16:08	7440-47-3	
Copper	**20100**	mg/kg	14.6	1.1	10	10/08/18 12:40	10/10/18 15:53	7440-50-8	
Lead	**1090**	mg/kg	0.29	0.14	1	10/08/18 12:40	10/09/18 16:08	7439-92-1	
Manganese	**456**	mg/kg	0.87	0.050	1	10/08/18 12:40	10/09/18 16:08	7439-96-5	

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Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-04 (0.5-1) **Lab ID: 7067135008** Collected: 10/05/18 11:40 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**145**	mg/kg	2.3	0.21	1	10/08/18 12:40	10/09/18 16:08	7440-02-0	
Selenium	**5.0**	mg/kg	0.58	0.31	1	10/08/18 12:40	10/09/18 16:08	7782-49-2	
Silver	**5.1**	mg/kg	0.58	0.073	1	10/08/18 12:40	10/09/18 16:08	7440-22-4	
Zinc	**19700**	mg/kg	58.3	3.7	50	10/08/18 12:40	10/11/18 03:17	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**6.4**	mg/kg	0.45	0.27	10	10/08/18 13:26	10/09/18 13:27	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**8450**	ug/kg	836	124	10	10/10/18 10:01	10/11/18 21:16	83-32-9	
Acenaphthylene	**<836**	ug/kg	836	167	10	10/10/18 10:01	10/11/18 21:16	208-96-8	
Anthracene	**17700**	ug/kg	836	244	10	10/10/18 10:01	10/11/18 21:16	120-12-7	
Benzo(a)anthracene	**34900**	ug/kg	836	192	10	10/10/18 10:01	10/11/18 21:16	56-55-3	
Benzo(a)pyrene	**32400**	ug/kg	836	353	10	10/10/18 10:01	10/11/18 21:16	50-32-8	
Benzo(b)fluoranthene	**50600**	ug/kg	836	290	10	10/10/18 10:01	10/11/18 21:16	205-99-2	
Benzo(g,h,i)perylene	**11800**	ug/kg	836	405	10	10/10/18 10:01	10/11/18 21:16	191-24-2	
Benzo(k)fluoranthene	**23000**	ug/kg	836	259	10	10/10/18 10:01	10/11/18 21:16	207-08-9	
Chrysene	**35500**	ug/kg	836	375	10	10/10/18 10:01	10/11/18 21:16	218-01-9	
Dibenz(a,h)anthracene	**3660**	ug/kg	836	273	10	10/10/18 10:01	10/11/18 21:16	53-70-3	
Dibenzofuran	**5620**	ug/kg	836	151	10	10/10/18 10:01	10/11/18 21:16	132-64-9	
Fluoranthene	**87900**	ug/kg	1670	1410	20	10/10/18 10:01	10/12/18 14:59	206-44-0	
Fluorene	**8970**	ug/kg	836	212	10	10/10/18 10:01	10/11/18 21:16	86-73-7	
Hexachlorobenzene	**<836**	ug/kg	836	166	10	10/10/18 10:01	10/11/18 21:16	118-74-1	
Indeno(1,2,3-cd)pyrene	**14800**	ug/kg	836	320	10	10/10/18 10:01	10/11/18 21:16	193-39-5	
2-Methylphenol(o-Cresol)	**<836**	ug/kg	836	463	10	10/10/18 10:01	10/11/18 21:16	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<836**	ug/kg	836	301	10	10/10/18 10:01	10/11/18 21:16		
Naphthalene	**3120**	ug/kg	836	92.3	10	10/10/18 10:01	10/11/18 21:16	91-20-3	
Pentachlorophenol	**<8360**	ug/kg	8360	84.2	10	10/10/18 10:01	10/11/18 21:16	87-86-5	
Phenanthrene	**78000**	ug/kg	1670	539	20	10/10/18 10:01	10/12/18 14:59	85-01-8	
Phenol	**<836**	ug/kg	836	159	10	10/10/18 10:01	10/11/18 21:16	108-95-2	
Pyrene	**56300**	ug/kg	836	397	10	10/10/18 10:01	10/11/18 21:16	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	67	%	23-120		10	10/10/18 10:01	10/11/18 21:16	4165-60-0	
2-Fluorobiphenyl (S)	76	%	30-115		10	10/10/18 10:01	10/11/18 21:16	321-60-8	
p-Terphenyl-d14 (S)	85	%	18-137		10	10/10/18 10:01	10/11/18 21:16	1718-51-0	
Phenol-d5 (S)	70	%	24-113		10	10/10/18 10:01	10/11/18 21:16	4165-62-2	
2-Fluorophenol (S)	70	%	25-121		10	10/10/18 10:01	10/11/18 21:16	367-12-4	
2,4,6-Tribromophenol (S)	93	%	19-122		10	10/10/18 10:01	10/11/18 21:16	118-79-6	CH
2-Chlorophenol-d4 (S)	69	%	20-130		10	10/10/18 10:01	10/11/18 21:16	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	61	%	20-130		10	10/10/18 10:01	10/11/18 21:16	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**88500J**	ug/kg			10	10/10/18 10:01	10/11/18 21:16		
5H-Indeno[1,2-b]pyridine	**10200J**	ug/kg			10	10/10/18 10:01	10/11/18 21:16	244-99-5	N
Phenanthrene, 2-methyl-	**7500J**	ug/kg			10	10/10/18 10:01	10/11/18 21:16	2531-84-2	N
Unknown PAH	**9340J**	ug/kg			10	10/10/18 10:01	10/11/18 21:16		

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-04 (0.5-1) **Lab ID: 7067135008** Collected: 10/05/18 11:40 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown PAH	**14500J**	ug/kg			10	10/10/18 10:01	10/11/18 21:16		
Naphthalene, 2-phenyl-	**4880J**	ug/kg			10	10/10/18 10:01	10/11/18 21:16	612-94-2	N
Unknown Aldol Condensate	**5710J**	ug/kg			10	10/10/18 10:01	10/11/18 21:16		
Unknown Ketone	**4620J**	ug/kg			10	10/10/18 10:01	10/11/18 21:16		
Unknown Organic Acid	**9260J**	ug/kg			10	10/10/18 10:01	10/11/18 21:16		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**20.5**	%	0.10	0.10	1		10/10/18 16:22		

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-06 (0.2-0.5) **Lab ID: 7067135009** Collected: 10/05/18 12:00 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3546								
Aldrin	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/19/18 22:05	309-00-2	
alpha-BHC	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/19/18 22:05	319-84-6	
beta-BHC	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/19/18 22:05	319-85-7	
delta-BHC	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/19/18 22:05	319-86-8	
gamma-BHC (Lindane)	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/19/18 22:05	58-89-9	
alpha-Chlordane	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/19/18 22:05	5103-71-9	
4,4'-DDD	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 22:05	72-54-8	
4,4'-DDE	**24.5**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 22:05	72-55-9	
4,4'-DDT	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 22:05	50-29-3	
Dieldrin	**3.7J**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 22:05	60-57-1	
Endosulfan I	**<1.9**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/19/18 22:05	959-98-8	
Endosulfan II	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 22:05	33213-65-9	
Endosulfan sulfate	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 22:05	1031-07-8	
Endrin	**<3.8**	ug/kg	3.8	1.9	1	10/08/18 17:25	10/19/18 22:05	72-20-8	
Heptachlor	**3.0**	ug/kg	1.9	0.97	1	10/08/18 17:25	10/19/18 22:05	76-44-8	
Surrogates									
Tetrachloro-m-xylene (S)	87	%	30-150		1	10/08/18 17:25	10/19/18 22:05	877-09-8	
Decachlorobiphenyl (S)	86	%	30-150		1	10/08/18 17:25	10/19/18 22:05	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	**<113**	ug/kg	113	56.5	3	10/08/18 17:25	10/12/18 17:19	12674-11-2	
PCB-1221 (Aroclor 1221)	**<229**	ug/kg	229	115	3	10/08/18 17:25	10/12/18 17:19	11104-28-2	
PCB-1232 (Aroclor 1232)	**<113**	ug/kg	113	56.5	3	10/08/18 17:25	10/12/18 17:19	11141-16-5	
PCB-1242 (Aroclor 1242)	**<113**	ug/kg	113	56.5	3	10/08/18 17:25	10/12/18 17:19	53469-21-9	
PCB-1248 (Aroclor 1248)	**666**	ug/kg	113	56.5	3	10/08/18 17:25	10/12/18 17:19	12672-29-6	
PCB-1254 (Aroclor 1254)	**<113**	ug/kg	113	56.5	3	10/08/18 17:25	10/12/18 17:19	11097-69-1	
PCB-1260 (Aroclor 1260)	**<113**	ug/kg	113	56.5	3	10/08/18 17:25	10/12/18 17:19	11096-82-5	
Surrogates									
Tetrachloro-m-xylene (S)	65	%	30-150		1	10/08/18 17:25	10/12/18 06:47	877-09-8	
Decachlorobiphenyl (S)	102	%	30-150		1	10/08/18 17:25	10/12/18 06:47	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A								
2,4,5-TP (Silvex)	**<5.7**	ug/kg	5.7	0.30	1	10/09/18 11:02	10/12/18 06:26	93-72-1	
Surrogates									
2,4-DCAA (S)	64	%	29-136		1	10/09/18 11:02	10/12/18 06:26	19719-28-9	
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Arsenic	**11.3**	mg/kg	0.55	0.17	1	10/08/18 12:40	10/09/18 16:14	7440-38-2	
Barium	**93.5**	mg/kg	11.0	0.84	1	10/08/18 12:40	10/09/18 16:14	7440-39-3	
Beryllium	**1.0**	mg/kg	0.28	0.035	1	10/08/18 12:40	10/09/18 16:14	7440-41-7	
Cadmium	**0.64**	mg/kg	0.14	0.017	1	10/08/18 12:40	10/09/18 16:14	7440-43-9	
Chromium	**18.1**	mg/kg	0.55	0.053	1	10/08/18 12:40	10/09/18 16:14	7440-47-3	
Copper	**173**	mg/kg	1.4	0.10	1	10/08/18 12:40	10/09/18 16:14	7440-50-8	
Lead	**86.3**	mg/kg	0.28	0.13	1	10/08/18 12:40	10/09/18 16:14	7439-92-1	
Manganese	**799**	mg/kg	0.83	0.047	1	10/08/18 12:40	10/09/18 16:14	7439-96-5	

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ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-06 (0.2-0.5) **Lab ID: 7067135009** Collected: 10/05/18 12:00 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Nickel	**18.6**	mg/kg	2.2	0.20	1	10/08/18 12:40	10/09/18 16:14	7440-02-0	
Selenium	**<0.55**	mg/kg	0.55	0.29	1	10/08/18 12:40	10/09/18 16:14	7782-49-2	
Silver	**0.077J**	mg/kg	0.55	0.069	1	10/08/18 12:40	10/09/18 16:14	7440-22-4	
Zinc	**397**	mg/kg	1.1	0.071	1	10/08/18 12:40	10/09/18 16:14	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B								
Mercury	**0.049**	mg/kg	0.035	0.021	1	10/08/18 13:26	10/09/18 13:14	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Acenaphthene	**<761**	ug/kg	761	113	10	10/10/18 10:01	10/11/18 19:52	83-32-9	
Acenaphthylene	**<761**	ug/kg	761	152	10	10/10/18 10:01	10/11/18 19:52	208-96-8	
Anthracene	**393J**	ug/kg	761	222	10	10/10/18 10:01	10/11/18 19:52	120-12-7	
Benzo(a)anthracene	**1070**	ug/kg	761	174	10	10/10/18 10:01	10/11/18 19:52	56-55-3	
Benzo(a)pyrene	**946**	ug/kg	761	321	10	10/10/18 10:01	10/11/18 19:52	50-32-8	
Benzo(b)fluoranthene	**1240**	ug/kg	761	264	10	10/10/18 10:01	10/11/18 19:52	205-99-2	
Benzo(g,h,i)perylene	**505J**	ug/kg	761	368	10	10/10/18 10:01	10/11/18 19:52	191-24-2	
Benzo(k)fluoranthene	**613J**	ug/kg	761	236	10	10/10/18 10:01	10/11/18 19:52	207-08-9	
Chrysene	**1180**	ug/kg	761	341	10	10/10/18 10:01	10/11/18 19:52	218-01-9	
Dibenz(a,h)anthracene	**<761**	ug/kg	761	249	10	10/10/18 10:01	10/11/18 19:52	53-70-3	
Dibenzofuran	**<761**	ug/kg	761	138	10	10/10/18 10:01	10/11/18 19:52	132-64-9	
Fluoranthene	**2510**	ug/kg	761	640	10	10/10/18 10:01	10/11/18 19:52	206-44-0	
Fluorene	**<761**	ug/kg	761	193	10	10/10/18 10:01	10/11/18 19:52	86-73-7	
Hexachlorobenzene	**<761**	ug/kg	761	151	10	10/10/18 10:01	10/11/18 19:52	118-74-1	
Indeno(1,2,3-cd)pyrene	**572J**	ug/kg	761	291	10	10/10/18 10:01	10/11/18 19:52	193-39-5	M6
2-Methylphenol(o-Cresol)	**<761**	ug/kg	761	422	10	10/10/18 10:01	10/11/18 19:52	95-48-7	
3&4-Methylphenol(m&p Cresol)	**<761**	ug/kg	761	274	10	10/10/18 10:01	10/11/18 19:52		
Naphthalene	**<761**	ug/kg	761	84.0	10	10/10/18 10:01	10/11/18 19:52	91-20-3	
Pentachlorophenol	**<7610**	ug/kg	7610	76.6	10	10/10/18 10:01	10/11/18 19:52	87-86-5	
Phenanthrene	**1720**	ug/kg	761	245	10	10/10/18 10:01	10/11/18 19:52	85-01-8	R1
Phenol	**<761**	ug/kg	761	145	10	10/10/18 10:01	10/11/18 19:52	108-95-2	
Pyrene	**1870**	ug/kg	761	361	10	10/10/18 10:01	10/11/18 19:52	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	50	%	23-120		10	10/10/18 10:01	10/11/18 19:52	4165-60-0	
2-Fluorobiphenyl (S)	62	%	30-115		10	10/10/18 10:01	10/11/18 19:52	321-60-8	
p-Terphenyl-d14 (S)	80	%	18-137		10	10/10/18 10:01	10/11/18 19:52	1718-51-0	
Phenol-d5 (S)	51	%	24-113		10	10/10/18 10:01	10/11/18 19:52	4165-62-2	
2-Fluorophenol (S)	44	%	25-121		10	10/10/18 10:01	10/11/18 19:52	367-12-4	
2,4,6-Tribromophenol (S)	74	%	19-122		10	10/10/18 10:01	10/11/18 19:52	118-79-6	CH
2-Chlorophenol-d4 (S)	47	%	20-130		10	10/10/18 10:01	10/11/18 19:52	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	48	%	20-130		10	10/10/18 10:01	10/11/18 19:52	2199-69-1	
Tentatively Identified Compounds									
Unknown Ketone	**4980J**	ug/kg			10	10/10/18 10:01	10/11/18 19:52		
Unknown Ketone	**78300J**	ug/kg			10	10/10/18 10:01	10/11/18 19:52		
Unknown Petroleum Alkane	**1890J**	ug/kg			10	10/10/18 10:01	10/11/18 19:52		
Unknown Organic Acid	**2650J**	ug/kg			10	10/10/18 10:01	10/11/18 19:52		

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(631)694-3040

ANALYTICAL RESULTS

Project: 31 WATER ST
Pace Project No.: 7067135

Sample: S-06 (0.2-0.5) **Lab ID: 7067135009** Collected: 10/05/18 12:00 Received: 10/06/18 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3545A								
Tentatively Identified Compounds									
Unknown Organic Acid	**2010J**	ug/kg			10	10/10/18 10:01	10/11/18 19:52		
Unknown Organic Acid	**3170J**	ug/kg			10	10/10/18 10:01	10/11/18 19:52		
Percent Moisture	Analytical Method: ASTM D2216-92M								
Percent Moisture	**12.6**	%	0.10	0.10	1		10/10/18 16:23		

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

QC Batch: 86083 Analysis Method: EPA 7471B
QC Batch Method: EPA 7471B Analysis Description: 7471 Mercury
Associated Lab Samples: 7067135001, 7067135002, 7067135003, 7067135004, 7067135005, 7067135006, 7067135007, 7067135008, 7067135009

METHOD BLANK: 395963 Matrix: Solid
Associated Lab Samples: 7067135001, 7067135002, 7067135003, 7067135004, 7067135005, 7067135006, 7067135007, 7067135008, 7067135009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	<0.032	0.032	0.019	10/09/18 12:46	

LABORATORY CONTROL SAMPLE: 395964

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.17	0.17	96	80-120	

MATRIX SPIKE SAMPLE: 395965

Parameter	Units	7067135001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.14	.19	0.33	99	80-120	

SAMPLE DUPLICATE: 395966

Parameter	Units	7067135001 Result	Dup Result	RPD	Max RPD	Qualifiers
Mercury	mg/kg	0.14	0.17	22	20	D6

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

QC Batch: 86079 Analysis Method: EPA 6010C
QC Batch Method: EPA 3050B Analysis Description: 6010 MET
Associated Lab Samples: 7067135001, 7067135002, 7067135003, 7067135004, 7067135005, 7067135006, 7067135007, 7067135008, 7067135009

METHOD BLANK: 395946 Matrix: Solid
Associated Lab Samples: 7067135001, 7067135002, 7067135003, 7067135004, 7067135005, 7067135006, 7067135007, 7067135008, 7067135009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	<0.50	0.50	0.15	10/09/18 14:45	
Barium	mg/kg	<10.0	10.0	0.76	10/09/18 14:45	
Beryllium	mg/kg	<0.25	0.25	0.032	10/09/18 14:45	
Cadmium	mg/kg	<0.13	0.13	0.015	10/09/18 14:45	
Chromium	mg/kg	<0.50	0.50	0.048	10/09/18 14:45	
Copper	mg/kg	0.099J	1.3	0.091	10/09/18 14:45	
Lead	mg/kg	<0.25	0.25	0.12	10/09/18 14:45	
Manganese	mg/kg	0.043J	0.75	0.043	10/09/18 14:45	
Nickel	mg/kg	<2.0	2.0	0.18	10/09/18 14:45	
Selenium	mg/kg	<0.50	0.50	0.26	10/09/18 14:45	
Silver	mg/kg	<0.50	0.50	0.063	10/09/18 14:45	
Zinc	mg/kg	0.52J	1.0	0.064	10/09/18 14:45	

LABORATORY CONTROL SAMPLE: 395947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	161	147	91	80-120	
Barium	mg/kg	261	238	91	80-120	
Beryllium	mg/kg	97.9	95.3	97	80-120	
Cadmium	mg/kg	212	189	89	80-120	
Chromium	mg/kg	136	124	91	80-120	
Copper	mg/kg	166	149	90	80-120	
Lead	mg/kg	111	99.7	90	80-120	
Manganese	mg/kg	229	214	94	80-120	
Nickel	mg/kg	92.2	85.0	92	80-120	
Selenium	mg/kg	192	180	94	80-120	
Silver	mg/kg	43.4	40.7	94	80-120	
Zinc	mg/kg	200	182	91	80-120	

MATRIX SPIKE SAMPLE: 395949

Parameter	Units	7067135001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	40.5	26.5	63.0	85	75-125	
Barium	mg/kg	186	26.5	182	-17	75-125	M1
Beryllium	mg/kg	0.83	2.6	3.3	92	75-125	
Cadmium	mg/kg	2.5	2.6	5.3	105	75-125	
Chromium	mg/kg	58.4	13.2	69.6	85	75-125	

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

MATRIX SPIKE SAMPLE: 395949

Parameter	Units	7067135001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Copper	mg/kg	1800	13.2	1600	-1530	75-125	M1
Lead	mg/kg	181	26.5	171	-36	75-125	M1
Manganese	mg/kg	512	13.2	443	-515	75-125	M1
Nickel	mg/kg	50.8	13.2	95.1	335	75-125	M1
Selenium	mg/kg	2.0	39.7	36.4	87	75-125	
Silver	mg/kg	0.67	13.2	11.3	81	75-125	
Zinc	mg/kg	3810	52.8	5820	3790	75-125	M6

SAMPLE DUPLICATE: 395948

Parameter	Units	7067135001 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic	mg/kg	40.5	35.6	13	20	
Barium	mg/kg	186	169	10	20	
Beryllium	mg/kg	0.83	0.74	11	20	
Cadmium	mg/kg	2.5	2.3	8	20	
Chromium	mg/kg	58.4	54.4	7	20	
Copper	mg/kg	1800	1650	9	20	
Lead	mg/kg	181	163	10	20	
Manganese	mg/kg	512	468	9	20	
Nickel	mg/kg	50.8	46.8	8	20	
Selenium	mg/kg	2.0	1.9	7	20	
Silver	mg/kg	0.67	0.63	8	20	
Zinc	mg/kg	3810	3390	12	20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

QC Batch: 86669
QC Batch Method: EPA 5035A-L
Analysis Method: EPA 8260C
Analysis Description: 8260 MSV 5035A-L Low Level
Associated Lab Samples: 7067135001

METHOD BLANK: 398788
Matrix: Solid
Associated Lab Samples: 7067135001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<2.0	2.0	1.0	10/11/18 08:33	
1,1-Dichloroethane	ug/kg	<2.0	2.0	0.78	10/11/18 08:33	
1,1-Dichloroethene	ug/kg	<2.0	2.0	0.76	10/11/18 08:33	
1,2,4-Trichlorobenzene	ug/kg	<2.0	2.0	0.79	10/11/18 08:33	
1,2,4-Trimethylbenzene	ug/kg	<2.0	2.0	0.85	10/11/18 08:33	
1,2-Dichlorobenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
1,2-Dichloroethane	ug/kg	<2.0	2.0	0.48	10/11/18 08:33	
1,3,5-Trimethylbenzene	ug/kg	<2.0	2.0	0.75	10/11/18 08:33	
1,3-Dichlorobenzene	ug/kg	<2.0	2.0	0.80	10/11/18 08:33	
1,4-Dichlorobenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
1,4-Dioxane (p-Dioxane)	ug/kg	<49.2	49.2	29.1	10/11/18 08:33	
2-Butanone (MEK)	ug/kg	<2.0	2.0	1.2	10/11/18 08:33	
Acetone	ug/kg	<2.0	2.0	1.9	10/11/18 08:33	
Benzene	ug/kg	<2.0	2.0	0.77	10/11/18 08:33	
Carbon tetrachloride	ug/kg	<2.0	2.0	1.2	10/11/18 08:33	
Chlorobenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
Chloroform	ug/kg	<2.0	2.0	0.54	10/11/18 08:33	
cis-1,2-Dichloroethene	ug/kg	<2.0	2.0	0.73	10/11/18 08:33	
Ethylbenzene	ug/kg	<2.0	2.0	0.75	10/11/18 08:33	
Methyl-tert-butyl ether	ug/kg	<2.0	2.0	0.44	10/11/18 08:33	
Methylene Chloride	ug/kg	<2.0	2.0	0.89	10/11/18 08:33	
n-Butylbenzene	ug/kg	<2.0	2.0	0.79	10/11/18 08:33	
n-Propylbenzene	ug/kg	<2.0	2.0	0.81	10/11/18 08:33	
sec-Butylbenzene	ug/kg	<2.0	2.0	0.78	10/11/18 08:33	
tert-Butylbenzene	ug/kg	<2.0	2.0	0.98	10/11/18 08:33	
Tetrachloroethene	ug/kg	<2.0	2.0	1.0	10/11/18 08:33	
Toluene	ug/kg	<2.0	2.0	0.92	10/11/18 08:33	
trans-1,2-Dichloroethene	ug/kg	<2.0	2.0	0.57	10/11/18 08:33	
Trichloroethene	ug/kg	<2.0	2.0	0.82	10/11/18 08:33	
Vinyl chloride	ug/kg	<2.0	2.0	0.43	10/11/18 08:33	
Xylene (Total)	ug/kg	<3.9	3.9	2.0	10/11/18 08:33	
1,2-Dichloroethane-d4 (S)	%	146	33-150		10/11/18 08:33	
4-Bromofluorobenzene (S)	%	105	34-145		10/11/18 08:33	
Toluene-d8 (S)	%	100	43-157		10/11/18 08:33	

LABORATORY CONTROL SAMPLE: 398789

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	50.2	60.7	121	59-134	CH
1,1-Dichloroethane	ug/kg	50.2	45.2	90	53-160	

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(631)694-3040

QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

LABORATORY CONTROL SAMPLE: 398789

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/kg	50.2	40.8	81	47-152	
1,2,4-Trichlorobenzene	ug/kg	50.2	60.0	119	52-140	CH
1,2,4-Trimethylbenzene	ug/kg	50.2	44.2	88	59-126	
1,2-Dichlorobenzene	ug/kg	50.2	50.6	101	67-125	
1,2-Dichloroethane	ug/kg	50.2	56.2	112	65-143	
1,3,5-Trimethylbenzene	ug/kg	50.2	48.1	96	49-134	
1,3-Dichlorobenzene	ug/kg	50.2	52.7	105	64-124	
1,4-Dichlorobenzene	ug/kg	50.2	51.1	102	61-127	
1,4-Dioxane (p-Dioxane)	ug/kg	1260	1200	96	10-205	
2-Butanone (MEK)	ug/kg	50.2	50.7	101	52-164	CH
Acetone	ug/kg	50.2	47.2	94	23-196	CH
Benzene	ug/kg	50.2	48.7	97	65-129	
Carbon tetrachloride	ug/kg	50.2	65.2	130	57-135	CH
Chlorobenzene	ug/kg	50.2	50.6	101	62-136	
Chloroform	ug/kg	50.2	50.1	100	71-135	
cis-1,2-Dichloroethene	ug/kg	50.2	43.5	87	75-130	
Ethylbenzene	ug/kg	50.2	49.5	99	59-135	
Methyl-tert-butyl ether	ug/kg	50.2	47.8	95	25-171	
Methylene Chloride	ug/kg	50.2	38.9	78	50-164	
n-Butylbenzene	ug/kg	50.2	51.8	103	54-121	
n-Propylbenzene	ug/kg	50.2	47.0	94	56-125	
sec-Butylbenzene	ug/kg	50.2	50.8	101	50-126	
tert-Butylbenzene	ug/kg	50.2	50.1	100	56-127	
Tetrachloroethene	ug/kg	50.2	57.2	114	10-176	CH
Toluene	ug/kg	50.2	47.8	95	66-131	
trans-1,2-Dichloroethene	ug/kg	50.2	43.1	86	53-157	
Trichloroethene	ug/kg	50.2	52.8	105	62-130	
Vinyl chloride	ug/kg	50.2	42.3	84	45-137	
Xylene (Total)	ug/kg	151	145	96	62-135	
1,2-Dichloroethane-d4 (S)	%			132	33-150	
4-Bromofluorobenzene (S)	%			106	34-145	
Toluene-d8 (S)	%			102	43-157	

MATRIX SPIKE SAMPLE: 401714

Parameter	Units	7067073004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	<3.5	96	112	117	59-134	CH
1,1-Dichloroethane	ug/kg	<3.5	96	82.1	86	53-160	
1,1-Dichloroethene	ug/kg	<3.5	96	77.4	81	47-152	
1,2,4-Trichlorobenzene	ug/kg	<3.5	96	93.1	97	52-140	CH
1,2,4-Trimethylbenzene	ug/kg	<3.5	96	78.4	82	59-126	
1,2-Dichlorobenzene	ug/kg	<3.5	96	86.8	90	67-125	
1,2-Dichloroethane	ug/kg	<3.5	96	101	105	65-143	
1,3,5-Trimethylbenzene	ug/kg	<3.5	96	85.2	89	49-134	
1,3-Dichlorobenzene	ug/kg	<3.5	96	91.1	95	64-124	

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(631)694-3040

QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

MATRIX SPIKE SAMPLE: 401714

Parameter	Units	7067073004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/kg	<3.5	96	89.4	93	61-127	
1,4-Dioxane (p-Dioxane)	ug/kg	<88.7	2400	2410	100	10-205	
2-Butanone (MEK)	ug/kg	<3.5	96	95.3	99	52-164	CH
Acetone	ug/kg	<3.5	96	120	125	23-196	CH
Benzene	ug/kg	<3.5	96	82.7	86	65-129	
Carbon tetrachloride	ug/kg	<3.5	96	122	127	57-135	CH
Chlorobenzene	ug/kg	<3.5	96	84.6	88	62-136	
Chloroform	ug/kg	<3.5	96	88.0	92	71-135	
cis-1,2-Dichloroethene	ug/kg	<3.5	96	77.8	81	75-130	
Ethylbenzene	ug/kg	<3.5	96	84.2	88	59-135	
Methyl-tert-butyl ether	ug/kg	<3.5	96	80.0	83	25-171	
Methylene Chloride	ug/kg	<3.5	96	66.7	69	50-164	
n-Butylbenzene	ug/kg	<3.5	96	92.6	96	54-121	
n-Propylbenzene	ug/kg	<3.5	96	86.1	90	56-125	
sec-Butylbenzene	ug/kg	<3.5	96	90.9	95	50-126	
tert-Butylbenzene	ug/kg	<3.5	96	88.5	92	56-127	
Tetrachloroethene	ug/kg	3.6	96	123	124	10-176	CH
Toluene	ug/kg	<3.5	96	83.7	87	66-131	
trans-1,2-Dichloroethene	ug/kg	<3.5	96	77.0	80	53-157	
Trichloroethene	ug/kg	21.0	96	116	99	62-130	
Vinyl chloride	ug/kg	<3.5	96	71.9	75	45-137	
Xylene (Total)	ug/kg	<7.1	289	245	85	62-135	
1,2-Dichloroethane-d4 (S)	%				145	33-150	
4-Bromofluorobenzene (S)	%				109	34-145	
Toluene-d8 (S)	%				101	43-157	

SAMPLE DUPLICATE: 398792

Parameter	Units	7067135001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	<9.7	<8.2		20	
1,1-Dichloroethane	ug/kg	<9.7	<8.2		20	
1,1-Dichloroethene	ug/kg	<9.7	<8.2		20	
1,2,4-Trichlorobenzene	ug/kg	<9.7	<8.2		20	
1,2,4-Trimethylbenzene	ug/kg	<9.7	<8.2		20	
1,2-Dichlorobenzene	ug/kg	<9.7	<8.2		20	
1,2-Dichloroethane	ug/kg	<9.7	<8.2		20	
1,3,5-Trimethylbenzene	ug/kg	<9.7	<8.2		20	
1,3-Dichlorobenzene	ug/kg	<9.7	<8.2		20	
1,4-Dichlorobenzene	ug/kg	<9.7	<8.2		20	
1,4-Dioxane (p-Dioxane)	ug/kg	<242	<204		20	
2-Butanone (MEK)	ug/kg	<9.7	<8.2		20	
Acetone	ug/kg	44.4	80.0	57	20	CH,D6
Benzene	ug/kg	<9.7	<8.2		20	
Carbon tetrachloride	ug/kg	<9.7	<8.2		20	
Chlorobenzene	ug/kg	<9.7	<8.2		20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

SAMPLE DUPLICATE: 398792

Parameter	Units	7067135001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloroform	ug/kg	<9.7	<8.2		20	
cis-1,2-Dichloroethene	ug/kg	7.3J	11.4		20	
Ethylbenzene	ug/kg	6.1J	7.2J		20	
Methyl-tert-butyl ether	ug/kg	<9.7	<8.2		20	
Methylene Chloride	ug/kg	35.5	74.0	70	20	D6
n-Butylbenzene	ug/kg	<9.7	<8.2		20	
n-Propylbenzene	ug/kg	<9.7	<8.2		20	
sec-Butylbenzene	ug/kg	<9.7	<8.2		20	
tert-Butylbenzene	ug/kg	<9.7	<8.2		20	
Tetrachloroethene	ug/kg	<9.7	<8.2		20	
Toluene	ug/kg	<9.7	<8.2		20	
trans-1,2-Dichloroethene	ug/kg	<9.7	<8.2		20	
Trichloroethene	ug/kg	233	347	39	20	D6
Vinyl chloride	ug/kg	<9.7	<8.2		20	
Xylene (Total)	ug/kg	43.3	56.6	26	20	
1,2-Dichloroethane-d4 (S)	%	145	152	12	20	S1
4-Bromofluorobenzene (S)	%	103	101	19	20	
Toluene-d8 (S)	%	106	111	13	20	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

QC Batch: 86092 Analysis Method: EPA 8081B
QC Batch Method: EPA 3546 Analysis Description: 8081 GCS Pesticides
Associated Lab Samples: 7067135001, 7067135002, 7067135003, 7067135004, 7067135005, 7067135006, 7067135007, 7067135008, 7067135009

METHOD BLANK: 396089 Matrix: Solid
Associated Lab Samples: 7067135001, 7067135002, 7067135003, 7067135004, 7067135005, 7067135006, 7067135007, 7067135008, 7067135009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
4,4'-DDD	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
4,4'-DDE	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
4,4'-DDT	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
Aldrin	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
alpha-BHC	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
alpha-Chlordane	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
beta-BHC	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
delta-BHC	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
Dieldrin	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
Endosulfan I	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
Endosulfan II	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
Endosulfan sulfate	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
Endrin	ug/kg	<3.3	3.3	1.6	10/13/18 03:42	
gamma-BHC (Lindane)	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
Heptachlor	ug/kg	<1.7	1.7	0.85	10/13/18 03:42	
Decachlorobiphenyl (S)	%	117	30-150		10/13/18 03:42	
Tetrachloro-m-xylene (S)	%	87	30-150		10/13/18 03:42	

LABORATORY CONTROL SAMPLE: 396090

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/kg	13.3	11.1	83	57-156	
4,4'-DDE	ug/kg	13.3	9.9	74	52-135	
4,4'-DDT	ug/kg	13.3	10.6	79	64-127	
Aldrin	ug/kg	13.3	8.5	64	35-147	
alpha-BHC	ug/kg	13.3	9.9	74	41-135	
alpha-Chlordane	ug/kg	13.3	8.3	62	43-128	
beta-BHC	ug/kg	13.3	10	75	42-158	
delta-BHC	ug/kg	13.3	9.5	71	48-142	
Dieldrin	ug/kg	13.3	10.4	78	47-134	
Endosulfan I	ug/kg	13.3	8.6	64	54-145	
Endosulfan II	ug/kg	13.3	9.0	68	61-137	
Endosulfan sulfate	ug/kg	13.3	11.9	89	51-154	
Endrin	ug/kg	13.3	10.7	80	37-146	
gamma-BHC (Lindane)	ug/kg	13.3	9.7	73	44-139	
Heptachlor	ug/kg	13.3	9.7	73	57-148	
Decachlorobiphenyl (S)	%			108	30-150	
Tetrachloro-m-xylene (S)	%			67	30-150	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

LABORATORY CONTROL SAMPLE: 396091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Decachlorobiphenyl (S)	%			119	30-150	
Tetrachloro-m-xylene (S)	%			90	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 396127 396128

Parameter	Units	7067135003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4,4'-DDD	ug/kg	<4.1	16.6	16.7	59.0	168	356	1010	57-156	96	30	CH,E, M1,R1
4,4'-DDE	ug/kg	3530	16.6	16.7	3390	5730	-862	13200	52-135	51	30	CH,E, M1,R1
4,4'-DDT	ug/kg	<414	16.6	16.7	3100	5510	18700	33000	64-127	56	27	CL,E, M1,R1
Aldrin	ug/kg	<2.1	16.6	16.7	1850	2990	11200	17900	35-147	47	43	E,M1, R1
alpha-BHC	ug/kg	<2.1	16.6	16.7	19.0	26.2	115	157	41-135	32	30	M1,R1
alpha-Chlordane	ug/kg	329	16.6	16.7	193	368	-822	230	43-128	62	30	E,M1, R1
beta-BHC	ug/kg	<2.1	16.6	16.7	9.1	8990	55	53900	42-158	200	30	E,M1, R1
delta-BHC	ug/kg	<2.1	16.6	16.7	27.7	41.1	167	246	48-142	39	30	CH,E, M1,R1
Dieldrin	ug/kg	1310	16.6	16.7	990	1580	-1940	1610	47-134	46	38	CH,E, M1,R1
Endosulfan I	ug/kg	<2.1	16.6	16.7	42.6	104	257	622	54-145	84	30	E,M1, R1
Endosulfan II	ug/kg	30.3	16.6	16.7	21.6	92.6	-53	373	61-137	124	30	E,M1, R1
Endosulfan sulfate	ug/kg	15.8	16.6	16.7	18.4	31.9	16	97	51-154	54	30	M1,R1
Endrin	ug/kg	35.9	16.6	16.7	50.7	125	90	536	37-146	85	45	E,M1, R1
gamma-BHC (Lindane)	ug/kg	172J	16.6	16.7	150	225	-133	312	44-139	40	31	E,M1, R1
Heptachlor	ug/kg	496	16.6	16.7	434	673	-373	1060	57-148	43	20	E,M1, R1
Decachlorobiphenyl (S)	%						225	503	30-150		30	E,S0
Tetrachloro-m-xylene (S)	%						87	128	30-150		30	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

QC Batch: 86094 Analysis Method: EPA 8082A
QC Batch Method: EPA 3546 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 7067135001, 7067135002, 7067135003, 7067135004, 7067135005, 7067135006, 7067135008, 7067135009

METHOD BLANK: 396095 Matrix: Solid
Associated Lab Samples: 7067135001, 7067135002, 7067135003, 7067135004, 7067135005, 7067135006, 7067135008, 7067135009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
PCB-1221 (Aroclor 1221)	ug/kg	<67.0	67.0	33.5	10/12/18 01:52	
PCB-1232 (Aroclor 1232)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
PCB-1242 (Aroclor 1242)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
PCB-1248 (Aroclor 1248)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
PCB-1254 (Aroclor 1254)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
PCB-1260 (Aroclor 1260)	ug/kg	<33.0	33.0	16.5	10/12/18 01:52	
Decachlorobiphenyl (S)	%	90	30-150		10/12/18 01:52	
Tetrachloro-m-xylene (S)	%	80	30-150		10/12/18 01:52	

LABORATORY CONTROL SAMPLE: 396096

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	134	81	50-136	
PCB-1260 (Aroclor 1260)	ug/kg	167	143	86	45-154	
Decachlorobiphenyl (S)	%			87	30-150	
Tetrachloro-m-xylene (S)	%			79	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 396110 396111

Parameter	Units	7067073004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<36.2	184	183	156	163	85	89	28-173	4	30	
PCB-1221 (Aroclor 1221)	ug/kg	<73.4			<74.1	<73.7					30	
PCB-1232 (Aroclor 1232)	ug/kg	<36.2			<36.5	<36.3					30	
PCB-1242 (Aroclor 1242)	ug/kg	<36.2			<36.5	<36.3					30	
PCB-1248 (Aroclor 1248)	ug/kg	<36.2			<36.5	<36.3					30	
PCB-1254 (Aroclor 1254)	ug/kg	<36.2			<36.5	<36.3					30	
PCB-1260 (Aroclor 1260)	ug/kg	<36.2	184	183	174	188	95	102	43-138	7	30	
Decachlorobiphenyl (S)	%						90	95	30-150		30	
Tetrachloro-m-xylene (S)	%						75	78	30-150		30	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

QC Batch: 87182
QC Batch Method: EPA 3546
Analysis Method: EPA 8082A
Analysis Description: 8082 GCS PCB
Associated Lab Samples: 7067135007

METHOD BLANK: 401573
Matrix: Solid
Associated Lab Samples: 7067135007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<33.0	33.0	16.5	10/16/18 22:58	
PCB-1221 (Aroclor 1221)	ug/kg	<67.0	67.0	33.5	10/16/18 22:58	
PCB-1232 (Aroclor 1232)	ug/kg	<33.0	33.0	16.5	10/16/18 22:58	
PCB-1242 (Aroclor 1242)	ug/kg	<33.0	33.0	16.5	10/16/18 22:58	
PCB-1248 (Aroclor 1248)	ug/kg	<33.0	33.0	16.5	10/16/18 22:58	
PCB-1254 (Aroclor 1254)	ug/kg	<33.0	33.0	16.5	10/16/18 22:58	
PCB-1260 (Aroclor 1260)	ug/kg	<33.0	33.0	16.5	10/16/18 22:58	
Decachlorobiphenyl (S)	%	91	30-150		10/16/18 22:58	
Tetrachloro-m-xylene (S)	%	79	30-150		10/16/18 22:58	

LABORATORY CONTROL SAMPLE: 401574

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	141	84	50-136	
PCB-1260 (Aroclor 1260)	ug/kg	167	167	100	45-154	
Decachlorobiphenyl (S)	%			95	30-150	
Tetrachloro-m-xylene (S)	%			81	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 401602 401603

Parameter	Units	7067135007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<41.7	211	211	130	138	62	66	28-173	6	30	
PCB-1221 (Aroclor 1221)	ug/kg	<84.8			<84.7	<84.7					30	
PCB-1232 (Aroclor 1232)	ug/kg	<41.7			<41.7	<41.7					30	
PCB-1242 (Aroclor 1242)	ug/kg	<41.7			<41.7	<41.7					30	
PCB-1248 (Aroclor 1248)	ug/kg	74.4			144	158				9	30	
PCB-1254 (Aroclor 1254)	ug/kg	<41.7			<41.7	<41.7					30	
PCB-1260 (Aroclor 1260)	ug/kg	<41.7	211	211	156	133	74	63	43-138	16	30	
Decachlorobiphenyl (S)	%						65	56	30-150		30	
Tetrachloro-m-xylene (S)	%						40	41	30-150		30	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

QC Batch: 86197 Analysis Method: EPA 8151A
QC Batch Method: EPA 8151A Analysis Description: 8151 GCS Herbicides
Associated Lab Samples: 7067135001, 7067135004, 7067135006, 7067135007, 7067135008, 7067135009

METHOD BLANK: 396413 Matrix: Solid
Associated Lab Samples: 7067135001, 7067135004, 7067135006, 7067135007, 7067135008, 7067135009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2,4,5-TP (Silvex)	ug/kg	<5.0	5.0	0.26	10/11/18 22:13	
2,4-DCAA (S)	%	66	29-136		10/11/18 22:13	

LABORATORY CONTROL SAMPLE: 396414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4,5-TP (Silvex)	ug/kg	19.9	11.9	60	12-146	
2,4-DCAA (S)	%			65	29-136	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 396415 396416

Parameter	Units	7067073004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4,5-TP (Silvex)	ug/kg	<5.5	22.2	22.1	12.6	10.9	57	49	12-146	15	30	
2,4-DCAA (S)	%						69	59	29-136		30	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

QC Batch: 86340 Analysis Method: EPA 8270D
QC Batch Method: EPA 3545A Analysis Description: 8270 Solid MSSV
Associated Lab Samples: 7067135001, 7067135002, 7067135003, 7067135004, 7067135005, 7067135006, 7067135007, 7067135008, 7067135009

METHOD BLANK: 397368 Matrix: Solid
Associated Lab Samples: 7067135001, 7067135002, 7067135003, 7067135004, 7067135005, 7067135006, 7067135007, 7067135008, 7067135009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2-Methylphenol(o-Cresol)	ug/kg	<67.0	67.0	37.1	10/11/18 12:22	
3&4-Methylphenol(m&p Cresol)	ug/kg	<67.0	67.0	24.1	10/11/18 12:22	
Acenaphthene	ug/kg	<67.0	67.0	9.9	10/11/18 12:22	
Acenaphthylene	ug/kg	<67.0	67.0	13.4	10/11/18 12:22	
Anthracene	ug/kg	<67.0	67.0	19.6	10/11/18 12:22	
Benzo(a)anthracene	ug/kg	<67.0	67.0	15.4	10/11/18 12:22	
Benzo(a)pyrene	ug/kg	<67.0	67.0	28.3	10/11/18 12:22	
Benzo(b)fluoranthene	ug/kg	<67.0	67.0	23.2	10/11/18 12:22	
Benzo(g,h,i)perylene	ug/kg	<67.0	67.0	32.4	10/11/18 12:22	
Benzo(k)fluoranthene	ug/kg	<67.0	67.0	20.8	10/11/18 12:22	
Chrysene	ug/kg	<67.0	67.0	30.0	10/11/18 12:22	
Dibenz(a,h)anthracene	ug/kg	<67.0	67.0	21.9	10/11/18 12:22	
Dibenzofuran	ug/kg	<67.0	67.0	12.1	10/11/18 12:22	
Fluoranthene	ug/kg	<67.0	67.0	56.3	10/11/18 12:22	
Fluorene	ug/kg	<67.0	67.0	17.0	10/11/18 12:22	
Hexachlorobenzene	ug/kg	<67.0	67.0	13.3	10/11/18 12:22	
Indeno(1,2,3-cd)pyrene	ug/kg	<67.0	67.0	25.6	10/11/18 12:22	
Naphthalene	ug/kg	<67.0	67.0	7.4	10/11/18 12:22	
Pentachlorophenol	ug/kg	<670	670	6.8	10/11/18 12:22	
Phenanthrene	ug/kg	<67.0	67.0	21.6	10/11/18 12:22	
Phenol	ug/kg	<67.0	67.0	12.8	10/11/18 12:22	
Pyrene	ug/kg	<67.0	67.0	31.8	10/11/18 12:22	
2.658:Unknown Aromatic Hydroca	ug/kg	710			10/11/18 12:22	
2.861:Unknown Ketone	ug/kg	175			10/11/18 12:22	
2.931:Unknown Ketone	ug/kg	250			10/11/18 12:22	
3.246:Unknown Ketone	ug/kg	3820			10/11/18 12:22	
3.449:Unknown Ketone	ug/kg	636			10/11/18 12:22	
3.641:Unknown Ketone	ug/kg	38000			10/11/18 12:22	
4.266:Unknown Aldol Condensate	ug/kg	196			10/11/18 12:22	
4.347:Unknown Aldol Condensate	ug/kg	318			10/11/18 12:22	
8.001:Hexamethylene diacrylate	ug/kg	178			10/11/18 12:22	N
8.353:Benzophenone	ug/kg	287			10/11/18 12:22	N
1,2-Dichlorobenzene-d4 (S)	%	72	20-130		10/11/18 12:22	
2,4,6-Tribromophenol (S)	%	105	19-122		10/11/18 12:22	CH
2-Chlorophenol-d4 (S)	%	73	20-130		10/11/18 12:22	
2-Fluorobiphenyl (S)	%	78	30-115		10/11/18 12:22	
2-Fluorophenol (S)	%	76	25-121		10/11/18 12:22	
Nitrobenzene-d5 (S)	%	69	23-120		10/11/18 12:22	
p-Terphenyl-d14 (S)	%	90	18-137		10/11/18 12:22	
Phenol-d5 (S)	%	69	24-113		10/11/18 12:22	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

LABORATORY CONTROL SAMPLE: 397369

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylphenol(o-Cresol)	ug/kg	1670	1410	85	36-104	
3&4-Methylphenol(m&p Cresol)	ug/kg	1670	1180	71	37-137	
Acenaphthene	ug/kg	1670	1310	79	45-109	
Acenaphthylene	ug/kg	1670	1330	80	43-107	
Anthracene	ug/kg	1670	1510	90	50-117	
Benzo(a)anthracene	ug/kg	1670	1470	88	52-116	
Benzo(a)pyrene	ug/kg	1670	1450	87	56-119	
Benzo(b)fluoranthene	ug/kg	1670	1370	82	45-122	
Benzo(g,h,i)perylene	ug/kg	1670	1710	103	30-107	
Benzo(k)fluoranthene	ug/kg	1670	1390	83	54-124	
Chrysene	ug/kg	1670	1430	86	48-121	
Dibenz(a,h)anthracene	ug/kg	1670	1570	94	52-109	
Dibenzofuran	ug/kg	1670	1350	81	48-112	
Fluoranthene	ug/kg	1670	1590	96	45-126	
Fluorene	ug/kg	1670	1330	80	47-108	
Hexachlorobenzene	ug/kg	1670	1650	99	51-110	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	1530	92	50-108	
Naphthalene	ug/kg	1670	1340	80	18-142	
Pentachlorophenol	ug/kg	1670	1340	80	22-115	
Phenanthrene	ug/kg	1670	1480	89	47-124	
Phenol	ug/kg	1670	1250	75	38-104	
Pyrene	ug/kg	1670	1420	85	49-132	
1,2-Dichlorobenzene-d4 (S)	%			74	20-130	
2,4,6-Tribromophenol (S)	%			106	19-122	CH
2-Chlorophenol-d4 (S)	%			78	20-130	
2-Fluorobiphenyl (S)	%			80	30-115	
2-Fluorophenol (S)	%			79	25-121	
Nitrobenzene-d5 (S)	%			74	23-120	
p-Terphenyl-d14 (S)	%			89	18-137	
Phenol-d5 (S)	%			74	24-113	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 397476 397477

Parameter	Units	7067135009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Methylphenol(o-Cresol)	ug/kg	<761	1910	1900	1270	1120	67	59	36-104	13	30	
3&4-Methylphenol(m&p Cresol)	ug/kg	<761	1910	1900	926	920	49	48	37-137	1	30	
Acenaphthene	ug/kg	<761	1910	1900	1490	1320	78	70	45-109	12	30	
Acenaphthylene	ug/kg	<761	1910	1900	1290	1290	68	68	43-107	1	30	
Anthracene	ug/kg	393J	1910	1900	2030	1730	86	70	50-117	16	30	
Benzo(a)anthracene	ug/kg	1070	1910	1900	2480	2300	74	65	52-116	7	30	
Benzo(a)pyrene	ug/kg	946	1910	1900	2300	2200	71	66	56-119	4	30	
Benzo(b)fluoranthene	ug/kg	1240	1910	1900	2540	2460	68	64	45-122	3	30	
Benzo(g,h,i)perylene	ug/kg	505J	1910	1900	1610	1490	58	52	30-107	8	30	

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 397476 397477

Parameter	Units	7067135009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzo(k)fluoranthene	ug/kg	613J	1910	1900	2230	2120	85	80	54-124	5	30	
Chrysene	ug/kg	1180	1910	1900	2470	2290	68	59	48-121	7	30	
Dibenz(a,h)anthracene	ug/kg	<761	1910	1900	1340	1280	70	68	52-109	4	30	
Dibenzofuran	ug/kg	<761	1910	1900	1450	1360	76	71	48-112	7	30	
Fluoranthene	ug/kg	2510	1910	1900	4540	3540	106	54	45-126	25	30	
Fluorene	ug/kg	<761	1910	1900	1550	1350	81	71	47-108	14	30	
Hexachlorobenzene	ug/kg	<761	1910	1900	1750	1720	92	91	51-110	1	30	
Indeno(1,2,3-cd)pyrene	ug/kg	572J	1910	1900	1520	1370	50	42	50-108	10	30	M6
Naphthalene	ug/kg	<761	1910	1900	1210	1220	64	64	18-142	1	30	
Pentachlorophenol	ug/kg	<7610	1910	1900	1060J	827J	56	44	22-115		30	
Phenanthrene	ug/kg	1720	1910	1900	3800	2620	109	47	47-124	37	30	R1
Phenol	ug/kg	<761	1910	1900	1060	1030	56	54	38-104	3	30	
Pyrene	ug/kg	1870	1910	1900	3570	2920	89	55	49-132	20	30	
1,2-Dichlorobenzene-d4 (S)	%						51	53	20-130			
2,4,6-Tribromophenol (S)	%						91	75	19-122			CH
2-Chlorophenol-d4 (S)	%						57	50	20-130			
2-Fluorobiphenyl (S)	%						64	65	30-115			
2-Fluorophenol (S)	%						58	49	25-121			
Nitrobenzene-d5 (S)	%						52	54	23-120			
p-Terphenyl-d14 (S)	%						83	84	18-137			
Phenol-d5 (S)	%						58	55	24-113			

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QUALITY CONTROL DATA

Project: 31 WATER ST
Pace Project No.: 7067135

QC Batch: 86472 Analysis Method: ASTM D2216-92M
QC Batch Method: ASTM D2216-92M Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 7067135001, 7067135002, 7067135003, 7067135004, 7067135005, 7067135006, 7067135007, 7067135008, 7067135009

SAMPLE DUPLICATE: 397708

Parameter	Units	7067135001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	9.3	9.1	3	20	

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QUALIFIERS

Project: 31 WATER ST
Pace Project No.: 7067135

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

SAMPLE QUALIFIERS

Sample: 7067135001
[1] Sample not collected according to EPA Method 5035A low level specifications. Results may be biased low.

Sample: 7067135002
[1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

Sample: 7067135003
[1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

Sample: 7067135004
[1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

Sample: 7067135005
[1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

Sample: 7067135006
[1] Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

ANALYTE QUALIFIERS

1j	Surrogate recovery high due to unresolved interferences.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.

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QUALIFIERS

Project: 31 WATER ST
Pace Project No.: 7067135

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
N	The reported TIC has an 85% or higher match on a mass spectral library search.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S1	Surrogate recovery outside laboratory control limits (confirmed by re-analysis).
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31 WATER ST
Pace Project No.: 7067135

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
7067135001	**BH-22 (0-1)**	EPA 3546	86092	EPA 8081B	86514
7067135002	**BH-22 (6-7.2)**	EPA 3546	86092	EPA 8081B	86514
7067135003	**S-01 (0-0.5)**	EPA 3546	86092	EPA 8081B	86514
7067135004	**S-02 (0-0.5)**	EPA 3546	86092	EPA 8081B	86514
7067135005	**S-03 (0.5-1)**	EPA 3546	86092	EPA 8081B	86514
7067135006	**S-07 (0.2-0.5)**	EPA 3546	86092	EPA 8081B	86514
7067135007	**S-05 (0-0.5)**	EPA 3546	86092	EPA 8081B	86514
7067135008	**S-04 (0.5-1)**	EPA 3546	86092	EPA 8081B	86514
7067135009	**S-06 (0.2-0.5)**	EPA 3546	86092	EPA 8081B	86514
7067135001	**BH-22 (0-1)**	EPA 3546	86094	EPA 8082A	86515
7067135002	**BH-22 (6-7.2)**	EPA 3546	86094	EPA 8082A	86515
7067135003	**S-01 (0-0.5)**	EPA 3546	86094	EPA 8082A	86515
7067135004	**S-02 (0-0.5)**	EPA 3546	86094	EPA 8082A	86515
7067135005	**S-03 (0.5-1)**	EPA 3546	86094	EPA 8082A	86515
7067135006	**S-07 (0.2-0.5)**	EPA 3546	86094	EPA 8082A	86515
7067135007	**S-05 (0-0.5)**	EPA 3546	87182	EPA 8082A	87285
7067135008	**S-04 (0.5-1)**	EPA 3546	86094	EPA 8082A	86515
7067135009	**S-06 (0.2-0.5)**	EPA 3546	86094	EPA 8082A	86515
7067135001	**BH-22 (0-1)**	EPA 8151A	86197	EPA 8151A	86442
7067135004	**S-02 (0-0.5)**	EPA 8151A	86197	EPA 8151A	86442
7067135006	**S-07 (0.2-0.5)**	EPA 8151A	86197	EPA 8151A	86442
7067135007	**S-05 (0-0.5)**	EPA 8151A	86197	EPA 8151A	86442
7067135008	**S-04 (0.5-1)**	EPA 8151A	86197	EPA 8151A	86442
7067135009	**S-06 (0.2-0.5)**	EPA 8151A	86197	EPA 8151A	86442
7067135001	**BH-22 (0-1)**	EPA 3050B	86079	EPA 6010C	86095
7067135002	**BH-22 (6-7.2)**	EPA 3050B	86079	EPA 6010C	86095
7067135003	**S-01 (0-0.5)**	EPA 3050B	86079	EPA 6010C	86095
7067135004	**S-02 (0-0.5)**	EPA 3050B	86079	EPA 6010C	86095
7067135005	**S-03 (0.5-1)**	EPA 3050B	86079	EPA 6010C	86095
7067135006	**S-07 (0.2-0.5)**	EPA 3050B	86079	EPA 6010C	86095
7067135007	**S-05 (0-0.5)**	EPA 3050B	86079	EPA 6010C	86095
7067135008	**S-04 (0.5-1)**	EPA 3050B	86079	EPA 6010C	86095
7067135009	**S-06 (0.2-0.5)**	EPA 3050B	86079	EPA 6010C	86095
7067135001	**BH-22 (0-1)**	EPA 7471B	86083	EPA 7471B	86099
7067135002	**BH-22 (6-7.2)**	EPA 7471B	86083	EPA 7471B	86099
7067135003	**S-01 (0-0.5)**	EPA 7471B	86083	EPA 7471B	86099
7067135004	**S-02 (0-0.5)**	EPA 7471B	86083	EPA 7471B	86099
7067135005	**S-03 (0.5-1)**	EPA 7471B	86083	EPA 7471B	86099
7067135006	**S-07 (0.2-0.5)**	EPA 7471B	86083	EPA 7471B	86099
7067135007	**S-05 (0-0.5)**	EPA 7471B	86083	EPA 7471B	86099
7067135008	**S-04 (0.5-1)**	EPA 7471B	86083	EPA 7471B	86099
7067135009	**S-06 (0.2-0.5)**	EPA 7471B	86083	EPA 7471B	86099
7067135001	**BH-22 (0-1)**	EPA 3545A	86340	EPA 8270D	86597
7067135002	**BH-22 (6-7.2)**	EPA 3545A	86340	EPA 8270D	86597
7067135003	**S-01 (0-0.5)**	EPA 3545A	86340	EPA 8270D	86597

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575 Broad Hollow Road
Melville, NY 11747
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 31 WATER ST
Pace Project No.: 7067135

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
7067135004	**S-02 (0-0.5)**	EPA 3545A	86340	EPA 8270D	86597
7067135005	**S-03 (0.5-1)**	EPA 3545A	86340	EPA 8270D	86597
7067135006	**S-07 (0.2-0.5)**	EPA 3545A	86340	EPA 8270D	86597
7067135007	**S-05 (0-0.5)**	EPA 3545A	86340	EPA 8270D	86597
7067135008	**S-04 (0.5-1)**	EPA 3545A	86340	EPA 8270D	86597
7067135009	**S-06 (0.2-0.5)**	EPA 3545A	86340	EPA 8270D	86597
7067135001	**BH-22 (0-1)**	EPA 5035A-L	86669	EPA 8260C	86670
7067135001	**BH-22 (0-1)**	EPA 8260			
7067135001	**BH-22 (0-1)**	ASTM D2216-92M	86472		
7067135002	**BH-22 (6-7.2)**	ASTM D2216-92M	86472		
7067135003	**S-01 (0-0.5)**	ASTM D2216-92M	86472		
7067135004	**S-02 (0-0.5)**	ASTM D2216-92M	86472		
7067135005	**S-03 (0.5-1)**	ASTM D2216-92M	86472		
7067135006	**S-07 (0.2-0.5)**	ASTM D2216-92M	86472		
7067135007	**S-05 (0-0.5)**	ASTM D2216-92M	86472		
7067135008	**S-04 (0.5-1)**	ASTM D2216-92M	86472		
7067135009	**S-06 (0.2-0.5)**	ASTM D2216-92M	86472		

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

WO#: 7067135

Container Preservative Type: 7067135

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Company: BE3 Corp	Billing Information: ← Same
Address: 1270 Niagara St Buffalo, NY 14213	
Report To: Jason Brydges	Email To: Jbrydges@be3corp.com
Copy To: abrenner@be3corp.com	Site Collection Info/Address: 31 Water St
Customer Project Name/Number: 31 WATER ST RI	State: NY County/City: Jamestown Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 716-249-6880 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brenner	Purchase Order # : Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	375 VOC + TICs	375 SVOC+TICs, Met, Pest, PCB	375 Herb	Lab Sample # / Comments
BH-22 (0-1')	SO	G	10/5	0915				2	X	X	X	001
BH-22 (6-7.2)				0945				1	~~X~~	X		002
S-01 (0-0.5)				1025				1		X		003
S-02 (0-0.5)				1045						X	X	004
S-03 (0-0.5)				1055						X		005
S-07 (0.2-0.5)				1115						X	X	006
S-05 (0-0.5)				1130						X	X	007
S-04 (0.5-1)				1140						X	X	008
S-06 (0.2-0.5)				1200						X	X	009

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: 4 0C Bubble wrap

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #: 8119 2993 7840

Samples received via: FEDEX UPS Client Courier Pace Courier

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
BE3	10/5/18 1400		10/6/18 1000
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: THO4
Cooler 1 Temp Upon Receipt: 1.5 oC
Cooler 1 Therm Corr. Factor: 0.0 oC
Cooler 1 Corrected Temp: 1.5 oC
Comments:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

Pace Analytical
www.pacelabs.com

Sample Receiving Non-Confor

WO#:7067135

PM: JM2 Due Date: 10/15/18
CLIENT: BE3

Date: 10/16/18	Evaluated by: JR
Client: BE3	

1. **If Chain-of-Custody (COC) is not received**: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. **If COC is incomplete, check applicable issues below and add details where appropriate:**

	Collection date/time missing or incorrect		Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
X	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:
Sample ID indicated on chain of custody sheet Sample ID SS-0305-03 (0-05). Bottle says SS-0305-19. Sample is logged in per chain of custody

3. **Sample integrity issues: check applicable issues below and add details where appropriate:**

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)		Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

4. **If Samples not preserved properly and Sample Receiving adjusts pH, add details below:**

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. **Client Contact: If client is contacted for any issue listed above, fill in details below:**

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 480-144153-1

Job Description: 31 WATER ST

For:
Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747

Attention: James Murphy



Approved for release.
Mary A Schwartzmyer
Project Manager I
11/13/2018 2:00 PM

Designee for
John R Schove, Project Manager II
10 Hazelwood Drive, Amherst, NY, 14228-2298
(716)504-9838
john.schove@testamericainc.com
11/13/2018

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who has signed this report.

TestAmerica Buffalo NELAC Certifications: CADPH 01169CA, FLDOH E87672, ILEPA 200003, KSDOH E-10187, LADEQ 30708, MDH 036-999-337, NHELAP 2973, NJDEP NY455, NYDOH 10026, ORELAP NY200003, PADEP 68-00281, TXCEQ T-104704412-10-1

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Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job Narrative
480-144153-1

Comments
No additional comments.

Receipt
The samples were received on 10/24/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.2º C and 3.4º C.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method(s) 3510C: The following samples were received outside of holding time: MW-03 (480-144153-1), MW-03 (480-144153-1[MS]), MW-03 (480-144153-1[MSD]), MW-02 (480-144153-2), 20181018-FD-1 (480-144153-3) and MW-05 (480-144153-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Client Sample ID: MW-03 — Lab Sample ID: 480-144153-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.16	J H	0.20	0.10	ug/L	1		8270D SIM ID	Total/NA

Client Sample ID: MW-02 — Lab Sample ID: 480-144153-2

No Detections.

Client Sample ID: 20181018-FD-1 — Lab Sample ID: 480-144153-3

No Detections.

Client Sample ID: MW-05 — Lab Sample ID: 480-144153-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-03

Date Collected: 10/18/18 10:50
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-1

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.16	J H	0.20	0.10	ug/L		10/31/18 07:26	11/08/18 17:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*29*		*15 - 110*	*10/31/18 07:26*	*11/08/18 17:31*	*1*

Client Sample ID: MW-02

Date Collected: 10/18/18 13:50
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-2

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H	0.19	0.095	ug/L		10/31/18 07:26	11/08/18 18:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*28*		*15 - 110*	*10/31/18 07:26*	*11/08/18 18:20*	*1*

Client Sample ID: 20181018-FD-1

Date Collected: 10/18/18 00:00
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-3

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H	0.19	0.095	ug/L		10/31/18 07:26	11/08/18 18:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*25*		*15 - 110*	*10/31/18 07:26*	*11/08/18 18:44*	*1*

Client Sample ID: MW-05

Date Collected: 10/18/18 16:10
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-4

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H	0.19	0.095	ug/L		10/31/18 07:26	11/08/18 19:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*26*		*15 - 110*	*10/31/18 07:26*	*11/08/18 19:09*	*1*

Default Detection Limits

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Prep: 3510C

Analyte	RL	MDL	Units	Method
1,4-Dioxane	0.20	0.10	ug/L	8270D SIM ID

Isotope Dilution Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	DXE (15-110)							
480-144153-1	MW-03	29							
480-144153-1 MS	MW-03	35							
480-144153-1 MSD	MW-03	31							
480-144153-2	MW-02	28							
480-144153-3	20181018-FD-1	25							
480-144153-4	MW-05	26							
LCS 480-442693/2-A	Lab Control Sample	36							
MB 480-442693/1-A	Method Blank	33							

Surrogate Legend

DXE = 1,4-Dioxane-d8

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-442693/1-A
Matrix: Water
Analysis Batch: 444395

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442693

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		10/31/18 07:26	11/08/18 15:07	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*33*		*15 - 110*	*10/31/18 07:26*	*11/08/18 15:07*	*1*

Lab Sample ID: LCS 480-442693/2-A
Matrix: Water
Analysis Batch: 444395

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442693

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			1.00	1.05		ug/L		105	40 - 140		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dioxane-d8	*36*		*15 - 110*

Lab Sample ID: 480-144153-1 MS
Matrix: Water
Analysis Batch: 444395

Client Sample ID: MW-03
Prep Type: Total/NA
Prep Batch: 442693

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane	0.16	J H	1.04	1.21	H	ug/L		101	40 - 140		

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
1,4-Dioxane-d8	*35*		*15 - 110*

Lab Sample ID: 480-144153-1 MSD
Matrix: Water
Analysis Batch: 444395

Client Sample ID: MW-03
Prep Type: Total/NA
Prep Batch: 442693

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	0.16	J H	0.952	1.14	H	ug/L		103	40 - 140	7	20

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,4-Dioxane-d8	*31*		*15 - 110*

QC Association Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

GC/MS Semi VOA

Prep Batch: 442693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-144153-1	MW-03	Total/NA	Water	3510C	
480-144153-2	MW-02	Total/NA	Water	3510C	
480-144153-3	20181018-FD-1	Total/NA	Water	3510C	
480-144153-4	MW-05	Total/NA	Water	3510C	
MB 480-442693/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-442693/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-144153-1 MS	MW-03	Total/NA	Water	3510C	
480-144153-1 MSD	MW-03	Total/NA	Water	3510C	

Analysis Batch: 444395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-144153-1	MW-03	Total/NA	Water	8270D SIM ID	442693
480-144153-2	MW-02	Total/NA	Water	8270D SIM ID	442693
480-144153-3	20181018-FD-1	Total/NA	Water	8270D SIM ID	442693
480-144153-4	MW-05	Total/NA	Water	8270D SIM ID	442693
MB 480-442693/1-A	Method Blank	Total/NA	Water	8270D SIM ID	442693
LCS 480-442693/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	442693
480-144153-1 MS	MW-03	Total/NA	Water	8270D SIM ID	442693
480-144153-1 MSD	MW-03	Total/NA	Water	8270D SIM ID	442693

Lab Chronicle

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Client Sample ID: MW-03
Date Collected: 10/18/18 10:50
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	444395	11/08/18 17:31	DMR	TAL BUF

Client Sample ID: MW-02
Date Collected: 10/18/18 13:50
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	444395	11/08/18 18:20	DMR	TAL BUF

Client Sample ID: 20181018-FD-1
Date Collected: 10/18/18 00:00
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	444395	11/08/18 18:44	DMR	TAL BUF

Client Sample ID: MW-05
Date Collected: 10/18/18 16:10
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	444395	11/08/18 19:09	DMR	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Method Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-144153-1	MW-03	Water	10/18/18 10:50	10/24/18 09:50
480-144153-2	MW-02	Water	10/18/18 13:50	10/24/18 09:50
480-144153-3	20181018-FD-1	Water	10/18/18 00:00	10/24/18 09:50
480-144153-4	MW-05	Water	10/18/18 16:10	10/24/18 09:50

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
MB_1,4SIM_WRK_00053	01/22/19	04/16/18	Methylene Chloride, Lot 196174	1 mL	MB_1,4SIM_INT_00009	10 uL	1,4-Dioxane	0.2 ug/mL
					MB_SIMSUR_INT_00002	10 uL	1,4-Dioxane-d8	2 ug/mL
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_1,4SIM_WRK_00054	01/22/19	04/16/18	Methylene Chloride, Lot 196174	1 mL	MB_1,4SIM_INT_00009	20 uL	1,4-Dioxane	0.4 ug/mL
					MB_SIMSUR_INT_00002	20 uL	1,4-Dioxane-d8	4 ug/mL
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_1,4SIM_WRK_00056	01/22/19	04/16/18	Methylene Chloride, Lot 196174	1 mL	MB_1,4SIM_INT_00009	40 uL	1,4-Dioxane	0.8 ug/mL
					MB_SIMSUR_INT_00002	40 uL	1,4-Dioxane-d8	8 ug/mL
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_1,4SIM_WRK_00057	01/22/19	04/16/18	Methylene Chloride, Lot 196174	1 mL	MB_1,4SIM_INT_00009	50 uL	1,4-Dioxane	1 ug/mL
					MB_SIMSUR_INT_00002	50 uL	1,4-Dioxane-d8	10 ug/mL
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_1,4SIM_WRK_00058	01/22/19	04/16/18	Methylene Chloride, Lot 196174	1 mL	MB_1,4SIM_INT_00009	60 uL	1,4-Dioxane	1.2 ug/mL
					MB_SIMSUR_INT_00002	60 uL	1,4-Dioxane-d8	12 ug/mL
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_1,4SIM_WRK_00059	01/16/19	07/16/18	Methylene Chloride, Lot 202206	10 mL	MB_1,4SIM_INT_00009	300 uL	1,4-Dioxane	0.6 ug/mL
					MB_SIMSUR_INT_00002	300 uL	1,4-Dioxane-d8	6 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_DFTPP_WRK_00343							4,4'-DDD	
							4,4'-DDE	
					MB_DFTPP_STK_00087	100 uL	4,4'-DDT	10 ug/mL
							DFTPP	10 ug/mL
.MB_DFTPP_STK_00087	09/30/19		Ultra Scientific, Lot CR-3789		(Purchased Reagent)		4,4'-DDT	1000 ug/mL
							DFTPP	1000 ug/mL
MB_LLIS_WRK_00156	04/10/19	10/22/18	Methylene Chloride, Lot 207567	10 mL	MB_INTSTD_STK_00054	1000 uL	1,4-Dichlorobenzene-d4	200 ug/mL
.MB_INTSTD_STK_00054	04/10/19		Restek, Lot A0133281		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MB_LLIS_WRK_00157	04/29/19	11/01/18	Methylene Chloride, Lot 209297	10 mL	MB_INTSTD_STK_00055	1000 uL	1,4-Dichlorobenzene-d4	200 ug/mL
.MB_INTSTD_STK_00055	04/29/19		Restek, Lot A0133281		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MB_SIMSS_WRK_00009	03/10/19	09/10/18	Methylene Chloride, Lot 192628	1 mL	MB_SIMSS_INT_00005	30 uL	1,4-Dioxane	0.6 ug/mL
					MB_SIMSUR_INT_00002	30 uL	1,4-Dioxane-d8	6 ug/mL
.MB_SIMSS_INT_00005	03/26/19	04/16/18	Methylene Chloride, Lot 197178	5 mL	MB_L1S1_SS_00023	100 uL	1,4-Dioxane	20 ug/mL
..MB_L1S1_SS_00023	03/26/19		Restek, Lot A0131190		(Purchased Reagent)		1,4-Dioxane	1000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
OP_SIM_LCS_00005	04/04/19	10/04/18	ACETONE, Lot 4833946	200 mL	O_1,4Diox_STK_00006	100 uL	1,4-Dioxane	1 ug/mL
.O_1,4Diox_STK_00006	01/31/23		Restek, Lot A0134438		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
OP_SimSurr_00011	04/26/19	10/26/18	ACETONE, Lot 4908645	400 mL	OP_1,4diox-d8_00015	1 mL	1,4-Dioxane-d8	10 ug/mL
					OP_1,4diox-d8_00016	1 mL	1,4-Dioxane-d8	10 ug/mL
.OP_1,4diox-d8_00015	06/30/21		Restek, Lot A0139112		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
.OP_1,4diox-d8_00016	06/30/21		Restek, Lot A0139112		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL

Reagent

MB_1,4SIM_INT_00009

Reagent

MB_1,4SIM_WRK_00053

Reagent

MB_1,4SIM_WRK_00054

Reagent

MB_1,4SIM_WRK_00056

Reagent

MB_1,4SIM_WRK_00057

Reagent

MB_1,4SIM_WRK_00058

Reagent

MB_1,4SIM_WRK_00059

Reagent

MB_14Diox_STK_00024



Reference Standards

1,4-dioxane

Catalog # 31853

Lot # A0110448

110 Benner Circle Bellefonte, PA 16823-8812
1-814-353-1300 1-800-356-1168
www.restek.com

FOR LABORATORY USE ONLY. READ SDS PRIOR TO USE.
RAW MATERIAL TEST INFORMATION AVAILABLE UPON REQUEST

MANUFACTURED UNDER RESTEK'S ISO 9001 REGISTERED QUALITY SYSTEM

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31853 **Lot No.:** A0110448

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2020 **Storage:** 0°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,4-Dioxane	2,005.0 µg/mL	+/- 11.7665 µg/mL	Gravimetric
	CAS # 123-91-1 (Lot SHBF2002V)		+/- 42.5509 µg/mL	Unstressed
	Purity 99%		+/- 42.7394 µg/mL	Stressed

Solvent: Methylene Chloride (MEOH FREE)
CAS # 75-09-2
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

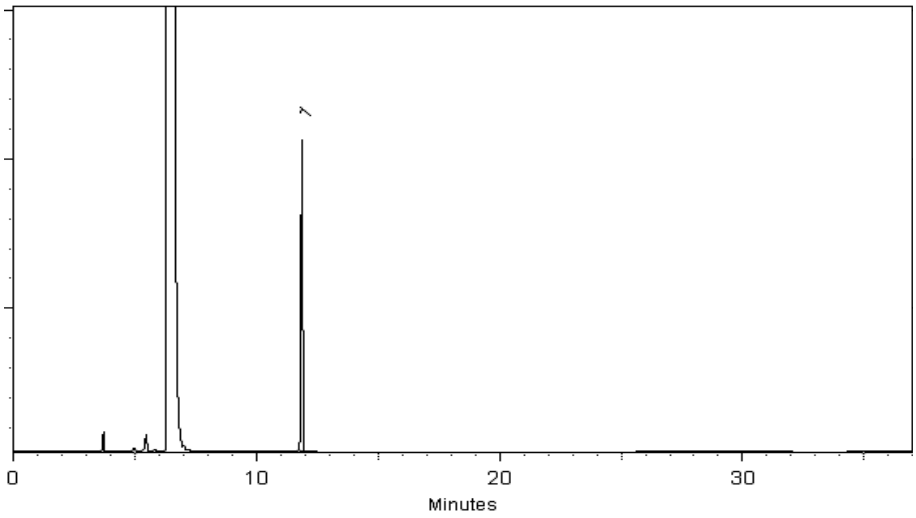
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Rebecca Sawyer

Date Mixed: 16-Apr-2015 **Balance:** 1128360905

Amanda Miller - QC Analyst

Date Passed: 20-Apr-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

RESTEK

Chemical Standard Batch Sheet
Lot #: A0110448

Catalog #: 31853	**Target:** 2000 ug/mL	
Description: 1,4-dioxane		
Solvent: Methylene Chloride (MEOH FREE)	**Solvent Lot:** 150188	**Final Volume:** 100 ml

Made by: Rebecca Lauver	**Date:** 4/16/2015 11:55:20AM		
Tested by: Amanda Miller	**Date:** 4/17/2015 10:07:38AM		
Pass	**By:** Amanda Miller	**Date:** 4/20/2015 8:16:14AM	
Packaged by: Joe Conway / Rebecca Lauver	**Date:** 4/16/2015 1:36:41PM	**No. Units:** 71	**Pkg Size:** 1 mL
Balance Used: BEDEARMBALPC3 XP205	**Serial #:** 1128360905		

Compound	CAS	Storage Location	Lot #	Purity	Target Conc(ug/mL)	Target	Actual	Calc Conc(ug/mL)
1,4-Dioxane	123-91-1	R0581	SHBF2002V	0.99	2,000.00	200.00 mg	200.50 mg	2,005.0

QA Report: 1 4-dioxane (Cat.#31853)

	Runs of Lot # a079686						Runs of Lot # a0110448							
COMPONENT	Run #1	Run #2	Run #3	AVG	STD DEV	% RSD	Run #1	Run #2	Run #3	AVG	STD DEV	% RSD	%D MEAN	**P/F**
1,4-dioxane	4744769	4744247	4791536	4760184	27153	0.57	4764070	4797484	4777169	4779574	16836	0.35	-0.41	PASS

Reagent

MB_DFTPP_STK_00087

Certificate of Analysis

Semi-Volatiles GC/MS Tuning Standard

Product Number: GCM-150

Lot Number: CR-3789

Lot Issue Date: 23-Aug-2017

Expiration Date: 30-Sep-2019

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
decafluorotriphenylphosphine	005074-71-5	RM03353	1005 ± 5 µg/mL
benzidine	000092-87-5	RM10200	1001 ± 5 µg/mL
pentachlorophenol	000087-86-5	RM02473	1004 ± 5 µg/mL
4,4'-DDT	000050-29-3	NT01175	1003 ± 5 µg/mL

Matrix: methylene chloride (purified)

Storage: Store Frozen (-25° to -10°C).

MB_DFTPP_STK_00084-00087

Received 4/9/18

BS

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

John Russo
President

Monica Bourgeois
Director of QA/RA

Reagent

MB_DFTPP_WRK_00343

Reagent

MB_INTSTD_STK_00054

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

MB_INTSD_STK-00053-00054

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Received 6/4/18 MKP

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567684 **Lot No.:** A0133281

Description : 8270 Internal Standard

8270 Internal Standard 2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : December 31, 2022 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dichlorobenzene-d4 **CAS #** 3855-82-1 **Purity** 99%	(Lot PR-18488)	2,000.9 µg/mL	+/- 11.6334 +/- 90.1217 +/- 100.0012	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Naphthalene-d8 **CAS #** 1146-65-2 **Purity** 99%	(Lot M-1452)	2,000.1 µg/mL	+/- 11.6285 +/- 90.0835 +/- 99.9587	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	Acenaphthene-d10 **CAS #** 15067-26-2 **Purity** 99%	(Lot PR-25444)	2,000.2 µg/mL	+/- 11.6290 +/- 90.0880 +/- 99.9637	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	Phenanthrene-d10 **CAS #** 1517-22-2 **Purity** 99%	(Lot PR-23065)	2,002.8 µg/mL	+/- 11.6442 +/- 90.2051 +/- 100.0937	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	Chrysene-d12 **CAS #** 1719-03-5 **Purity** 99%	(Lot PR-27952)	2,001.4 µg/mL	+/- 11.6360 +/- 90.1420 +/- 100.0237	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	Perylene-d12 **CAS #** 1520-96-3 **Purity** 99%	(Lot PR-24113)	2,002.3 µg/mL	+/- 11.6413 +/- 90.1825 +/- 100.0687	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Reagent

MB_INTSTD_STK_00055

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567684 **Lot No.:** A0133281

MB_INTSTD_STK_00055-56

Description : 8270 Internal Standard

8270 Internal Standard 2,000µg/mL, Methylene chloride, 5mL/ampul

Received 9/17/18
BS

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : December 31, 2022 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dichlorobenzene-d4 **CAS #** 3855-82-1 **Purity** 99%	(Lot PR-18488)	2,000.9 µg/mL	+/- 11.6334 +/- 90.1217 +/- 100.0012	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Naphthalene-d8 **CAS #** 1146-65-2 **Purity** 99%	(Lot M-1452)	2,000.1 µg/mL	+/- 11.6285 +/- 90.0835 +/- 99.9587	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	Acenaphthene-d10 **CAS #** 15067-26-2 **Purity** 99%	(Lot PR-25444)	2,000.2 µg/mL	+/- 11.6290 +/- 90.0880 +/- 99.9637	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	Phenanthrene-d10 **CAS #** 1517-22-2 **Purity** 99%	(Lot PR-23065)	2,002.8 µg/mL	+/- 11.6442 +/- 90.2051 +/- 100.0937	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	Chrysene-d12 **CAS #** 1719-03-5 **Purity** 99%	(Lot PR-27952)	2,001.4 µg/mL	+/- 11.6360 +/- 90.1420 +/- 100.0237	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	Perylene-d12 **CAS #** 1520-96-3 **Purity** 99%	(Lot PR-24113)	2,002.3 µg/mL	+/- 11.6413 +/- 90.1825 +/- 100.0687	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Reagent

MB_L1S1_SS_00023

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 571995.SEC **Lot No.:** A0131190

MB_LISI_SS_00023-00027

Description : 8270 List 1 / Std #1 MegaMix (2017)

8270 List 1 / Std #1 MegaMix (2017) 500-2,000µg/mL, Methylene chloride, 5mL/ampul

Received 3/9/18

Container Size : 10 mL **Pkg Amt:** > 5 mL

Expiration Date : March 31, 2019 **Storage:** 0°C or colder

Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,4-Dioxane **CAS #** 123-91-1.SEC (Lot MUFZH) **Purity** 99%	1,000.0 µg/mL	+/- 5.8275 µg/mL +/- 11.9606 µg/mL +/- 19.0288 µg/mL	Gravimetric Unstressed Stressed
2	N-Nitrosodimethylamine **CAS #** 62-75-9.SEC (Lot 61H72) **Purity** 99%	1,000.0 µg/mL	+/- 5.8275 µg/mL +/- 11.9606 µg/mL +/- 19.0288 µg/mL	Gravimetric Unstressed Stressed
3	Pyridine **CAS #** 110-86-1.SEC (Lot QN8DK) **Purity** 99%	2,000.0 µg/mL	+/- 11.6282 µg/mL +/- 23.9081 µg/mL +/- 38.0494 µg/mL	Gravimetric Unstressed Stressed
4	Phenol **CAS #** 108-95-2.SEC (Lot EDPYN) **Purity** 99%	1,000.6 µg/mL	+/- 5.8310 µg/mL +/- 11.9678 µg/mL +/- 19.0402 µg/mL	Gravimetric Unstressed Stressed
5	Aniline **CAS #** 62-53-3.SEC (Lot ZCD3N) **Purity** 99%	1,000.4 µg/mL	+/- 5.8299 µg/mL +/- 11.9654 µg/mL +/- 19.0364 µg/mL	Gravimetric Unstressed Stressed
6	Bis(2-chloroethyl)ether **CAS #** 111-44-4.SEC (Lot FA010143) **Purity** 99%	1,000.6 µg/mL	+/- 5.8310 µg/mL +/- 11.9678 µg/mL +/- 19.0402 µg/mL	Gravimetric Unstressed Stressed
7	n-Decane (C10) **CAS #** 124-18-5.SEC (Lot UCVNN) **Purity** 99%	1,000.0 µg/mL	+/- 5.8275 µg/mL +/- 11.9606 µg/mL +/- 19.0288 µg/mL	Gravimetric Unstressed Stressed

8	2-Chlorophenol **CAS #** 95-57-8.SEC **Purity** 99%	(Lot GJ01)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	1,3-Dichlorobenzene **CAS #** 541-73-1.SEC **Purity** 99%	(Lot FMDFD)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	1,4-Dichlorobenzene **CAS #** 106-46-7.SEC **Purity** 99%	(Lot 4Y5DC)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	Benzyl alcohol **CAS #** 100-51-6.SEC **Purity** 99%	(Lot QZBUO)	1,000.6	µg/mL	+/- 5.8310 +/- 11.9678 +/- 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	1,2-Dichlorobenzene **CAS #** 95-50-1.SEC **Purity** 99%	(Lot R6QDM)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	2-Methylphenol (o-cresol) **CAS #** 95-48-7.SEC **Purity** 99%	(Lot NC7HL)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	2,2'-oxybis(1-chloropropane) **CAS #** 108-60-1.SEC **Purity** 99%	(Lot 2-KMW-57-8)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Acetophenone **CAS #** 98-86-2.SEC **Purity** 99%	(Lot NSGTI)	1,000.6	µg/mL	+/- 5.8310 +/- 11.9678 +/- 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	3-Methylphenol (m-cresol) **CAS #** 108-39-4.SEC **Purity** 99%	(Lot 6LHTM)	500.0	µg/mL	+/- 2.9138 +/- 5.9803 +/- 9.5144	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	4-Methylphenol (p-cresol) **CAS #** 106-44-5.SEC **Purity** 99%	(Lot 65S2E)	501.0	µg/mL	+/- 2.9196 +/- 5.9923 +/- 9.5334	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	N-Nitroso-di-n-propylamine **CAS #** 621-64-7.SEC **Purity** 99%	(Lot 4423200)	1,001.4	µg/mL	+/- 5.8357 +/- 11.9773 +/- 19.0555	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
19	Hexachloroethane **CAS #** 67-72-1.SEC **Purity** 99%	(Lot 10173016)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
20	Nitrobenzene **CAS #** 98-95-3.SEC **Purity** 99%	(Lot FLYIG)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
21	Isophorone **CAS #** 78-59-1.SEC **Purity** 99%	(Lot XHGJI)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
22	2-Nitrophenol **CAS #** 88-75-5.SEC **Purity** 99%	(Lot GXJ7J)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
23	2,4-Dimethylphenol **CAS #** 105-67-9.SEC **Purity** 99%	(Lot MKBL3650V)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

24	Bis(2-chloroethoxy)methane **CAS #** 111-91-1 * **Purity** 99%	(Lot 5670100)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
25	2,4-Dichlorophenol **CAS #** 120-83-2.SEC **Purity** 99%	(Lot FHM01)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
26	1,2,4-Trichlorobenzene **CAS #** 120-82-1.SEC **Purity** 99%	(Lot OGO01)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
27	Naphthalene **CAS #** 91-20-3.SEC **Purity** 99%	(Lot SKZ5N)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
28	2,6-Dichlorophenol **CAS #** 87-65-0.SEC **Purity** 99%	(Lot SIDBB)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
29	4-Chloroaniline **CAS #** 106-47-8.SEC **Purity** 99%	(Lot 10171860)	1,000.2 µg/mL	+/- 5.8287 +/- 11.9630 +/- 19.0326	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
30	Hexachlorobutadiene **CAS #** 87-68-3.SEC **Purity** 97%	(Lot 1068200)	1,000.5 µg/mL	+/- 5.8302 +/- 11.9661 +/- 19.0375	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
31	4-Chloro-3-methylphenol **CAS #** 59-50-7.SEC **Purity** 99%	(Lot FDO02)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
32	2-Methylnaphthalene **CAS #** 91-57-6.SEC **Purity** 98%	(Lot 76023-1)	1,000.8 µg/mL	+/- 5.8320 +/- 11.9699 +/- 19.0436	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
33	1-Methylnaphthalene **CAS #** 90-12-0.SEC **Purity** 97%	(Lot UATSA)	1,000.1 µg/mL	+/- 5.8279 +/- 11.9614 +/- 19.0302	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
34	1,2,4,5-Tetrachlorobenzene **CAS #** 95-94-3.SEC **Purity** 99%	(Lot AF02)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
35	Hexachlorocyclopentadiene **CAS #** 77-47-4.SEC **Purity** 99%	(Lot 5608400)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
36	2,4,6-Trichlorophenol **CAS #** 88-06-2.SEC **Purity** 98%	(Lot UUMYM)	1,000.6 µg/mL	+/- 5.8309 +/- 11.9675 +/- 19.0399	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
37	2,4,5-Trichlorophenol **CAS #** 95-95-4.SEC **Purity** 97%	(Lot MKBQ9937V)	1,000.1 µg/mL	+/- 5.8279 +/- 11.9614 +/- 19.0302	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
38	2-Chloronaphthalene **CAS #** 91-58-7.SEC **Purity** 99%	(Lot LC07783V)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
39	Biphenyl **CAS #** 92-52-4.SEC **Purity** 99%	(Lot 33OQE)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

40	2-Nitroaniline **CAS #** 88-74-4.SEC **Purity** 99%	(Lot T6E7B)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
41	Acenaphthylene **CAS #** 208-96-8.SEC **Purity** 96%	(Lot 0012014)	999.9	µg/mL	+/- 5.8271 +/- 11.9598 +/- 19.0276	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
42	1,3-Dinitrobenzene **CAS #** 99-65-0.SEC **Purity** 99%	(Lot 3XXLB)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
43	Dimethylphthalate **CAS #** 131-11-3.SEC **Purity** 99%	(Lot 483WC)	1,002.0	µg/mL	+/- 5.8392 +/- 11.9845 +/- 19.0669	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
44	2,6-Dinitrotoluene **CAS #** 606-20-2.SEC **Purity** 99%	(Lot GE01)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
45	3-Nitroaniline **CAS #** 99-09-2.SEC **Purity** 99%	(Lot FGN03)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
46	Acenaphthene **CAS #** 83-32-9.SEC **Purity** 99%	(Lot BWZJE)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
47	2,4-Dinitrophenol **CAS #** 51-28-5.SEC **Purity** 99%	(Lot YTR6B)	2,000.0	µg/mL	+/- 11.6282 +/- 23.9081 +/- 38.0494	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
48	Dibenzofuran **CAS #** 132-64-9.SEC **Purity** 99%	(Lot 27ZGC)	1,000.8	µg/mL	+/- 5.8322 +/- 11.9702 +/- 19.0440	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
49	4-Nitrophenol **CAS #** 100-02-7.SEC **Purity** 99%	(Lot 2J5LB)	2,000.0	µg/mL	+/- 11.6282 +/- 23.9081 +/- 38.0494	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
50	2,4-Dinitrotoluene **CAS #** 121-14-2.SEC **Purity** 99%	(Lot SHRSA)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
51	2,3,4,6-Tetrachlorophenol **CAS #** 58-90-2.SEC **Purity** 99%	(Lot LC19623V)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
52	Fluorene **CAS #** 86-73-7.SEC **Purity** 99%	(Lot 5027400)	1,000.6	µg/mL	+/- 5.8310 +/- 11.9678 +/- 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
53	n-Hexadecane (C16) **CAS #** 544-76-3.SEC **Purity** 99%	(Lot A0328141)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
54	Diethylphthalate **CAS #** 84-66-2.SEC **Purity** 99%	(Lot UMBJC)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
55	4-Chlorophenyl phenyl ether **CAS #** 7005-72-3.SEC **Purity** 99%	(Lot P31G)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

56	4-Nitroaniline **CAS #** 100-01-6.SEC **Purity** 99%	(Lot 5ITRC)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
57	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) **CAS #** 534-52-1.SEC **Purity** 99%	(Lot 6333400)	2,000.0	µg/mL	+/- 11.6282 +/- 23.9081 +/- 38.0494	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
58	Diphenylamine **CAS #** 122-39-4.SEC **Purity** 99%	(Lot 10164691)	850.0	µg/mL	+/- 4.9534 +/- 10.1665 +/- 16.1745	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
59	Azobenzene **CAS #** 103-33-3.SEC **Purity** 99%	(Lot JUWAG)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
60	4-Bromophenyl phenyl ether **CAS #** 101-55-3.SEC **Purity** 99%	(Lot 84C6D)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
61	Hexachlorobenzene **CAS #** 118-74-1.SEC **Purity** 99%	(Lot G120431)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
62	Pentachlorophenol **CAS #** 87-86-5.SEC **Purity** 99%	(Lot 5784900)	2,000.4	µg/mL	+/- 11.6305 +/- 23.9129 +/- 38.0570	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
63	n-Octadecane (C18) **CAS #** 593-45-3.SEC **Purity** 99%	(Lot G14U045)	1,001.0	µg/mL	+/- 5.8333 +/- 11.9726 +/- 19.0478	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
64	Phenanthrene **CAS #** 85-01-8.SEC **Purity** 98%	(Lot 4708400)	1,002.0	µg/mL	+/- 5.8389 +/- 11.9839 +/- 19.0660	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
65	Anthracene **CAS #** 120-12-7.SEC **Purity** 99%	(Lot WDFNJ)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
66	Carbazole **CAS #** 86-74-8.SEC **Purity** 99%	(Lot LMIZB)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
67	Di-n-butylphthalate **CAS #** 84-74-2.SEC **Purity** 99%	(Lot 42FSG)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
68	Fluoranthene **CAS #** 206-44-0.SEC **Purity** 99%	(Lot FREGF)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
69	Pyrene **CAS #** 129-00-0.SEC **Purity** 99%	(Lot ROVJC)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
70	Benzyl butyl phthalate **CAS #** 85-68-7.SEC **Purity** 98%	(Lot GX3GL)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9605 +/- 19.0287	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
71	Benz(a)anthracene **CAS #** 56-55-3.SEC **Purity** 99%	(Lot MTENF)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

72	chrysene **CAS #** 218-01-9.SEC **Purity** 99%	(Lot NICZC)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
73	Bis(2-ethylhexyl)phthalate **CAS #** 117-81-7.SEC **Purity** 99%	(Lot MT8AG)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
74	Di-n-octyl phthalate **CAS #** 117-84-0.SEC **Purity** 99%	(Lot O8DLD)	1,000.8 µg/mL	+/- 5.8322 +/- 11.9702 +/- 19.0440	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
75	Benzo(b)fluoranthene **CAS #** 205-99-2.SEC **Purity** 99%	(Lot 022011)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
76	Benzo(k)fluoranthene **CAS #** 207-08-9.SEC **Purity** 99%	(Lot ER041513-01)	1,000.6 µg/mL	+/- 5.8310 +/- 11.9678 +/- 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
77	Benzo(a)pyrene **CAS #** 50-32-8.SEC **Purity** 97%	(Lot M8DFD)	1,000.5 µg/mL	+/- 5.8302 +/- 11.9661 +/- 19.0375	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
78	Indeno(1,2,3-cd)pyrene **CAS #** 193-39-5.SEC **Purity** 99%	(Lot 0012014)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
79	Dibenz(a,h)anthracene **CAS #** 53-70-3.SEC **Purity** 99%	(Lot 0012011)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
80	Benzo(g,h,i)perylene **CAS #** 191-24-2.SEC **Purity** 97%	(Lot 0022012)	1,000.1 µg/mL	+/- 5.8279 +/- 11.9614 +/- 19.0302	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

*** Restek is unable to identify a reliable and/or acceptable second source for this material - the same batch of neat material may have been used to produce both the primary and secondary standard. The primary and secondary standards were prepared using different equipment and personnel.**

Specific Reference Material Notes:
N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL.
N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine.
N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

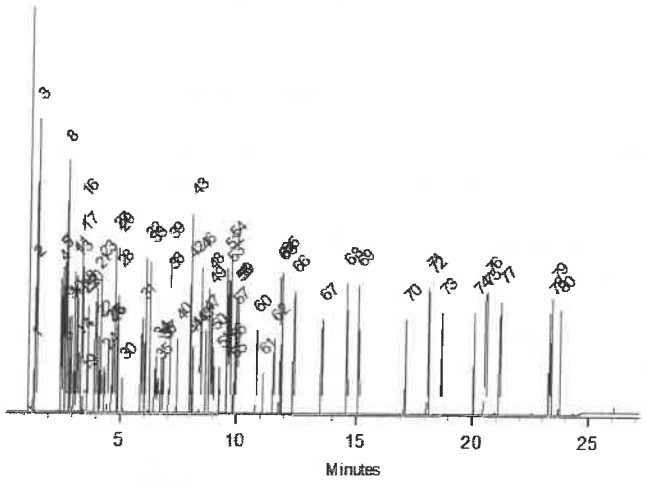
Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Date Mixed: 28-Sep-2017 **Balance:** 1128342313

Justine Albertson - Operations Tech-ARM QC

Date Passed: 13-Oct-2017

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
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- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MB_LLIS_WRK_00156

Reagent

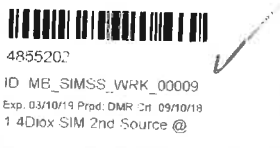
MB_SIMSS_INT_00005

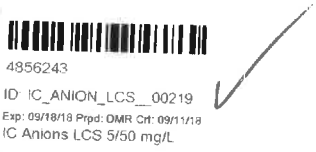
Reagent

MB_SIMSS_WRK_00009

GCMS Semivolatile / Ion Chromatography - Intermediate Reagent Review Sheet

TALS Reagent ID(s):





	N/A	Yes	No	2nd
Does the Description match the concentration of the standard?		Y		✓
Is the number of Bottles set to 1?		Y		✓
Is the storage location set correctly? • MB # 12 – opened SVOA intermediates • MB # 13 – opened IC reagents • IC Room Temperature – opened IC reagents		Y		✓
Are the Source reagents added correctly?		Y		✓
Is the expiration date set with the **tightest** of the following criteria? • Earliest Source reagent expiration date • 1 year from preparation (SVOA only) • 6 months from preparation (Daily SVOA reagents – DFTPP, CCV, RL Check, etc) X • 1 month (VFA working standards) • 1 week (Anions LCS/CCV reagents) X • 2 days (Anions ICAL reagents)		Y		✓
Final amount and Amount units correct?		Y		✓
Analyte units correct?		Y		✓
Creation date updated to day reagent was prepared?		Y		✓
Type of Solvent and Solvent Lot # used in preparation of reagent updated?		Y		✓
All analytes included that are required?		Y		✓
All analytes checked to Calibrate that are required?		Y		✓
Is the concentration of analytes correct?		Y		
Reagent set to Approved? (2nd level review only)				✓
Are the previous intermediates set to Disposed and removed storage location?		Y		✓

1st Reviewer: DR **Date Reviewed:** 9/11/18

2nd Reviewer: MCP **Date Reviewed:** 9/11/18

Comments:

IRV (SIMSS-WRK-00009) Exp. set to 6 months. (can be 3/24/18. (earliest parent exp.) Not changed in TALS or on label.

Reagent

MB_SIMSUR_INT_00002

Reagent

MB_SIMSur_STK_00014

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30614 **Lot No.:** A0134839

Description : 1,4-dioxane-d8 Standard

1,4-dioxane-d8 Standard 2000 µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dioxane-d8	2,008.7 µg/mL	+/- 11.7880	µg/mL	Gravimetric
	CAS # 17647-74-4 (Lot I-19942)		+/- 43.0356	µg/mL	Unstressed
	Purity 99%		+/- 44.2850	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

MB_SIMSim_STK_00014 – 00017

Received 4/5/18
MKP

Reagent

O_1,4Diox_STK_00006

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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ilac-MRA

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31853 **Lot No.:** A0134438

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2023 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dioxane **CAS #** 123-91-1 **Purity** 99% (Lot SHBH5677)	2,013.0 µg/mL	+/- 11.8134 µg/mL +/- 43.1285 µg/mL +/- 44.3806 µg/mL		Gravimetric Unstressed Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

45887048
ID O_1 4Diox_STK_00006
Exp: 01/31/23 Prpd: CAM
1 4 Dioxane @ 2000 ug/mL

45887050
ID O_1 4Diox_STK_00007
Exp: 01/31/23 Prpd: CAM
1 4 Dioxane @ 2000 ug/mL

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

OP_1,4diox-d8_00015

RESTEK®
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Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30614 **Lot No.:** A0139112

Description : 1,4-dioxane-d8 Standard

1,4-dioxane-d8 Standard 2000 µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dioxane-d8 **CAS #** 17647-74-4 (Lot I-19942) **Purity** 99%	2,011.6 µg/mL	+/- 11.8052 µg/mL +/- 43.0985 µg/mL +/- 44.3497 µg/mL		Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

4828706
ID: OP_1,4dIox-d8_00013
Exp: 06/30/21 Prpd: SMP
1,4-dioxane-d8@2000

4828707
ID: OP_1 4dIox-d8_00014
Exp: 06/30/21 Prpd: SMP
1,4-dioxane-d8@2000

4828726
ID: OP_1 4dIox-d8_00015
Exp: 06/30/21 Prpd: SMP
1,4-dioxane-d8@2000

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
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- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

OP_1,4diox-d8_00016

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www.restek.com

CERTIFIED REFERENCE MATERIAL

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30614 **Lot No.:** A0139112

Description : 1,4-dioxane-d8 Standard

1,4-dioxane-d8 Standard 2000 µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dioxane-d8		2,011.6 µg/mL	+/- 11.8052	µg/mL	Gravimetric
	CAS # 17647-74-4	(Lot I-19942)		+/- 43.0985	µg/mL	Unstressed
	Purity 99%			+/- 44.3497	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

4897237
ID OP_1,4diox-d8_00016
Exp: 06/30/21 Prpd: SMP
1 4-dioxane-d8@2000

4897238
ID OP_1.4diox-d8_00017
Exp: 06/30/21 Prpd: SMP
1 4-dioxane-d8@2000

4897239
ID OP_1.4diox-d8_00018
Exp: 06/30/21 Prpd: SMP
1.4-dioxane-d8@2000

General Certified Reference Material Notes

Expiration Notes:

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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

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Manufacturing Notes:

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Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Done! All 5 Order(s) of this packslip have(has) been processed.

*** Thank you for your patience! ***

Reagent

OP_SIM_LCS_00005

100 µL in 200 mL Acetone

Organic Prep
Spike / Surrogate Verification Form

4905360
ID: OP_SIM_LCS_00005
Exp: 04/04/19 Prpd: SMP Crl: 10/04/18
1,4-Dioxane SIM LCS @1.0p

Spike/Surrogate Method: 8270 SIM LCS TALs Reagent ID: _____

Spike/Surrogate Code: 8270 SIM LCS

Prepared By / Date: SP 10/4/18

Date Submitted for Analysis: 10/4/18

Solvent Exchanged? (YES) NO

Solvent Used for Exchange: MeCl2

Final Concentrated Volume: 1.0mL

Final Method Volume: 1.0mL

Final Method Volume Done by Prep? (Yes) No

Date of Analysis: 10/16/18

Analyzed By: DR

Compounds within 80-120% of expected recovery? (YES) NO

Spike / Surrogate Verified for Preparation Use? (YES) NO

* Please return form with final concentration report to Organic Prep



Method 8270D SIM-ID

Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution) by Method 8270D

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): RXI-5Sil MS ID: 0.25(mm)

Client Sample ID	Lab Sample ID	DXE #
MW-03	480-144153-1	29
MW-02	480-144153-2	28
20181018-FD-1	480-144153-3	25
MW-05	480-144153-4	26
	MB 480-442693/1-A	33
	LCS 480-442693/2-A	36
MW-03 MS	480-144153-1 MS	35
MW-03 MSD	480-144153-1 MSD	31

	QC LIMITS
DXE = 1,4-Dioxane-d8	15-110

Column to be used to flag recovery values

FORM II 8270D SIM ID

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Matrix: Water Level: Low Lab File ID: U3313086.D

Lab ID: LCS 480-442693/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	1.05	105	40-140	
1,4-Dioxane-d8	10.0	3.62	36	15-110	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM III
GC/MS SEMI VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Matrix: Water Level: Low Lab File ID: U3313087.D

Lab ID: 480-144153-1 MS Client ID: MW-03 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,4-Dioxane	1.04	0.16 J	1.21	101	40-140	H
1,4-Dioxane-d8	10.4	2.9	3.64	35	15-110	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM III
GC/MS SEMI VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Matrix: Water Level: Low Lab File ID: U3313088.D

Lab ID: 480-144153-1 MSD Client ID: MW-03 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
1,4-Dioxane	0.952	1.14	103	7	20	40-140	H
1,4-Dioxane-d8	9.52	2.93	31			15-110	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Lab File ID: U3313085.D Lab Sample ID: MB 480-442693/1-A

Matrix: Water Date Extracted: 10/31/2018 07:26

Instrument ID: HP5973U Date Analyzed: 11/08/2018 15:07

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-442693/2-A	U3313086.D	11/08/2018 15:31
MW-03 MS	480-144153-1 MS	U3313087.D	11/08/2018 15:55
MW-03 MSD	480-144153-1 MSD	U3313088.D	11/08/2018 16:19
MW-03	480-144153-1	U3313091.D	11/08/2018 17:31
MW-02	480-144153-2	U3313093.D	11/08/2018 18:20
20181018-FD-1	480-144153-3	U3313094.D	11/08/2018 18:44
MW-05	480-144153-4	U3313095.D	11/08/2018 19:09

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Lab File ID: U3312592.D DFTPP Injection Date: 10/26/2018

Instrument ID: HP5973U DFTPP Injection Time: 17:27

Analysis Batch No.: 442039

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10-80% of Base Peak	52.8	
68	Less than 2% of mass 69	0.0	(0.0) 1
69	Mass 69 Relative abundance	48.8	
70	Less than 2% of mass 69	0.3	(0.6) 1
127	10-80% of Base Peak	52.6	
197	Less than 2% of mass 198	0.0	
198	Base peak	100.0	
199	5-9% of mass 198	7.1	
275	10-60% of Base Peak	25.2	
365	Greater than 1% of mass 198	3.1	
441	present but less than 24% of mass 442	9.3	(16.0) 2
442	Greater than 50% of mass 198	58.1	
443	15-24% of mass 442	11.4	(19.6) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 480-442039/3	U3312593.D	10/26/2018	17:56
	IC 480-442039/4	U3312594.D	10/26/2018	18:20
	ICIS 480-442039/5	U3312595.D	10/26/2018	18:45
	IC 480-442039/6	U3312596.D	10/26/2018	19:08
	IC 480-442039/7	U3312597.D	10/26/2018	19:32
	IC 480-442039/8	U3312598.D	10/26/2018	19:56
	ICV 480-442039/9	U3312599.D	10/26/2018	20:20

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Lab File ID: U3313077.D DFTPP Injection Date: 11/08/2018

Instrument ID: HP5973U DFTPP Injection Time: 11:51

Analysis Batch No.: 444395

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10-80% of Base Peak	58.3	
68	Less than 2% of mass 69	0.5	(1.0) 1
69	Mass 69 Relative abundance	52.7	
70	Less than 2% of mass 69	0.7	(1.3) 1
127	10-80% of Base Peak	56.5	
197	Less than 2% of mass 198	0.1	
198	Base peak	100.0	
199	5-9% of mass 198	7.3	
275	10-60% of Base Peak	28.0	
365	Greater than 1% of mass 198	4.2	
441	present but less than 24% of mass 442	12.2	(16.2) 2
442	Greater than 50% of mass 198	75.5	
443	15-24% of mass 442	15.3	(20.2) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-444395/3	U3313078.D	11/08/2018	12:21
	MB 480-442693/1-A	U3313085.D	11/08/2018	15:07
	LCS 480-442693/2-A	U3313086.D	11/08/2018	15:31
MW-03 MS	480-144153-1 MS	U3313087.D	11/08/2018	15:55
MW-03 MSD	480-144153-1 MSD	U3313088.D	11/08/2018	16:19
MW-03	480-144153-1	U3313091.D	11/08/2018	17:31
MW-02	480-144153-2	U3313093.D	11/08/2018	18:20
20181018-FD-1	480-144153-3	U3313094.D	11/08/2018	18:44
MW-05	480-144153-4	U3313095.D	11/08/2018	19:09

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Sample No.: ICIS 480-442039/5 Date Analyzed: 10/26/2018 18:45

Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)

Lab File ID (Standard): U3312595.D Heated Purge: (Y/N) N

Calibration ID: 35206

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		769210	5.90				
UPPER LIMIT		1538420	6.40				
LOWER LIMIT		384605	5.40				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 480-442039/9		666864	5.90				
CCVIS 480-444395/3		634343	5.69				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Sample No.: CCVIS 480-444395/3 Date Analyzed: 11/08/2018 12:21

Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)

Lab File ID (Standard): U3313078.D Heated Purge: (Y/N) N

Calibration ID: 35206

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		634343	5.69				
UPPER LIMIT		1268686	6.19				
LOWER LIMIT		317172	5.19				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-442693/1-A		472154	5.69				
LCS 480-442693/2-A		496937	5.69				
480-144153-1 MS	MW-03 MS	488483	5.69				
480-144153-1 MSD	MW-03 MSD	469780	5.69				
480-144153-1	MW-03	471701	5.69				
480-144153-2	MW-02	461477	5.69				
480-144153-3	20181018-FD-1	485345	5.69				
480-144153-4	MW-05	457965	5.69				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-1

SDG No.:

Client Sample ID: MW-03 | Lab Sample ID: 480-144153-1

Matrix: Water | Lab File ID: U3313091.D

Analysis Method: 8270D SIM ID | Date Collected: 10/18/2018 10:50

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 1000(mL) | Date Analyzed: 11/08/2018 17:31

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.16	J H	0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	29		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313091.D
Lims ID: 480-144153-A-1-C
Client ID: MW-03
Sample Type: Client
Inject. Date: 08-Nov-2018 17:31:30 ALS Bottle#: 16 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-016
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:50

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D	1 1,4-Dioxane-d8	96	2.435	2.357	0.078	94	158825	2.94	29.4	
	3 1,4-Dioxane	88	2.475	2.394	0.081	72	2471	0.1600		
*	2 1,4-Dichlorobenzene-d4	152	5.690	5.686	0.004	93	471701	4.00		

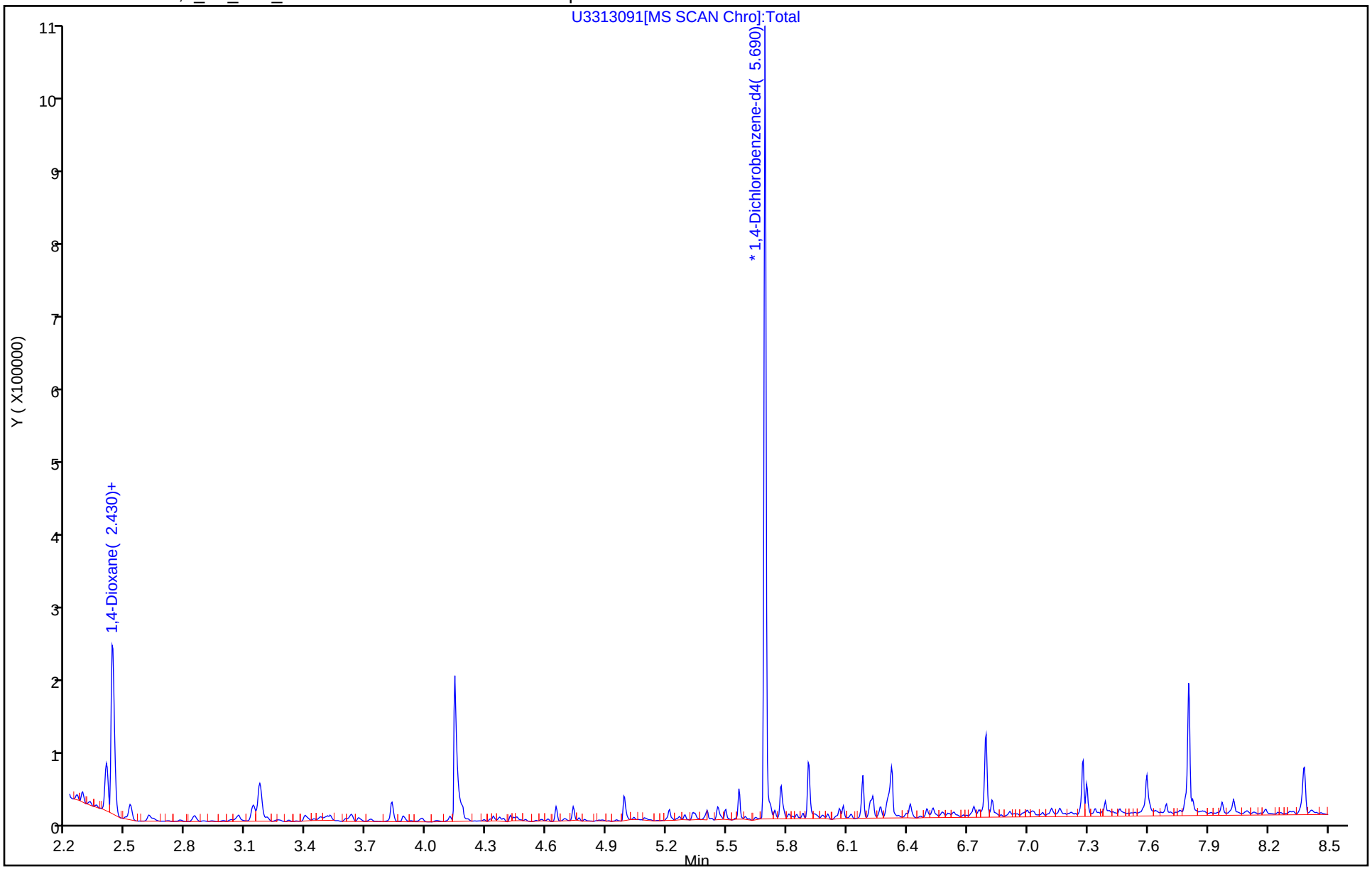
Reagents:

MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:57:50 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File:	\\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313091.D				
Injection Date:	08-Nov-2018 17:31:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	480-144153-A-1-C	Lab Sample ID:	480-144153-1	Worklist Smp#:	16
Client ID:	MW-03				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	16
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



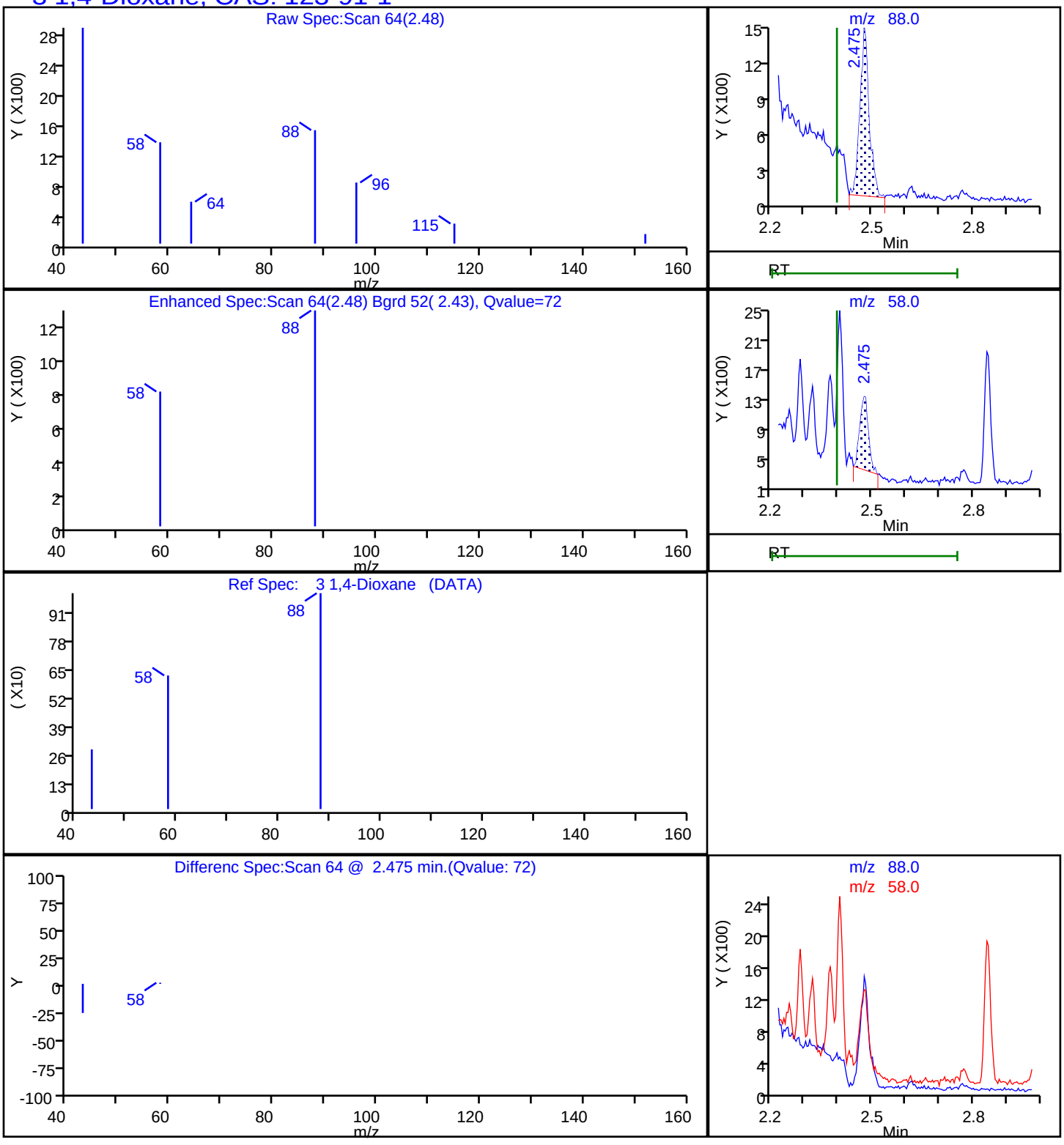
Report Date: 09-Nov-2018 15:57:50 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313091.D

Injection Date:	08-Nov-2018 17:31:30	Instrument ID:	HP5973U		
Lims ID:	480-144153-A-1-C	Lab Sample ID:	480-144153-1		
Client ID:	MW-03				
Operator ID:	MKP	ALS Bottle#:	16	Worklist Smp#:	16
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		
Column:		Detector	MS SCAN		

3 1,4-Dioxane, CAS: 123-91-1



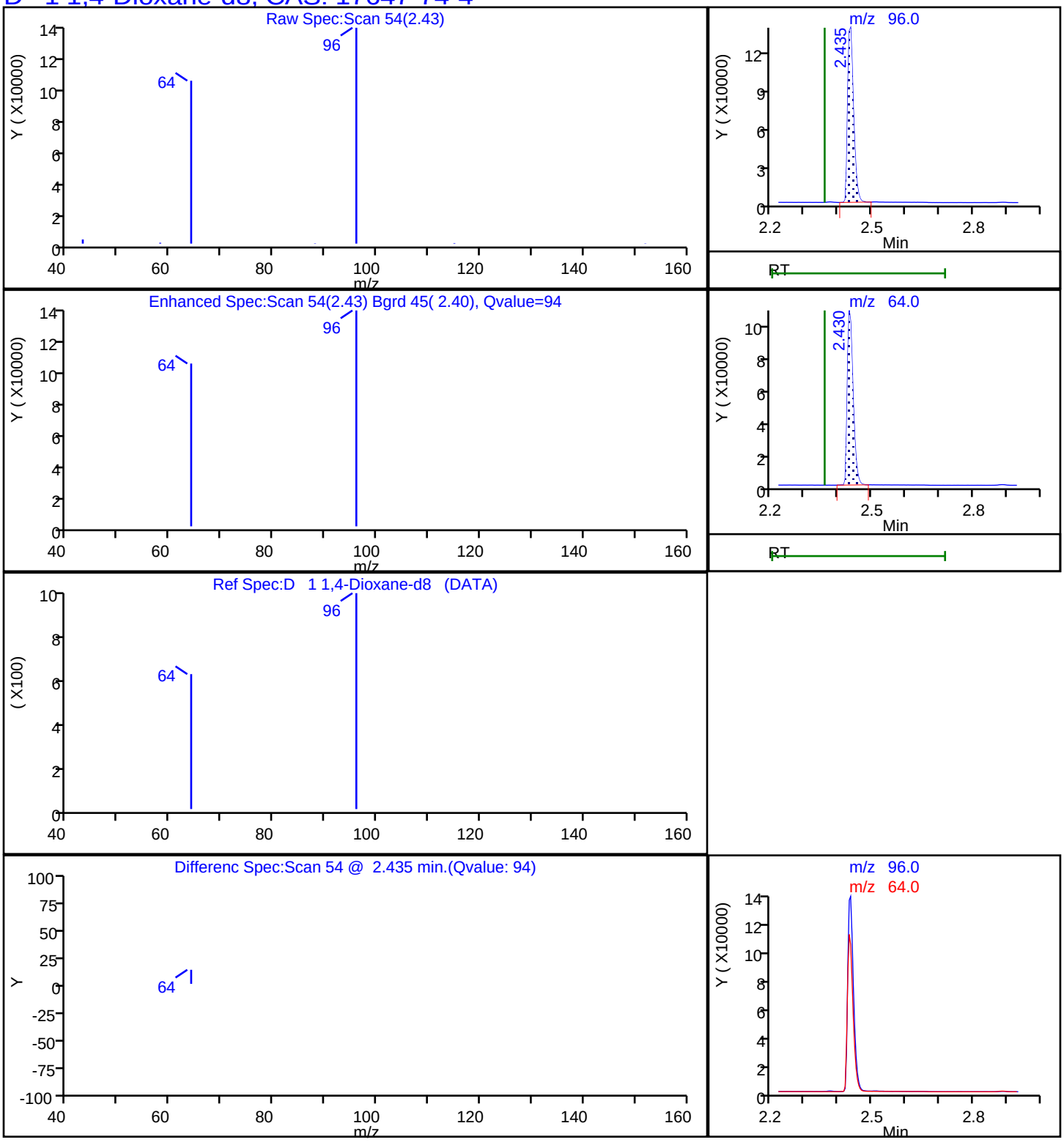
Report Date: 09-Nov-2018 15:57:50 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313091.D

Injection Date:	08-Nov-2018 17:31:30	Instrument ID:	HP5973U		
Lims ID:	480-144153-A-1-C	Lab Sample ID:	480-144153-1		
Client ID:	MW-03				
Operator ID:	MKP	ALS Bottle#:	16	Worklist Smp#:	16
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		
Column:		Detector	MS SCAN		

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-1

SDG No.:

Client Sample ID: MW-02 | Lab Sample ID: 480-144153-2

Matrix: Water | Lab File ID: U3313093.D

Analysis Method: 8270D SIM ID | Date Collected: 10/18/2018 13:50

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 1050(mL) | Date Analyzed: 11/08/2018 18:20

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND	H	0.19	0.095

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	28		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313093.D
Lims ID: 480-144153-A-2-A
Client ID: MW-02
Sample Type: Client
Inject. Date: 08-Nov-2018 18:20:30 ALS Bottle#: 18 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-018
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:54

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D	1 1,4-Dioxane-d8	96	2.434	2.357	0.077	92	150213	2.84	28.4	
	3 1,4-Dioxane	88		2.394				ND		
*	2 1,4-Dichlorobenzene-d4	152	5.690	5.686	0.004	94	461477	4.00		

Reagents:

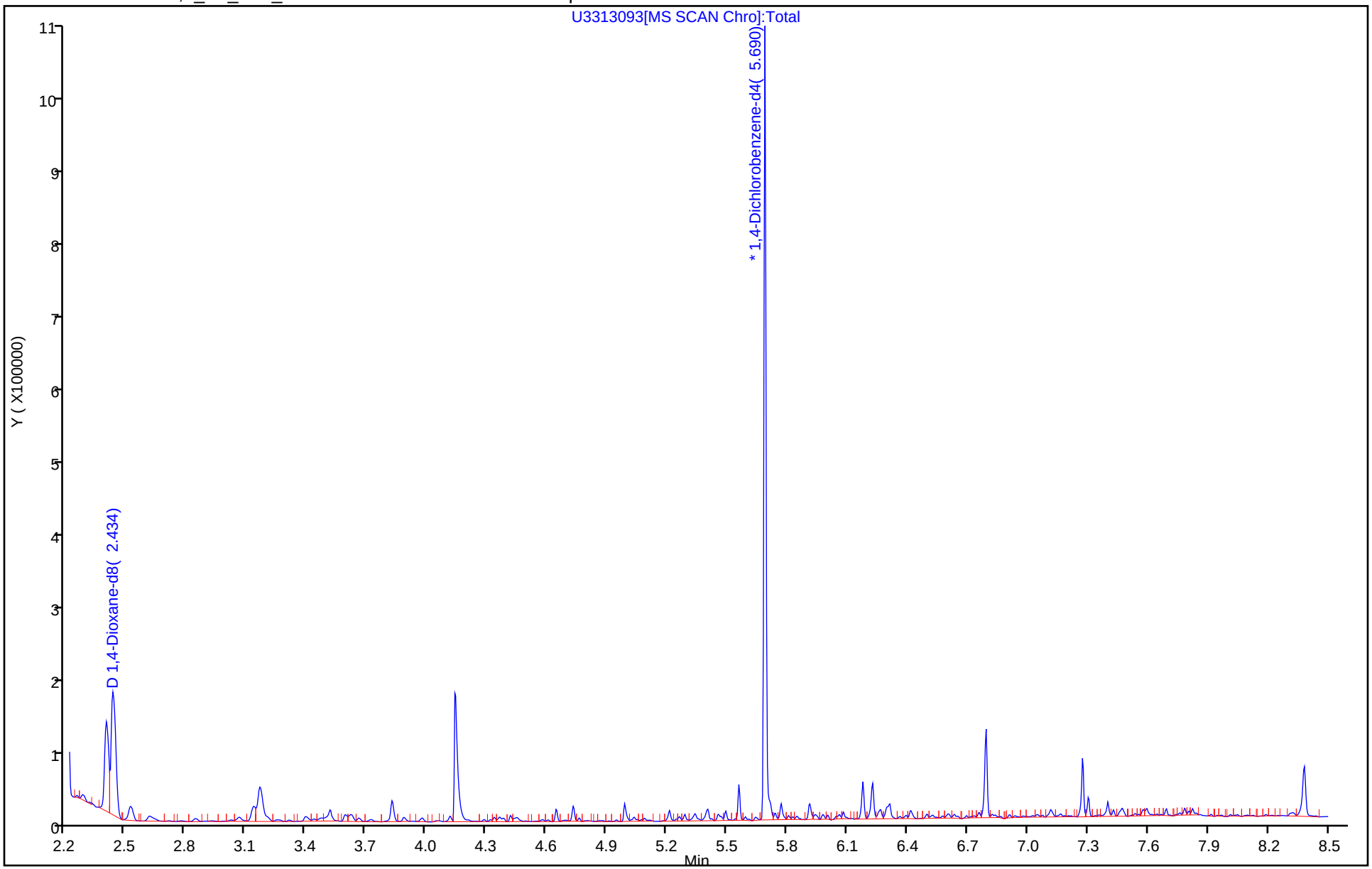
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:57:54 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313093.D

Injection Date:	08-Nov-2018 18:20:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	480-144153-A-2-A	Lab Sample ID:	480-144153-2	Worklist Smp#:	18
Client ID:	MW-02				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	18
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



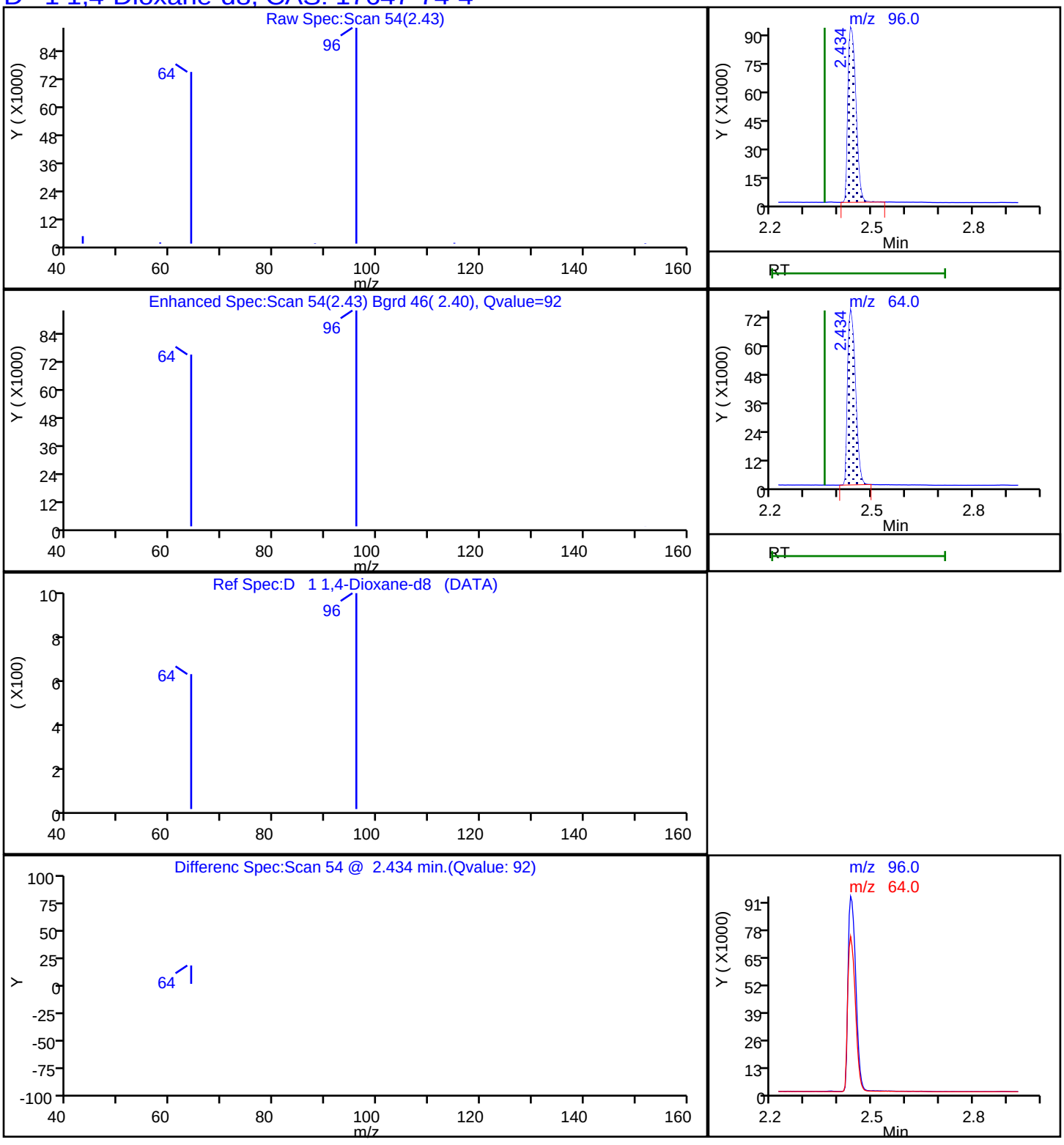
Report Date: 09-Nov-2018 15:57:54 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313093.D

Injection Date:	08-Nov-2018 18:20:30	Instrument ID:	HP5973U		
Lims ID:	480-144153-A-2-A	Lab Sample ID:	480-144153-2		
Client ID:	MW-02				
Operator ID:	MKP	ALS Bottle#:	18	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		
Column:		Detector	MS SCAN		

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-1

SDG No.:

Client Sample ID: 20181018-FD-1 | Lab Sample ID: 480-144153-3

Matrix: Water | Lab File ID: U3313094.D

Analysis Method: 8270D SIM ID | Date Collected: 10/18/2018 00:00

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 1050(mL) | Date Analyzed: 11/08/2018 18:44

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND	H	0.19	0.095

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	25		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313094.D
Lims ID: 480-144153-A-3-A
Client ID: 20181018-FD-1
Sample Type: Client
Inject. Date: 08-Nov-2018 18:44:30 ALS Bottle#: 19 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-019
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:58

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D	1 1,4-Dioxane-d8	96	2.426	2.357	0.069	93	136602	2.46	24.6	
	3 1,4-Dioxane	88		2.394				ND		
*	2 1,4-Dichlorobenzene-d4	152	5.690	5.686	0.004	94	485345	4.00		

Reagents:

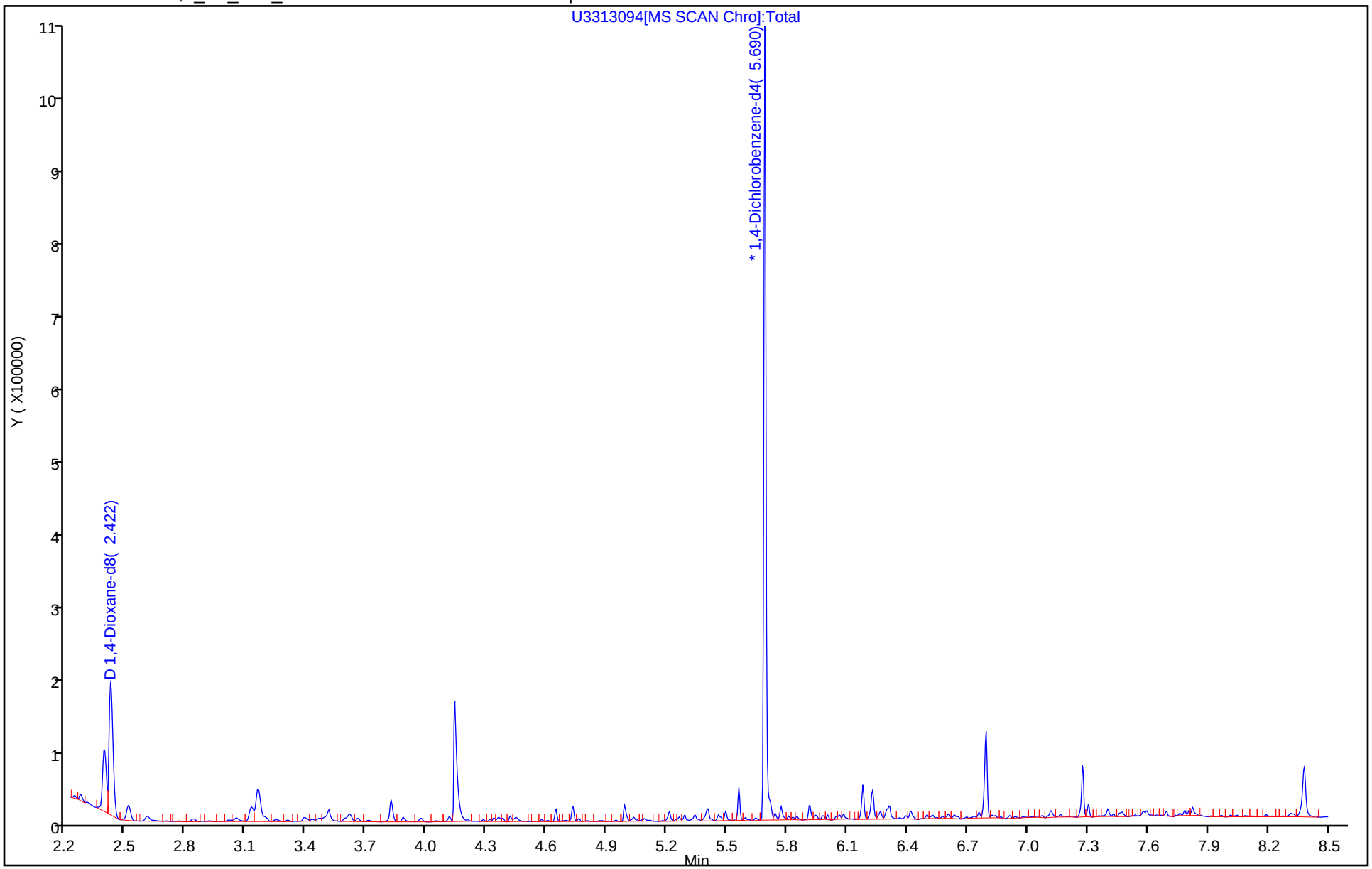
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:57:58 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313094.D

Injection Date:	08-Nov-2018 18:44:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	480-144153-A-3-A	Lab Sample ID:	480-144153-3	Worklist Smp#:	19
Client ID:	20181018-FD-1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	19
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



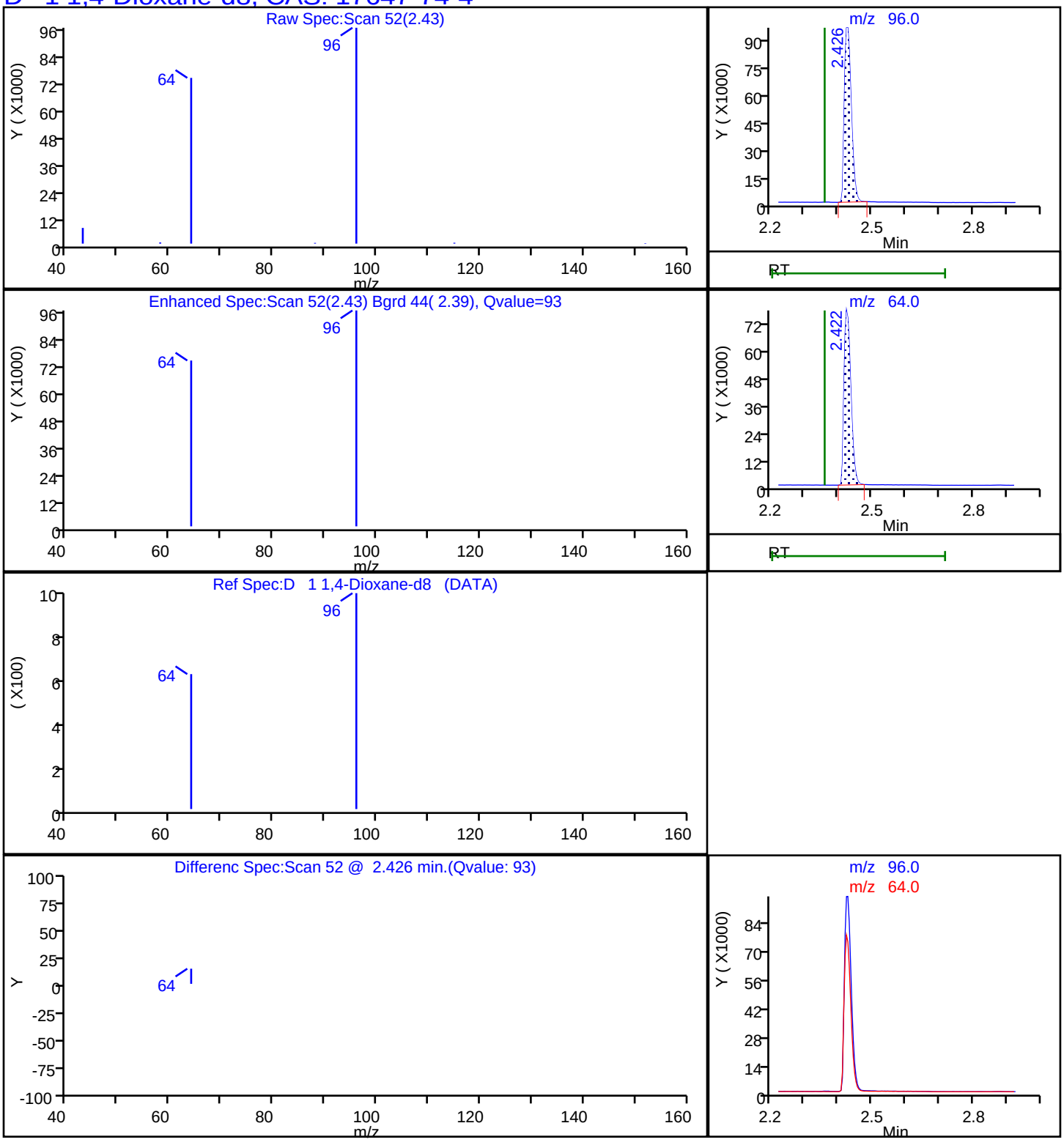
Report Date: 09-Nov-2018 15:57:58 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313094.D

Injection Date:	08-Nov-2018 18:44:30	Instrument ID:	HP5973U		
Lims ID:	480-144153-A-3-A	Lab Sample ID:	480-144153-3		
Client ID:	20181018-FD-1				
Operator ID:	MKP	ALS Bottle#:	19	Worklist Smp#:	19
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		
Column:		Detector	MS SCAN		

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-1

SDG No.:

Client Sample ID: MW-05 | Lab Sample ID: 480-144153-4

Matrix: Water | Lab File ID: U3313095.D

Analysis Method: 8270D SIM ID | Date Collected: 10/18/2018 16:10

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 1050(mL) | Date Analyzed: 11/08/2018 19:09

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND	H	0.19	0.095

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	26		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313095.D
Lims ID: 480-144153-A-4-A
Client ID: MW-05
Sample Type: Client
Inject. Date: 08-Nov-2018 19:09:30 ALS Bottle#: 20 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-020
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:58:01

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D	1 1,4-Dioxane-d8	96	2.422	2.357	0.065	93	136037	2.59	25.9	
	3 1,4-Dioxane	88		2.394				ND		
*	2 1,4-Dichlorobenzene-d4	152	5.690	5.686	0.004	93	457965	4.00		

Reagents:

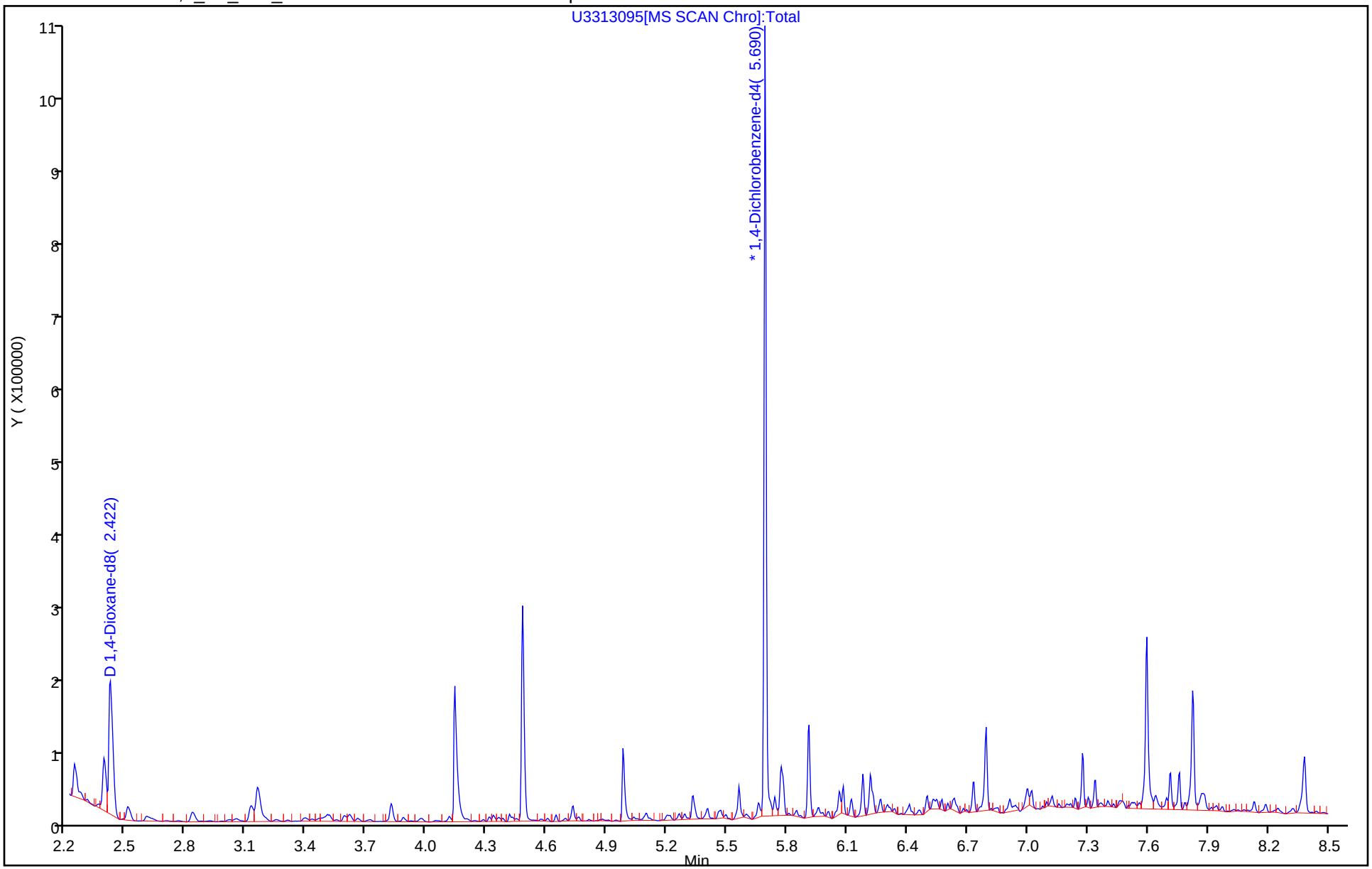
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:58:01 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313095.D

Injection Date:	08-Nov-2018 19:09:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	480-144153-A-4-A	Lab Sample ID:	480-144153-4	Worklist Smp#:	20
Client ID:	MW-05				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	20
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



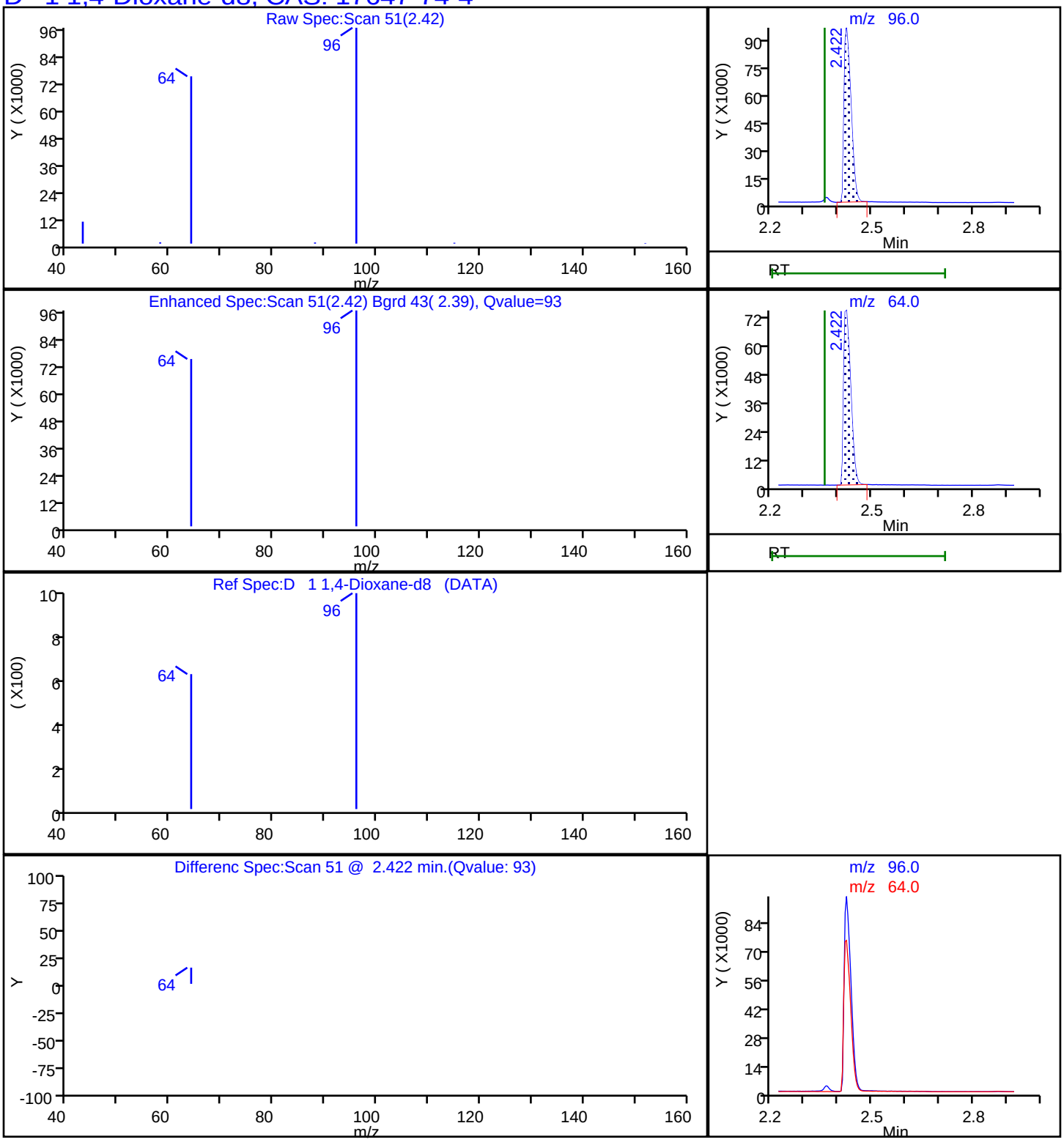
Report Date: 09-Nov-2018 15:58:01 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313095.D

Injection Date:	08-Nov-2018 19:09:30	Instrument ID:	HP5973U		
Lims ID:	480-144153-A-4-A	Lab Sample ID:	480-144153-4		
Client ID:	MW-05				
Operator ID:	MKP	ALS Bottle#:	20	Worklist Smp#:	20
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		
Column:		Detector	MS SCAN		

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1 Analy Batch No.: 442039

SDG No.:

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/26/2018 17:56 Calibration End Date: 10/26/2018 19:56 Calibration ID: 35206

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-442039/3	U3312593.D
Level 2	ICIS 480-442039/5	U3312595.D
Level 3	IC 480-442039/6	U3312596.D
Level 4	IC 480-442039/7	U3312597.D
Level 5	IC 480-442039/8	U3312598.D
Level 6	IC 480-442039/4	U3312594.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
1,4-Dioxane	1.0272 1.1181	1.1403	1.1674	1.2020	1.1911	L2ID	-0.040	1.2228			0.0100				1.0000		0.9900
1,4-Dioxane-d8	0.4652 0.4652	0.4519	0.4606	0.4543	0.4501	Ave		0.4579			0.0100	1.5		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1 Analy Batch No.: 442039

SDG No.:

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/26/2018 17:56 Calibration End Date: 10/26/2018 19:56 Calibration ID: 35206

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-442039/3	U3312593.D
Level 2	ICIS 480-442039/5	U3312595.D
Level 3	IC 480-442039/6	U3312596.D
Level 4	IC 480-442039/7	U3312597.D
Level 5	IC 480-442039/8	U3312598.D
Level 6	IC 480-442039/4	U3312594.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
1,4-Dioxane		L2ID	25072 47655	59461	107956	146288	154566	0.200 0.400	0.600	0.800	1.00	1.20
1,4-Dioxane-d8	DCBd 4	Ave	244071 426208	521445	924722	1217025	1297680	2.00 4.00	6.00	8.00	10.0	12.0

Curve Type Legend:

Ave = Average ISTD
L2ID = Linear 1/conc^2 IsoDil

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1 Analy Batch No.: 442039

SDG No.:

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/26/2018 17:56 Calibration End Date: 10/26/2018 19:56 Calibration ID: 35206

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-442039/3	U3312593.D
Level 2	ICIS 480-442039/5	U3312595.D
Level 3	IC 480-442039/6	U3312596.D
Level 4	IC 480-442039/7	U3312597.D
Level 5	IC 480-442039/8	U3312598.D
Level 6	IC 480-442039/4	U3312594.D

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
1,4-Dioxane	0.4	-1.3	-0.4	1.6	0.1	-0.4	30	30	30	30	30	30
1,4-Dioxane-d8	1.6	-1.3	0.6	-0.8	-1.7	1.6	30	30	30	30	30	30

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312593.D
Lims ID: IC - SIM 0.2
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 26-Oct-2018 17:56:30 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC - 0.2 SIM
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:16 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:34

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.691	2.687	0.004	93	244071	2.00	2.03	
3 1,4-Dioxane	88	2.732	2.732	0.000	89	25072	0.2000	0.2008	
* 2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	95	1049327	4.00	4.00	

Reagents:

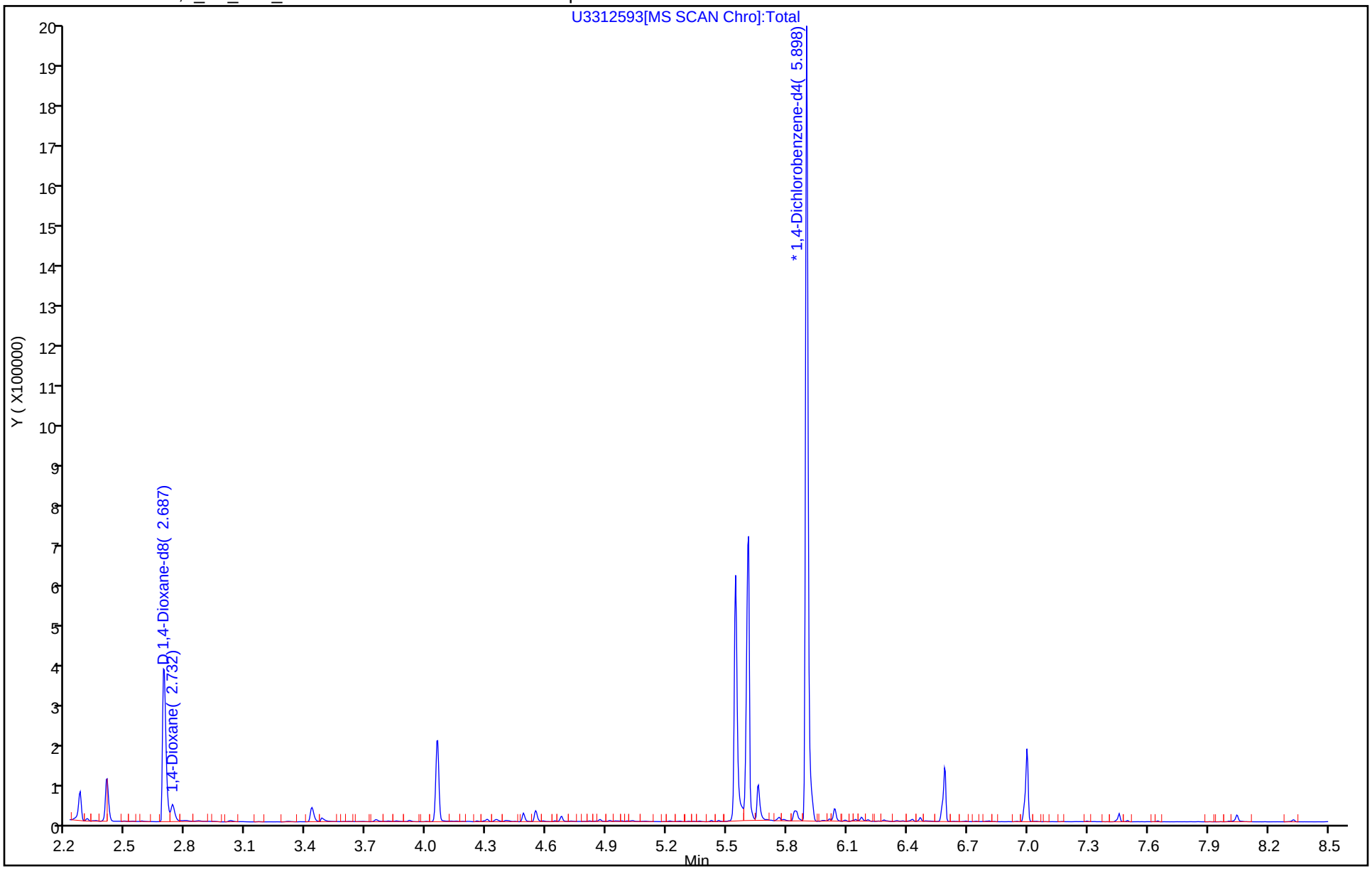
MB_1,4SIM_WRK_00053 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:17 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312593.D

Injection Date:	26-Oct-2018 17:56:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	IC - SIM 0.2			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312594.D
Lims ID: IC - SIM 0.4
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 26-Oct-2018 18:20:30 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC 0.4 SIM
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:17 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:20

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.687	2.687	0.000	93	426208	4.00	4.06	
	3 1,4-Dioxane	88	2.728	2.732	-0.004	88	47655	0.4000	0.3985	
*	2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	95	916170	4.00	4.00	

Reagents:

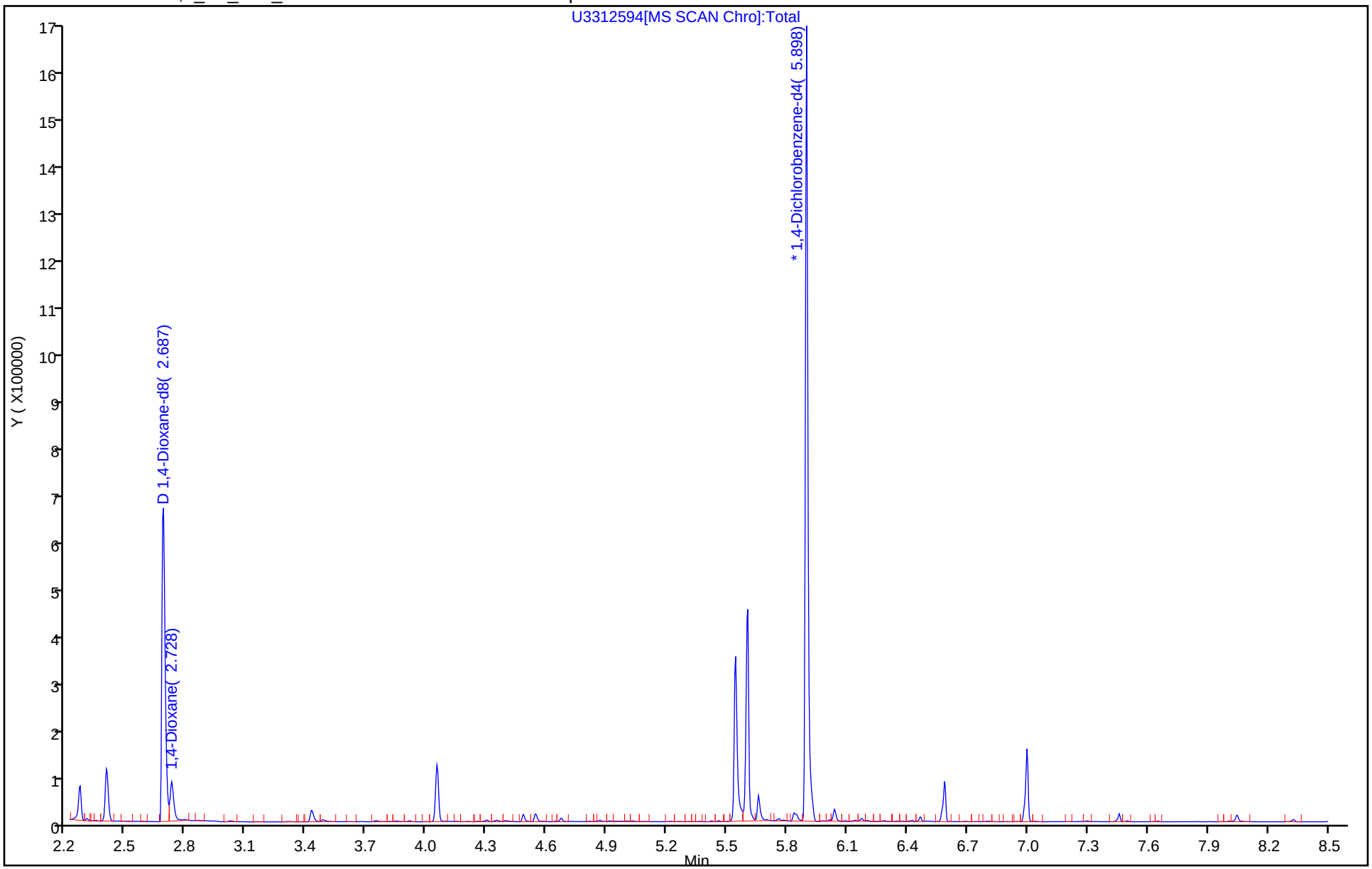
MB_1,4SIM_WRK_00054 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:17 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312594.D

Injection Date:	26-Oct-2018 18:20:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	IC - SIM 0.4			Worklist Smp#:	4
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312595.D
Lims ID: ICIS - SIM 0.6
Client ID:
Sample Type: ICIS Calib Level: 3
Inject. Date: 26-Oct-2018 18:45:30 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICIS- 0.6 SIM
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:18 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:02

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.687	2.687	0.000	92	521445	6.00	5.92	
3 1,4-Dioxane	88	2.732	2.732	0.000	90	59461	0.6000	0.5923	
* 2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	96	769210	4.00	4.00	

Reagents:

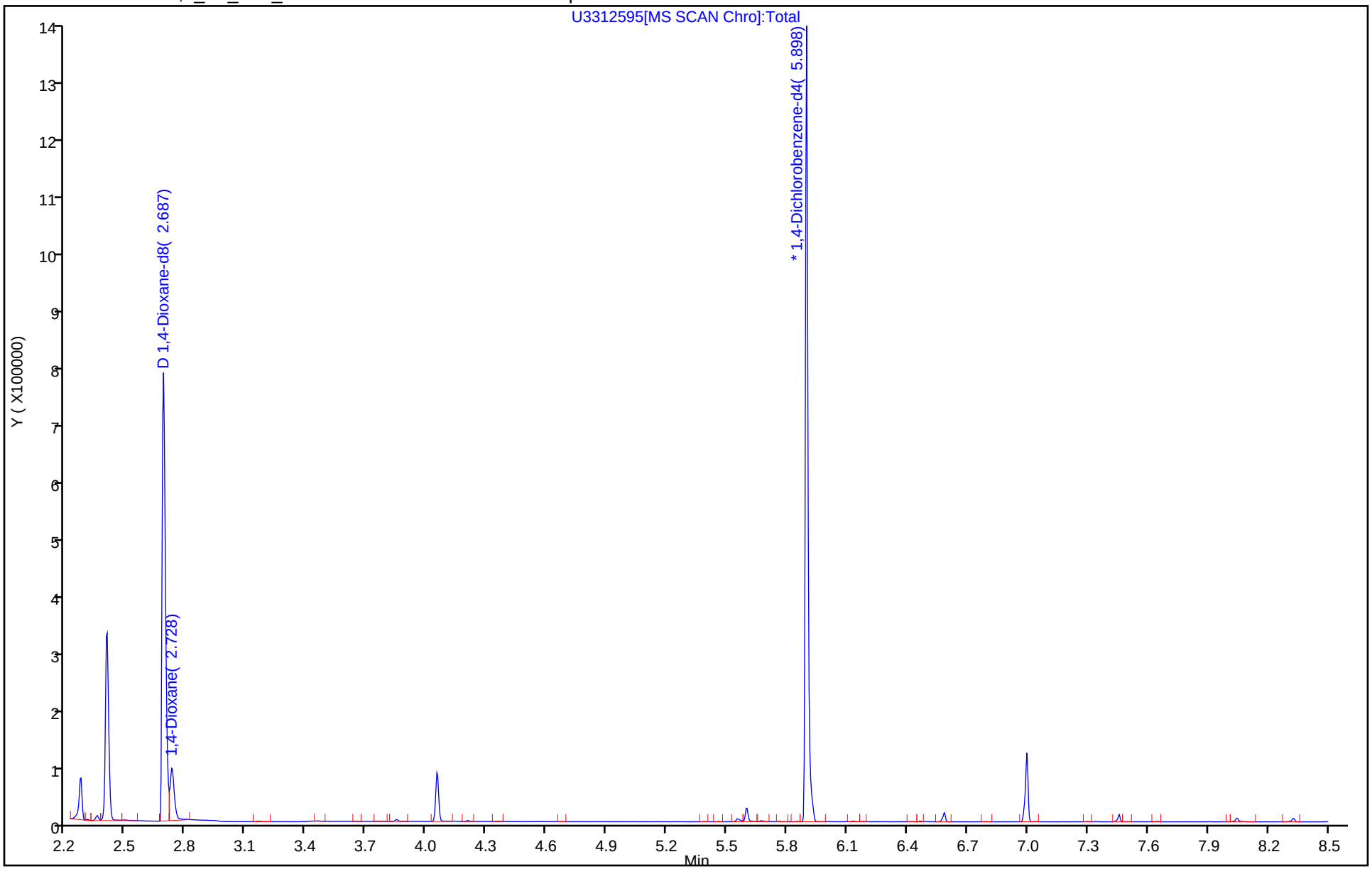
MB_1,4SIM_WRK_00059 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:18 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312595.D

Injection Date:	26-Oct-2018 18:45:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	ICIS - SIM 0.6			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312596.D
Lims ID: IC - SIM 0.8
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 26-Oct-2018 19:08:30 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC - 0.8 SIM
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:19 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:15

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.691	2.687	0.004	92	924722	8.00	8.05	
3 1,4-Dioxane	88	2.732	2.732	0.000	90	107956	0.8000	0.7965	
* 2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	95	1003796	4.00	4.00	

Reagents:

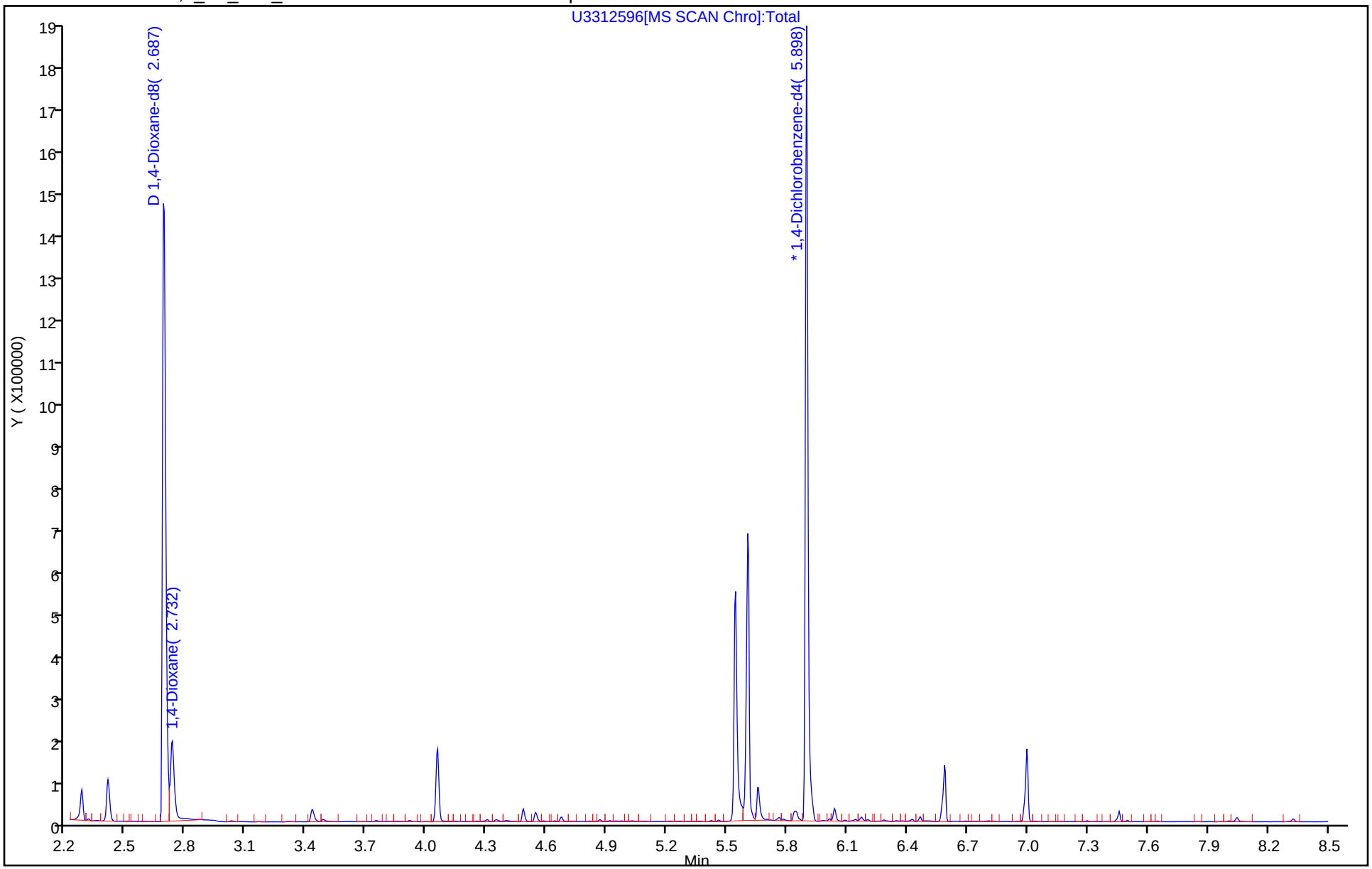
MB_1,4SIM_WRK_00056 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:19 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312596.D

Injection Date:	26-Oct-2018 19:08:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	IC - SIM 0.8			Worklist Smp#:	6
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312597.D
Lims ID: IC - SIM 1.0
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 26-Oct-2018 19:32:30 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0075895-007
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:20 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:14

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.687	2.687	0.000	91	1217025	10.0	9.92	
	3 1,4-Dioxane	88	2.728	2.732	-0.004	88	146288	1.00	1.02	
*	2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	95	1071553	4.00	4.00	

Reagents:

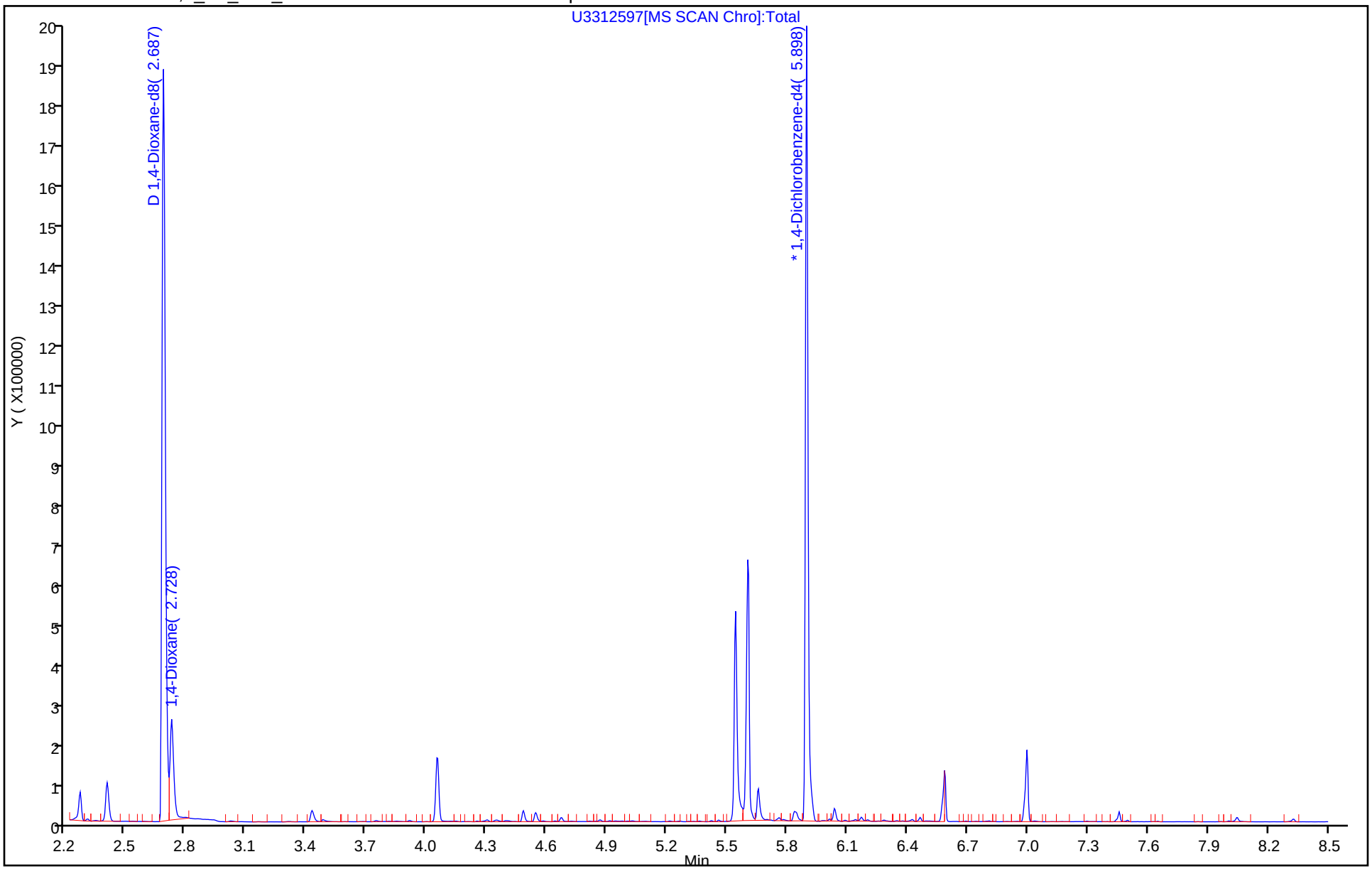
MB_1,4SIM_WRK_00057 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:21 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312597.D

Injection Date:	26-Oct-2018 19:32:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	IC - SIM 1.0			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D
Lims ID: IC - SIM 1.2
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 26-Oct-2018 19:56:30 ALS Bottle#: 8 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0075895-008
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:21 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:12

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.687	2.687	0.000	93	1297680	12.0	11.8	
	3 1,4-Dioxane	88	2.728	2.732	-0.004	91	154566	1.20	1.20	
*	2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	96	961134	4.00	4.00	

Reagents:

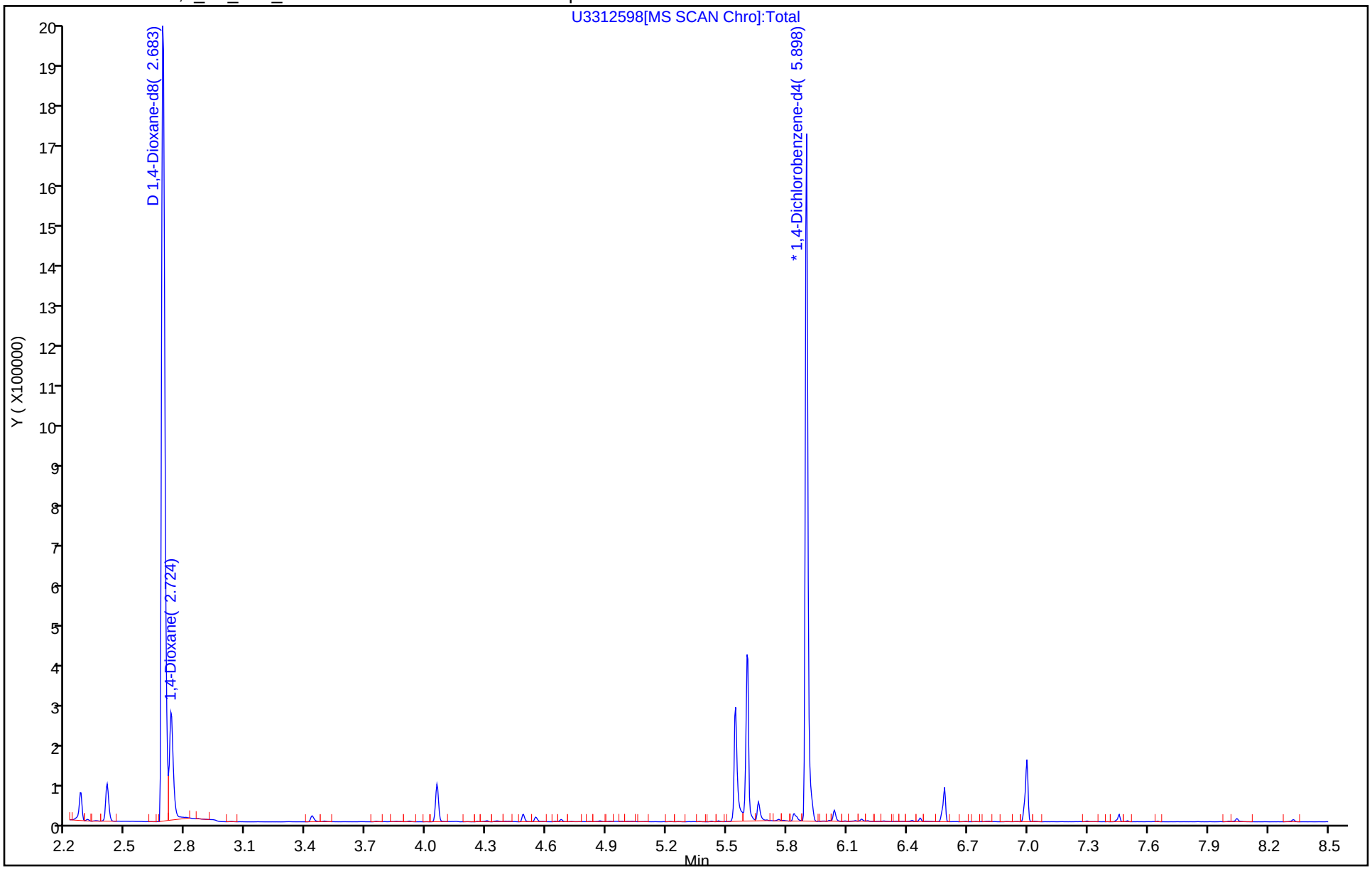
MB_1,4SIM_WRK_00058 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:21 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Injection Date:	26-Oct-2018 19:56:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	IC - SIM 1.2			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	8
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Lab Sample ID: ICV 480-442039/9 Calibration Date: 10/26/2018 20:20

Instrument ID: HP5973U Calib Start Date: 10/26/2018 17:56

GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm) Calib End Date: 10/26/2018 19:56

Lab File ID: U3312599.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	L2ID		1.078	0.0100	562	600	-6.4	20.0
1,4-Dioxane-d8	Ave	0.4579	0.4610	0.0100	6040	6000	0.7	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312599.D
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 26-Oct-2018 20:20:30 ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0075895-009
Operator ID: DR Instrument ID: HP5973U
Sublist:

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:34 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 16:53:28

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.687	2.687	0.000	92	461091	6.00	6.04	
	3 1,4-Dioxane	88	2.732	2.732	0.000	90	49718	0.6000	0.5618	
*	2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	96	666864	4.00	4.00	

Reagents:

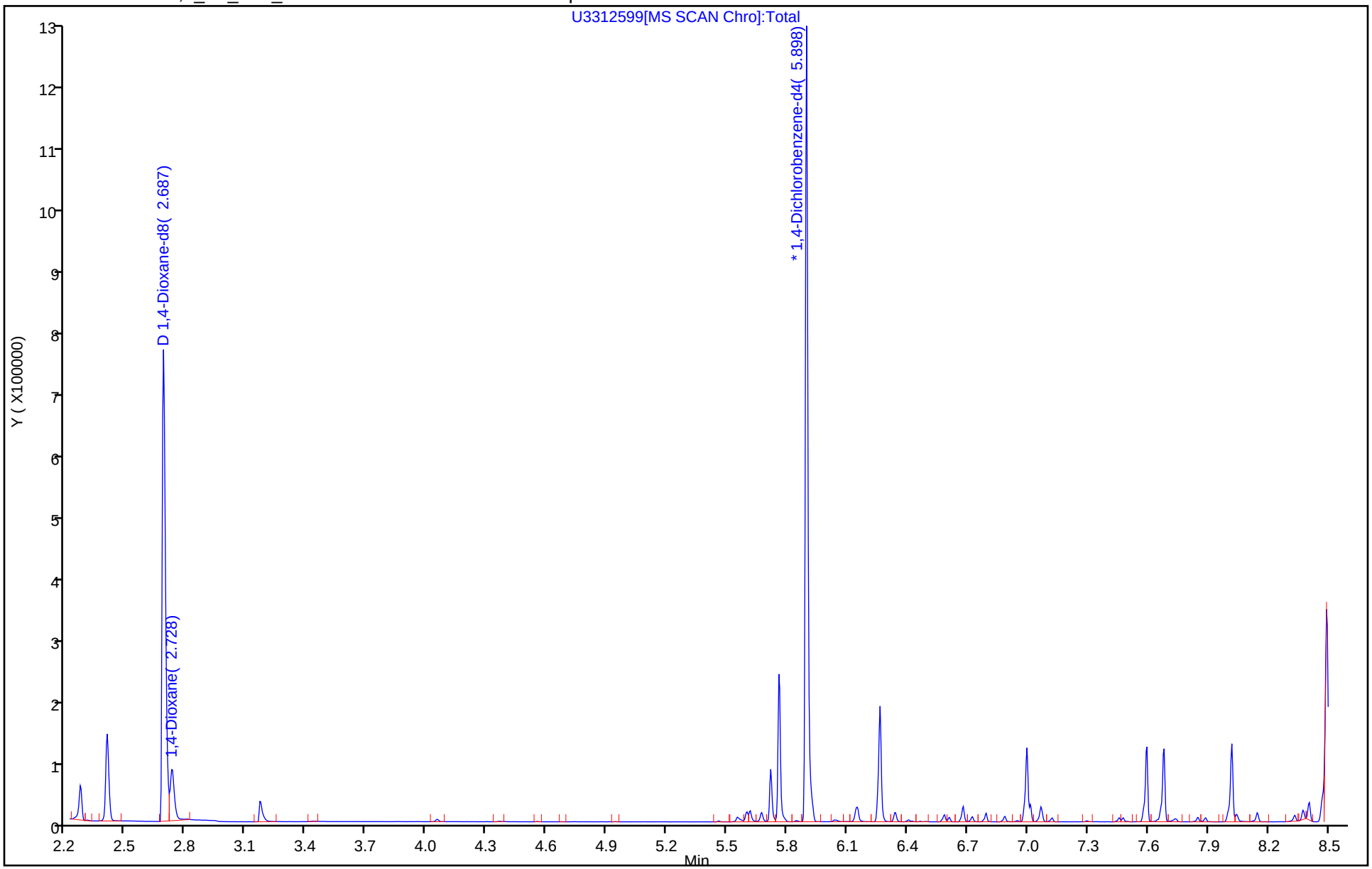
MB_SIMSS_WRK_00009 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 16:53:32 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312599.D

Injection Date:	26-Oct-2018 20:20:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	ICV			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Lab Sample ID: CCVIS 480-444395/3 Calibration Date: 11/08/2018 12:21

Instrument ID: HP5973U Calib Start Date: 10/26/2018 17:56

GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm) Calib End Date: 10/26/2018 19:56

Lab File ID: U3313078.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	L2ID		1.169	0.0100	606	600	1.1	20.0
1,4-Dioxane-d8	Ave	0.4579	0.4523	0.0100	5930	6000	-1.2	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313078.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 08-Nov-2018 12:21:30 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-003
Operator ID: MKP Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:12

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.357	2.357	0.000	92	430381	6.00	5.93	
	3 1,4-Dioxane	88	2.394	2.394	0.000	86	50310	0.6000	0.6063	
*	2 1,4-Dichlorobenzene-d4	152	5.686	5.686	0.000	94	634343	4.00	4.00	

Reagents:

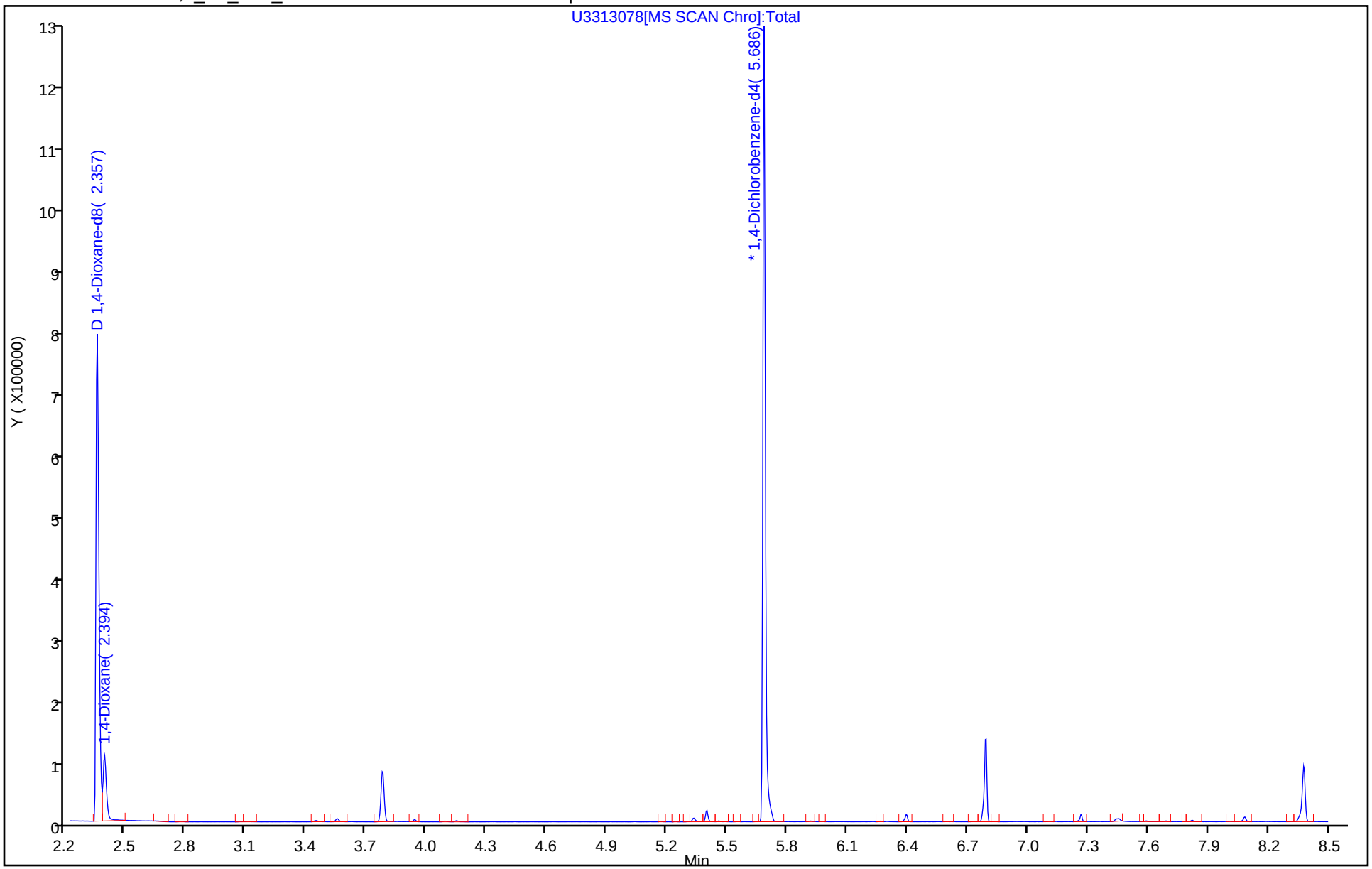
MB_1,4SIM_WRK_00059 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:57:12 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313078.D

Injection Date:	08-Nov-2018 12:21:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	CCVIS			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 26-Oct-2018 17:27:30 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: DFTPP
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:34 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: Deconvolution ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:19:34

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
7 4,4'-DDE	246	10.976	10.976	0.000	0	13780		NR	
5 4,4'-DDD	235	11.269	11.269	0.000	97	14879		NR	
6 4,4'-DDT	235	11.553	11.553	0.000	98	1338498	NR	NR	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard

Reagents:

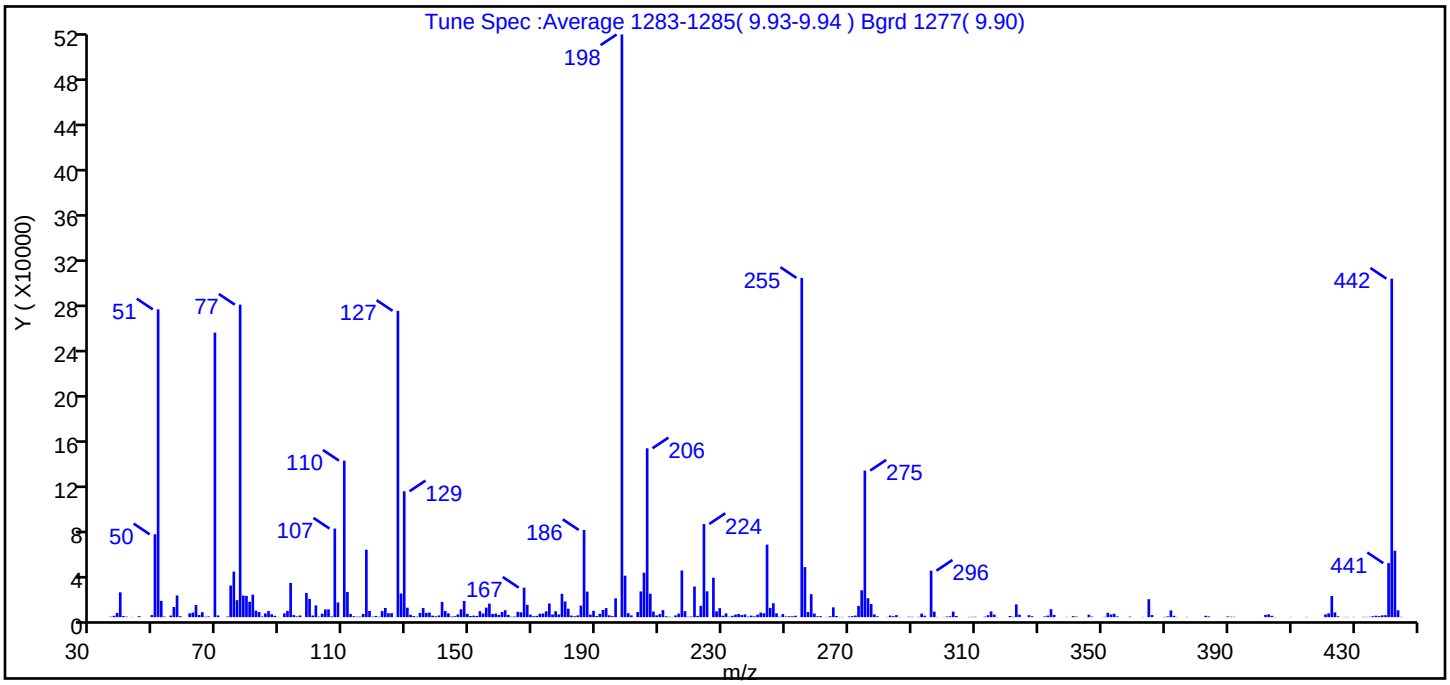
MB_DFTPP_WRK_00343 Amount Added: 1.00 Units: mL

MS Tune Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D
Injection Date: 26-Oct-2018 17:27:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (172.2)
51	10-80% of the base peak	52.8
68	<2% of mass 69	0.0 (0.0)
69	Present	48.8
70	<2% of mass 69	0.3 (0.6)
127	10-80% of the base peak	52.6
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.1
275	10-60% of the base peak	25.2
365	>1% of mass 198	3.1
441	present but <24% of mass 442	9.3 (16.0)
442	base peak, or >50% of 198	58.1
443	15-24% of mass 442	11.4 (19.6)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 26-Oct-2018 17:27:30
Spectrum: Tune Spec :Average 1283-1285(9.93-9.94) Bgrd 1277(9.90)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 311

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	391	129.00	112072	209.00	1610	297.00	4906
37.00	1218	130.00	8431	210.00	2699	298.00	218
38.00	3789	131.00	2113	211.00	6236	300.00	171
39.00	22080	132.00	958	212.00	766	301.00	560
40.00	978	133.00	465	213.00	399	302.00	748
41.00	430	134.00	3753	214.00	220	303.00	4952
43.00	178	135.00	8183	215.00	1537	304.00	1016
45.00	854	136.00	3742	216.00	3141	308.00	272
49.00	1817	137.00	4109	217.00	41520	309.00	276
50.00	73752	138.00	1295	218.00	5366	310.00	341
51.00	273984	139.00	790	219.00	421	313.00	427
52.00	14515	140.00	1521	220.00	496	314.00	1707
53.00	510	141.00	13529	221.00	27224	315.00	5101
55.00	1427	142.00	5518	222.00	1148	316.00	2294
56.00	9018	143.00	3390	223.00	10073	317.00	190
57.00	19272	144.00	560	224.00	82936	321.00	1057
58.00	844	145.00	804	225.00	23000	322.00	348
61.00	3355	146.00	2385	227.00	35104	323.00	11375
62.00	4047	147.00	6985	228.00	5206	324.00	2180
63.00	10825	148.00	14417	229.00	8026	327.00	1741
64.00	1873	149.00	2963	230.00	1278	328.00	803
65.00	4427	150.00	1056	231.00	3321	332.00	621
66.00	432	151.00	1307	232.00	394	333.00	1391
67.00	610	152.00	1086	233.00	1194	334.00	7082
69.00	253312	153.00	5277	234.00	2270	335.00	1915
70.00	1518	154.00	3253	235.00	2825	339.00	239
73.00	535	155.00	8509	236.00	1816	341.00	941
74.00	28168	156.00	12059	237.00	2450	342.00	494
75.00	40560	157.00	2785	238.00	513	346.00	2159
76.00	15103	158.00	3165	239.00	1400	347.00	498
77.00	278208	159.00	1959	240.00	718	351.00	248
78.00	19168	160.00	4649	241.00	2188	352.00	3778
79.00	18928	161.00	6170	242.00	4050	353.00	2319

Report Date: 29-Oct-2018 12:21:35 Chrom Revision: 2.3 12-Oct-2018 08:24:38
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 26-Oct-2018 17:27:30
Spectrum: Tune Spec :Average 1283-1285(9.93-9.94) Bgrd 1277(9.90)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 311

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	13715	162.00	1972	243.00	3449	354.00	3004
81.00	19984	163.00	400	244.00	64560	355.00	630
82.00	5760	164.00	564	245.00	8210	359.00	464
83.00	4568	165.00	4736	246.00	12418	363.00	185
84.00	582	166.00	4247	247.00	3441	365.00	15967
85.00	3304	167.00	26240	248.00	380	366.00	1841
86.00	5387	168.00	10937	249.00	2715	370.00	283
87.00	2560	169.00	2239	250.00	598	371.00	681
88.00	1186	170.00	845	251.00	843	372.00	5990
89.00	216	171.00	1144	252.00	758	373.00	1184
91.00	3312	172.00	3076	253.00	1258	374.00	177
92.00	5577	173.00	3211	255.00	302016	377.00	212
93.00	30440	174.00	5197	256.00	44560	383.00	1226
94.00	1829	175.00	12179	257.00	4512	384.00	655
95.00	698	176.00	2388	258.00	20440	390.00	631
96.00	1462	177.00	5222	259.00	3202	391.00	397
98.00	21592	178.00	2329	260.00	781	392.00	316
99.00	16212	179.00	20816	261.00	871	402.00	1990
100.00	1423	180.00	13951	263.00	201	403.00	2510
101.00	10441	181.00	7470	264.00	825	404.00	1177
102.00	498	182.00	1382	265.00	8736	405.00	209
103.00	3036	183.00	789	266.00	1048	410.00	178
104.00	6906	184.00	1560	267.00	182	415.00	221
105.00	6956	185.00	10251	268.00	216	421.00	2417
106.00	635	186.00	77600	270.00	555	422.00	3414
107.00	78840	187.00	22720	271.00	916	423.00	18808
108.00	13100	188.00	2270	272.00	1412	424.00	4203
110.00	139328	189.00	5661	273.00	10006	425.00	797
111.00	22448	190.00	999	274.00	23920	427.00	196
112.00	2881	191.00	2930	275.00	130496	428.00	225
113.00	810	192.00	6394	276.00	16856	430.00	217
114.00	478	193.00	8057	277.00	11689	433.00	284
115.00	543	194.00	1625	278.00	2451	434.00	231
116.00	2878	195.00	898	279.00	784	435.00	303

Report Date: 29-Oct-2018 12:21:35 Chrom Revision: 2.3 12-Oct-2018 08:24:38
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 26-Oct-2018 17:27:30
Spectrum: Tune Spec :Average 1283-1285(9.93-9.94) Bgrd 1277(9.90)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 311

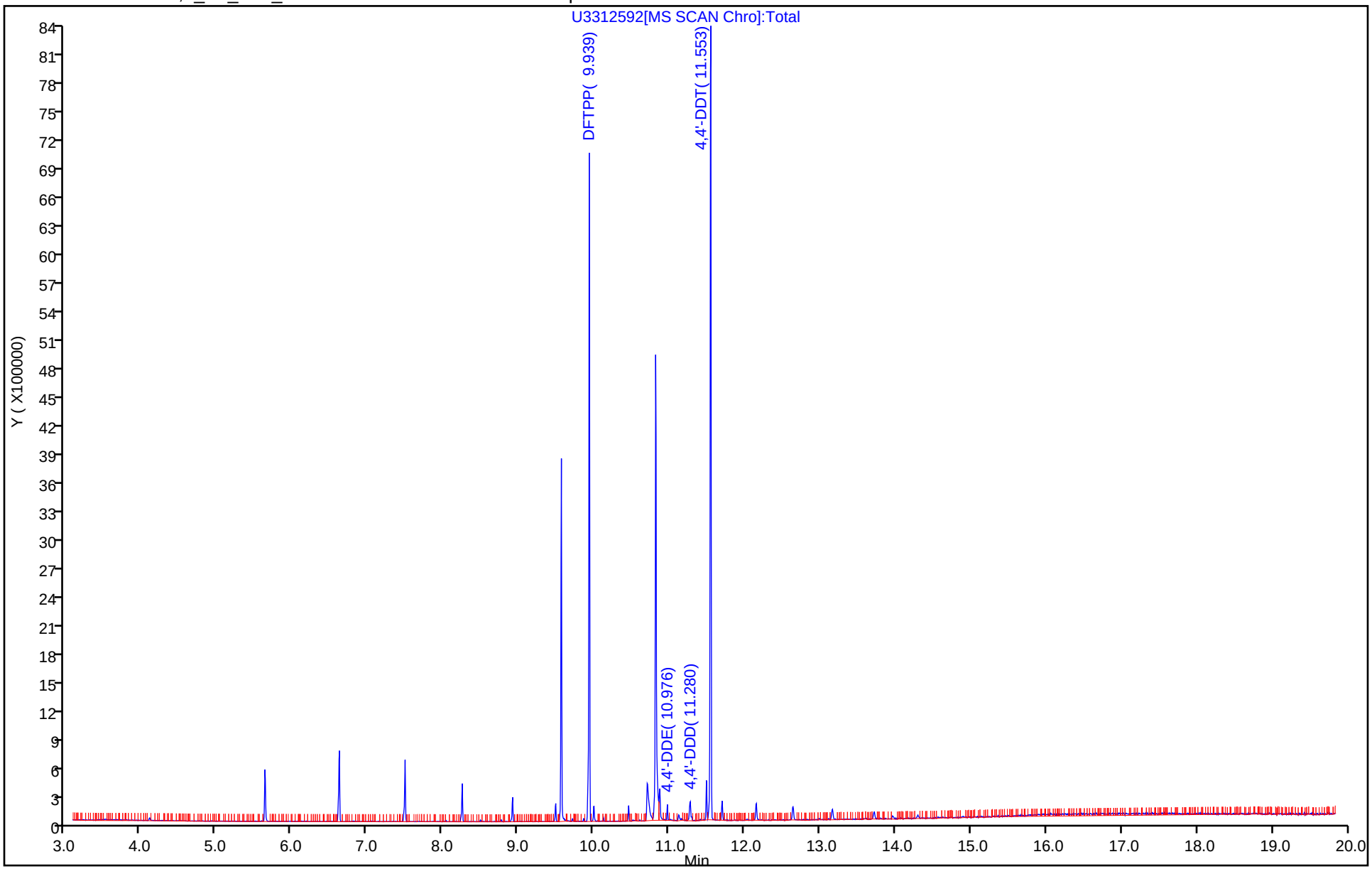
m/z	Y	m/z	Y	m/z	Y	m/z	Y
117.00	59968	196.00	16728	282.00	166	436.00	853
118.00	5516	198.00	518720	283.00	1392	437.00	1302
119.00	431	199.00	36912	284.00	838	438.00	923
120.00	1075	200.00	3492	285.00	1803	439.00	1640
121.00	430	201.00	1578	286.00	197	440.00	1731
122.00	5393	203.00	4555	289.00	385	441.00	48088
123.00	8186	204.00	22912	290.00	297	442.00	301312
124.00	3527	205.00	39608	292.00	270	443.00	59112
125.00	3576	206.00	150336	293.00	3164	444.00	6127
127.00	272704	207.00	20848	294.00	1287	445.00	263
128.00	21056	208.00	4993	296.00	41376		

Report Date: 29-Oct-2018 12:21:35 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D

Injection Date:	26-Oct-2018 17:27:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	DFTPP			Worklist Smp#:	2
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		

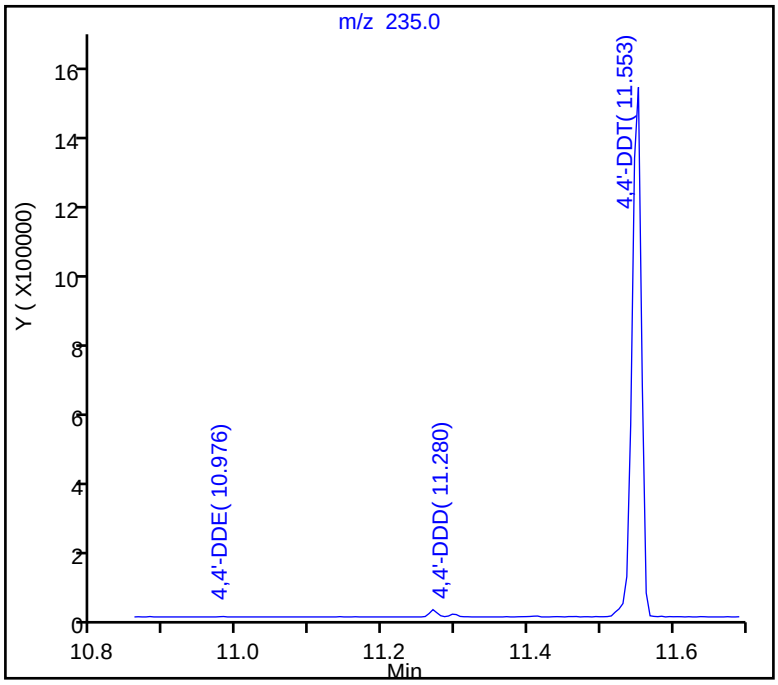


Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D
Injection Date: 26-Oct-2018 17:27:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN



SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

6 4,4'-DDT, Area = 1338498
5 4,4'-DDD, Area = 14879
7 4,4'-DDE, Area = 13780

%Breakdown: 2.10%, Max Limit: 20.00%
Passed

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 08-Nov-2018 11:51:30 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: DFTPP
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:06 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: Deconvolution ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:06

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
7 4,4'-DDE	246		10.965					ND	
5 4,4'-DDD	235	11.045	11.045	0.000	92	6832			NR
6 4,4'-DDT	235	11.307	11.307	0.000	95	1175401	NR		NR

QC Flag Legend

Processing Flags
NR - Missing Quant Standard
8 - Failed MS Tune Ratio Test

Reagents:

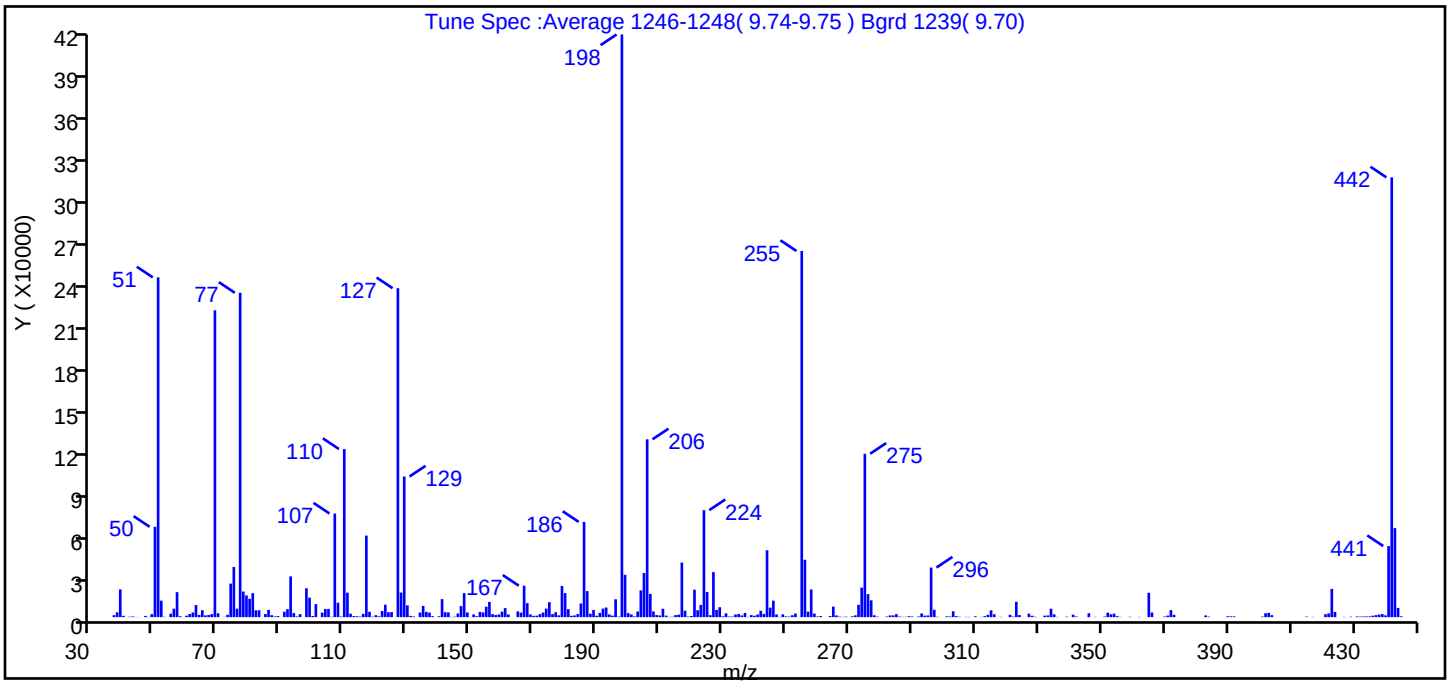
MB_DFTPP_WRK_00343 Amount Added: 1.00 Units: mL

MS Tune Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D
Injection Date: 08-Nov-2018 11:51:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: MKP ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (132.5)
51	10-80% of the base peak	58.3
68	<2% of mass 69	0.5 (1.0)
69	Present	52.7
70	<2% of mass 69	0.7 (1.3)
127	10-80% of the base peak	56.5
197	<2% of mass 198	0.1
199	5-9% of mass 198	7.3
275	10-60% of the base peak	28.0
365	>1% of mass 198	4.2
441	present but <24% of mass 442	12.2 (16.2)
442	base peak, or >50% of 198	75.5
443	15-24% of mass 442	15.3 (20.2)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 08-Nov-2018 11:51:30
Spectrum: Tune Spec :Average 1246-1248(9.74-9.75) Bgrd 1239(9.70)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 321

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	1397	125.00	3579	210.00	1197	298.00	255
38.00	3458	127.00	233664	211.00	5964	301.00	620
39.00	19680	128.00	17472	212.00	1070	302.00	504
40.00	937	129.00	99904	213.00	196	303.00	4207
42.00	331	130.00	8340	214.00	309	304.00	702
43.00	468	131.00	906	215.00	1466	305.00	287
44.00	132	132.00	456	216.00	1759	307.00	216
45.00	56	133.00	3	217.00	38776	308.00	182
47.00	838	134.00	3273	218.00	4590	310.00	596
48.00	174	135.00	7992	219.00	444	312.00	177
49.00	2095	136.00	3725	220.00	813	313.00	704
50.00	64152	137.00	3235	221.00	19504	314.00	1648
51.00	241344	138.00	732	222.00	4934	315.00	4854
52.00	11706	140.00	603	223.00	8696	316.00	2050
53.00	261	141.00	12803	224.00	76008	318.00	213
55.00	2470	142.00	3485	225.00	17864	321.00	1666
56.00	6011	143.00	3355	226.00	1390	322.00	409
57.00	17752	144.00	175	227.00	31992	323.00	10899
58.00	670	145.00	322	228.00	5156	324.00	1458
59.00	90	146.00	2568	229.00	7031	327.00	2479
60.00	1016	147.00	7839	230.00	605	328.00	1001
61.00	2194	148.00	17048	231.00	2689	329.00	276
62.00	3331	149.00	3336	232.00	427	332.00	1057
63.00	8574	150.00	146	233.00	436	333.00	1203
64.00	1563	151.00	1934	234.00	1868	334.00	5979
65.00	4939	152.00	678	235.00	2257	335.00	1955
66.00	1229	153.00	3712	236.00	1228	336.00	171
67.00	1535	154.00	3334	237.00	3006	339.00	314
68.00	2151	155.00	7416	238.00	167	341.00	1767
69.00	217984	156.00	10831	239.00	1440	342.00	459
70.00	2742	157.00	2152	240.00	1002	346.00	2781
72.00	185	158.00	1539	241.00	1845	348.00	198
73.00	1671	159.00	1883	242.00	4518	351.00	404

Report Date: 09-Nov-2018 15:57:07 Chrom Revision: 2.3 12-Oct-2018 08:24:38
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 08-Nov-2018 11:51:30
Spectrum: Tune Spec :Average 1246-1248(9.74-9.75) Bgrd 1239(9.70)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 321

m/z	Y	m/z	Y	m/z	Y	m/z	Y
74.00	23808	160.00	3926	243.00	2323	352.00	3175
75.00	35600	161.00	6399	244.00	47528	353.00	2049
76.00	6025	162.00	1939	245.00	6755	354.00	2458
77.00	230400	165.00	4103	246.00	11712	355.00	697
78.00	18192	166.00	3155	247.00	1887	356.00	181
79.00	15432	167.00	22328	248.00	171	359.00	255
80.00	13058	168.00	9977	249.00	2002	362.00	186
81.00	17032	169.00	1916	250.00	521	365.00	17296
82.00	4846	170.00	916	251.00	400	366.00	3313
83.00	4872	171.00	1046	252.00	1331	370.00	446
84.00	2	172.00	2159	253.00	2532	371.00	1119
85.00	2201	173.00	3249	255.00	260096	372.00	4996
86.00	5174	174.00	6042	256.00	40768	373.00	1628
87.00	1378	175.00	10642	257.00	3897	383.00	1205
88.00	511	176.00	2148	258.00	19648	384.00	377
89.00	770	177.00	3489	259.00	2503	390.00	638
91.00	3858	178.00	1284	260.00	476	391.00	563
92.00	5681	179.00	22104	261.00	787	392.00	548
93.00	28944	180.00	17072	264.00	776	401.00	415
94.00	2857	181.00	5677	265.00	7499	402.00	2730
95.00	514	182.00	966	266.00	1210	403.00	3053
96.00	2123	183.00	1198	267.00	387	404.00	1410
98.00	20536	184.00	2158	268.00	185	415.00	392
99.00	13849	185.00	9719	269.00	353	417.00	181
100.00	824	186.00	67632	271.00	599	421.00	2067
101.00	9273	187.00	18504	272.00	1280	422.00	2614
103.00	3169	188.00	2409	273.00	8750	423.00	20056
104.00	5783	189.00	5102	274.00	21008	424.00	3722
105.00	5838	190.00	981	275.00	116072	427.00	182
106.00	248	191.00	3032	276.00	16355	429.00	309
107.00	73600	192.00	6094	277.00	11924	431.00	485
108.00	10255	193.00	6848	278.00	1313	432.00	408
109.00	439	194.00	1970	279.00	353	433.00	512
110.00	119400	195.00	1085	282.00	440	434.00	515

Report Date: 09-Nov-2018 15:57:07 Chrom Revision: 2.3 12-Oct-2018 08:24:38
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 08-Nov-2018 11:51:30
Spectrum: Tune Spec :Average 1246-1248(9.74-9.75) Bgrd 1239(9.70)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 321

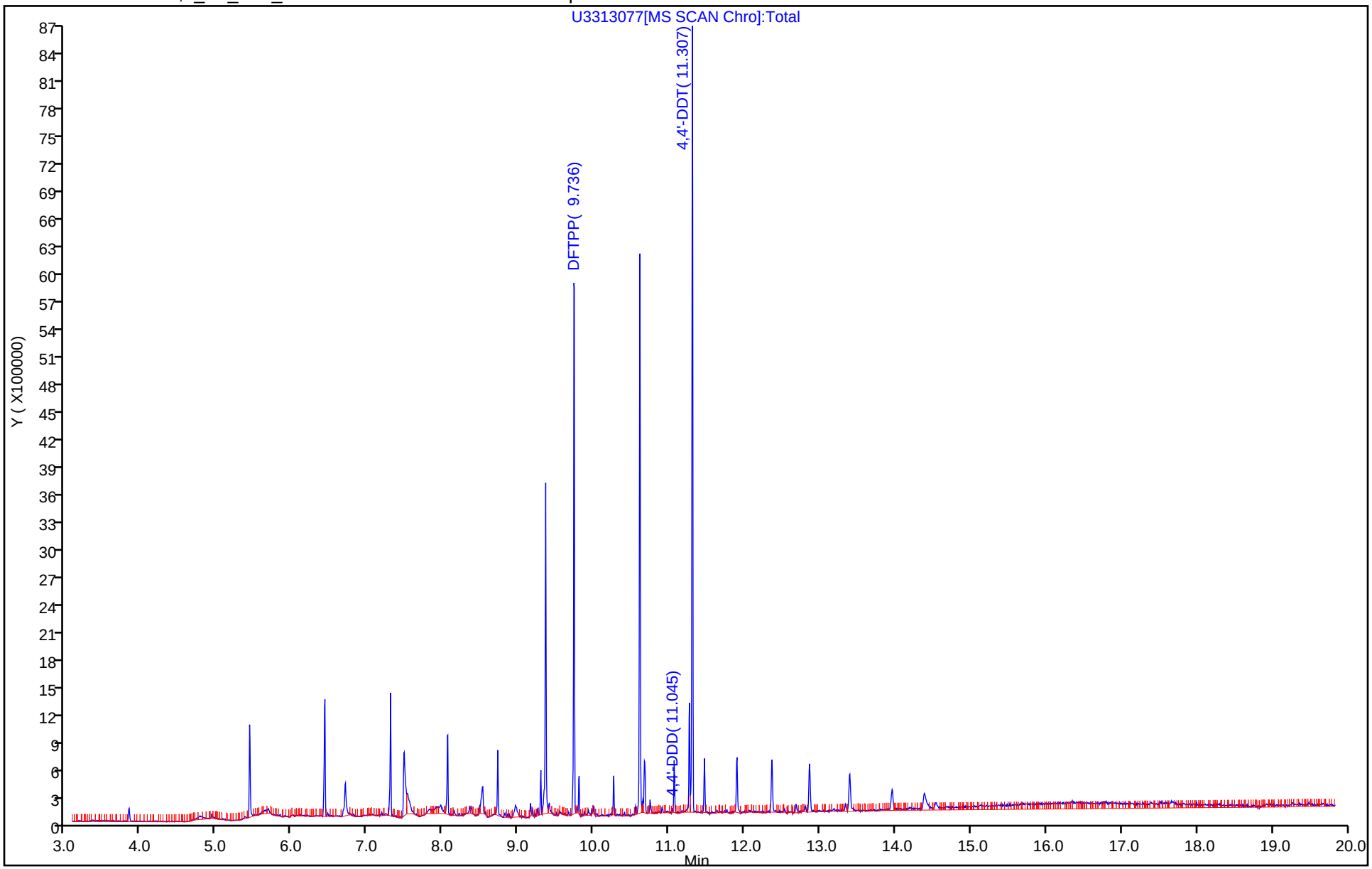
m/z	Y	m/z	Y	m/z	Y	m/z	Y
111.00	17384	196.00	12690	283.00	1241	435.00	551
112.00	2439	197.00	401	284.00	1246	436.00	1034
113.00	762	198.00	413888	285.00	2107	437.00	1461
114.00	671	199.00	30072	286.00	406	438.00	1831
115.00	410	200.00	2897	287.00	190	439.00	2201
116.00	2355	201.00	1885	288.00	238	440.00	1278
117.00	57936	202.00	535	289.00	682	441.00	50472
118.00	3829	203.00	4035	290.00	450	442.00	312384
119.00	319	204.00	19024	292.00	478	443.00	63240
120.00	1392	205.00	31376	293.00	2648	444.00	6558
121.00	581	206.00	126320	294.00	1098	445.00	604
122.00	4403	207.00	16504	295.00	1172		
123.00	8856	208.00	4049	296.00	35216		
124.00	3512	209.00	1480	297.00	5211		

Report Date: 09-Nov-2018 15:57:07 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D

Injection Date:	08-Nov-2018 11:51:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	DFTPP			Worklist Smp#:	2
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		

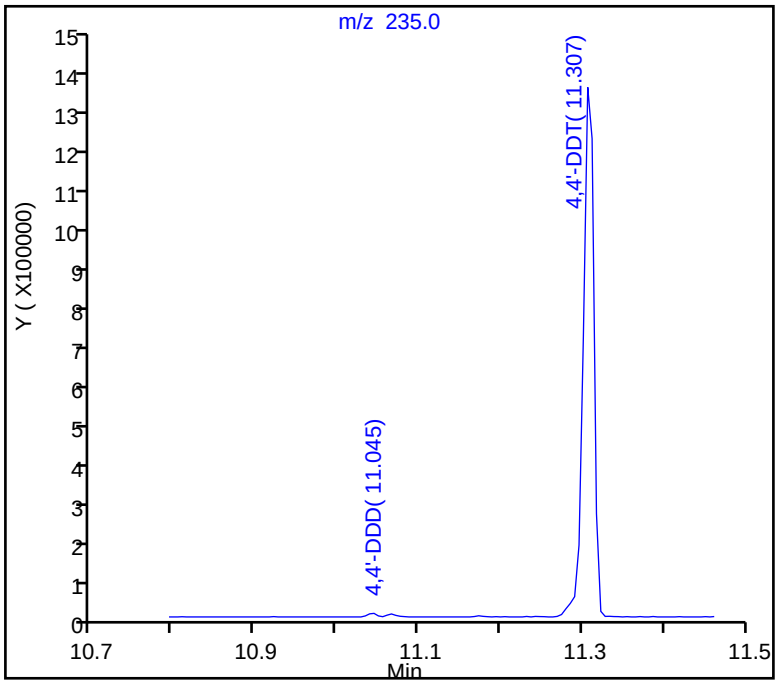


Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D
Injection Date: 08-Nov-2018 11:51:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: MKP ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN



SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

6 4,4'-DDT, Area = 1175401
5 4,4'-DDD, Area = 6832
7 4,4'-DDE, Area = 0

%Breakdown: 0.58%, Max Limit: 20.00%
Passed

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 480-442693/1-A

Matrix: Water | Lab File ID: U3313085.D

Analysis Method: 8270D SIM ID | Date Collected:

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 1000(mL) | Date Analyzed: 11/08/2018 15:07

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	33		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313085.D
Lims ID: MB 480-442693/1-A
Client ID:
Sample Type: MB
Inject. Date: 08-Nov-2018 15:07:30 ALS Bottle#: 10 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-010
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:33

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.435	2.357	0.078	93	175998	10.0	3.26	
	3 1,4-Dioxane	88		2.394					ND	
*	2 1,4-Dichlorobenzene-d4	152	5.690	5.686	0.004	93	472154	4.00	4.00	

Reagents:

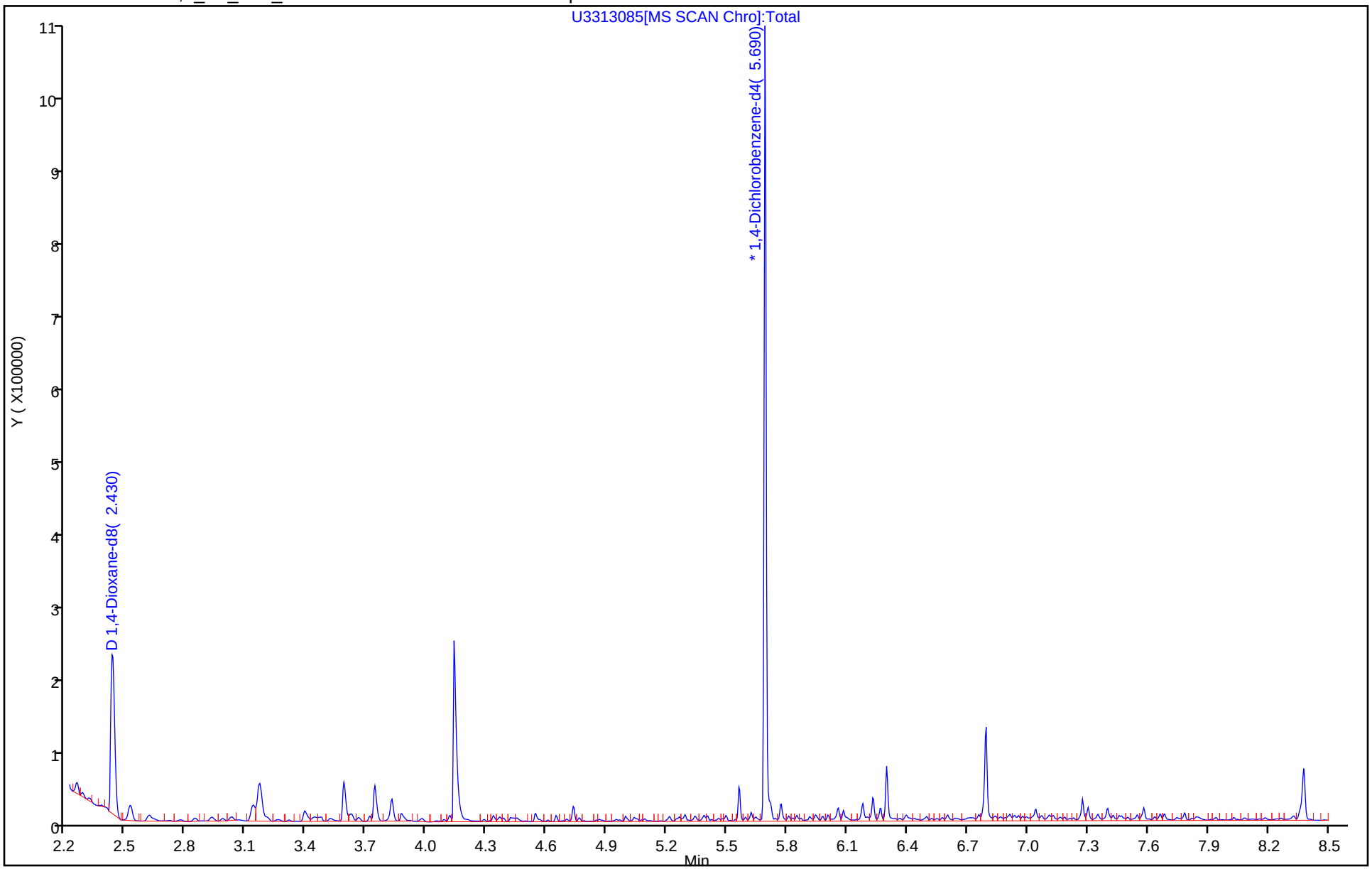
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:57:33 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313085.D

Injection Date:	08-Nov-2018 15:07:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	MB 480-442693/1-A			Worklist Smp#:	10
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



Report Date: 09-Nov-2018 15:57:34 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313085.D

Injection Date: 08-Nov-2018 15:07:30 Instrument ID: HP5973U

Lims ID: MB 480-442693/1-A

Client ID:

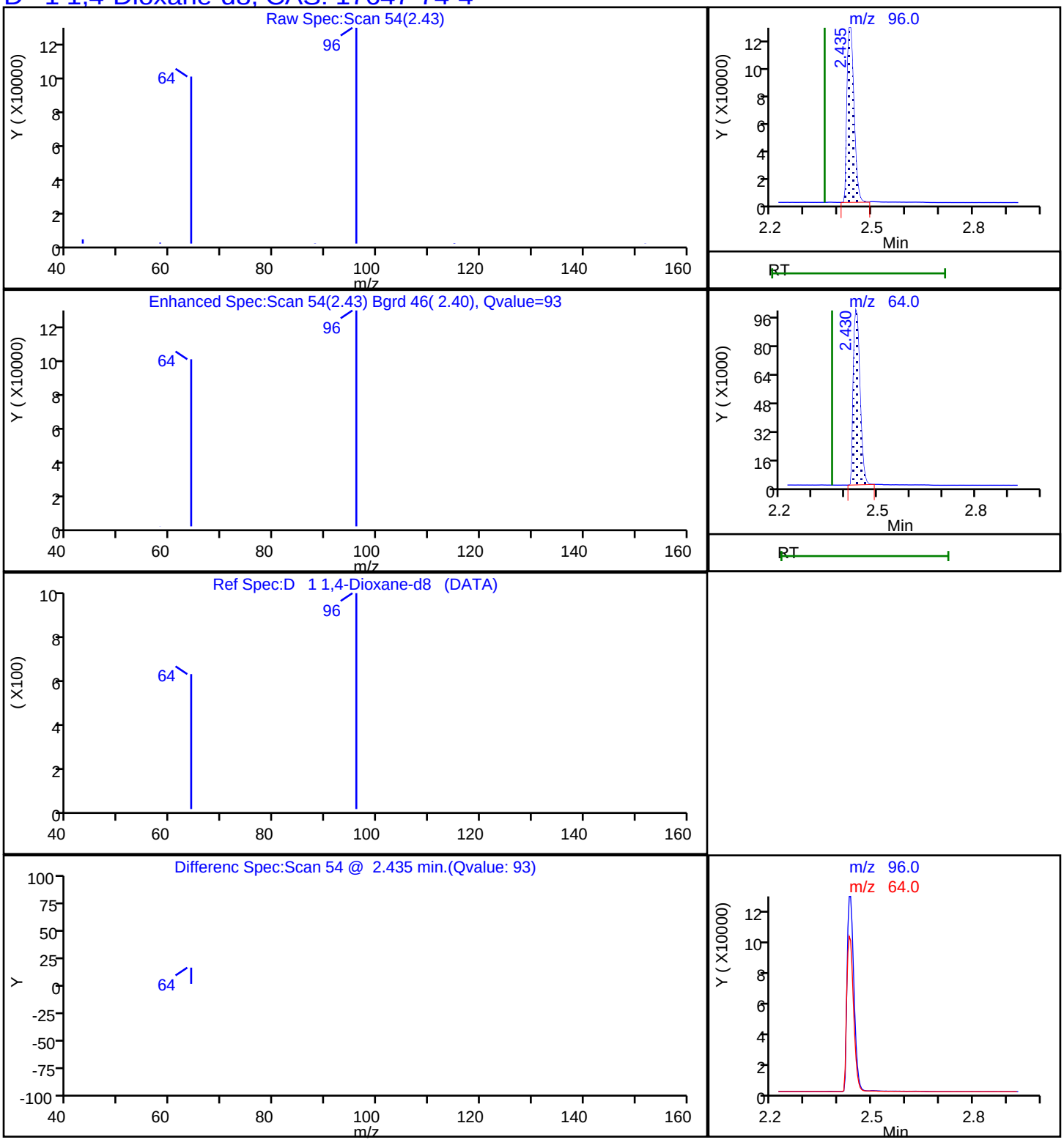
Operator ID: MKP ALS Bottle#: 10 Worklist Smp#: 10

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL

Column: Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 480-442693/2-A

Matrix: Water | Lab File ID: U3313086.D

Analysis Method: 8270D SIM ID | Date Collected:

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 1000(mL) | Date Analyzed: 11/08/2018 15:31

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.05		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	36		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313086.D
Lims ID: LCS 480-442693/2-A
Client ID:
Sample Type: LCS
Inject. Date: 08-Nov-2018 15:31:30 ALS Bottle#: 11 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-011
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:37

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.483	2.357	0.126	91	205886	10.0	3.62	
	3 1,4-Dioxane	88	2.520	2.394	0.126	86	25621	1.00	1.05	
*	2 1,4-Dichlorobenzene-d4	152	5.694	5.686	0.008	93	496937	4.00	4.00	

Reagents:

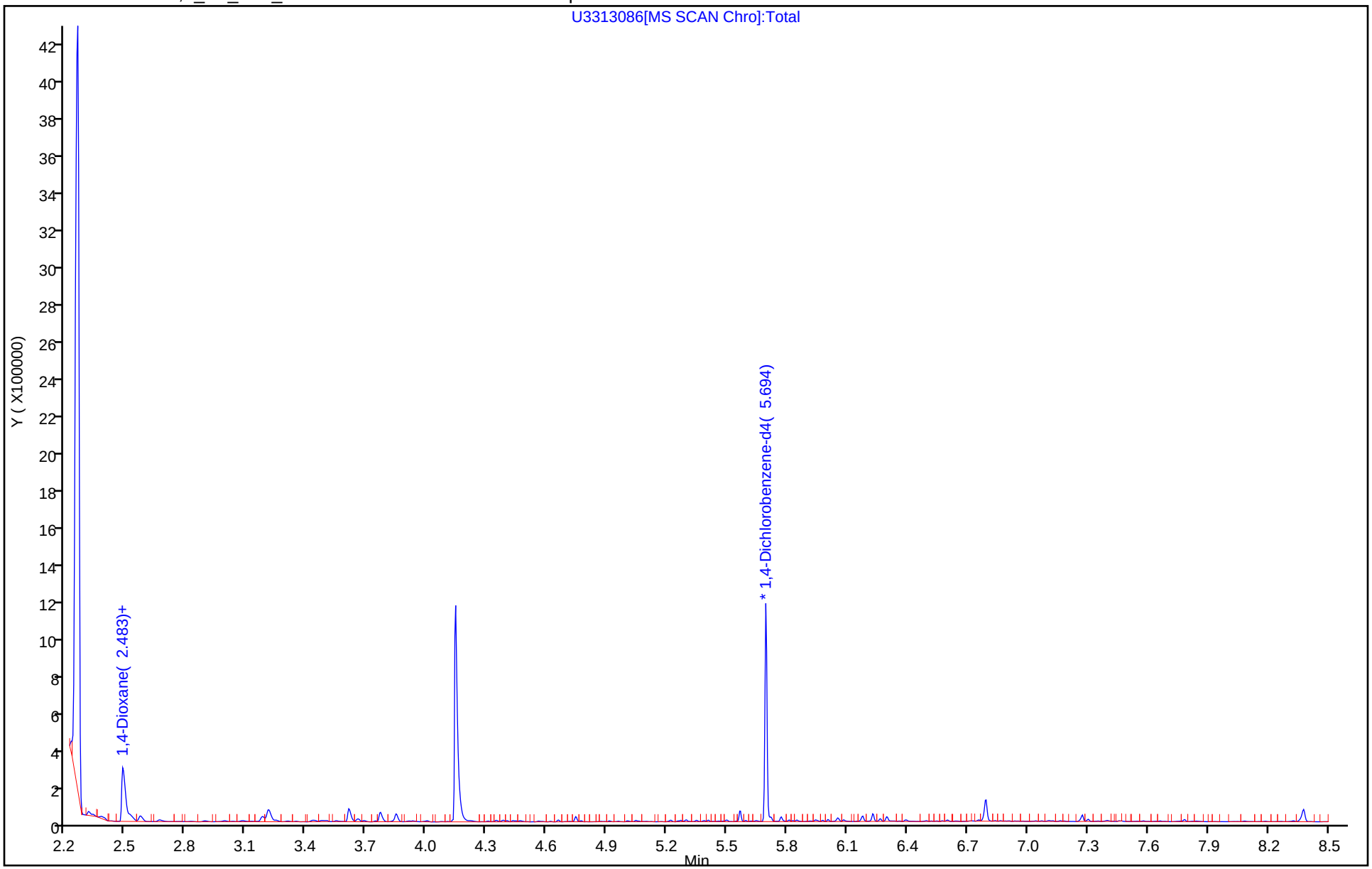
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:57:38 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313086.D

Injection Date:	08-Nov-2018 15:31:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	LCS 480-442693/2-A			Worklist Smp#:	11
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	11
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-1

SDG No.:

Client Sample ID: MW-03 MS | Lab Sample ID: 480-144153-1 MS

Matrix: Water | Lab File ID: U3313087.D

Analysis Method: 8270D SIM ID | Date Collected: 10/18/2018 10:50

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 960(mL) | Date Analyzed: 11/08/2018 15:55

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.21		0.21	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	35		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313087.D
Lims ID: 480-144153-A-1-A MS
Client ID: MW-03
Sample Type: MS
Inject. Date: 08-Nov-2018 15:55:30 ALS Bottle#: 12 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-012
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:40

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.483	2.357	0.126	92	195648	10.0	3.50	
	3 1,4-Dioxane	88	2.520	2.394	0.126	70	27094	1.00	1.17	
*	2 1,4-Dichlorobenzene-d4	152	5.694	5.686	0.008	93	488483	4.00	4.00	
	7 4,4'-DDE	246		10.965					ND	
	5 4,4'-DDD	235		11.045					ND	
	6 4,4'-DDT	235		11.307					ND	

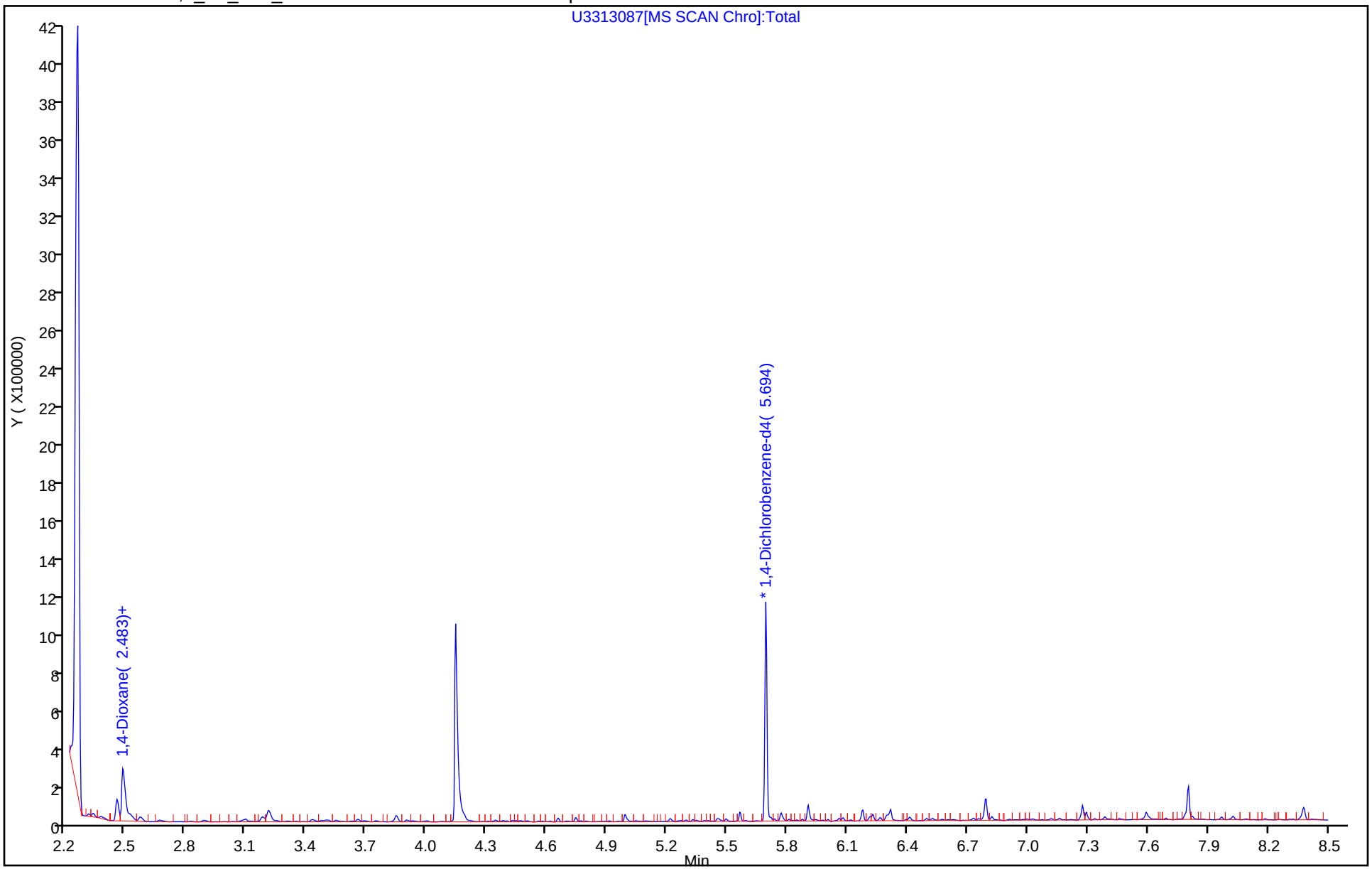
Reagents:

MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:57:40 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File:	\\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313087.D				
Injection Date:	08-Nov-2018 15:55:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	480-144153-A-1-A MS			Worklist Smp#:	12
Client ID:	MW-03				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	12
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-1

SDG No.:

Client Sample ID: MW-03 MSD | Lab Sample ID: 480-144153-1 MSD

Matrix: Water | Lab File ID: U3313088.D

Analysis Method: 8270D SIM ID | Date Collected: 10/18/2018 10:50

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 1050(mL) | Date Analyzed: 11/08/2018 16:19

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.14		0.19	0.095

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	31		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313088.D
Lims ID: 480-144153-A-1-B MSD
Client ID: MW-03
Sample Type: MSD
Inject. Date: 08-Nov-2018 16:19:30 ALS Bottle#: 13 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-013
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:43

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.467	2.357	0.110	92	165689	10.0	3.08	
	3 1,4-Dioxane	88	2.508	2.394	0.114	66	23518	1.00	1.19	
*	2 1,4-Dichlorobenzene-d4	152	5.694	5.686	0.008	93	469780	4.00	4.00	
	7 4,4'-DDE	246		10.965					ND	
	5 4,4'-DDD	235		11.045					ND	
	6 4,4'-DDT	235		11.307					ND	

Reagents:

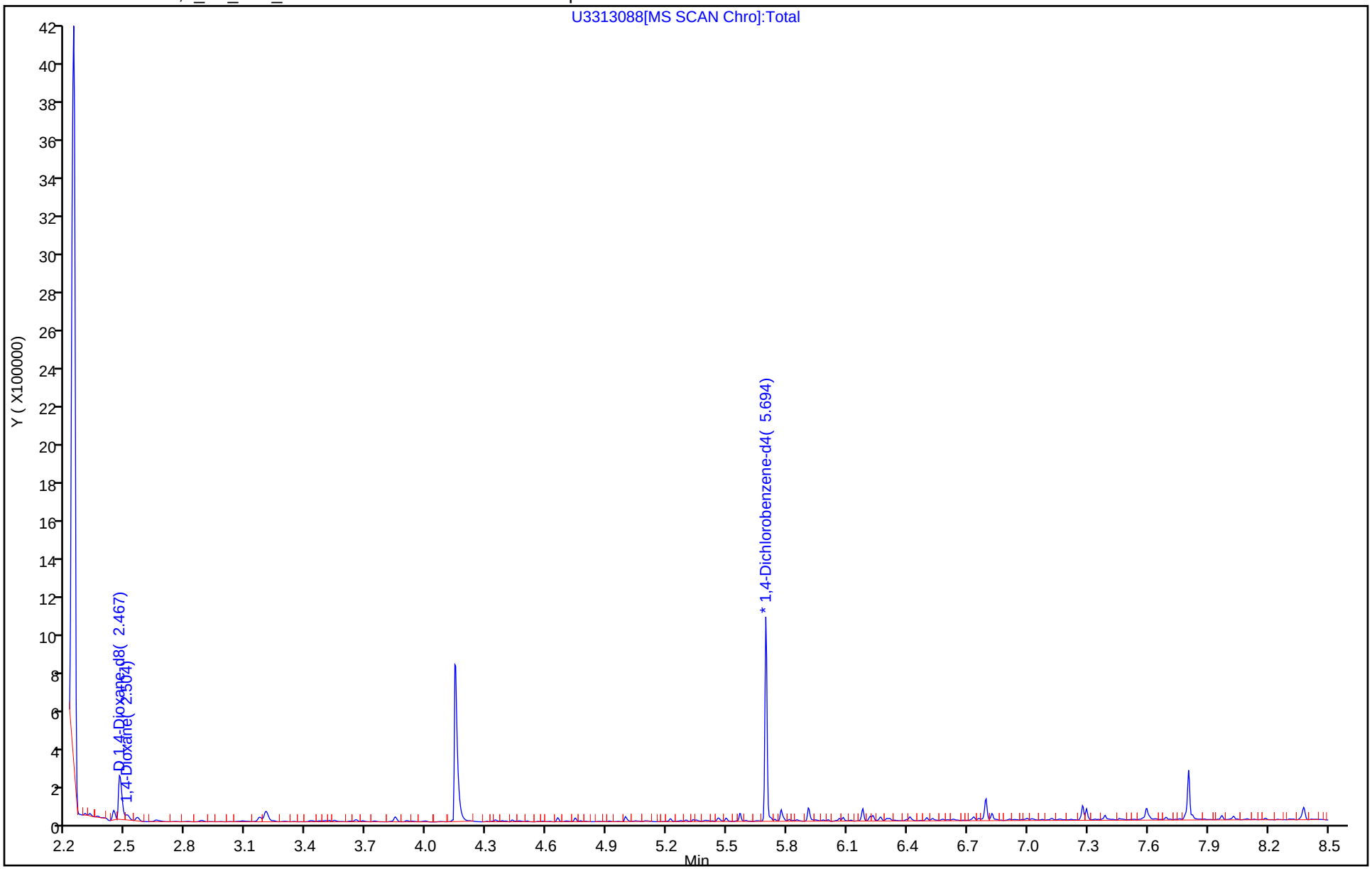
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:57:43 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313088.D

Injection Date:	08-Nov-2018 16:19:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	480-144153-A-1-B MSD			Worklist Smp#:	13
Client ID:	MW-03				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	13
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Instrument ID: HP5973U Start Date: 10/26/2018 17:27

Analysis Batch Number: 442039 End Date: 10/26/2018 20:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-442039/2		10/26/2018 17:27	1	U3312592.D	RXI-5Sil MS(0.5 0.25(mm)
IC 480-442039/3		10/26/2018 17:56	1	U3312593.D	RXI-5Sil MS(0.5 0.25(mm)
IC 480-442039/4		10/26/2018 18:20	1	U3312594.D	RXI-5Sil MS(0.5 0.25(mm)
ICIS 480-442039/5		10/26/2018 18:45	1	U3312595.D	RXI-5Sil MS(0.5 0.25(mm)
IC 480-442039/6		10/26/2018 19:08	1	U3312596.D	RXI-5Sil MS(0.5 0.25(mm)
IC 480-442039/7		10/26/2018 19:32	1	U3312597.D	RXI-5Sil MS(0.5 0.25(mm)
IC 480-442039/8		10/26/2018 19:56	1	U3312598.D	RXI-5Sil MS(0.5 0.25(mm)
ICV 480-442039/9		10/26/2018 20:20	1	U3312599.D	RXI-5Sil MS(0.5 0.25(mm)

8270D SIM ID

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Instrument ID: HP5973U Start Date: 11/08/2018 11:51

Analysis Batch Number: 444395 End Date: 11/08/2018 22:46

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-444395/2		11/08/2018 11:51	1	U3313077.D	RXI-5Sil MS(0.5 0.25(mm)
CCVIS 480-444395/3		11/08/2018 12:21	1	U3313078.D	RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 12:45	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 13:09	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 13:32	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 13:56	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 14:20	100		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 14:43	100		RXI-5Sil MS(0.5 0.25(mm)
MB 480-442693/1-A		11/08/2018 15:07	1	U3313085.D	RXI-5Sil MS(0.5 0.25(mm)
LCS 480-442693/2-A		11/08/2018 15:31	1	U3313086.D	RXI-5Sil MS(0.5 0.25(mm)
480-144153-1 MS		11/08/2018 15:55	1	U3313087.D	RXI-5Sil MS(0.5 0.25(mm)
480-144153-1 MSD		11/08/2018 16:19	1	U3313088.D	RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 16:43	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 17:07	1		RXI-5Sil MS(0.5 0.25(mm)
480-144153-1		11/08/2018 17:31	1	U3313091.D	RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 17:55	1		RXI-5Sil MS(0.5 0.25(mm)
480-144153-2		11/08/2018 18:20	1	U3313093.D	RXI-5Sil MS(0.5 0.25(mm)
480-144153-3		11/08/2018 18:44	1	U3313094.D	RXI-5Sil MS(0.5 0.25(mm)
480-144153-4		11/08/2018 19:09	1	U3313095.D	RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 19:33	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 19:58	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 20:22	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 20:46	20		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 21:11	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 21:35	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 21:59	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 22:23	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 22:46	10		RXI-5Sil MS(0.5 0.25(mm)

8270D SIM ID

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Batch Number: 442693 Batch Start Date: 10/31/18 07:26 Batch Analyst: Pollock, Jacob M

Batch Method: 3510C Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	SecondAdjustpH	OP_SIM_LCS 00005
MB 480-442693/1		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	>11 SU	
LCS 480-442693/2		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	>11 SU	1 mL
480-144153-A-1 MS	MW-03	3510C, 8270D SIM ID	T	960 mL	1 mL	7 SU	<2 SU	>11 SU	1 mL
480-144153-A-1 MSD	MW-03	3510C, 8270D SIM ID	T	1050 mL	1 mL	7 SU	<2 SU	>11 SU	1 mL
480-144153-A-1	MW-03	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-2	MW-02	3510C, 8270D SIM ID	T	1050 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-3	20181018-FD-1	3510C, 8270D SIM ID	T	1050 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-4	MW-05	3510C, 8270D SIM ID	T	1050 mL	1 mL	7 SU	<2 SU	>11 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	OP_SimSurr 00011	AnalysisComment				
MB 480-442693/1		3510C, 8270D SIM ID		1 mL					
LCS 480-442693/2		3510C, 8270D SIM ID		1 mL					
480-144153-A-1 MS	MW-03	3510C, 8270D SIM ID	T	1 mL	Contains some sediment				
480-144153-A-1 MSD	MW-03	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-1	MW-03	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-2	MW-02	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-3	20181018-FD-1	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-4	MW-05	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D SIM ID

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Batch Number: 442693 Batch Start Date: 10/31/18 07:26 Batch Analyst: Pollock, Jacob M

Batch Method: 3510C Batch End Date:

Batch Notes	
Acid Used for pH Adjustment ID	4932774
Analyst ID - Concentration	JP, SP
Analyst ID - Extraction	JP
Method/Fraction	3510C/8270D_SIM_MS_ID
Na2SO4 ID	4895626
Prep Solvent ID	4964719
Prep Solvent Volume Used	180 mL
Analyst ID - Spike Analyst	JP
Analyst ID - Spike Witness Analyst	JP
Sufficient Volume for Batch QC	Yes
Vial Lot Number	1709111094

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

Chain of Custody

480-144153 COC

Workorder: 7068532 **Workorder Name:** 31 WATER ST **Results Requested By:** 10/26/2018

Report / Invoice To	Subcontract To
James Murphy Pace Analytical New York 2190 Technology Drive Schenectady, NY 12308 Phone (518)860-9724 Email: james.murphy@pacelabs.com	TA- Buffalo 10 Haxelwood Dr Amherst, NY P.O. 102218JM2001

State of Sample Origin: NY

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: 1,4 Dioxane voa 8270 SIM	LAB USE ONLY
1	MW-03	10/18/2018 10:50	7068532001	Water	3	X	MS/MSD
2	MW-02	10/18/2018 13:50	7068532002	Water	1	X	
3	20181018-FD-1	10/18/2018 00:00	7068532003	Water	1	X	
4	MW-05	10/18/2018 16:10	7068532004	Water	1	X	
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	10/23/18 1800	[signature]	10/24/18 0950
2				
3				

Comments

NYS CAT B DATA PKG
NYS EqUIS EDD

Cooler Temperature on Receipt 3.2 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact Y or N

#1

Page 147 of 148

Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 480-144153-1

Login Number: 144153
List Number: 1
Creator: Wallace, Cameron

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	N/A	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-144153-1
Client Project/Site: 31 WATER ST

For:
Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, New York 11747

Attn: James Murphy

Mary Schwartzmyer

Authorized for release by:
11/13/2018 2:06:30 PM
Mary Schwartzmyer, Project Manager I
mary.schwartzmyer@testamericainc.com

Designee for

John Schove, Project Manager II
(716)504-9838
john.schove@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-144153-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-144153-1

Comments
No additional comments.

Receipt
The samples were received on 10/24/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.2º C and 3.4º C.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method(s) 3510C: The following samples were received outside of holding time: MW-03 (480-144153-1), MW-03 (480-144153-1[MS]), MW-03 (480-144153-1[MSD]), MW-02 (480-144153-2), 20181018-FD-1 (480-144153-3) and MW-05 (480-144153-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Client Sample ID: MW-03 — Lab Sample ID: 480-144153-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.16	J H	0.20	0.10	ug/L	1		8270D SIM ID	Total/NA

Client Sample ID: MW-02 — Lab Sample ID: 480-144153-2

No Detections.

Client Sample ID: 20181018-FD-1 — Lab Sample ID: 480-144153-3

No Detections.

Client Sample ID: MW-05 — Lab Sample ID: 480-144153-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-03

Lab Sample ID: 480-144153-1

Date Collected: 10/18/18 10:50

Matrix: Water

Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.16	J H	0.20	0.10	ug/L		10/31/18 07:26	11/08/18 17:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*29*		*15 - 110*	*10/31/18 07:26*	*11/08/18 17:31*	*1*

Client Sample ID: MW-02

Lab Sample ID: 480-144153-2

Date Collected: 10/18/18 13:50

Matrix: Water

Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H	0.19	0.095	ug/L		10/31/18 07:26	11/08/18 18:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*28*		*15 - 110*	*10/31/18 07:26*	*11/08/18 18:20*	*1*

Client Sample ID: 20181018-FD-1

Lab Sample ID: 480-144153-3

Date Collected: 10/18/18 00:00

Matrix: Water

Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H	0.19	0.095	ug/L		10/31/18 07:26	11/08/18 18:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*25*		*15 - 110*	*10/31/18 07:26*	*11/08/18 18:44*	*1*

Client Sample ID: MW-05

Lab Sample ID: 480-144153-4

Date Collected: 10/18/18 16:10

Matrix: Water

Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H	0.19	0.095	ug/L		10/31/18 07:26	11/08/18 19:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*26*		*15 - 110*	*10/31/18 07:26*	*11/08/18 19:09*	*1*

Isotope Dilution Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	DXE (15-110)							
480-144153-1	MW-03	29							
480-144153-1 MS	MW-03	35							
480-144153-1 MSD	MW-03	31							
480-144153-2	MW-02	28							
480-144153-3	20181018-FD-1	25							
480-144153-4	MW-05	26							
LCS 480-442693/2-A	Lab Control Sample	36							
MB 480-442693/1-A	Method Blank	33							

Surrogate Legend

DXE = 1,4-Dioxane-d8

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-442693/1-A
Matrix: Water
Analysis Batch: 444395

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442693

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		10/31/18 07:26	11/08/18 15:07	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*33*		*15 - 110*	*10/31/18 07:26*	*11/08/18 15:07*	*1*

Lab Sample ID: LCS 480-442693/2-A
Matrix: Water
Analysis Batch: 444395

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442693

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			1.00	1.05		ug/L		105	40 - 140		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dioxane-d8	*36*		*15 - 110*

Lab Sample ID: 480-144153-1 MS
Matrix: Water
Analysis Batch: 444395

Client Sample ID: MW-03
Prep Type: Total/NA
Prep Batch: 442693

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane	0.16	J H	1.04	1.21	H	ug/L		101	40 - 140		

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
1,4-Dioxane-d8	*35*		*15 - 110*

Lab Sample ID: 480-144153-1 MSD
Matrix: Water
Analysis Batch: 444395

Client Sample ID: MW-03
Prep Type: Total/NA
Prep Batch: 442693

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	0.16	J H	0.952	1.14	H	ug/L		103	40 - 140	7	20

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,4-Dioxane-d8	*31*		*15 - 110*

QC Association Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

GC/MS Semi VOA

Prep Batch: 442693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-144153-1	MW-03	Total/NA	Water	3510C	
480-144153-2	MW-02	Total/NA	Water	3510C	
480-144153-3	20181018-FD-1	Total/NA	Water	3510C	
480-144153-4	MW-05	Total/NA	Water	3510C	
MB 480-442693/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-442693/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-144153-1 MS	MW-03	Total/NA	Water	3510C	
480-144153-1 MSD	MW-03	Total/NA	Water	3510C	

Analysis Batch: 444395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-144153-1	MW-03	Total/NA	Water	8270D SIM ID	442693
480-144153-2	MW-02	Total/NA	Water	8270D SIM ID	442693
480-144153-3	20181018-FD-1	Total/NA	Water	8270D SIM ID	442693
480-144153-4	MW-05	Total/NA	Water	8270D SIM ID	442693
MB 480-442693/1-A	Method Blank	Total/NA	Water	8270D SIM ID	442693
LCS 480-442693/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	442693
480-144153-1 MS	MW-03	Total/NA	Water	8270D SIM ID	442693
480-144153-1 MSD	MW-03	Total/NA	Water	8270D SIM ID	442693

Lab Chronicle

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Client Sample ID: MW-03
Date Collected: 10/18/18 10:50
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	444395	11/08/18 17:31	DMR	TAL BUF

Client Sample ID: MW-02
Date Collected: 10/18/18 13:50
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	444395	11/08/18 18:20	DMR	TAL BUF

Client Sample ID: 20181018-FD-1
Date Collected: 10/18/18 00:00
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	444395	11/08/18 18:44	DMR	TAL BUF

Client Sample ID: MW-05
Date Collected: 10/18/18 16:10
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	444395	11/08/18 19:09	DMR	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Method Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-144153-1	MW-03	Water	10/18/18 10:50	10/24/18 09:50
480-144153-2	MW-02	Water	10/18/18 13:50	10/24/18 09:50
480-144153-3	20181018-FD-1	Water	10/18/18 00:00	10/24/18 09:50
480-144153-4	MW-05	Water	10/18/18 16:10	10/24/18 09:50

Chain of Custody

480-144153 COC

Workorder: 7068532 **Workorder Name:** 31 WATER ST **Results Requested By:** 10/26/2018

Report / Invoice To	Subcontract To
James Murphy Pace Analytical New York 2190 Technology Drive Schenectady, NY 12308 Phone (518)860-9724 Email: james.murphy@pacelabs.com	TA- Buffalo 10 Haxelwood Dr Amherst, NY P.O. 102218JM2001

State of Sample Origin: NY

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: 1,4 Dioxane voa 8270 SIM	LAB USE ONLY
1	MW-03	10/18/2018 10:50	7068532001	Water	3	X	MS/MSD
2	MW-02	10/18/2018 13:50	7068532002	Water	1	X	
3	20181018-FD-1	10/18/2018 00:00	7068532003	Water	1	X	
4	MW-05	10/18/2018 16:10	7068532004	Water	1	X	
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	10/23/18 1800	[illegible]	10/24/18 0950
2				
3				

Comments

NYS CAT B DATA PKG
NYS EqUIS EDD

Cooler Temperature on Receipt 3.2 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

#1

Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 480-144153-1

Login Number: 144153
List Number: 1
Creator: Wallace, Cameron

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	N/A	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

ANALYTICAL REPORT

Job Number: 480-144153-2

Job Description: 31 Water St

For:
Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747

Attention: James Murphy



Approved for release.
Mary A Schwartzmyer
Project Manager I
11/15/2018 4:00 PM

Designee for
John R Schove, Project Manager II
10 Hazelwood Drive, Amherst, NY, 14228-2298
(716)504-9838
john.schove@testamericainc.com
11/15/2018

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who has signed this report.

TestAmerica Buffalo NELAC Certifications: CADPH 01169CA, FLDOH E87672, ILEPA 200003, KSDOH E-10187, LADEQ 30708, MDH 036-999-337, NHELAP 2973, NJDEP NY455, NYDOH 10026, ORELAP NY200003, PADEP 68-00281, TXCEQ T-104704412-10-1

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Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job Narrative
480-144153-2

Comments
No additional comments.

Receipt
The samples were received on 10/24/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.2º C and 3.4º C.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method(s) 3510C: The following samples were received outside of holding time: BMW-01 (480-144153-5), MW-04 (480-144153-6), MW-01 (480-144153-7) and TANK WS-01 (480-144153-8).

Method(s) 3510C: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: TANK WS-01 (480-144153-8).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 Water St

TestAmerica Job ID: 480-144153-2

Client Sample ID: BMW-01 — Lab Sample ID: 480-144153-5

No Detections.

Client Sample ID: MW-04 — Lab Sample ID: 480-144153-6

No Detections.

Client Sample ID: MW-01 — Lab Sample ID: 480-144153-7

No Detections.

Client Sample ID: TANK WS-01 — Lab Sample ID: 480-144153-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BMW-01

Lab Sample ID: 480-144153-5

Date Collected: 10/19/18 12:50

Matrix: Water

Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H	0.20	0.10	ug/L		10/31/18 07:26	11/08/18 19:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*29*		*15 - 110*	*10/31/18 07:26*	*11/08/18 19:33*	*1*

Client Sample ID: MW-04

Lab Sample ID: 480-144153-6

Date Collected: 10/19/18 14:20

Matrix: Water

Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H	0.20	0.10	ug/L		10/31/18 07:26	11/08/18 19:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*27*		*15 - 110*	*10/31/18 07:26*	*11/08/18 19:58*	*1*

Client Sample ID: MW-01

Lab Sample ID: 480-144153-7

Date Collected: 10/19/18 15:30

Matrix: Water

Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H	0.21	0.11	ug/L		10/31/18 07:26	11/13/18 18:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*31*		*15 - 110*	*10/31/18 07:26*	*11/13/18 18:16*	*1*

Client Sample ID: TANK WS-01

Lab Sample ID: 480-144153-8

Date Collected: 10/19/18 09:30

Matrix: Water

Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H	0.23	0.12	ug/L		10/31/18 07:26	11/13/18 18:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*30*		*15 - 110*	*10/31/18 07:26*	*11/13/18 18:40*	*1*

Default Detection Limits

Client: Pace Analytical Services, LLC
Project/Site: 31 Water St

TestAmerica Job ID: 480-144153-2

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Prep: 3510C

Analyte	RL	MDL	Units	Method
1,4-Dioxane	0.20	0.10	ug/L	8270D SIM ID

Isotope Dilution Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 Water St

TestAmerica Job ID: 480-144153-2

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DXE (15-110)
480-144153-5	BMW-01	29
480-144153-6	MW-04	27
480-144153-7	MW-01	31
480-144153-8	TANK WS-01	30
LCS 480-442693/2-A	Lab Control Sample	36
MB 480-442693/1-A	Method Blank	33

Surrogate Legend

DXE = 1,4-Dioxane-d8

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-442693/1-A
Matrix: Water
Analysis Batch: 444395

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442693

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		10/31/18 07:26	11/08/18 15:07	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*33*		*15 - 110*	*10/31/18 07:26*	*11/08/18 15:07*	*1*

Lab Sample ID: LCS 480-442693/2-A
Matrix: Water
Analysis Batch: 444395

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442693

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			1.00	1.05		ug/L		105	40 - 140		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dioxane-d8	*36*		*15 - 110*

GC/MS Semi VOA

Prep Batch: 442693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-144153-5	BMW-01	Total/NA	Water	3510C	
480-144153-6	MW-04	Total/NA	Water	3510C	
480-144153-7	MW-01	Total/NA	Water	3510C	
480-144153-8	TANK WS-01	Total/NA	Water	3510C	
MB 480-442693/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-442693/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 444395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-144153-5	BMW-01	Total/NA	Water	8270D SIM ID	442693
480-144153-6	MW-04	Total/NA	Water	8270D SIM ID	442693
MB 480-442693/1-A	Method Blank	Total/NA	Water	8270D SIM ID	442693
LCS 480-442693/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	442693

Analysis Batch: 445333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-144153-7	MW-01	Total/NA	Water	8270D SIM ID	442693
480-144153-8	TANK WS-01	Total/NA	Water	8270D SIM ID	442693

Lab Chronicle

Client: Pace Analytical Services, LLC
Project/Site: 31 Water St

TestAmerica Job ID: 480-144153-2

Client Sample ID: BMW-01
Date Collected: 10/19/18 12:50
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	444395	11/08/18 19:33	DMR	TAL BUF

Client Sample ID: MW-04
Date Collected: 10/19/18 14:20
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	444395	11/08/18 19:58	DMR	TAL BUF

Client Sample ID: MW-01
Date Collected: 10/19/18 15:30
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	445333	11/13/18 18:16	DMR	TAL BUF

Client Sample ID: TANK WS-01
Date Collected: 10/19/18 09:30
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			442693	10/31/18 07:26	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	445333	11/13/18 18:40	DMR	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 Water St

TestAmerica Job ID: 480-144153-2

Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Method Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 Water St

TestAmerica Job ID: 480-144153-2

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 Water St

TestAmerica Job ID: 480-144153-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-144153-5	BMW-01	Water	10/19/18 12:50	10/24/18 09:50
480-144153-6	MW-04	Water	10/19/18 14:20	10/24/18 09:50
480-144153-7	MW-01	Water	10/19/18 15:30	10/24/18 09:50
480-144153-8	TANK WS-01	Water	10/19/18 09:30	10/24/18 09:50

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Instrument ID: HP5973U Analysis Batch Number: 445333

Lab Sample ID: 480-144153-7 Client Sample ID: MW-01

Date Analyzed: 11/13/18 18:16 Lab File ID: U3313303.D GC Column: RXI-5Sil MS(0 ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane		Invalid Compound ID	richardsd	11/14/18 10:26

Lab Sample ID: 480-144153-8 Client Sample ID: TANK WS-01

Date Analyzed: 11/13/18 18:40 Lab File ID: U3313304.D GC Column: RXI-5Sil MS(0 ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane		Invalid Compound ID	richardsd	11/14/18 10:26

8270D SIM ID

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
MB_1,4SIM_WRK_00053	01/22/19	04/16/18	Methylene Chloride, Lot 196174	1 mL	MB_1,4SIM_INT_00009	10 uL	1,4-Dioxane	0.2 ug/mL
					MB_SIMSUR_INT_00002	10 uL	1,4-Dioxane-d8	2 ug/mL
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_1,4SIM_WRK_00054	01/22/19	04/16/18	Methylene Chloride, Lot 196174	1 mL	MB_1,4SIM_INT_00009	20 uL	1,4-Dioxane	0.4 ug/mL
					MB_SIMSUR_INT_00002	20 uL	1,4-Dioxane-d8	4 ug/mL
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_1,4SIM_WRK_00056	01/22/19	04/16/18	Methylene Chloride, Lot 196174	1 mL	MB_1,4SIM_INT_00009	40 uL	1,4-Dioxane	0.8 ug/mL
					MB_SIMSUR_INT_00002	40 uL	1,4-Dioxane-d8	8 ug/mL
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_1,4SIM_WRK_00057	01/22/19	04/16/18	Methylene Chloride, Lot 196174	1 mL	MB_1,4SIM_INT_00009	50 uL	1,4-Dioxane	1 ug/mL
					MB_SIMSUR_INT_00002	50 uL	1,4-Dioxane-d8	10 ug/mL
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_1,4SIM_WRK_00058	01/22/19	04/16/18	Methylene Chloride, Lot 196174	1 mL	MB_1,4SIM_INT_00009	60 uL	1,4-Dioxane	1.2 ug/mL
					MB_SIMSUR_INT_00002	60 uL	1,4-Dioxane-d8	12 ug/mL
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_1,4SIM_WRK_00059	01/16/19	07/16/18	Methylene Chloride, Lot 202206	10 mL	MB_1,4SIM_INT_00009	300 uL	1,4-Dioxane	0.6 ug/mL
					MB_SIMSUR_INT_00002	300 uL	1,4-Dioxane-d8	6 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MB_1,4SIM_INT_00009	01/22/19	01/22/18	Methylene Chloride, Lot 187621	10 mL	MB_14Diox_STK_00024	100 uL	1,4-Dioxane	20 ug/mL
..MB_14Diox_STK_00024	01/22/19		Restek, Lot A0110448		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
MB_DFTPP_WRK_00343							4,4'-DDD	
							4,4'-DDE	
					MB_DFTPP_STK_00087	100 uL	4,4'-DDT	10 ug/mL
							DFTPP	10 ug/mL
.MB_DFTPP_STK_00087	09/30/19		Ultra Scientific, Lot CR-3789		(Purchased Reagent)		4,4'-DDT	1000 ug/mL
							DFTPP	1000 ug/mL
MB_LLIS_WRK_00156	04/10/19	10/22/18	Methylene Chloride, Lot 207567	10 mL	MB_INTSTD_STK_00054	1000 uL	1,4-Dichlorobenzene-d4	200 ug/mL
.MB_INTSTD_STK_00054	04/10/19		Restek, Lot A0133281		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MB_LLIS_WRK_00157	04/29/19	11/01/18	Methylene Chloride, Lot 209297	10 mL	MB_INTSTD_STK_00055	1000 uL	1,4-Dichlorobenzene-d4	200 ug/mL
.MB_INTSTD_STK_00055	04/29/19		Restek, Lot A0133281		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MB_SIMSS_WRK_00009	03/10/19	09/10/18	Methylene Chloride, Lot 192628	1 mL	MB_SIMSS_INT_00005	30 uL	1,4-Dioxane	0.6 ug/mL
					MB_SIMSUR_INT_00002	30 uL	1,4-Dioxane-d8	6 ug/mL
.MB_SIMSS_INT_00005	03/26/19	04/16/18	Methylene Chloride, Lot 197178	5 mL	MB_L1S1_SS_00023	100 uL	1,4-Dioxane	20 ug/mL
..MB_L1S1_SS_00023	03/26/19		Restek, Lot A0131190		(Purchased Reagent)		1,4-Dioxane	1000 ug/mL
.MB_SIMSUR_INT_00002	04/16/19	04/16/18	Methylene Chloride, Lot 194176	10 mL	MB_SIMSur_STK_00014	1000 uL	1,4-Dioxane-d8	200 ug/mL
..MB_SIMSur_STK_00014	04/16/19		Restek, Lot A0134839		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
OP_SIM_LCS_00005	04/04/19	10/04/18	ACETONE, Lot 4833946	200 mL	O_1,4Diox_STK_00006	100 uL	1,4-Dioxane	1 ug/mL
.O_1,4Diox_STK_00006	01/31/23		Restek, Lot A0134438		(Purchased Reagent)		1,4-Dioxane	2000 ug/mL
OP_SimSurr_00011	04/26/19	10/26/18	ACETONE, Lot 4908645	400 mL	OP_1,4diox-d8_00015	1 mL	1,4-Dioxane-d8	10 ug/mL
					OP_1,4diox-d8_00016	1 mL	1,4-Dioxane-d8	10 ug/mL
.OP_1,4diox-d8_00015	06/30/21		Restek, Lot A0139112		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL
.OP_1,4diox-d8_00016	06/30/21		Restek, Lot A0139112		(Purchased Reagent)		1,4-Dioxane-d8	2000 ug/mL

Reagent

MB_1,4SIM_INT_00009

Reagent

MB_1,4SIM_WRK_00053

Reagent

MB_1,4SIM_WRK_00054

Reagent

MB_1,4SIM_WRK_00056

Reagent

MB_1,4SIM_WRK_00057

Reagent

MB_1,4SIM_WRK_00058

Reagent

MB_1,4SIM_WRK_00059

Reagent

MB_14Diox_STK_00024



Reference Standards

1,4-dioxane

Catalog # 31853

Lot # A0110448

110 Benner Circle Bellefonte, PA 16823-8812
1-814-353-1300 1-800-356-1168
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RAW MATERIAL TEST INFORMATION AVAILABLE UPON REQUEST

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31853 **Lot No.:** A0110448

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2020 **Storage:** 0°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,4-Dioxane	2,005.0 µg/mL	+/- 11.7665 µg/mL	Gravimetric
	CAS # 123-91-1 (Lot SHBF2002V)		+/- 42.5509 µg/mL	Unstressed
	Purity 99%		+/- 42.7394 µg/mL	Stressed

Solvent: Methylene Chloride (MEOH FREE)
CAS # 75-09-2
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

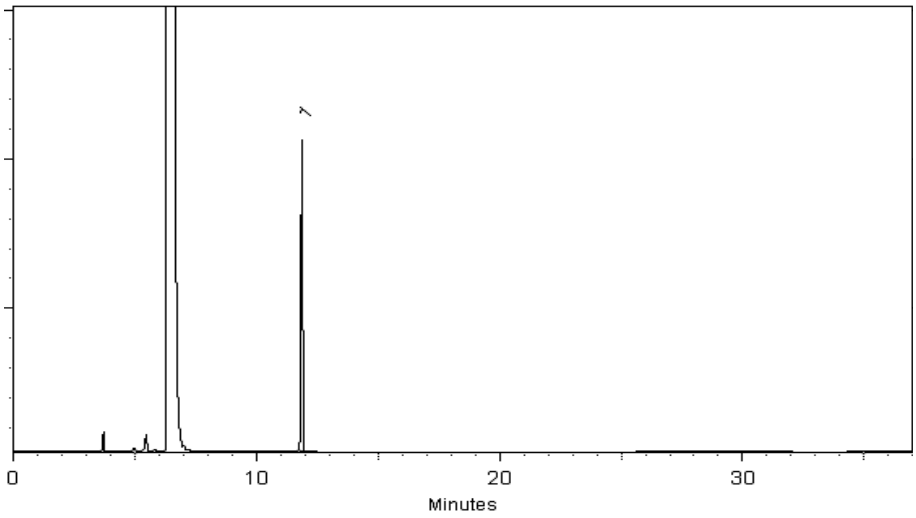
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Rebecca Sawyer

Date Mixed: 16-Apr-2015 **Balance:** 1128360905

Amanda Miller - QC Analyst

Date Passed: 20-Apr-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

RESTEK

Chemical Standard Batch Sheet
Lot #: A0110448

Catalog #: 31853	**Target:** 2000 ug/mL	
Description: 1,4-dioxane		
Solvent: Methylene Chloride (MEOH FREE)	**Solvent Lot:** 150188	**Final Volume:** 100 ml

Made by: Rebecca Lauver	**Date:** 4/16/2015 11:55:20AM		
Tested by: Amanda Miller	**Date:** 4/17/2015 10:07:38AM		
Pass	**By:** Amanda Miller	**Date:** 4/20/2015 8:16:14AM	
Packaged by: Joe Conway / Rebecca Lauver	**Date:** 4/16/2015 1:36:41PM	**No. Units:** 71	**Pkg Size:** 1 mL
Balance Used: BEDEARMBALPC3 XP205	**Serial #:** 1128360905		

Compound	CAS	Storage Location	Lot #	Purity	Target Conc(ug/mL)	Target	Actual	Calc Conc(ug/mL)
1,4-Dioxane	123-91-1	R0581	SHBF2002V	0.99	2,000.00	200.00 mg	200.50 mg	2,005.0

QA Report: 1 4-dioxane (Cat.#31853)

	Runs of Lot # a079686						Runs of Lot # a0110448							
COMPONENT	Run #1	Run #2	Run #3	AVG	STD DEV	% RSD	Run #1	Run #2	Run #3	AVG	STD DEV	% RSD	%D MEAN	**P/F**
1,4-dioxane	4744769	4744247	4791536	4760184	27153	0.57	4764070	4797484	4777169	4779574	16836	0.35	-0.41	PASS

Reagent

MB_DFTPP_STK_00087

Certificate of Analysis

Semi-Volatiles GC/MS Tuning Standard

Product Number: GCM-150

Lot Number: CR-3789

Lot Issue Date: 23-Aug-2017

Expiration Date: 30-Sep-2019

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
decafluorotriphenylphosphine	005074-71-5	RM03353	1005 ± 5 µg/mL
benzidine	000092-87-5	RM10200	1001 ± 5 µg/mL
pentachlorophenol	000087-86-5	RM02473	1004 ± 5 µg/mL
4,4'-DDT	000050-29-3	NT01175	1003 ± 5 µg/mL

Matrix: methylene chloride (purified)

Storage: Store Frozen (-25° to -10°C).

MB_DFTPP_STK_00084-00087

Received 4/9/18

BS

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

John Russo
President

Monica Bourgeois
Director of QA/RA

ANAB ACCREDITED TESTING LABORATORY

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Reagent

MB_DFTPP_WRK_00343

Reagent

MB_INTSTD_STK_00054

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MB_INTSD_STK-00053-00054

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Received 6/4/18 MKP

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567684 **Lot No.:** A0133281

Description : 8270 Internal Standard

8270 Internal Standard 2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : December 31, 2022 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dichlorobenzene-d4 **CAS #** 3855-82-1 **Purity** 99%	(Lot PR-18488)	2,000.9 µg/mL	+/- 11.6334 +/- 90.1217 +/- 100.0012	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Naphthalene-d8 **CAS #** 1146-65-2 **Purity** 99%	(Lot M-1452)	2,000.1 µg/mL	+/- 11.6285 +/- 90.0835 +/- 99.9587	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	Acenaphthene-d10 **CAS #** 15067-26-2 **Purity** 99%	(Lot PR-25444)	2,000.2 µg/mL	+/- 11.6290 +/- 90.0880 +/- 99.9637	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	Phenanthrene-d10 **CAS #** 1517-22-2 **Purity** 99%	(Lot PR-23065)	2,002.8 µg/mL	+/- 11.6442 +/- 90.2051 +/- 100.0937	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	Chrysene-d12 **CAS #** 1719-03-5 **Purity** 99%	(Lot PR-27952)	2,001.4 µg/mL	+/- 11.6360 +/- 90.1420 +/- 100.0237	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	Perylene-d12 **CAS #** 1520-96-3 **Purity** 99%	(Lot PR-24113)	2,002.3 µg/mL	+/- 11.6413 +/- 90.1825 +/- 100.0687	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Reagent

MB_INTSTD_STK_00055

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

MB_INTSTD_STK_00055-56

Received 9/17/18

BS

Catalog No. : 567684 **Lot No.:** A0133281

Description : 8270 Internal Standard

8270 Internal Standard 2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : December 31, 2022 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dichlorobenzene-d4 **CAS #** 3855-82-1 **Purity** 99% (Lot PR-18488)	2,000.9 µg/mL	+/- 11.6334 +/- 90.1217 +/- 100.0012	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Naphthalene-d8 **CAS #** 1146-65-2 **Purity** 99% (Lot M-1452)	2,000.1 µg/mL	+/- 11.6285 +/- 90.0835 +/- 99.9587	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	Acenaphthene-d10 **CAS #** 15067-26-2 **Purity** 99% (Lot PR-25444)	2,000.2 µg/mL	+/- 11.6290 +/- 90.0880 +/- 99.9637	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	Phenanthrene-d10 **CAS #** 1517-22-2 **Purity** 99% (Lot PR-23065)	2,002.8 µg/mL	+/- 11.6442 +/- 90.2051 +/- 100.0937	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	Chrysene-d12 **CAS #** 1719-03-5 **Purity** 99% (Lot PR-27952)	2,001.4 µg/mL	+/- 11.6360 +/- 90.1420 +/- 100.0237	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	Perylene-d12 **CAS #** 1520-96-3 **Purity** 99% (Lot PR-24113)	2,002.3 µg/mL	+/- 11.6413 +/- 90.1825 +/- 100.0687	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Reagent

MB_L1S1_SS_00023

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 571995.SEC **Lot No.:** A0131190

MB_LISI_SS_00023-00027

Description : 8270 List 1 / Std #1 MegaMix (2017)

8270 List 1 / Std #1 MegaMix (2017) 500-2,000µg/mL, Methylene chloride, 5mL/ampul

Received 3/9/18

Container Size : 10 mL **Pkg Amt:** > 5 mL

Expiration Date : March 31, 2019 **Storage:** 0°C or colder

Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,4-Dioxane **CAS #** 123-91-1.SEC (Lot MUFZH) **Purity** 99%	1,000.0 µg/mL	+/- 5.8275 µg/mL +/- 11.9606 µg/mL +/- 19.0288 µg/mL	Gravimetric Unstressed Stressed
2	N-Nitrosodimethylamine **CAS #** 62-75-9.SEC (Lot 61H72) **Purity** 99%	1,000.0 µg/mL	+/- 5.8275 µg/mL +/- 11.9606 µg/mL +/- 19.0288 µg/mL	Gravimetric Unstressed Stressed
3	Pyridine **CAS #** 110-86-1.SEC (Lot QN8DK) **Purity** 99%	2,000.0 µg/mL	+/- 11.6282 µg/mL +/- 23.9081 µg/mL +/- 38.0494 µg/mL	Gravimetric Unstressed Stressed
4	Phenol **CAS #** 108-95-2.SEC (Lot EDPYN) **Purity** 99%	1,000.6 µg/mL	+/- 5.8310 µg/mL +/- 11.9678 µg/mL +/- 19.0402 µg/mL	Gravimetric Unstressed Stressed
5	Aniline **CAS #** 62-53-3.SEC (Lot ZCD3N) **Purity** 99%	1,000.4 µg/mL	+/- 5.8299 µg/mL +/- 11.9654 µg/mL +/- 19.0364 µg/mL	Gravimetric Unstressed Stressed
6	Bis(2-chloroethyl)ether **CAS #** 111-44-4.SEC (Lot FA010143) **Purity** 99%	1,000.6 µg/mL	+/- 5.8310 µg/mL +/- 11.9678 µg/mL +/- 19.0402 µg/mL	Gravimetric Unstressed Stressed
7	n-Decane (C10) **CAS #** 124-18-5.SEC (Lot UCVNN) **Purity** 99%	1,000.0 µg/mL	+/- 5.8275 µg/mL +/- 11.9606 µg/mL +/- 19.0288 µg/mL	Gravimetric Unstressed Stressed

8	2-Chlorophenol **CAS #** 95-57-8.SEC **Purity** 99%	(Lot GJ01)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	1,3-Dichlorobenzene **CAS #** 541-73-1.SEC **Purity** 99%	(Lot FMDFD)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	1,4-Dichlorobenzene **CAS #** 106-46-7.SEC **Purity** 99%	(Lot 4Y5DC)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	Benzyl alcohol **CAS #** 100-51-6.SEC **Purity** 99%	(Lot QZBUO)	1,000.6	µg/mL	+/- 5.8310 +/- 11.9678 +/- 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	1,2-Dichlorobenzene **CAS #** 95-50-1.SEC **Purity** 99%	(Lot R6QDM)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	2-Methylphenol (o-cresol) **CAS #** 95-48-7.SEC **Purity** 99%	(Lot NC7HL)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	2,2'-oxybis(1-chloropropane) **CAS #** 108-60-1.SEC **Purity** 99%	(Lot 2-KMW-57-8)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Acetophenone **CAS #** 98-86-2.SEC **Purity** 99%	(Lot NSGTI)	1,000.6	µg/mL	+/- 5.8310 +/- 11.9678 +/- 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	3-Methylphenol (m-cresol) **CAS #** 108-39-4.SEC **Purity** 99%	(Lot 6LHTM)	500.0	µg/mL	+/- 2.9138 +/- 5.9803 +/- 9.5144	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	4-Methylphenol (p-cresol) **CAS #** 106-44-5.SEC **Purity** 99%	(Lot 65S2E)	501.0	µg/mL	+/- 2.9196 +/- 5.9923 +/- 9.5334	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	N-Nitroso-di-n-propylamine **CAS #** 621-64-7.SEC **Purity** 99%	(Lot 4423200)	1,001.4	µg/mL	+/- 5.8357 +/- 11.9773 +/- 19.0555	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
19	Hexachloroethane **CAS #** 67-72-1.SEC **Purity** 99%	(Lot 10173016)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
20	Nitrobenzene **CAS #** 98-95-3.SEC **Purity** 99%	(Lot FLYIG)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
21	Isophorone **CAS #** 78-59-1.SEC **Purity** 99%	(Lot XHGJI)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
22	2-Nitrophenol **CAS #** 88-75-5.SEC **Purity** 99%	(Lot GXJ7J)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
23	2,4-Dimethylphenol **CAS #** 105-67-9.SEC **Purity** 99%	(Lot MKBL3650V)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

24	Bis(2-chloroethoxy)methane **CAS #** 111-91-1 * **Purity** 99%	(Lot 5670100)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
25	2,4-Dichlorophenol **CAS #** 120-83-2.SEC **Purity** 99%	(Lot FHM01)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
26	1,2,4-Trichlorobenzene **CAS #** 120-82-1.SEC **Purity** 99%	(Lot OGO01)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
27	Naphthalene **CAS #** 91-20-3.SEC **Purity** 99%	(Lot SKZ5N)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
28	2,6-Dichlorophenol **CAS #** 87-65-0.SEC **Purity** 99%	(Lot SIDBB)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
29	4-Chloroaniline **CAS #** 106-47-8.SEC **Purity** 99%	(Lot 10171860)	1,000.2	µg/mL	+/- 5.8287 +/- 11.9630 +/- 19.0326	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
30	Hexachlorobutadiene **CAS #** 87-68-3.SEC **Purity** 97%	(Lot 1068200)	1,000.5	µg/mL	+/- 5.8302 +/- 11.9661 +/- 19.0375	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
31	4-Chloro-3-methylphenol **CAS #** 59-50-7.SEC **Purity** 99%	(Lot FDO02)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
32	2-Methylnaphthalene **CAS #** 91-57-6.SEC **Purity** 98%	(Lot 76023-1)	1,000.8	µg/mL	+/- 5.8320 +/- 11.9699 +/- 19.0436	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
33	1-Methylnaphthalene **CAS #** 90-12-0.SEC **Purity** 97%	(Lot UATSA)	1,000.1	µg/mL	+/- 5.8279 +/- 11.9614 +/- 19.0302	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
34	1,2,4,5-Tetrachlorobenzene **CAS #** 95-94-3.SEC **Purity** 99%	(Lot AF02)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
35	Hexachlorocyclopentadiene **CAS #** 77-47-4.SEC **Purity** 99%	(Lot 5608400)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
36	2,4,6-Trichlorophenol **CAS #** 88-06-2.SEC **Purity** 98%	(Lot UUMYM)	1,000.6	µg/mL	+/- 5.8309 +/- 11.9675 +/- 19.0399	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
37	2,4,5-Trichlorophenol **CAS #** 95-95-4.SEC **Purity** 97%	(Lot MKBQ9937V)	1,000.1	µg/mL	+/- 5.8279 +/- 11.9614 +/- 19.0302	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
38	2-Chloronaphthalene **CAS #** 91-58-7.SEC **Purity** 99%	(Lot LC07783V)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
39	Biphenyl **CAS #** 92-52-4.SEC **Purity** 99%	(Lot 33OQE)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

40	2-Nitroaniline **CAS #** 88-74-4.SEC **Purity** 99%	(Lot T6E7B)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
41	Acenaphthylene **CAS #** 208-96-8.SEC **Purity** 96%	(Lot 0012014)	999.9	µg/mL	+/- 5.8271 +/- 11.9598 +/- 19.0276	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
42	1,3-Dinitrobenzene **CAS #** 99-65-0.SEC **Purity** 99%	(Lot 3XXLB)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
43	Dimethylphthalate **CAS #** 131-11-3.SEC **Purity** 99%	(Lot 483WC)	1,002.0	µg/mL	+/- 5.8392 +/- 11.9845 +/- 19.0669	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
44	2,6-Dinitrotoluene **CAS #** 606-20-2.SEC **Purity** 99%	(Lot GE01)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
45	3-Nitroaniline **CAS #** 99-09-2.SEC **Purity** 99%	(Lot FGN03)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
46	Acenaphthene **CAS #** 83-32-9.SEC **Purity** 99%	(Lot BWZJE)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
47	2,4-Dinitrophenol **CAS #** 51-28-5.SEC **Purity** 99%	(Lot YTR6B)	2,000.0	µg/mL	+/- 11.6282 +/- 23.9081 +/- 38.0494	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
48	Dibenzofuran **CAS #** 132-64-9.SEC **Purity** 99%	(Lot 27ZGC)	1,000.8	µg/mL	+/- 5.8322 +/- 11.9702 +/- 19.0440	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
49	4-Nitrophenol **CAS #** 100-02-7.SEC **Purity** 99%	(Lot 2J5LB)	2,000.0	µg/mL	+/- 11.6282 +/- 23.9081 +/- 38.0494	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
50	2,4-Dinitrotoluene **CAS #** 121-14-2.SEC **Purity** 99%	(Lot SHRSA)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
51	2,3,4,6-Tetrachlorophenol **CAS #** 58-90-2.SEC **Purity** 99%	(Lot LC19623V)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
52	Fluorene **CAS #** 86-73-7.SEC **Purity** 99%	(Lot 5027400)	1,000.6	µg/mL	+/- 5.8310 +/- 11.9678 +/- 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
53	n-Hexadecane (C16) **CAS #** 544-76-3.SEC **Purity** 99%	(Lot A0328141)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
54	Diethylphthalate **CAS #** 84-66-2.SEC **Purity** 99%	(Lot UMBJC)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
55	4-Chlorophenyl phenyl ether **CAS #** 7005-72-3.SEC **Purity** 99%	(Lot P31G)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

56	4-Nitroaniline **CAS #** 100-01-6.SEC **Purity** 99%	(Lot 5ITRC)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
57	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) **CAS #** 534-52-1.SEC **Purity** 99%	(Lot 6333400)	2,000.0	µg/mL	+/- 11.6282 +/- 23.9081 +/- 38.0494	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
58	Diphenylamine **CAS #** 122-39-4.SEC **Purity** 99%	(Lot 10164691)	850.0	µg/mL	+/- 4.9534 +/- 10.1665 +/- 16.1745	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
59	Azobenzene **CAS #** 103-33-3.SEC **Purity** 99%	(Lot JUWAG)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
60	4-Bromophenyl phenyl ether **CAS #** 101-55-3.SEC **Purity** 99%	(Lot 84C6D)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
61	Hexachlorobenzene **CAS #** 118-74-1.SEC **Purity** 99%	(Lot G120431)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
62	Pentachlorophenol **CAS #** 87-86-5.SEC **Purity** 99%	(Lot 5784900)	2,000.4	µg/mL	+/- 11.6305 +/- 23.9129 +/- 38.0570	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
63	n-Octadecane (C18) **CAS #** 593-45-3.SEC **Purity** 99%	(Lot G14U045)	1,001.0	µg/mL	+/- 5.8333 +/- 11.9726 +/- 19.0478	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
64	Phenanthrene **CAS #** 85-01-8.SEC **Purity** 98%	(Lot 4708400)	1,002.0	µg/mL	+/- 5.8389 +/- 11.9839 +/- 19.0660	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
65	Anthracene **CAS #** 120-12-7.SEC **Purity** 99%	(Lot WDFNJ)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
66	Carbazole **CAS #** 86-74-8.SEC **Purity** 99%	(Lot LMIZB)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
67	Di-n-butylphthalate **CAS #** 84-74-2.SEC **Purity** 99%	(Lot 42FSG)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
68	Fluoranthene **CAS #** 206-44-0.SEC **Purity** 99%	(Lot FREGF)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
69	Pyrene **CAS #** 129-00-0.SEC **Purity** 99%	(Lot ROVJC)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
70	Benzyl butyl phthalate **CAS #** 85-68-7.SEC **Purity** 98%	(Lot GX3GL)	1,000.0	µg/mL	+/- 5.8275 +/- 11.9605 +/- 19.0287	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
71	Benz(a)anthracene **CAS #** 56-55-3.SEC **Purity** 99%	(Lot MTENF)	1,000.4	µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

72	chrysene **CAS #** 218-01-9.SEC **Purity** 99%	(Lot NICZC)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
73	Bis(2-ethylhexyl)phthalate **CAS #** 117-81-7.SEC **Purity** 99%	(Lot MT8AG)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
74	Di-n-octyl phthalate **CAS #** 117-84-0.SEC **Purity** 99%	(Lot O8DLD)	1,000.8 µg/mL	+/- 5.8322 +/- 11.9702 +/- 19.0440	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
75	Benzo(b)fluoranthene **CAS #** 205-99-2.SEC **Purity** 99%	(Lot 022011)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
76	Benzo(k)fluoranthene **CAS #** 207-08-9.SEC **Purity** 99%	(Lot ER041513-01)	1,000.6 µg/mL	+/- 5.8310 +/- 11.9678 +/- 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
77	Benzo(a)pyrene **CAS #** 50-32-8.SEC **Purity** 97%	(Lot M8DFD)	1,000.5 µg/mL	+/- 5.8302 +/- 11.9661 +/- 19.0375	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
78	Indeno(1,2,3-cd)pyrene **CAS #** 193-39-5.SEC **Purity** 99%	(Lot 0012014)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
79	Dibenz(a,h)anthracene **CAS #** 53-70-3.SEC **Purity** 99%	(Lot 0012011)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
80	Benzo(g,h,i)perylene **CAS #** 191-24-2.SEC **Purity** 97%	(Lot 0022012)	1,000.1 µg/mL	+/- 5.8279 +/- 11.9614 +/- 19.0302	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

*** Restek is unable to identify a reliable and/or acceptable second source for this material - the same batch of neat material may have been used to produce both the primary and secondary standard. The primary and secondary standards were prepared using different equipment and personnel.**

Specific Reference Material Notes:
N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL.
N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine.
N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

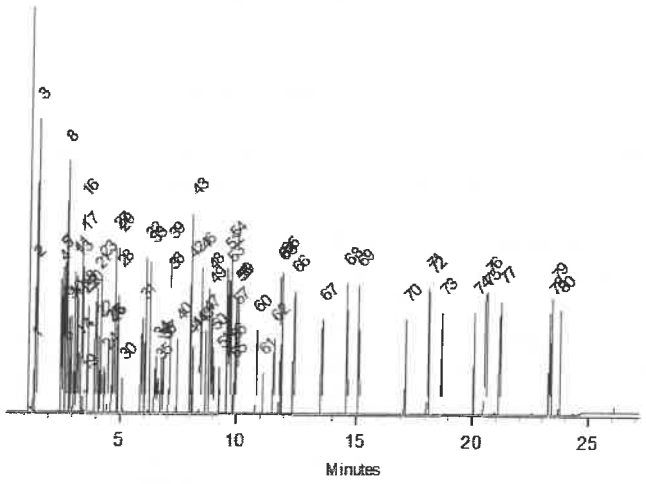
Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Date Mixed: 28-Sep-2017 **Balance:** 1128342313

Justine Albertson - Operations Tech-ARM QC

Date Passed: 13-Oct-2017

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MB_LLIS_WRK_00156

Reagent

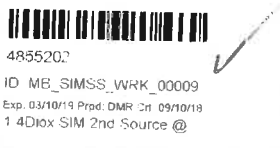
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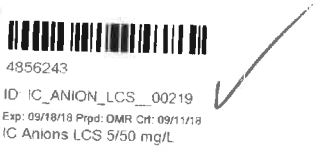
Reagent

MB_SIMSS_WRK_00009

GCMS Semivolatile / Ion Chromatography - Intermediate Reagent Review Sheet

TALS Reagent ID(s):





	N/A	Yes	No	2nd
Does the Description match the concentration of the standard?		Y		✓
Is the number of Bottles set to 1?		Y		✓
Is the storage location set correctly? • MB # 12 – opened SVOA intermediates • MB # 13 – opened IC reagents • IC Room Temperature – opened IC reagents		Y		✓
Are the Source reagents added correctly?		Y		✓
Is the expiration date set with the **tightest** of the following criteria? • Earliest Source reagent expiration date • 1 year from preparation (SVOA only) • 6 months from preparation (Daily SVOA reagents – DFTPP, CCV, RL Check, etc) X • 1 month (VFA working standards) • 1 week (Anions LCS/CCV reagents) X • 2 days (Anions ICAL reagents)		Y		✓
Final amount and Amount units correct?		Y		✓
Analyte units correct?		Y		✓
Creation date updated to day reagent was prepared?		Y		✓
Type of Solvent and Solvent Lot # used in preparation of reagent updated?		Y		✓
All analytes included that are required?		Y		✓
All analytes checked to Calibrate that are required?		Y		✓
Is the concentration of analytes correct?		Y		
Reagent set to Approved? (2nd level review only)				✓
Are the previous intermediates set to Disposed and removed storage location?		Y		✓

1st Reviewer: DR **Date Reviewed:** 9/11/18

2nd Reviewer: MCP **Date Reviewed:** 9/11/18

Comments:

IRV (SIMSS-WRK-00009) Exp. set to 6 months. (can be 3/24/18. (earliest parent exp.) Not changed in TALS or on label.

Reagent

MB_SIMSUR_INT_00002

Reagent

MB_SIMSur_STK_00014

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30614 **Lot No.:** A0134839

Description : 1,4-dioxane-d8 Standard

1,4-dioxane-d8 Standard 2000 µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,4-Dioxane-d8	2,008.7 µg/mL	+/- 11.7880 µg/mL	Gravimetric
	CAS # 17647-74-4 (Lot I-19942)		+/- 43.0356 µg/mL	Unstressed
	Purity 99%		+/- 44.2850 µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

MB_SIMSim_STK_00014 – 00017

Received 4/5/18
MKP

Reagent

O_1,4Diox_STK_00006

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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31853 **Lot No.:** A0134438

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2023 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dioxane **CAS #** 123-91-1 **Purity** 99% (Lot SHBH5677)	2,013.0 µg/mL	+/- 11.8134 µg/mL +/- 43.1285 µg/mL +/- 44.3806 µg/mL		Gravimetric Unstressed Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

45887048
ID O_1 4Diox_STK_00006
Exp: 01/31/23 Prpd: CAM
1 4 Dioxane @ 2000 ug/mL

45887050
ID O_1 4Diox_STK_00007
Exp: 01/31/23 Prpd: CAM
1 4 Dioxane @ 2000 ug/mL

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

OP_1,4diox-d8_00015

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

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ilac-MRA

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30614 **Lot No.:** A0139112

Description : 1,4-dioxane-d8 Standard

1,4-dioxane-d8 Standard 2000 µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dioxane-d8 **CAS #** 17647-74-4 (Lot I-19942) **Purity** 99%	2,011.6 µg/mL	+/- 11.8052 µg/mL +/- 43.0985 µg/mL +/- 44.3497 µg/mL		Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

4828706
ID: OP_1,4dIox-d8_00013
Exp: 06/30/21 Prpd: SMP
1,4-dioxane-d8@2000

4828707
ID: OP_1 4dIox-d8_00014
Exp: 06/30/21 Prpd: SMP
1,4-dioxane-d8@2000

4828726
ID: OP_1 4dIox-d8_00015
Exp: 06/30/21 Prpd: SMP
1,4-dioxane-d8@2000

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

OP_1,4diox-d8_00016

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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30614 **Lot No.:** A0139112

Description : 1,4-dioxane-d8 Standard

1,4-dioxane-d8 Standard 2000 µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dioxane-d8	2,011.6 µg/mL	+/- 11.8052	µg/mL	Gravimetric
	CAS # 17647-74-4 (Lot I-19942)		+/- 43.0985	µg/mL	Unstressed
	Purity 99%		+/- 44.3497	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

4897237
ID OP_1,4diox-d8_00016
Exp: 06/30/21 Prpd: SMP
1 4-dioxane-d8@2000

4897238
ID OP_1.4diox-d8_00017
Exp: 06/30/21 Prpd: SMP
1 4-dioxane-d8@2000

4897239
ID OP_1.4diox-d8_00018
Exp: 06/30/21 Prpd: SMP
1.4-dioxane-d8@2000

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Done! All 5 Order(s) of this packslip have(has) been processed.

*** Thank you for your patience! ***

Reagent

OP_SIM_LCS_00005

100 µL in 200 mL Acetone

Organic Prep
Spike / Surrogate Verification Form

4905360
ID: OP_SIM_LCS_00005
Exp: 04/04/19 Prpd: SMP Crl: 10/04/18
1,4-Dioxane SIM LCS @1.0p

Spike/Surrogate Method: 8270 SIM LCS TALs Reagent ID: _____

Spike/Surrogate Code: 8270 SIM LCS

Prepared By / Date: SP 10/4/18

Date Submitted for Analysis: 10/4/18

Solvent Exchanged? (YES) NO

Solvent Used for Exchange: MeCl2

Final Concentrated Volume: 1.0mL

Final Method Volume: 1.0mL

Final Method Volume Done by Prep? (Yes) No

Date of Analysis: 10/16/18

Analyzed By: DR

Compounds within 80-120% of expected recovery? (YES) NO

Spike / Surrogate Verified for Preparation Use? (YES) NO

* Please return form with final concentration report to Organic Prep



Method 8270D SIM-ID

Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution) by Method 8270D

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Matrix: Water Level: Low

GC Column (1): RXI-5Sil MS ID: 0.25(mm)

Client Sample ID	Lab Sample ID	DXE #
BMW-01	480-144153-5	29
MW-04	480-144153-6	27
MW-01	480-144153-7	31
TANK WS-01	480-144153-8	30
	MB 480-442693/1-A	33
	LCS 480-442693/2-A	36

	QC LIMITS
DXE = 1,4-Dioxane-d8	15-110

Column to be used to flag recovery values

FORM II 8270D SIM ID

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Matrix: Water Level: Low Lab File ID: U3313086.D

Lab ID: LCS 480-442693/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	1.05	105	40-140	
1,4-Dioxane-d8	10.0	3.62	36	15-110	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Lab File ID: U3313085.D Lab Sample ID: MB 480-442693/1-A

Matrix: Water Date Extracted: 10/31/2018 07:26

Instrument ID: HP5973U Date Analyzed: 11/08/2018 15:07

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-442693/2-A	U3313086.D	11/08/2018 15:31
BMW-01	480-144153-5	U3313096.D	11/08/2018 19:33
MW-04	480-144153-6	U3313097.D	11/08/2018 19:58
MW-01	480-144153-7	U3313303.D	11/13/2018 18:16
TANK WS-01	480-144153-8	U3313304.D	11/13/2018 18:40

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Lab File ID: U3312592.D DFTPP Injection Date: 10/26/2018

Instrument ID: HP5973U DFTPP Injection Time: 17:27

Analysis Batch No.: 442039

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10-80% of Base Peak	52.8	
68	Less than 2% of mass 69	0.0	(0.0) 1
69	Mass 69 Relative abundance	48.8	
70	Less than 2% of mass 69	0.3	(0.6) 1
127	10-80% of Base Peak	52.6	
197	Less than 2% of mass 198	0.0	
198	Base peak	100.0	
199	5-9% of mass 198	7.1	
275	10-60% of Base Peak	25.2	
365	Greater than 1% of mass 198	3.1	
441	present but less than 24% of mass 442	9.3	(16.0) 2
442	Greater than 50% of mass 198	58.1	
443	15-24% of mass 442	11.4	(19.6) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 480-442039/3	U3312593.D	10/26/2018	17:56
	IC 480-442039/4	U3312594.D	10/26/2018	18:20
	ICIS 480-442039/5	U3312595.D	10/26/2018	18:45
	IC 480-442039/6	U3312596.D	10/26/2018	19:08
	IC 480-442039/7	U3312597.D	10/26/2018	19:32
	IC 480-442039/8	U3312598.D	10/26/2018	19:56
	ICV 480-442039/9	U3312599.D	10/26/2018	20:20

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Lab File ID: U3313077.D DFTPP Injection Date: 11/08/2018

Instrument ID: HP5973U DFTPP Injection Time: 11:51

Analysis Batch No.: 444395

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10-80% of Base Peak	58.3	
68	Less than 2% of mass 69	0.5	(1.0) 1
69	Mass 69 Relative abundance	52.7	
70	Less than 2% of mass 69	0.7	(1.3) 1
127	10-80% of Base Peak	56.5	
197	Less than 2% of mass 198	0.1	
198	Base peak	100.0	
199	5-9% of mass 198	7.3	
275	10-60% of Base Peak	28.0	
365	Greater than 1% of mass 198	4.2	
441	present but less than 24% of mass 442	12.2	(16.2) 2
442	Greater than 50% of mass 198	75.5	
443	15-24% of mass 442	15.3	(20.2) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-444395/3	U3313078.D	11/08/2018	12:21
	MB 480-442693/1-A	U3313085.D	11/08/2018	15:07
	LCS 480-442693/2-A	U3313086.D	11/08/2018	15:31
BMW-01	480-144153-5	U3313096.D	11/08/2018	19:33
MW-04	480-144153-6	U3313097.D	11/08/2018	19:58

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Lab File ID: U3313301.D DFTPP Injection Date: 11/13/2018

Instrument ID: HP5973U DFTPP Injection Time: 17:23

Analysis Batch No.: 445333

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10-80% of Base Peak	63.5	
68	Less than 2% of mass 69	0.0	(0.0) 1
69	Mass 69 Relative abundance	56.5	
70	Less than 2% of mass 69	0.4	(0.7) 1
127	10-80% of Base Peak	58.6	
197	Less than 2% of mass 198	0.0	
198	Base peak	100.0	
199	5-9% of mass 198	7.1	
275	10-60% of Base Peak	25.8	
365	Greater than 1% of mass 198	4.1	
441	present but less than 24% of mass 442	10.4	(15.8) 2
442	Greater than 50% of mass 198	65.8	
443	15-24% of mass 442	13.7	(20.9) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-445333/3	U3313302.D	11/13/2018	17:51
MW-01	480-144153-7	U3313303.D	11/13/2018	18:16
TANK WS-01	480-144153-8	U3313304.D	11/13/2018	18:40

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Sample No.: ICIS 480-442039/5 Date Analyzed: 10/26/2018 18:45

Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)

Lab File ID (Standard): U3312595.D Heated Purge: (Y/N) N

Calibration ID: 35206

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		769210	5.90				
UPPER LIMIT		1538420	6.40				
LOWER LIMIT		384605	5.40				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 480-442039/9		666864	5.90				
CCVIS 480-444395/3		634343	5.69				
CCVIS 480-445333/3		693641	5.49				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Sample No.: CCVIS 480-444395/3 Date Analyzed: 11/08/2018 12:21

Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)

Lab File ID (Standard): U3313078.D Heated Purge: (Y/N) N

Calibration ID: 35206

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		634343	5.69				
UPPER LIMIT		1268686	6.19				
LOWER LIMIT		317172	5.19				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-442693/1-A		472154	5.69				
LCS 480-442693/2-A		496937	5.69				
480-144153-5	BMW-01	454191	5.69				
480-144153-6	MW-04	459917	5.69				

DCBd4 = 1,4-Dichlorobenzene-d4
DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Sample No.: CCVIS 480-445333/3 Date Analyzed: 11/13/2018 17:51

Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)

Lab File ID (Standard): U3313302.D Heated Purge: (Y/N) N

Calibration ID: 35206

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		693641	5.49				
UPPER LIMIT		1387282	5.99				
LOWER LIMIT		346821	4.99				
LAB SAMPLE ID	CLIENT SAMPLE ID						
480-144153-7	MW-01	542474	5.49				
480-144153-8	TANK WS-01	499480	5.49				

DCBd4 = 1,4-Dichlorobenzene-d4
DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-2

SDG No.:

Client Sample ID: BMW-01 | Lab Sample ID: 480-144153-5

Matrix: Water | Lab File ID: U3313096.D

Analysis Method: 8270D SIM ID | Date Collected: 10/19/2018 12:50

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 980(mL) | Date Analyzed: 11/08/2018 19:33

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND	H	0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	29		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313096.D
Lims ID: 480-144153-A-5-A
Client ID: BMW-01
Sample Type: Client
Inject. Date: 08-Nov-2018 19:33:30 ALS Bottle#: 21 Worklist Smp#: 21
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-021
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:58:04

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D	1 1,4-Dioxane-d8	96	2.430	2.357	0.073	92	150154	2.89	28.9	
	3 1,4-Dioxane	88		2.394				ND		
*	2 1,4-Dichlorobenzene-d4	152	5.690	5.686	0.004	93	454191	4.00		

Reagents:

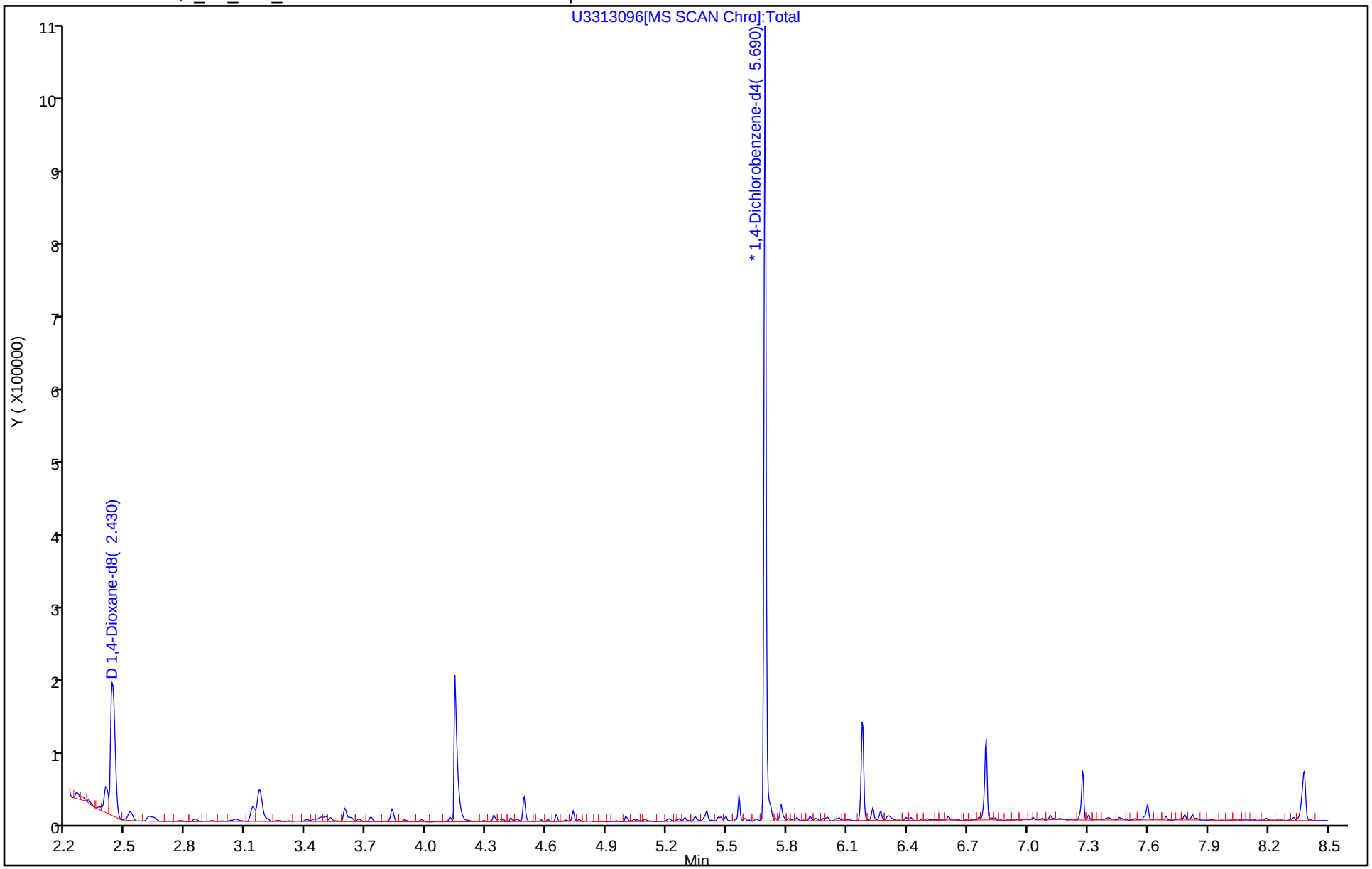
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:58:04 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313096.D

Injection Date:	08-Nov-2018 19:33:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	480-144153-A-5-A	Lab Sample ID:	480-144153-5	Worklist Smp#:	21
Client ID:	BMW-01				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	21
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



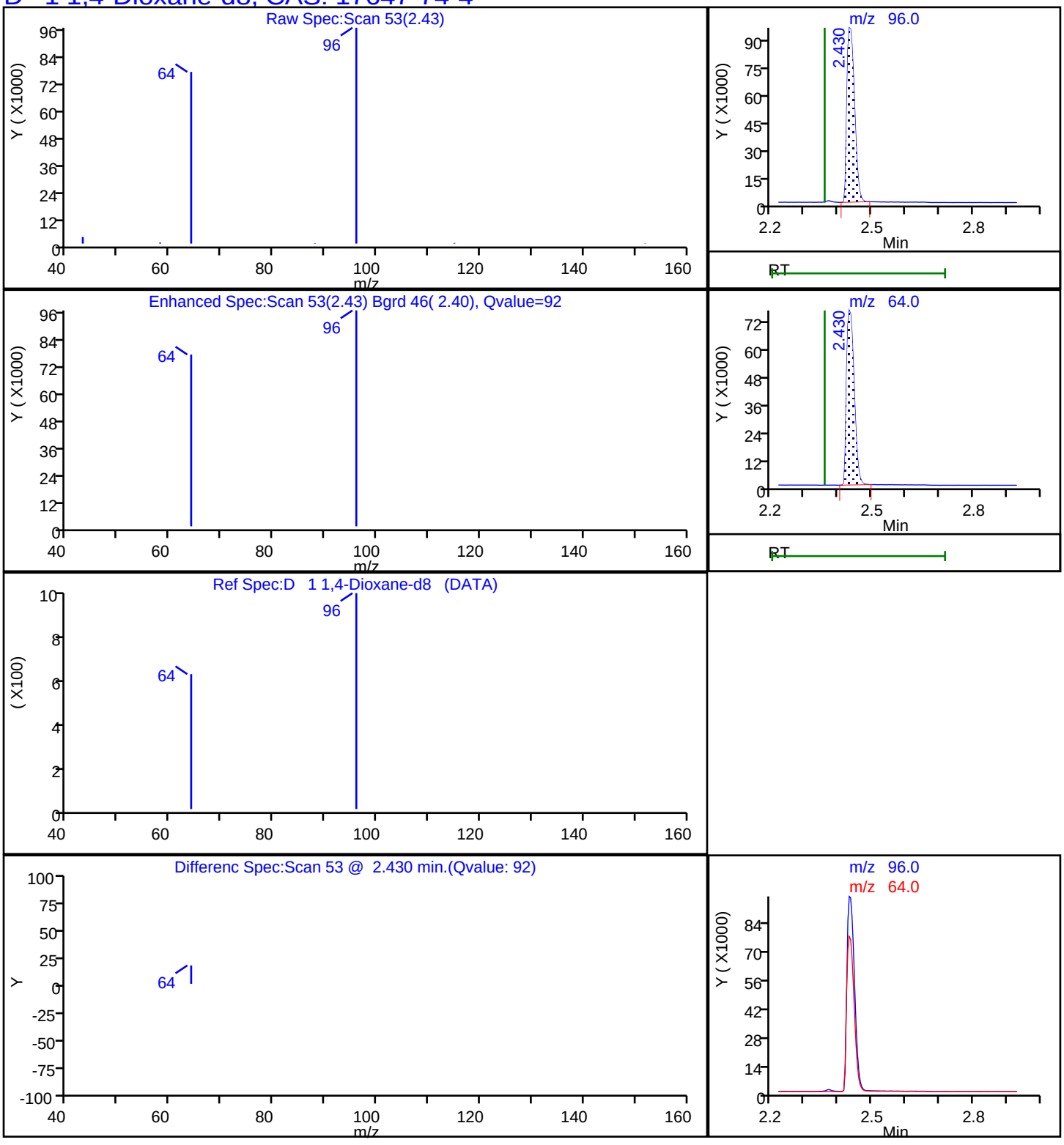
Report Date: 09-Nov-2018 15:58:04 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313096.D

Injection Date:	08-Nov-2018 19:33:30	Instrument ID:	HP5973U		
Lims ID:	480-144153-A-5-A	Lab Sample ID:	480-144153-5		
Client ID:	BMW-01				
Operator ID:	MKP	ALS Bottle#:	21	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		
Column:		Detector	MS SCAN		

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-2

SDG No.:

Client Sample ID: MW-04 | Lab Sample ID: 480-144153-6

Matrix: Water | Lab File ID: U3313097.D

Analysis Method: 8270D SIM ID | Date Collected: 10/19/2018 14:20

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 990(mL) | Date Analyzed: 11/08/2018 19:58

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND	H	0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	27		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313097.D
Lims ID: 480-144153-A-6-A
Client ID: MW-04
Sample Type: Client
Inject. Date: 08-Nov-2018 19:58:30 ALS Bottle#: 22 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-022
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:58:08

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D	1 1,4-Dioxane-d8	96	2.422	2.357	0.065	93	143599	2.73	27.3	
	3 1,4-Dioxane	88		2.394				ND		
*	2 1,4-Dichlorobenzene-d4	152	5.690	5.686	0.004	93	459917	4.00		

Reagents:

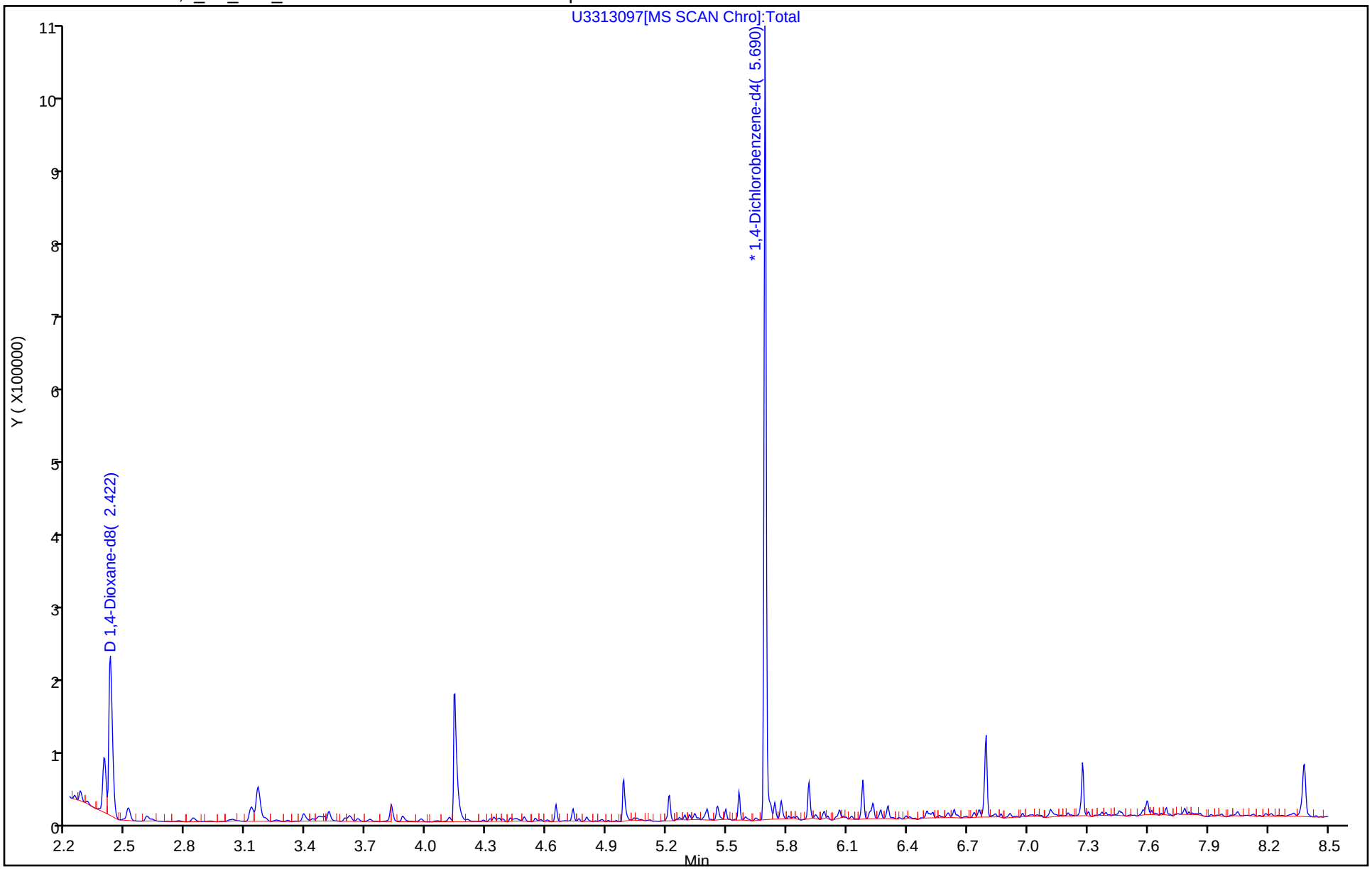
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:58:08 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313097.D

Injection Date:	08-Nov-2018 19:58:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	480-144153-A-6-A	Lab Sample ID:	480-144153-6	Worklist Smp#:	22
Client ID:	MW-04				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	22
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



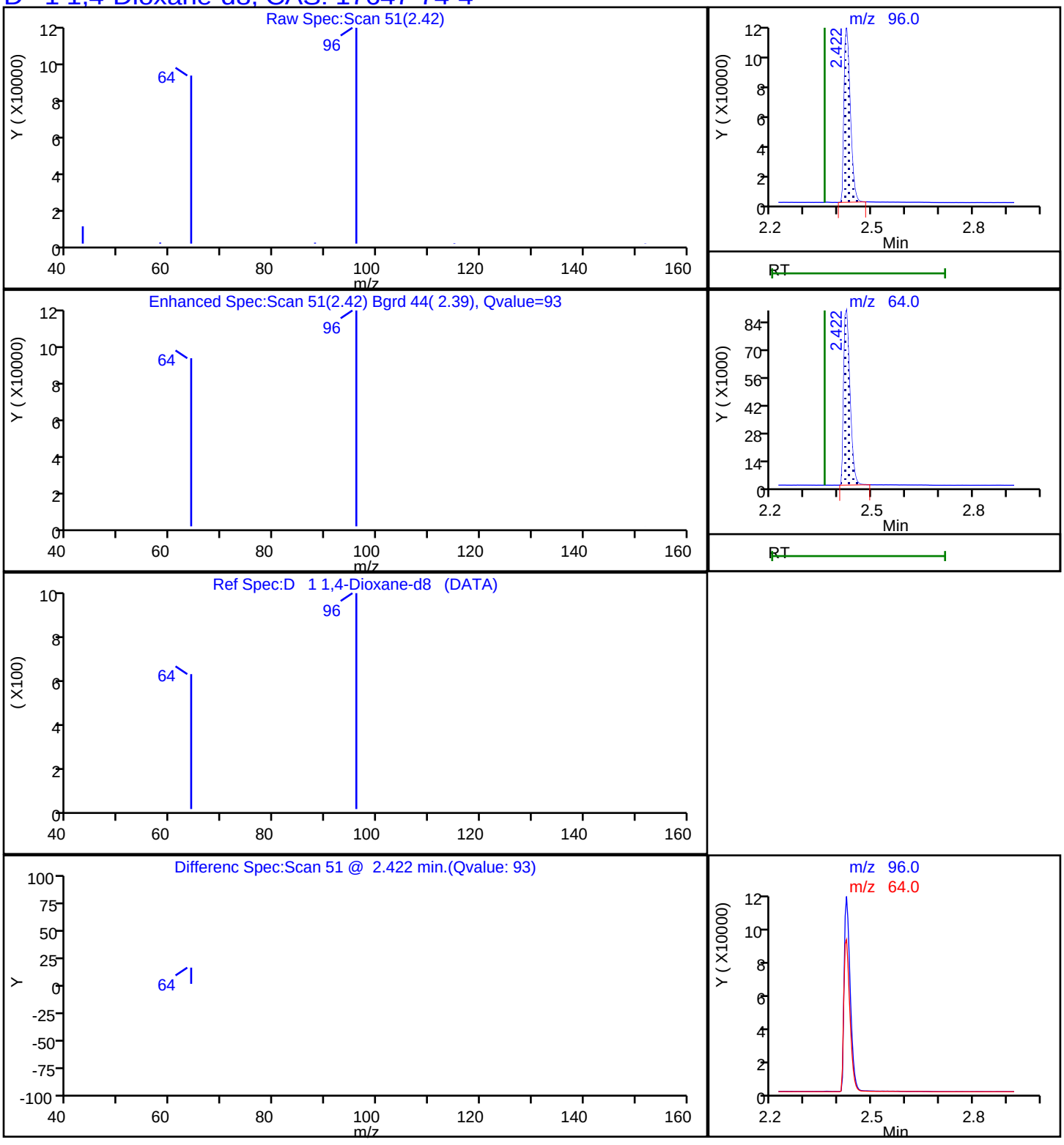
Report Date: 09-Nov-2018 15:58:08 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313097.D

Injection Date:	08-Nov-2018 19:58:30	Instrument ID:	HP5973U		
Lims ID:	480-144153-A-6-A	Lab Sample ID:	480-144153-6		
Client ID:	MW-04				
Operator ID:	MKP	ALS Bottle#:	22	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		
Column:		Detector	MS SCAN		

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-2

SDG No.:

Client Sample ID: MW-01 | Lab Sample ID: 480-144153-7

Matrix: Water | Lab File ID: U3313303.D

Analysis Method: 8270D SIM ID | Date Collected: 10/19/2018 15:30

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 940(mL) | Date Analyzed: 11/13/2018 18:16

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 445333 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND	H	0.21	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	31		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313303.D
Lims ID: 480-144153-A-7-A
Client ID: MW-01
Sample Type: Client
Inject. Date: 13-Nov-2018 18:16:30 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076403-004
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 14-Nov-2018 10:29:04 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 14-Nov-2018 10:26:10

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
	3 1,4-Dioxane	88		2.081				ND		U
D	1 1,4-Dioxane-d8	96	2.130	2.353	-0.223	91	190177	3.06	30.6	
*	2 1,4-Dichlorobenzene-d4	152	5.491	5.487	0.004	96	542474	4.00		

QC Flag Legend

Review Flags
U - Marked Undetected

Reagents:

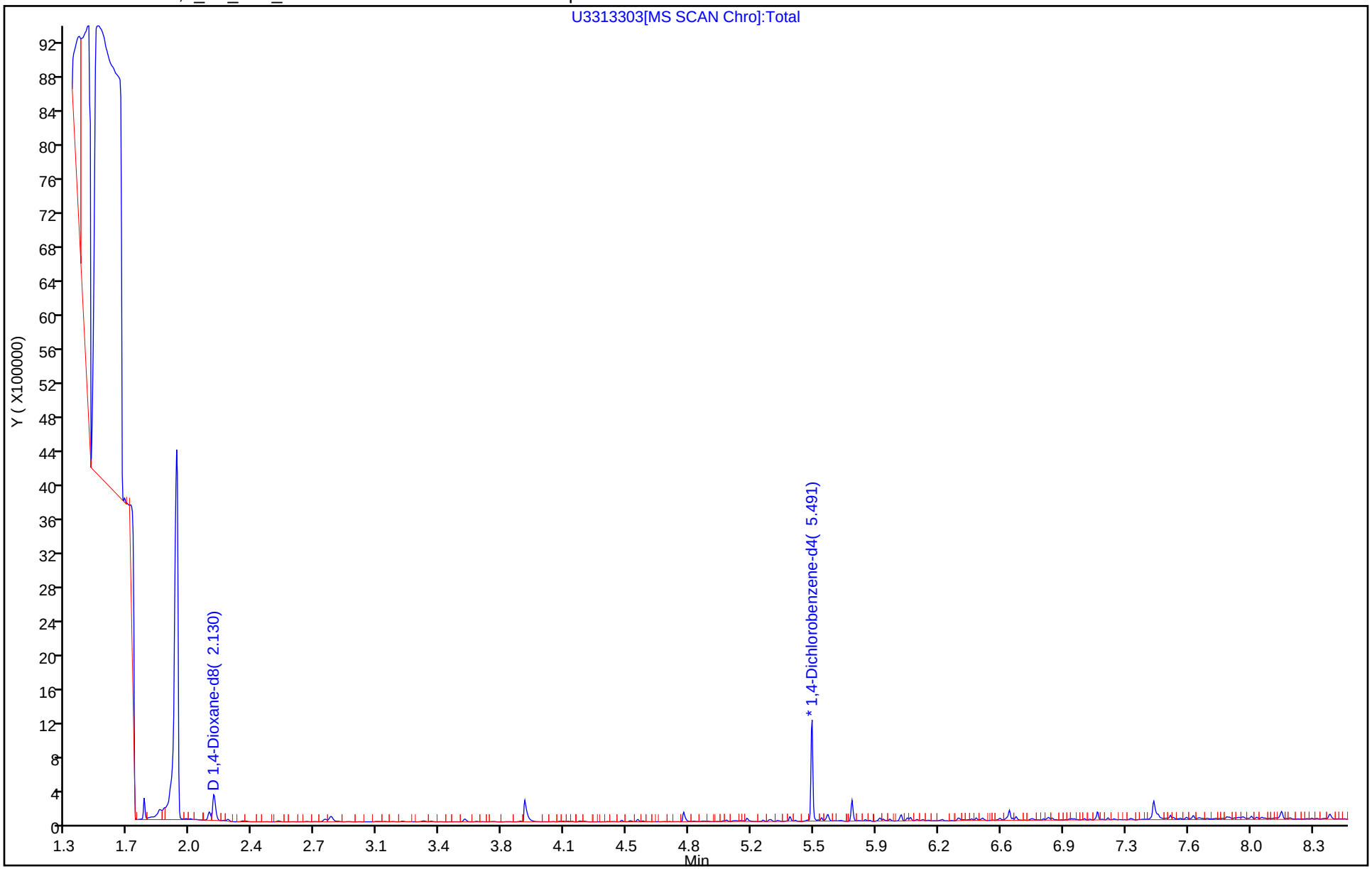
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 14-Nov-2018 10:30:05 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313303.D

Injection Date:	13-Nov-2018 18:16:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	480-144153-A-7-A	Lab Sample ID:	480-144153-7	Worklist Smp#:	4
Client ID:	MW-01				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



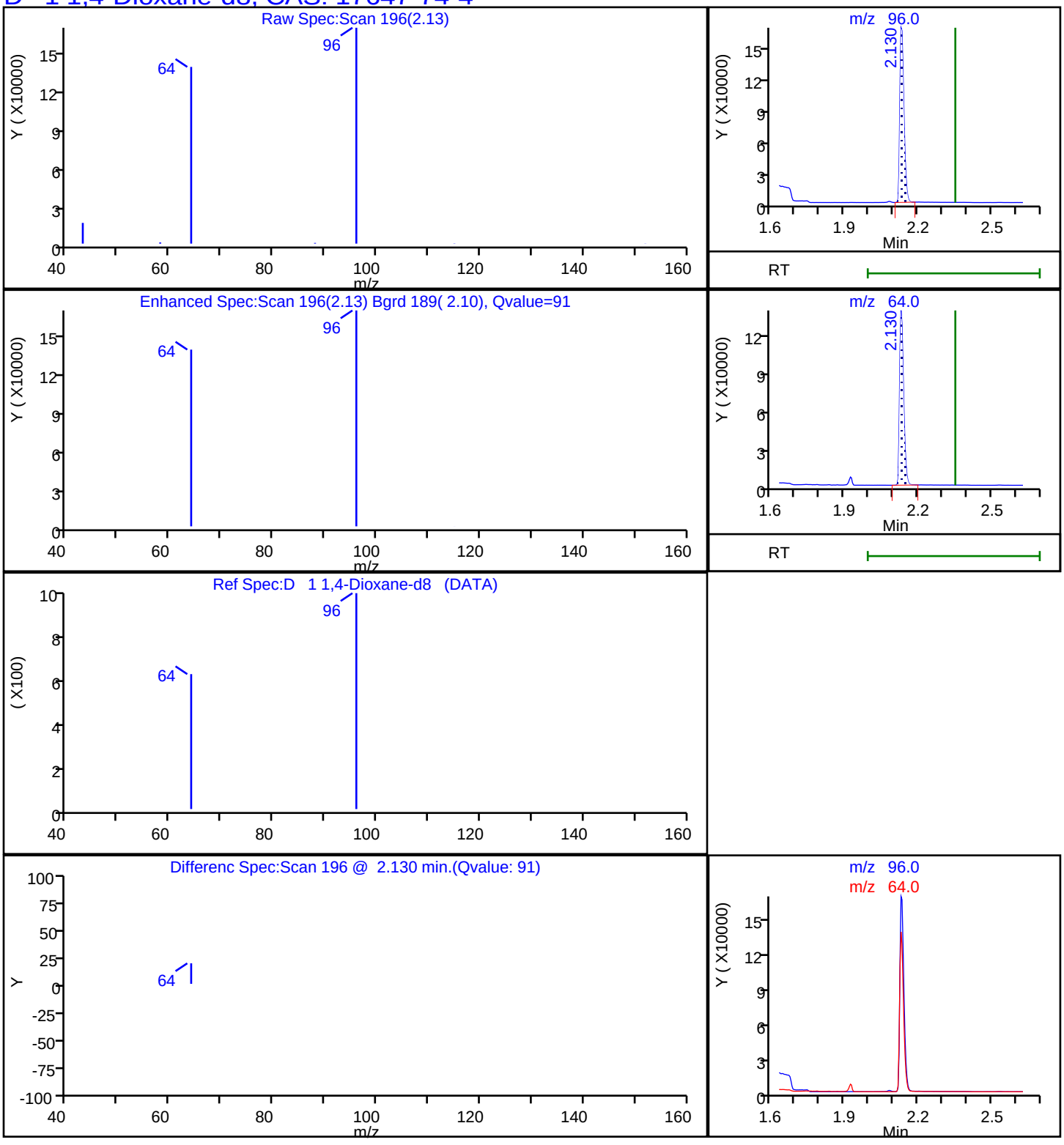
Report Date: 14-Nov-2018 10:30:05 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313303.D

Injection Date:	13-Nov-2018 18:16:30	Instrument ID:	HP5973U		
Lims ID:	480-144153-A-7-A	Lab Sample ID:	480-144153-7		
Client ID:	MW-01				
Operator ID:	DR	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		
Column:		Detector	MS SCAN		

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



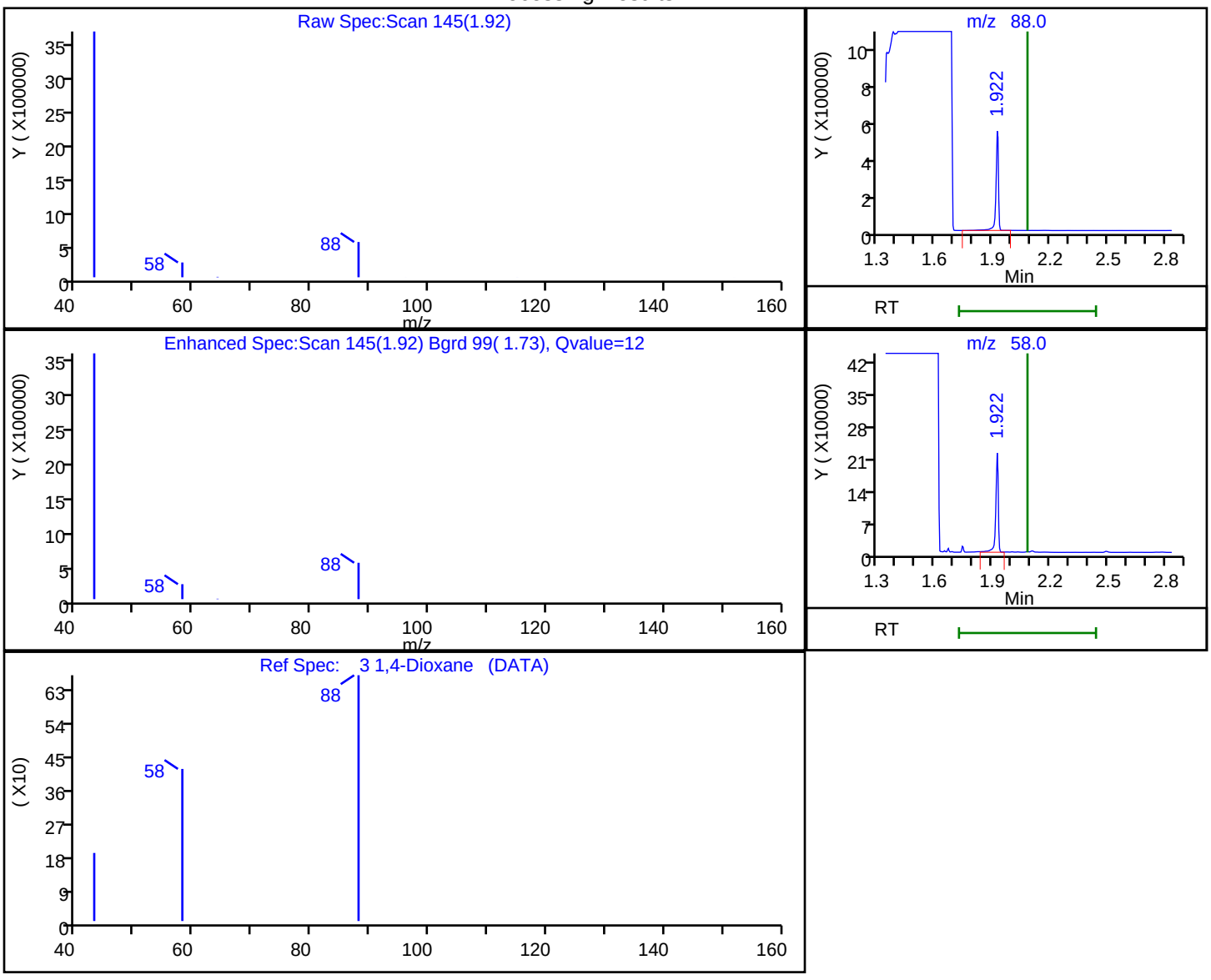
User Disabled Compound Report

TestAmerica Buffalo

Data File:	\\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313303.D				
Injection Date:	13-Nov-2018 18:16:30	Instrument ID:	HP5973U		
Lims ID:	480-144153-A-7-A	Lab Sample ID:	480-144153-7		
Client ID:	MW-01				
Operator ID:	DR	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		
Column:		Detector	MS SCAN		

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
1.92	88.00	470359	20.258407
1.92	58.00	199165	

Reviewer: richardsd, 14-Nov-2018 10:26:05

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-2

SDG No.:

Client Sample ID: TANK WS-01 | Lab Sample ID: 480-144153-8

Matrix: Water | Lab File ID: U3313304.D

Analysis Method: 8270D SIM ID | Date Collected: 10/19/2018 09:30

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 860(mL) | Date Analyzed: 11/13/2018 18:40

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 445333 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND	H	0.23	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	30		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313304.D
Lims ID: 480-144153-A-8-A
Client ID: TANK WS-01
Sample Type: Client
Inject. Date: 13-Nov-2018 18:40:30 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076403-005
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 14-Nov-2018 10:29:04 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 14-Nov-2018 10:26:14

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
	3 1,4-Dioxane	88		2.081				ND		U
D	1 1,4-Dioxane-d8	96	2.126	2.353	-0.227	91	174284	3.05	30.5	
*	2 1,4-Dichlorobenzene-d4	152	5.491	5.487	0.004	95	499480	4.00		

QC Flag Legend

Review Flags
U - Marked Undetected

Reagents:

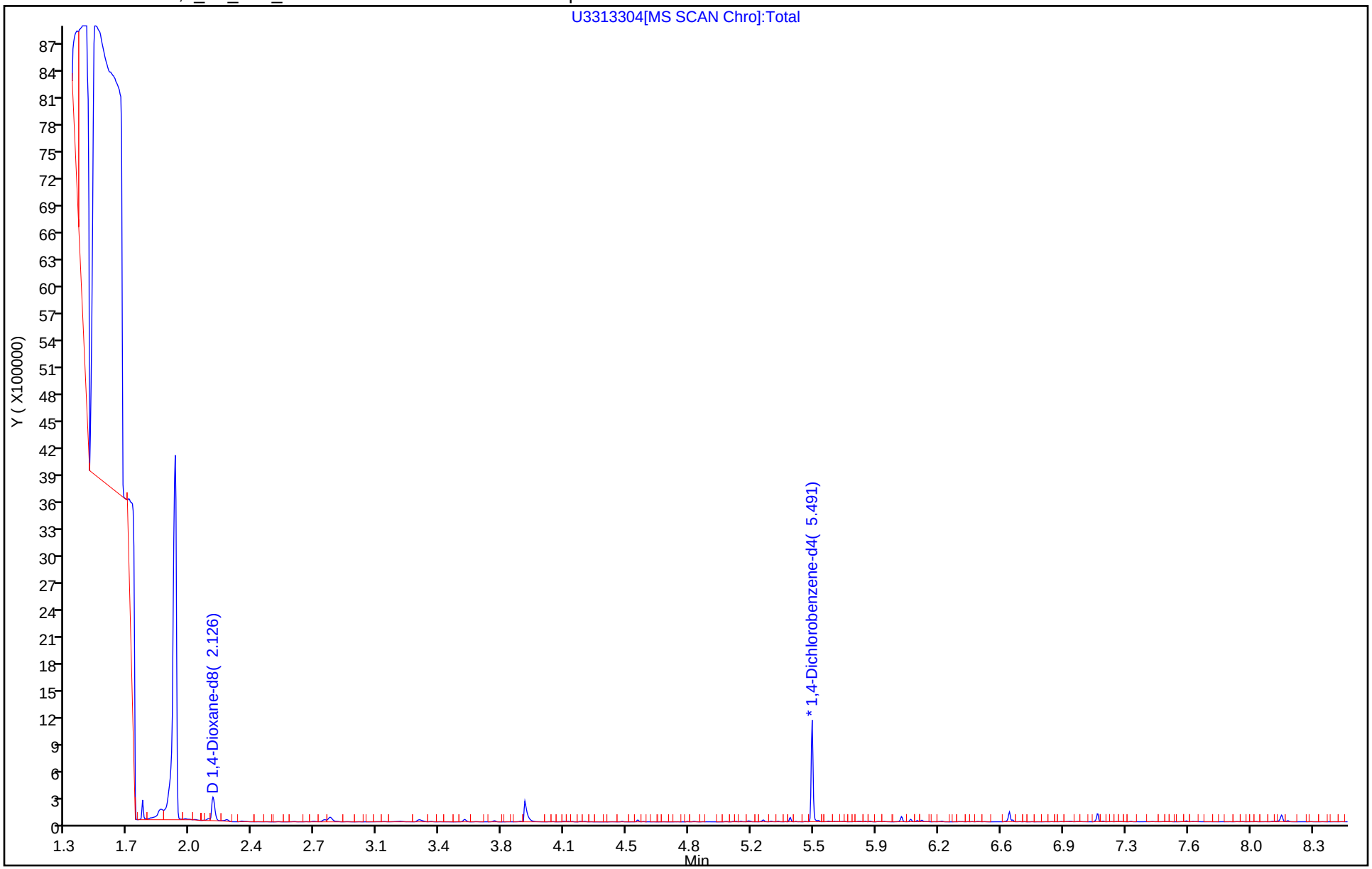
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 14-Nov-2018 10:30:03 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313304.D

Injection Date:	13-Nov-2018 18:40:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	480-144153-A-8-A	Lab Sample ID:	480-144153-8	Worklist Smp#:	5
Client ID:	TANK WS-01				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



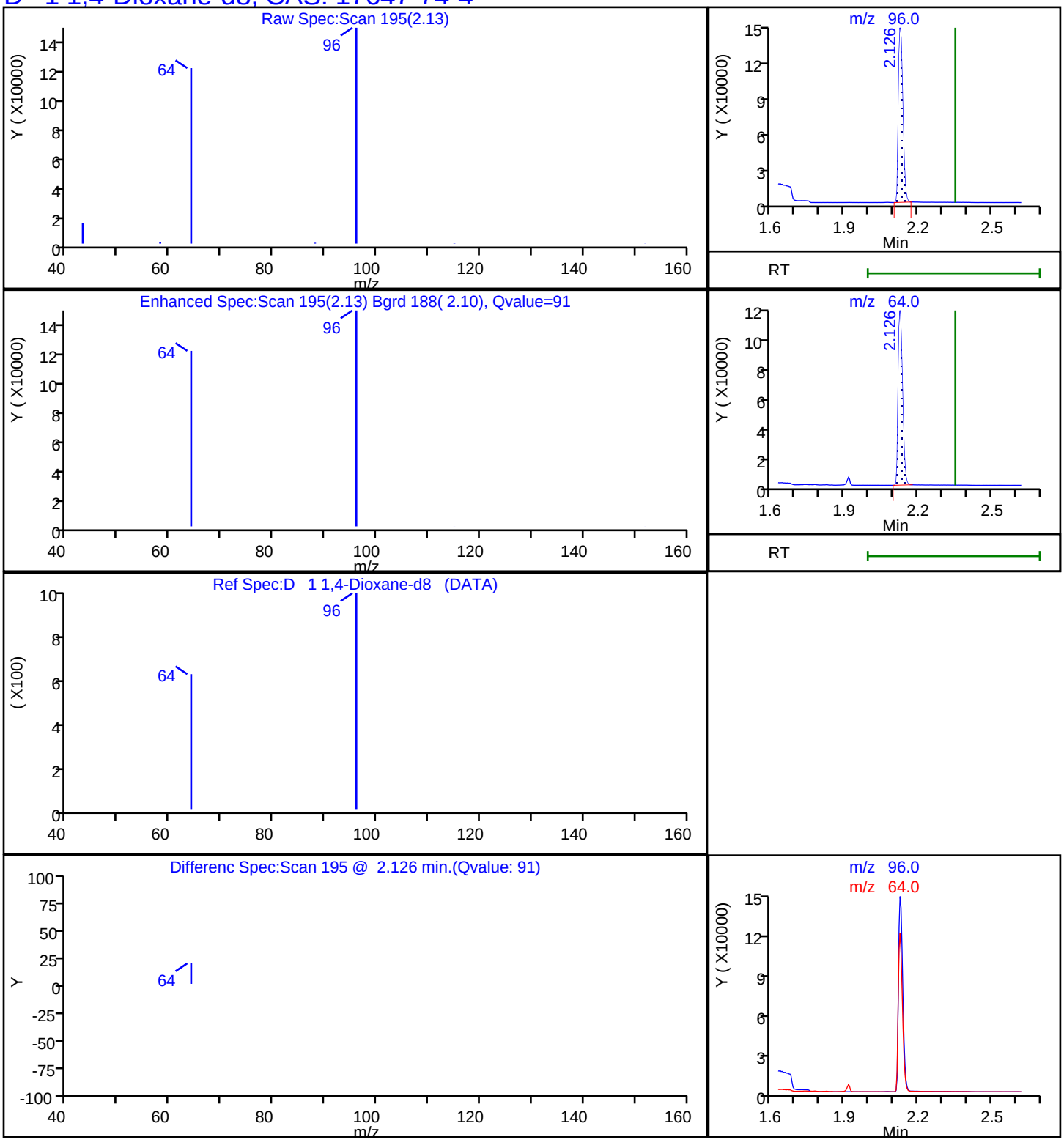
Report Date: 14-Nov-2018 10:30:03 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313304.D

Injection Date:	13-Nov-2018 18:40:30	Instrument ID:	HP5973U		
Lims ID:	480-144153-A-8-A	Lab Sample ID:	480-144153-8		
Client ID:	TANK WS-01				
Operator ID:	DR	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		
Column:		Detector	MS SCAN		

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



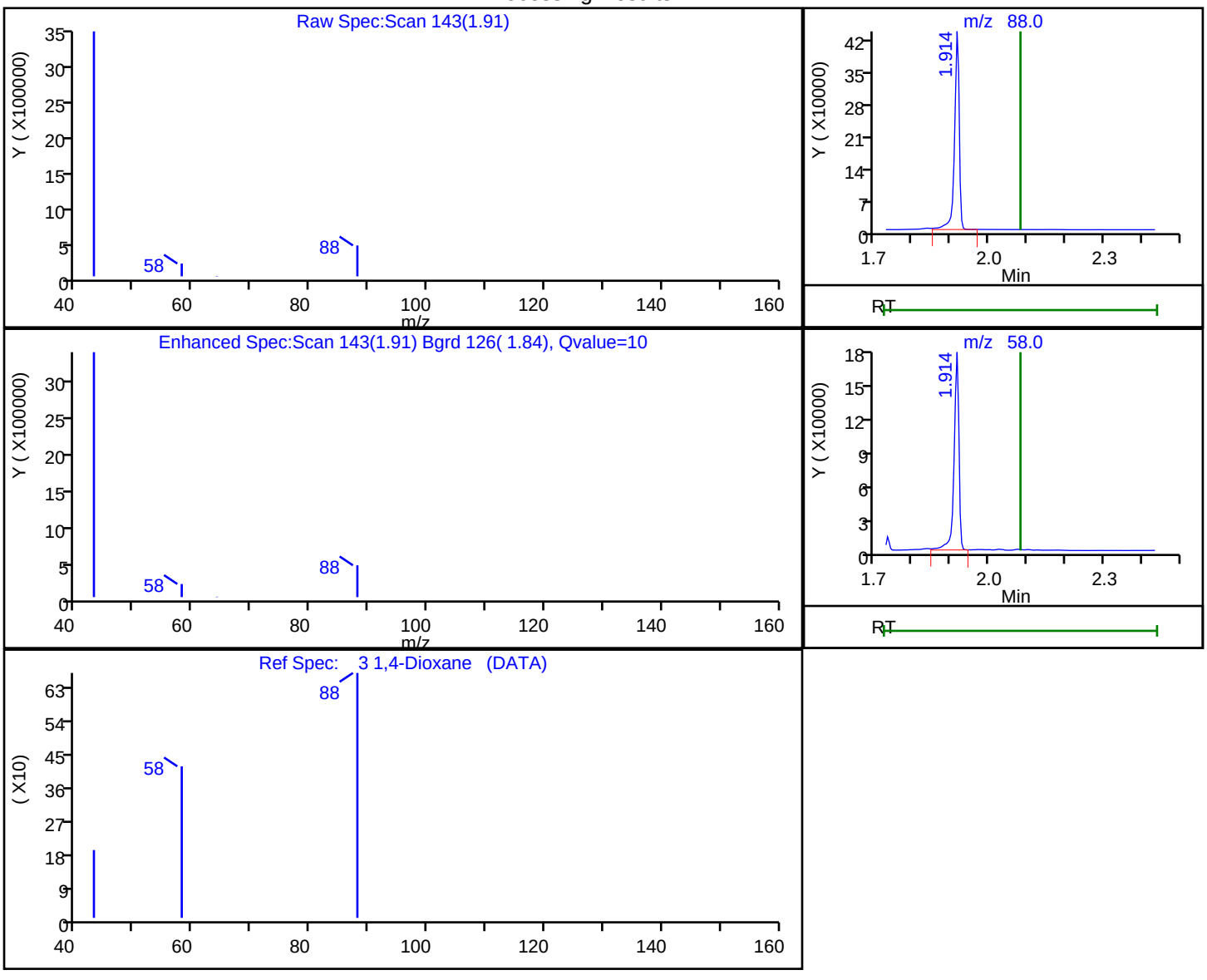
User Disabled Compound Report

TestAmerica Buffalo

Data File:	\\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313304.D				
Injection Date:	13-Nov-2018 18:40:30	Instrument ID:	HP5973U		
Lims ID:	480-144153-A-8-A	Lab Sample ID:	480-144153-8		
Client ID:	TANK WS-01				
Operator ID:	DR	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		
Column:		Detector	MS SCAN		

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
1.91	88.00	374920	17.624632
1.91	58.00	159726	

Reviewer: richardsd, 14-Nov-2018 10:26:13

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2 Analy Batch No.: 442039

SDG No.:

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/26/2018 17:56 Calibration End Date: 10/26/2018 19:56 Calibration ID: 35206

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-442039/3	U3312593.D
Level 2	ICIS 480-442039/5	U3312595.D
Level 3	IC 480-442039/6	U3312596.D
Level 4	IC 480-442039/7	U3312597.D
Level 5	IC 480-442039/8	U3312598.D
Level 6	IC 480-442039/4	U3312594.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
1,4-Dioxane	1.0272 1.1181	1.1403	1.1674	1.2020	1.1911	L2ID	-0.040	1.2228			0.0100				1.0000		0.9900
1,4-Dioxane-d8	0.4652 0.4652	0.4519	0.4606	0.4543	0.4501	Ave		0.4579			0.0100	1.5		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2 Analy Batch No.: 442039

SDG No.:

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/26/2018 17:56 Calibration End Date: 10/26/2018 19:56 Calibration ID: 35206

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-442039/3	U3312593.D
Level 2	ICIS 480-442039/5	U3312595.D
Level 3	IC 480-442039/6	U3312596.D
Level 4	IC 480-442039/7	U3312597.D
Level 5	IC 480-442039/8	U3312598.D
Level 6	IC 480-442039/4	U3312594.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
1,4-Dioxane		L2ID	25072 47655	59461	107956	146288	154566	0.200 0.400	0.600	0.800	1.00	1.20
1,4-Dioxane-d8	DCBd 4	Ave	244071 426208	521445	924722	1217025	1297680	2.00 4.00	6.00	8.00	10.0	12.0

Curve Type Legend:

Ave = Average ISTD
L2ID = Linear 1/conc^2 IsoDil

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2 Analy Batch No.: 442039

SDG No.:

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/26/2018 17:56 Calibration End Date: 10/26/2018 19:56 Calibration ID: 35206

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-442039/3	U3312593.D
Level 2	ICIS 480-442039/5	U3312595.D
Level 3	IC 480-442039/6	U3312596.D
Level 4	IC 480-442039/7	U3312597.D
Level 5	IC 480-442039/8	U3312598.D
Level 6	IC 480-442039/4	U3312594.D

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
1,4-Dioxane	0.4	-1.3	-0.4	1.6	0.1	-0.4	30	30	30	30	30	30
1,4-Dioxane-d8	1.6	-1.3	0.6	-0.8	-1.7	1.6	30	30	30	30	30	30

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312593.D
Lims ID: IC - SIM 0.2
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 26-Oct-2018 17:56:30 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC - 0.2 SIM
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:16 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:34

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.691	2.687	0.004	93	244071	2.00	2.03	
	3 1,4-Dioxane	88	2.732	2.732	0.000	89	25072	0.2000	0.2008	
*	2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	95	1049327	4.00	4.00	

Reagents:

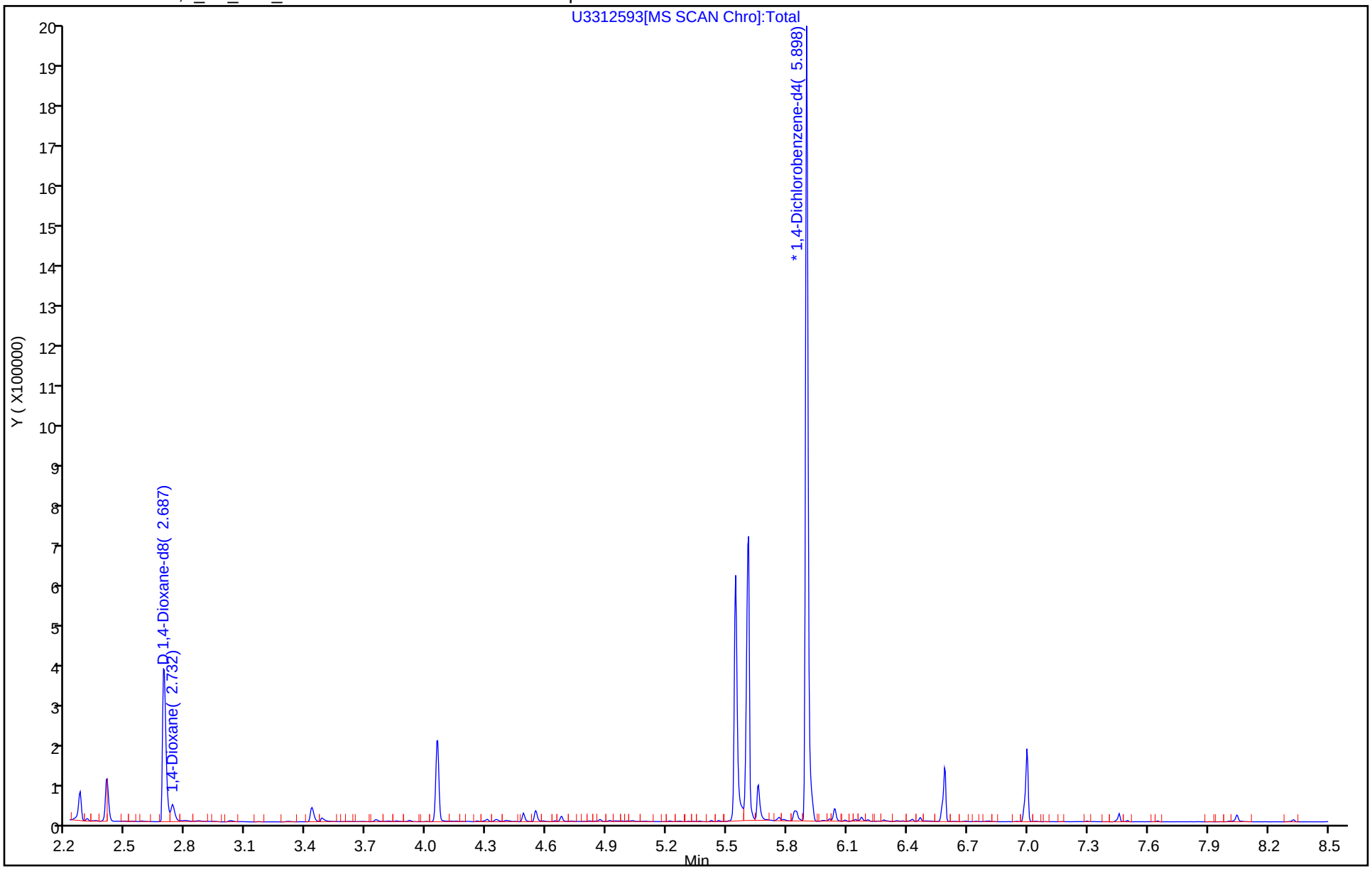
MB_1,4SIM_WRK_00053 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:17 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312593.D

Injection Date:	26-Oct-2018 17:56:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	IC - SIM 0.2			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312594.D
Lims ID: IC - SIM 0.4
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 26-Oct-2018 18:20:30 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC 0.4 SIM
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:17 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:20

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.687	2.687	0.000	93	426208	4.00	4.06	
	3 1,4-Dioxane	88	2.728	2.732	-0.004	88	47655	0.4000	0.3985	
*	2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	95	916170	4.00	4.00	

Reagents:

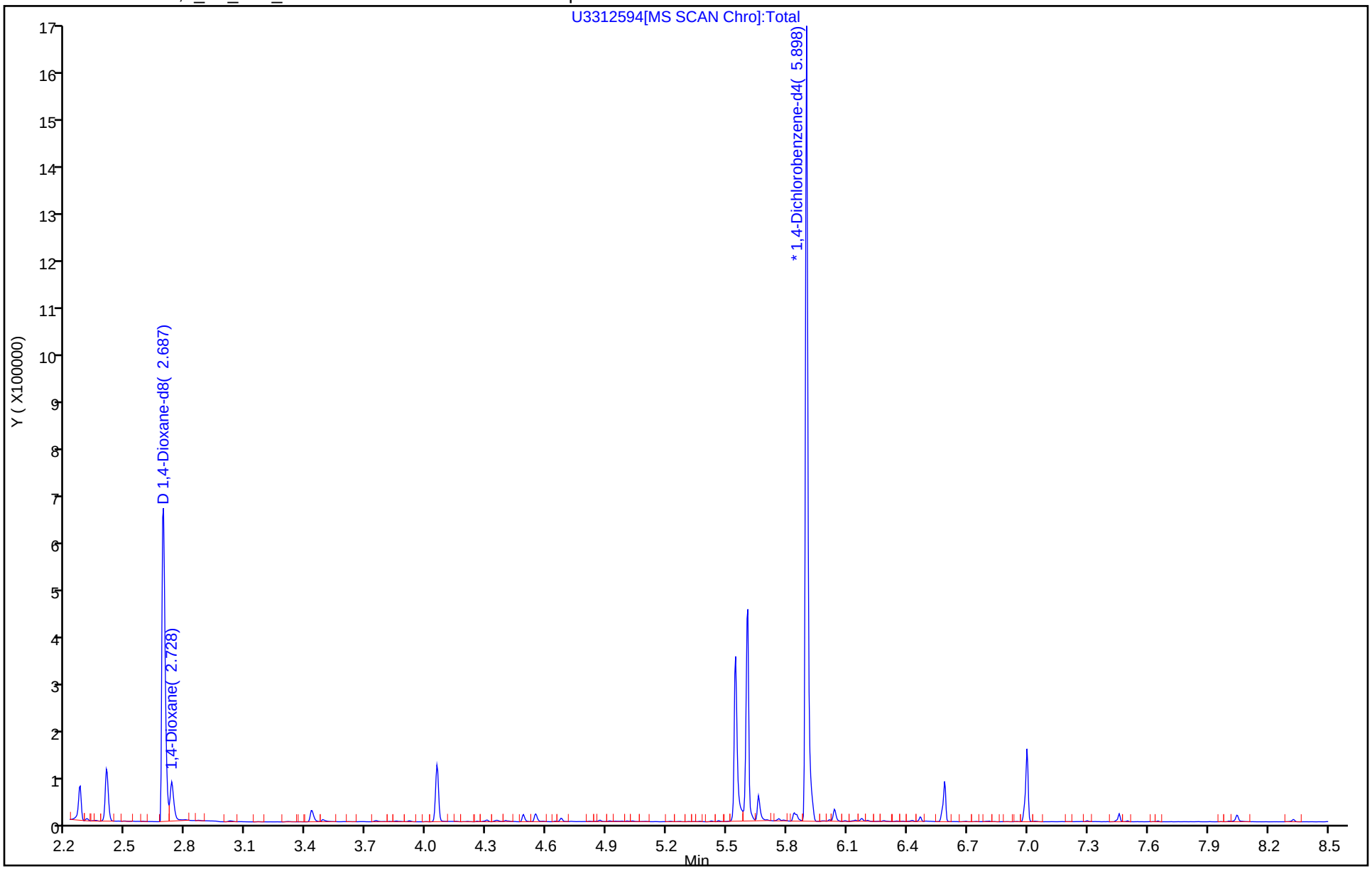
MB_1,4SIM_WRK_00054 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:17 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312594.D

Injection Date:	26-Oct-2018 18:20:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	IC - SIM 0.4			Worklist Smp#:	4
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312595.D
Lims ID: ICIS - SIM 0.6
Client ID:
Sample Type: ICIS Calib Level: 3
Inject. Date: 26-Oct-2018 18:45:30 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICIS- 0.6 SIM
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:18 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:02

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.687	2.687	0.000	92	521445	6.00	5.92	
	3 1,4-Dioxane	88	2.732	2.732	0.000	90	59461	0.6000	0.5923	
*	2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	96	769210	4.00	4.00	

Reagents:

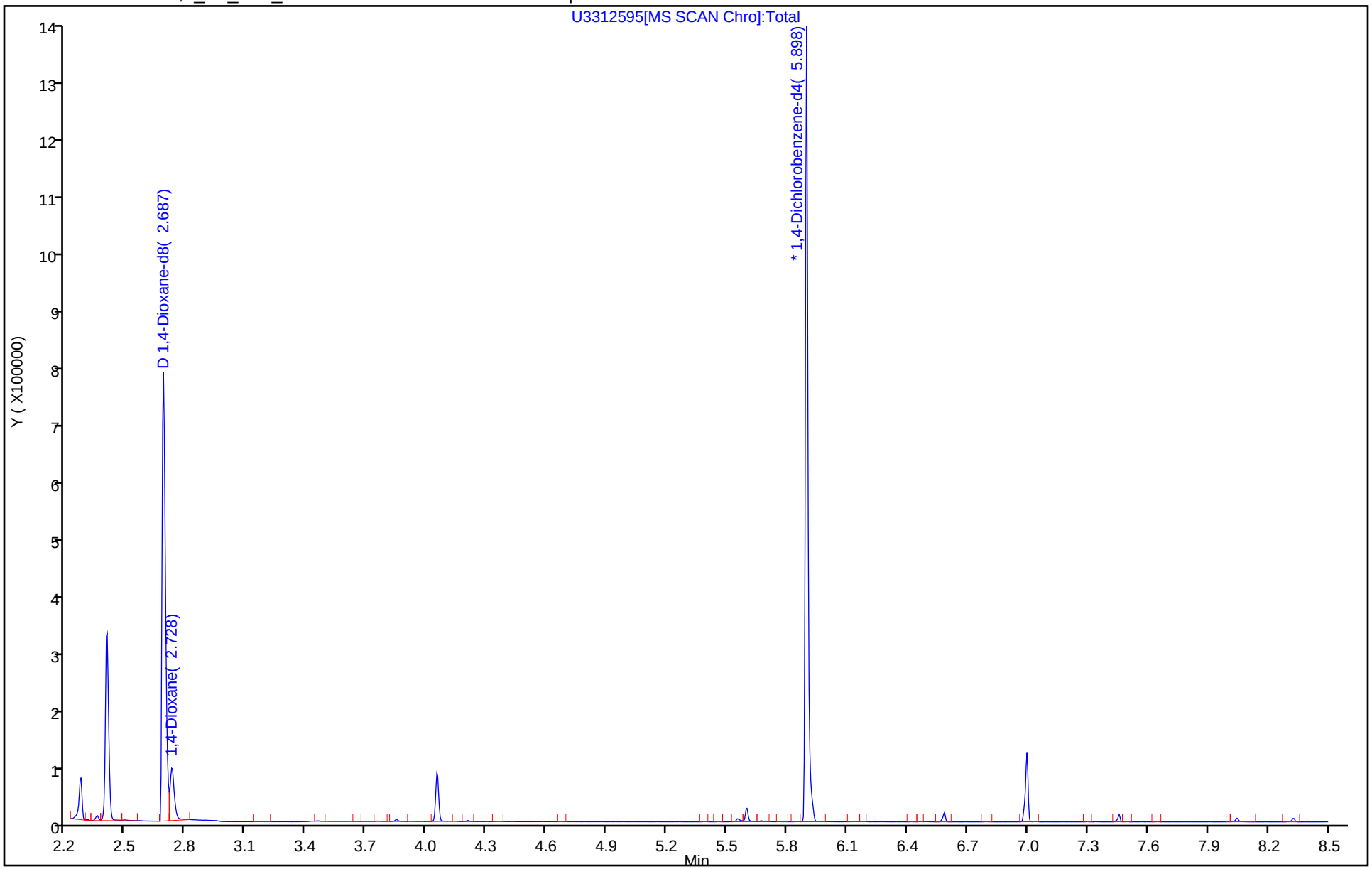
MB_1,4SIM_WRK_00059 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:18 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312595.D

Injection Date:	26-Oct-2018 18:45:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	ICIS - SIM 0.6			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312596.D
Lims ID: IC - SIM 0.8
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 26-Oct-2018 19:08:30 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC - 0.8 SIM
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:19 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:15

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.691	2.687	0.004	92	924722	8.00	8.05	
	3 1,4-Dioxane	88	2.732	2.732	0.000	90	107956	0.8000	0.7965	
*	2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	95	1003796	4.00	4.00	

Reagents:

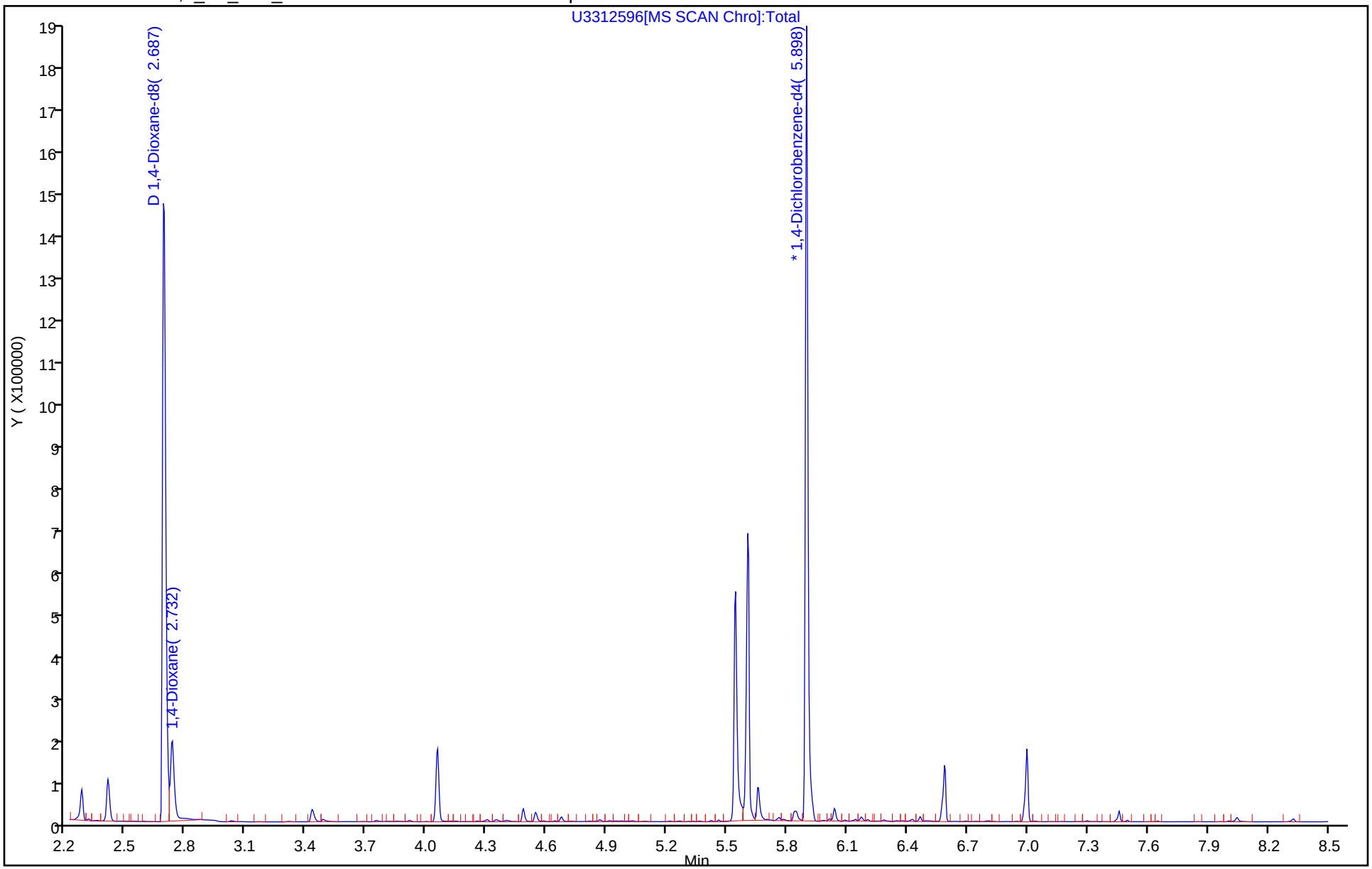
MB_1,4SIM_WRK_00056 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:19 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312596.D

Injection Date:	26-Oct-2018 19:08:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	IC - SIM 0.8			Worklist Smp#:	6
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312597.D
Lims ID: IC - SIM 1.0
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 26-Oct-2018 19:32:30 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0075895-007
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:20 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:14

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.687	2.687	0.000	91	1217025	10.0	9.92	
	3 1,4-Dioxane	88	2.728	2.732	-0.004	88	146288	1.00	1.02	
*	2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	95	1071553	4.00	4.00	

Reagents:

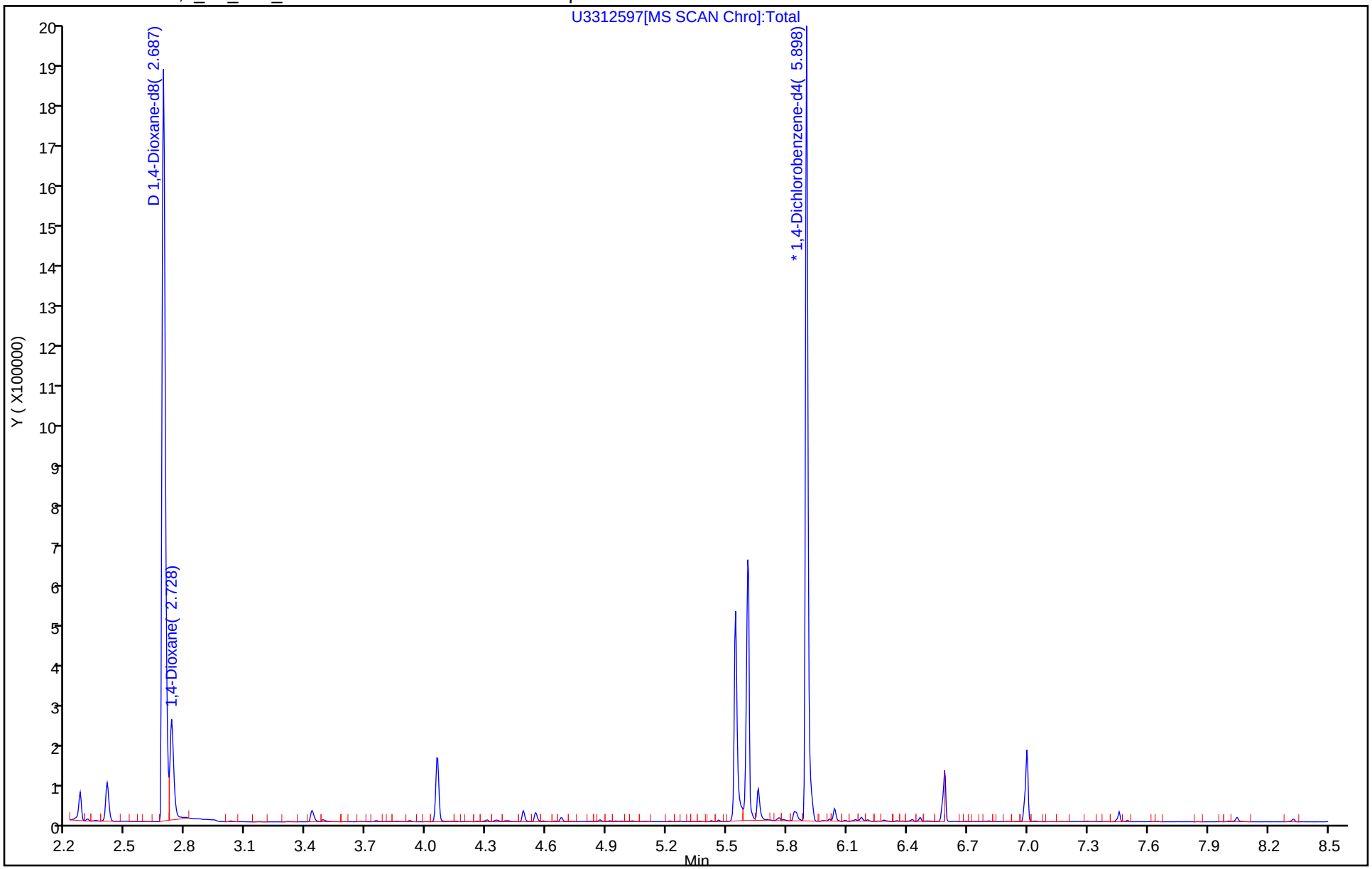
MB_1,4SIM_WRK_00057 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:21 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312597.D

Injection Date:	26-Oct-2018 19:32:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	IC - SIM 1.0			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D
Lims ID: IC - SIM 1.2
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 26-Oct-2018 19:56:30 ALS Bottle#: 8 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0075895-008
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:21 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:20:12

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.687	2.687	0.000	93	1297680	12.0	11.8	
	3 1,4-Dioxane	88	2.728	2.732	-0.004	91	154566	1.20	1.20	
*	2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	96	961134	4.00	4.00	

Reagents:

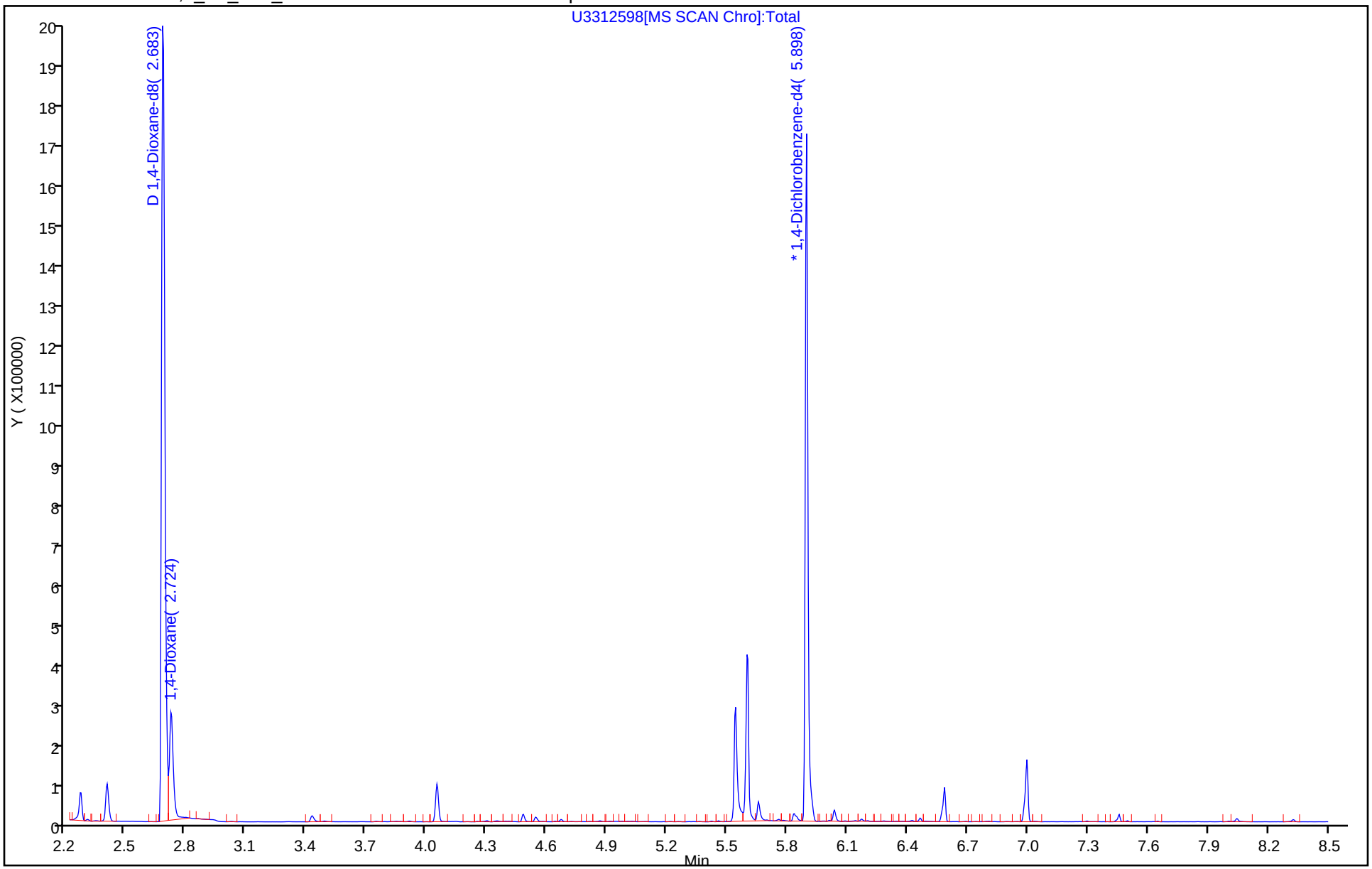
MB_1,4SIM_WRK_00058 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 12:21:21 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Injection Date:	26-Oct-2018 19:56:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	IC - SIM 1.2			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	8
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Lab Sample ID: ICV 480-442039/9 Calibration Date: 10/26/2018 20:20

Instrument ID: HP5973U Calib Start Date: 10/26/2018 17:56

GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm) Calib End Date: 10/26/2018 19:56

Lab File ID: U3312599.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	L2ID		1.078	0.0100	562	600	-6.4	20.0
1,4-Dioxane-d8	Ave	0.4579	0.4610	0.0100	6040	6000	0.7	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312599.D
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 26-Oct-2018 20:20:30 ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0075895-009
Operator ID: DR Instrument ID: HP5973U
Sublist:

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:34 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 16:53:28

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.687	2.687	0.000	92	461091	6.00	6.04	
	3 1,4-Dioxane	88	2.732	2.732	0.000	90	49718	0.6000	0.5618	
*	2 1,4-Dichlorobenzene-d4	152	5.898	5.898	0.000	96	666864	4.00	4.00	

Reagents:

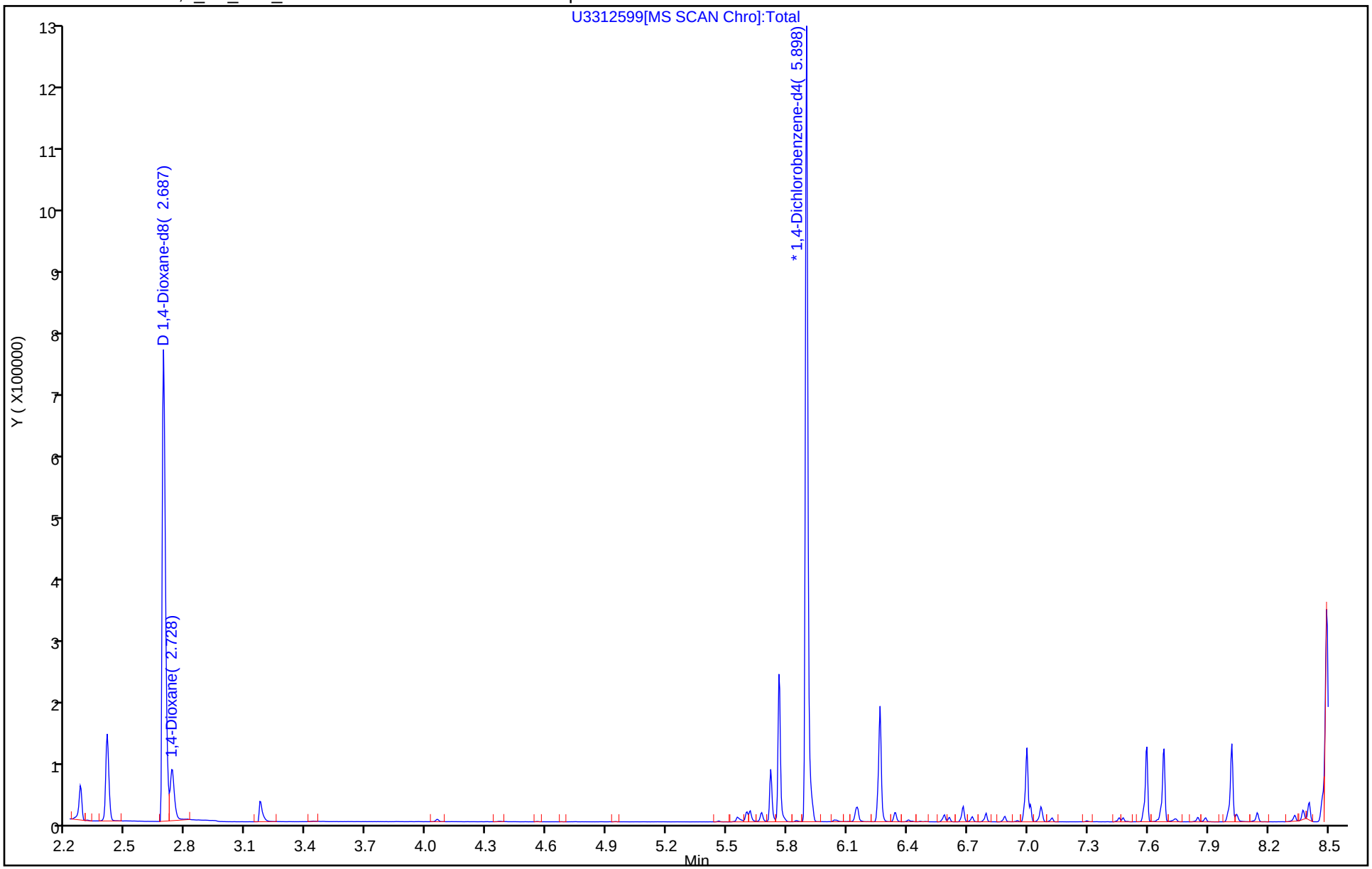
MB_SIMSS_WRK_00009 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00156 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 29-Oct-2018 16:53:32 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312599.D

Injection Date:	26-Oct-2018 20:20:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	ICV			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Lab Sample ID: CCVIS 480-444395/3 Calibration Date: 11/08/2018 12:21

Instrument ID: HP5973U Calib Start Date: 10/26/2018 17:56

GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm) Calib End Date: 10/26/2018 19:56

Lab File ID: U3313078.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	L2ID		1.169	0.0100	606	600	1.1	20.0
1,4-Dioxane-d8	Ave	0.4579	0.4523	0.0100	5930	6000	-1.2	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313078.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 08-Nov-2018 12:21:30 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-003
Operator ID: MKP Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:12

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.357	2.357	0.000	92	430381	6.00	5.93	
	3 1,4-Dioxane	88	2.394	2.394	0.000	86	50310	0.6000	0.6063	
*	2 1,4-Dichlorobenzene-d4	152	5.686	5.686	0.000	94	634343	4.00	4.00	

Reagents:

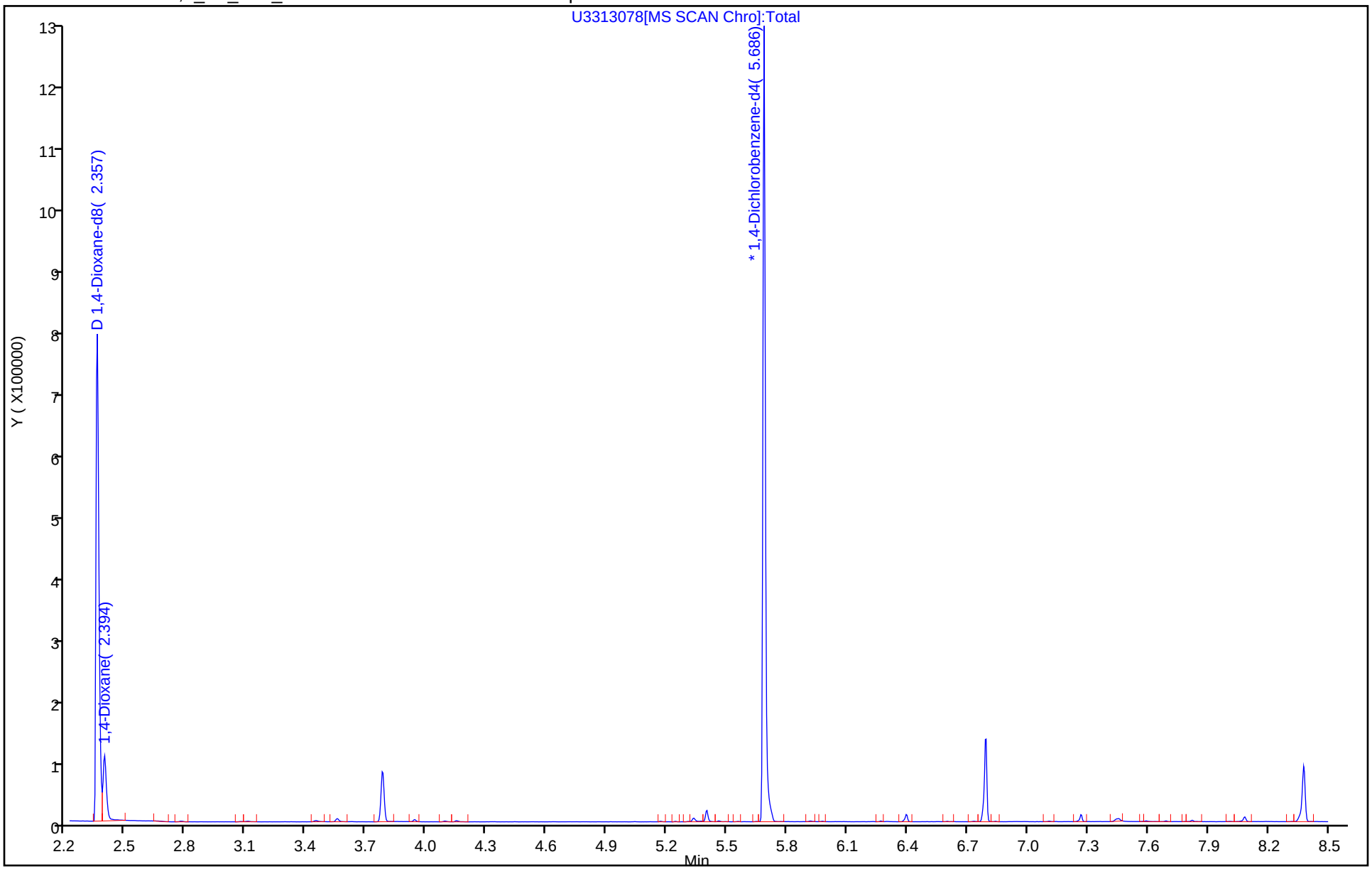
MB_1,4SIM_WRK_00059 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:57:12 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313078.D

Injection Date:	08-Nov-2018 12:21:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	CCVIS			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Lab Sample ID: CCVIS 480-445333/3 Calibration Date: 11/13/2018 17:51

Instrument ID: HP5973U Calib Start Date: 10/26/2018 17:56

GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm) Calib End Date: 10/26/2018 19:56

Lab File ID: U3313302.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	L2ID		1.169	0.0100	606	600	1.0	20.0
1,4-Dioxane-d8	Ave	0.4579	0.3770	0.0100	4940	6000	-17.7	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313302.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 13-Nov-2018 17:51:30 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCVIS
Operator ID: DR Instrument ID: HP5973U
Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 14-Nov-2018 10:30:05 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 14-Nov-2018 10:25:26

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
	3 1,4-Dioxane	88	2.081	2.081	0.000	85	45851	0.6000	0.6063	
D	1 1,4-Dioxane-d8	96	2.048	2.353	-0.305	91	392271	6.00	4.94	
*	2 1,4-Dichlorobenzene-d4	152	5.487	5.487	0.000	96	693641	4.00	4.00	

Reagents:

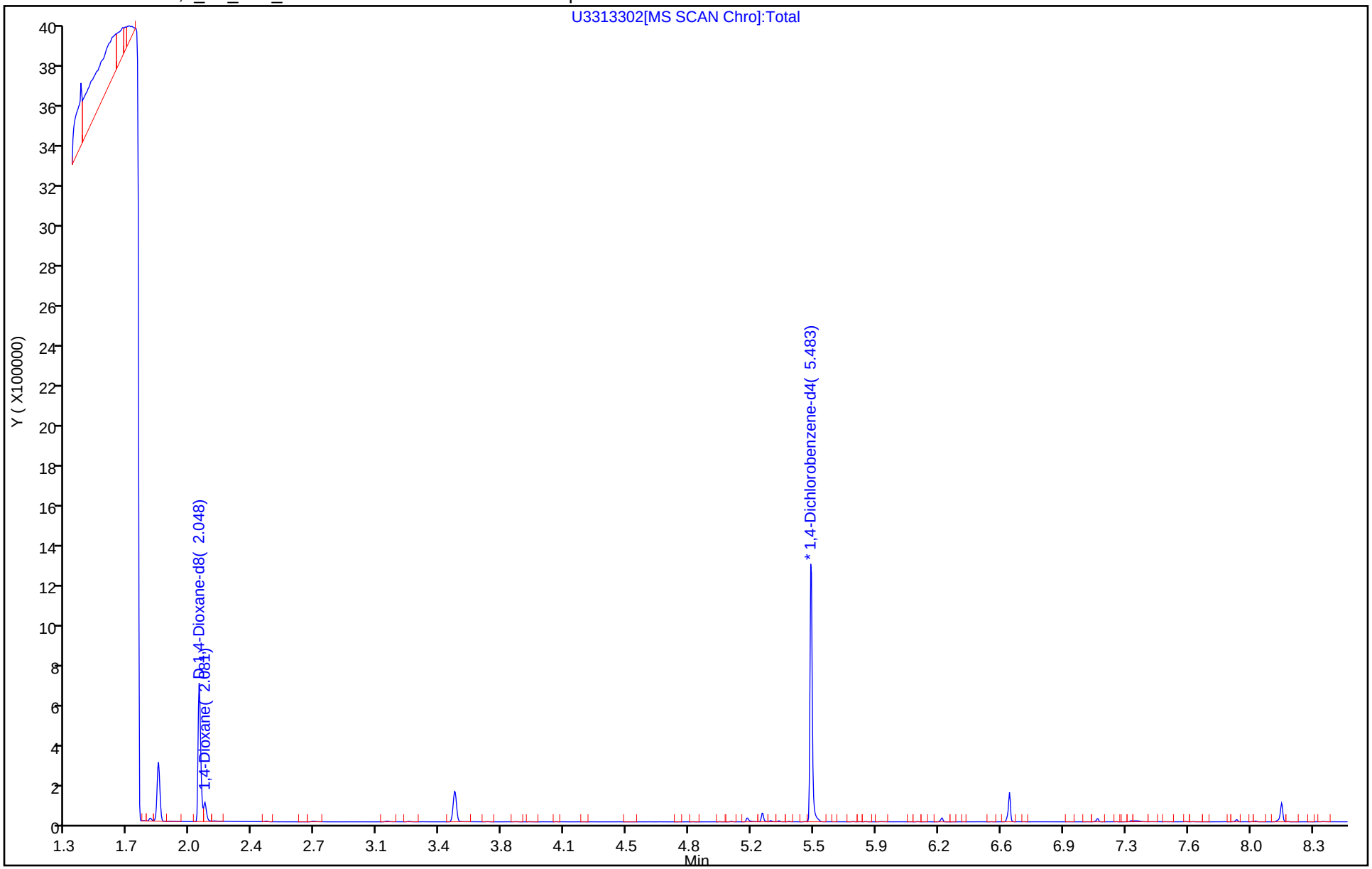
MB_1,4SIM_WRK_00059 Amount Added: 1.00 Units: mL
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 14-Nov-2018 10:30:06 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313302.D

Injection Date:	13-Nov-2018 17:51:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	CCVIS			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 26-Oct-2018 17:27:30 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: DFTPP
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 29-Oct-2018 12:21:34 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: Deconvolution ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 29-Oct-2018 12:19:34

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
7 4,4'-DDE	246	10.976	10.976	0.000	0	13780		NR	
5 4,4'-DDD	235	11.269	11.269	0.000	97	14879		NR	
6 4,4'-DDT	235	11.553	11.553	0.000	98	1338498	NR	NR	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard

Reagents:

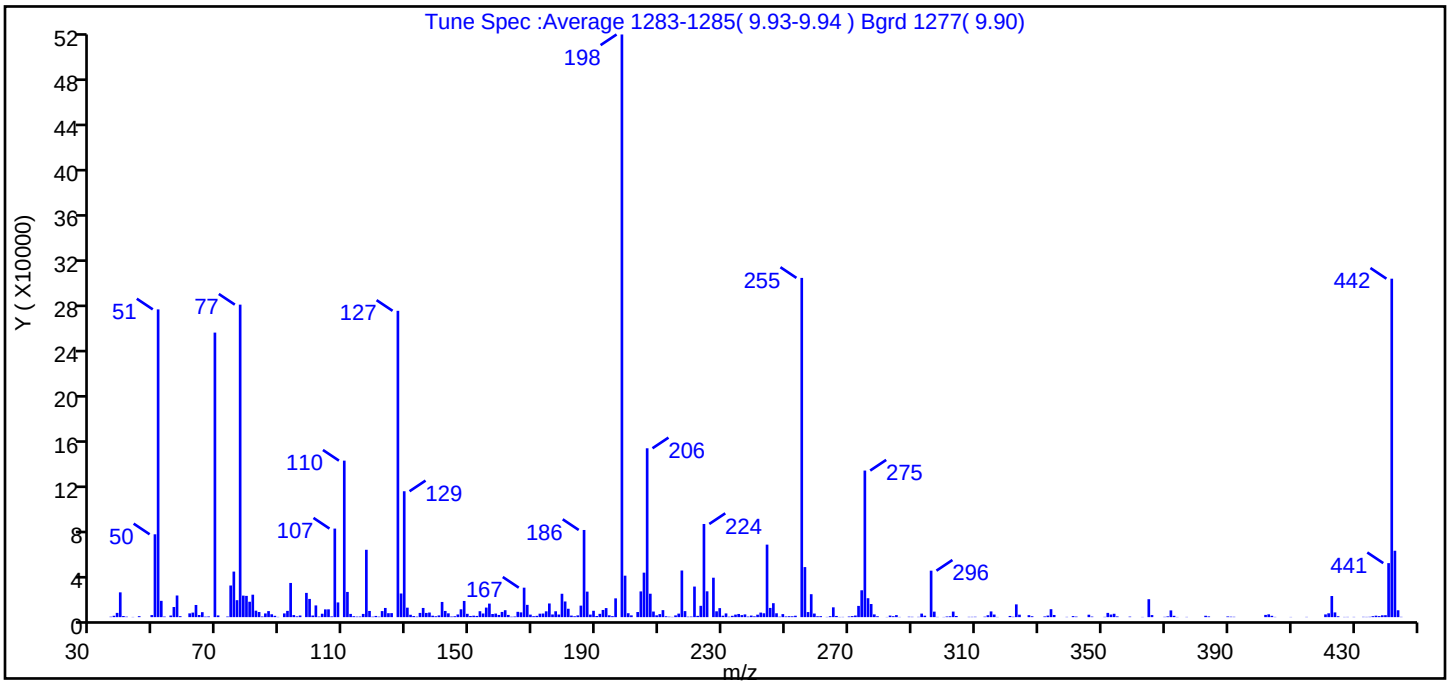
MB_DFTPP_WRK_00343 Amount Added: 1.00 Units: mL

MS Tune Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D
Injection Date: 26-Oct-2018 17:27:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (172.2)
51	10-80% of the base peak	52.8
68	<2% of mass 69	0.0 (0.0)
69	Present	48.8
70	<2% of mass 69	0.3 (0.6)
127	10-80% of the base peak	52.6
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.1
275	10-60% of the base peak	25.2
365	>1% of mass 198	3.1
441	present but <24% of mass 442	9.3 (16.0)
442	base peak, or >50% of 198	58.1
443	15-24% of mass 442	11.4 (19.6)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 26-Oct-2018 17:27:30
Spectrum: Tune Spec :Average 1283-1285(9.93-9.94) Bgrd 1277(9.90)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 311

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	391	129.00	112072	209.00	1610	297.00	4906
37.00	1218	130.00	8431	210.00	2699	298.00	218
38.00	3789	131.00	2113	211.00	6236	300.00	171
39.00	22080	132.00	958	212.00	766	301.00	560
40.00	978	133.00	465	213.00	399	302.00	748
41.00	430	134.00	3753	214.00	220	303.00	4952
43.00	178	135.00	8183	215.00	1537	304.00	1016
45.00	854	136.00	3742	216.00	3141	308.00	272
49.00	1817	137.00	4109	217.00	41520	309.00	276
50.00	73752	138.00	1295	218.00	5366	310.00	341
51.00	273984	139.00	790	219.00	421	313.00	427
52.00	14515	140.00	1521	220.00	496	314.00	1707
53.00	510	141.00	13529	221.00	27224	315.00	5101
55.00	1427	142.00	5518	222.00	1148	316.00	2294
56.00	9018	143.00	3390	223.00	10073	317.00	190
57.00	19272	144.00	560	224.00	82936	321.00	1057
58.00	844	145.00	804	225.00	23000	322.00	348
61.00	3355	146.00	2385	227.00	35104	323.00	11375
62.00	4047	147.00	6985	228.00	5206	324.00	2180
63.00	10825	148.00	14417	229.00	8026	327.00	1741
64.00	1873	149.00	2963	230.00	1278	328.00	803
65.00	4427	150.00	1056	231.00	3321	332.00	621
66.00	432	151.00	1307	232.00	394	333.00	1391
67.00	610	152.00	1086	233.00	1194	334.00	7082
69.00	253312	153.00	5277	234.00	2270	335.00	1915
70.00	1518	154.00	3253	235.00	2825	339.00	239
73.00	535	155.00	8509	236.00	1816	341.00	941
74.00	28168	156.00	12059	237.00	2450	342.00	494
75.00	40560	157.00	2785	238.00	513	346.00	2159
76.00	15103	158.00	3165	239.00	1400	347.00	498
77.00	278208	159.00	1959	240.00	718	351.00	248
78.00	19168	160.00	4649	241.00	2188	352.00	3778
79.00	18928	161.00	6170	242.00	4050	353.00	2319

Report Date: 29-Oct-2018 12:21:35 Chrom Revision: 2.3 12-Oct-2018 08:24:38
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 26-Oct-2018 17:27:30
Spectrum: Tune Spec :Average 1283-1285(9.93-9.94) Bgrd 1277(9.90)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 311

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	13715	162.00	1972	243.00	3449	354.00	3004
81.00	19984	163.00	400	244.00	64560	355.00	630
82.00	5760	164.00	564	245.00	8210	359.00	464
83.00	4568	165.00	4736	246.00	12418	363.00	185
84.00	582	166.00	4247	247.00	3441	365.00	15967
85.00	3304	167.00	26240	248.00	380	366.00	1841
86.00	5387	168.00	10937	249.00	2715	370.00	283
87.00	2560	169.00	2239	250.00	598	371.00	681
88.00	1186	170.00	845	251.00	843	372.00	5990
89.00	216	171.00	1144	252.00	758	373.00	1184
91.00	3312	172.00	3076	253.00	1258	374.00	177
92.00	5577	173.00	3211	255.00	302016	377.00	212
93.00	30440	174.00	5197	256.00	44560	383.00	1226
94.00	1829	175.00	12179	257.00	4512	384.00	655
95.00	698	176.00	2388	258.00	20440	390.00	631
96.00	1462	177.00	5222	259.00	3202	391.00	397
98.00	21592	178.00	2329	260.00	781	392.00	316
99.00	16212	179.00	20816	261.00	871	402.00	1990
100.00	1423	180.00	13951	263.00	201	403.00	2510
101.00	10441	181.00	7470	264.00	825	404.00	1177
102.00	498	182.00	1382	265.00	8736	405.00	209
103.00	3036	183.00	789	266.00	1048	410.00	178
104.00	6906	184.00	1560	267.00	182	415.00	221
105.00	6956	185.00	10251	268.00	216	421.00	2417
106.00	635	186.00	77600	270.00	555	422.00	3414
107.00	78840	187.00	22720	271.00	916	423.00	18808
108.00	13100	188.00	2270	272.00	1412	424.00	4203
110.00	139328	189.00	5661	273.00	10006	425.00	797
111.00	22448	190.00	999	274.00	23920	427.00	196
112.00	2881	191.00	2930	275.00	130496	428.00	225
113.00	810	192.00	6394	276.00	16856	430.00	217
114.00	478	193.00	8057	277.00	11689	433.00	284
115.00	543	194.00	1625	278.00	2451	434.00	231
116.00	2878	195.00	898	279.00	784	435.00	303

Report Date: 29-Oct-2018 12:21:35 Chrom Revision: 2.3 12-Oct-2018 08:24:38
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 26-Oct-2018 17:27:30
Spectrum: Tune Spec :Average 1283-1285(9.93-9.94) Bgrd 1277(9.90)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 311

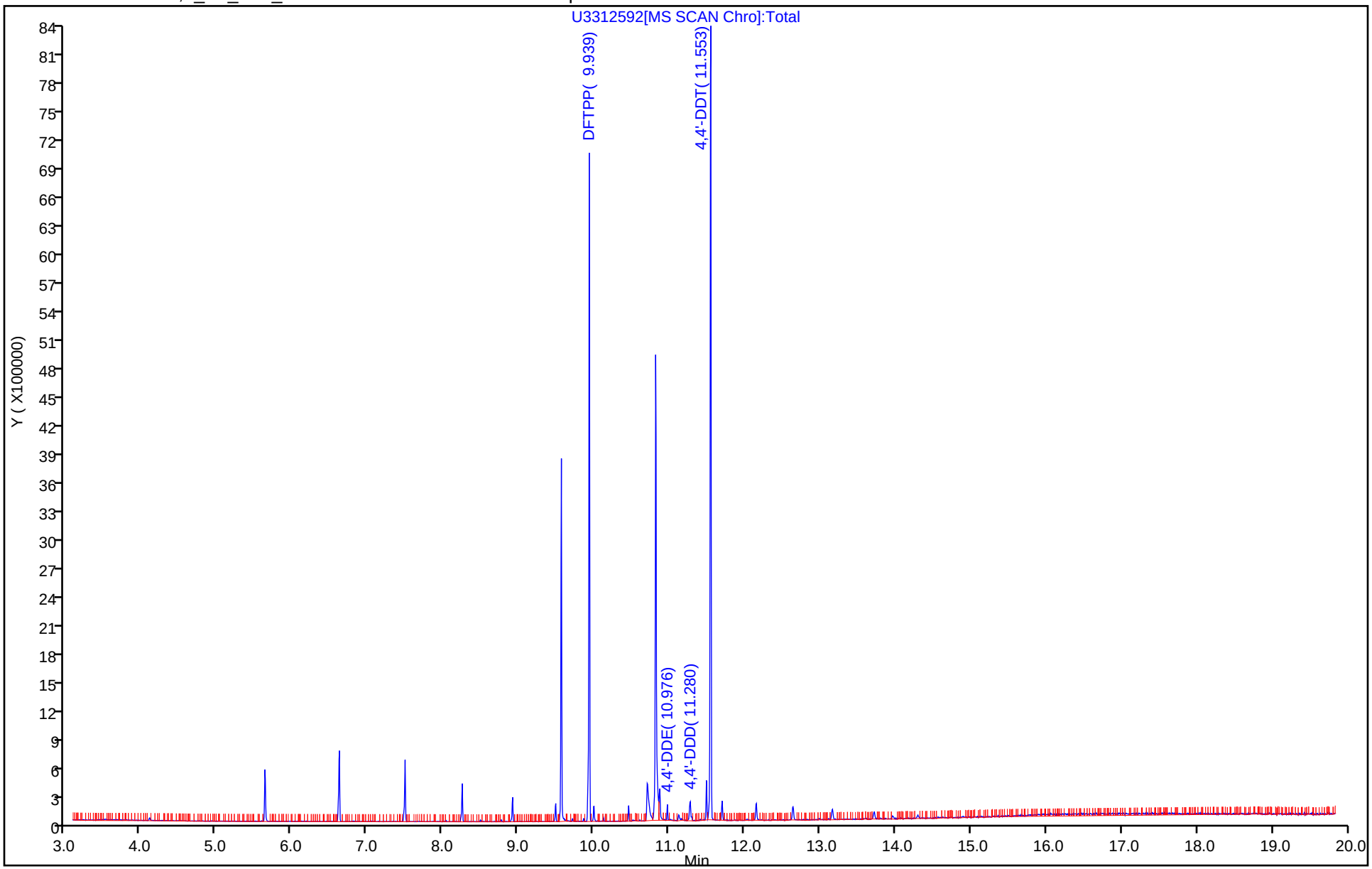
m/z	Y	m/z	Y	m/z	Y	m/z	Y
117.00	59968	196.00	16728	282.00	166	436.00	853
118.00	5516	198.00	518720	283.00	1392	437.00	1302
119.00	431	199.00	36912	284.00	838	438.00	923
120.00	1075	200.00	3492	285.00	1803	439.00	1640
121.00	430	201.00	1578	286.00	197	440.00	1731
122.00	5393	203.00	4555	289.00	385	441.00	48088
123.00	8186	204.00	22912	290.00	297	442.00	301312
124.00	3527	205.00	39608	292.00	270	443.00	59112
125.00	3576	206.00	150336	293.00	3164	444.00	6127
127.00	272704	207.00	20848	294.00	1287	445.00	263
128.00	21056	208.00	4993	296.00	41376		

Report Date: 29-Oct-2018 12:21:35 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D

Injection Date:	26-Oct-2018 17:27:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	DFTPP			Worklist Smp#:	2
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		

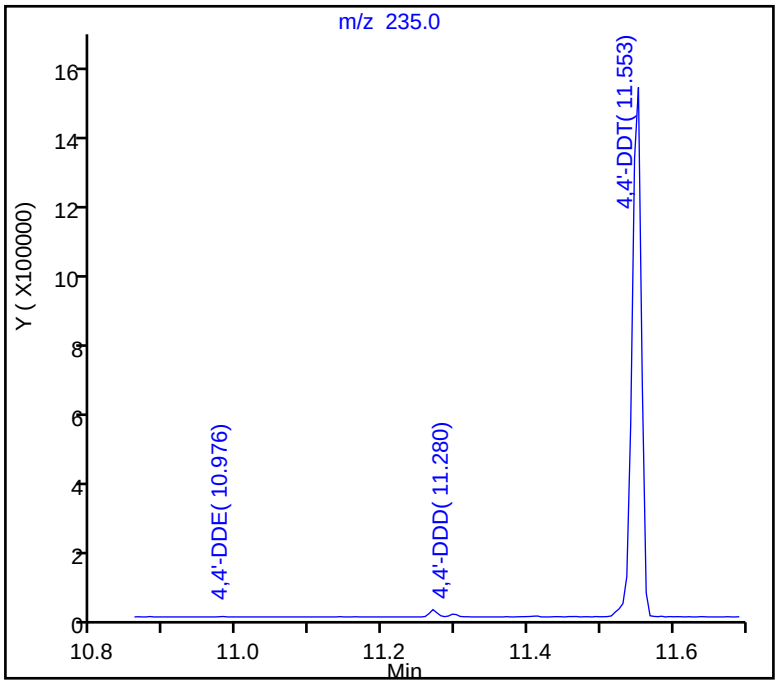


Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312592.D
Injection Date: 26-Oct-2018 17:27:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN



SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

6 4,4'-DDT, Area = 1338498
5 4,4'-DDD, Area = 14879
7 4,4'-DDE, Area = 13780

%Breakdown: 2.10%, Max Limit: 20.00%
Passed

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 08-Nov-2018 11:51:30 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: DFTPP
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:06 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: Deconvolution ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:06

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
7 4,4'-DDE	246		10.965					ND	
5 4,4'-DDD	235	11.045	11.045	0.000	92	6832			NR
6 4,4'-DDT	235	11.307	11.307	0.000	95	1175401	NR		NR

QC Flag Legend

Processing Flags
NR - Missing Quant Standard
8 - Failed MS Tune Ratio Test

Reagents:

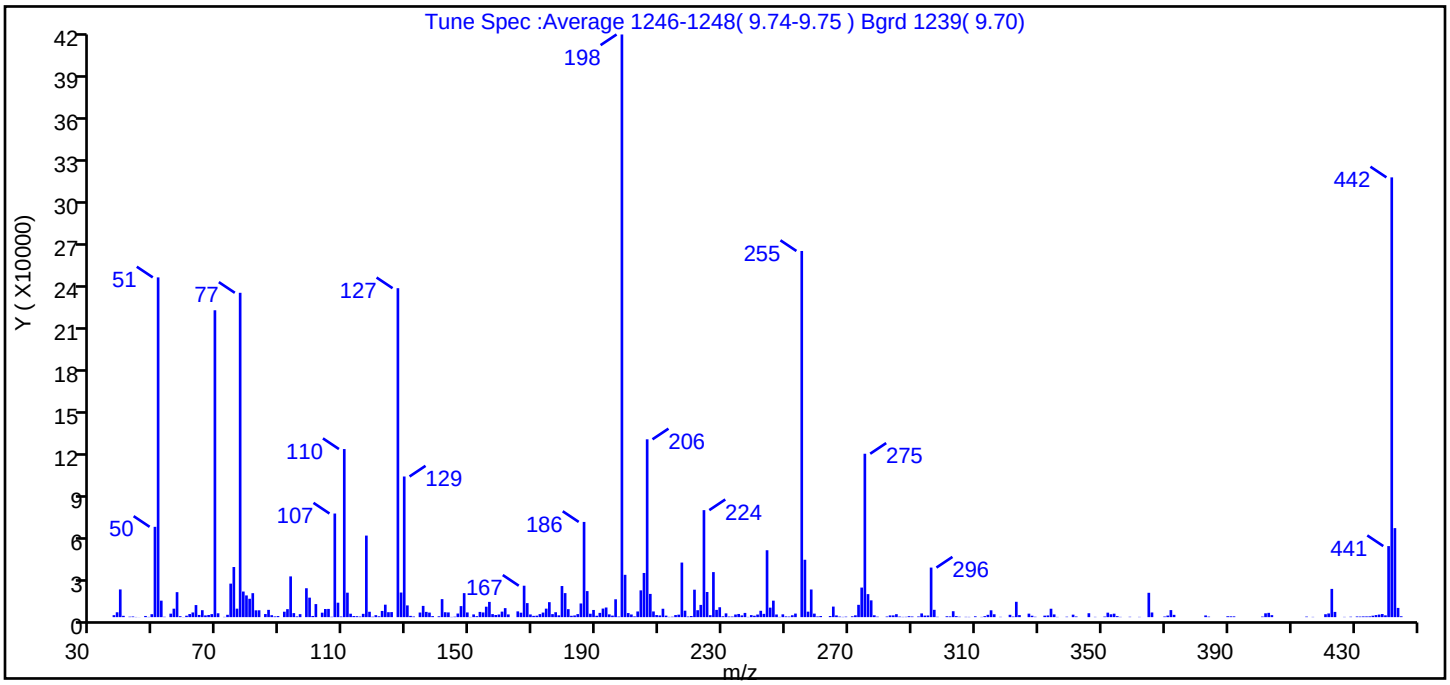
MB_DFTPP_WRK_00343 Amount Added: 1.00 Units: mL

MS Tune Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D
Injection Date: 08-Nov-2018 11:51:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: MKP ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (132.5)
51	10-80% of the base peak	58.3
68	<2% of mass 69	0.5 (1.0)
69	Present	52.7
70	<2% of mass 69	0.7 (1.3)
127	10-80% of the base peak	56.5
197	<2% of mass 198	0.1
199	5-9% of mass 198	7.3
275	10-60% of the base peak	28.0
365	>1% of mass 198	4.2
441	present but <24% of mass 442	12.2 (16.2)
442	base peak, or >50% of 198	75.5
443	15-24% of mass 442	15.3 (20.2)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 08-Nov-2018 11:51:30
Spectrum: Tune Spec :Average 1246-1248(9.74-9.75) Bgrd 1239(9.70)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 321

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	1397	125.00	3579	210.00	1197	298.00	255
38.00	3458	127.00	233664	211.00	5964	301.00	620
39.00	19680	128.00	17472	212.00	1070	302.00	504
40.00	937	129.00	99904	213.00	196	303.00	4207
42.00	331	130.00	8340	214.00	309	304.00	702
43.00	468	131.00	906	215.00	1466	305.00	287
44.00	132	132.00	456	216.00	1759	307.00	216
45.00	56	133.00	3	217.00	38776	308.00	182
47.00	838	134.00	3273	218.00	4590	310.00	596
48.00	174	135.00	7992	219.00	444	312.00	177
49.00	2095	136.00	3725	220.00	813	313.00	704
50.00	64152	137.00	3235	221.00	19504	314.00	1648
51.00	241344	138.00	732	222.00	4934	315.00	4854
52.00	11706	140.00	603	223.00	8696	316.00	2050
53.00	261	141.00	12803	224.00	76008	318.00	213
55.00	2470	142.00	3485	225.00	17864	321.00	1666
56.00	6011	143.00	3355	226.00	1390	322.00	409
57.00	17752	144.00	175	227.00	31992	323.00	10899
58.00	670	145.00	322	228.00	5156	324.00	1458
59.00	90	146.00	2568	229.00	7031	327.00	2479
60.00	1016	147.00	7839	230.00	605	328.00	1001
61.00	2194	148.00	17048	231.00	2689	329.00	276
62.00	3331	149.00	3336	232.00	427	332.00	1057
63.00	8574	150.00	146	233.00	436	333.00	1203
64.00	1563	151.00	1934	234.00	1868	334.00	5979
65.00	4939	152.00	678	235.00	2257	335.00	1955
66.00	1229	153.00	3712	236.00	1228	336.00	171
67.00	1535	154.00	3334	237.00	3006	339.00	314
68.00	2151	155.00	7416	238.00	167	341.00	1767
69.00	217984	156.00	10831	239.00	1440	342.00	459
70.00	2742	157.00	2152	240.00	1002	346.00	2781
72.00	185	158.00	1539	241.00	1845	348.00	198
73.00	1671	159.00	1883	242.00	4518	351.00	404

Report Date: 09-Nov-2018 15:57:07 Chrom Revision: 2.3 12-Oct-2018 08:24:38
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 08-Nov-2018 11:51:30
Spectrum: Tune Spec :Average 1246-1248(9.74-9.75) Bgrd 1239(9.70)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 321

m/z	Y	m/z	Y	m/z	Y	m/z	Y
74.00	23808	160.00	3926	243.00	2323	352.00	3175
75.00	35600	161.00	6399	244.00	47528	353.00	2049
76.00	6025	162.00	1939	245.00	6755	354.00	2458
77.00	230400	165.00	4103	246.00	11712	355.00	697
78.00	18192	166.00	3155	247.00	1887	356.00	181
79.00	15432	167.00	22328	248.00	171	359.00	255
80.00	13058	168.00	9977	249.00	2002	362.00	186
81.00	17032	169.00	1916	250.00	521	365.00	17296
82.00	4846	170.00	916	251.00	400	366.00	3313
83.00	4872	171.00	1046	252.00	1331	370.00	446
84.00	2	172.00	2159	253.00	2532	371.00	1119
85.00	2201	173.00	3249	255.00	260096	372.00	4996
86.00	5174	174.00	6042	256.00	40768	373.00	1628
87.00	1378	175.00	10642	257.00	3897	383.00	1205
88.00	511	176.00	2148	258.00	19648	384.00	377
89.00	770	177.00	3489	259.00	2503	390.00	638
91.00	3858	178.00	1284	260.00	476	391.00	563
92.00	5681	179.00	22104	261.00	787	392.00	548
93.00	28944	180.00	17072	264.00	776	401.00	415
94.00	2857	181.00	5677	265.00	7499	402.00	2730
95.00	514	182.00	966	266.00	1210	403.00	3053
96.00	2123	183.00	1198	267.00	387	404.00	1410
98.00	20536	184.00	2158	268.00	185	415.00	392
99.00	13849	185.00	9719	269.00	353	417.00	181
100.00	824	186.00	67632	271.00	599	421.00	2067
101.00	9273	187.00	18504	272.00	1280	422.00	2614
103.00	3169	188.00	2409	273.00	8750	423.00	20056
104.00	5783	189.00	5102	274.00	21008	424.00	3722
105.00	5838	190.00	981	275.00	116072	427.00	182
106.00	248	191.00	3032	276.00	16355	429.00	309
107.00	73600	192.00	6094	277.00	11924	431.00	485
108.00	10255	193.00	6848	278.00	1313	432.00	408
109.00	439	194.00	1970	279.00	353	433.00	512
110.00	119400	195.00	1085	282.00	440	434.00	515

Report Date: 09-Nov-2018 15:57:07 Chrom Revision: 2.3 12-Oct-2018 08:24:38
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 08-Nov-2018 11:51:30
Spectrum: Tune Spec :Average 1246-1248(9.74-9.75) Bgrd 1239(9.70)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 321

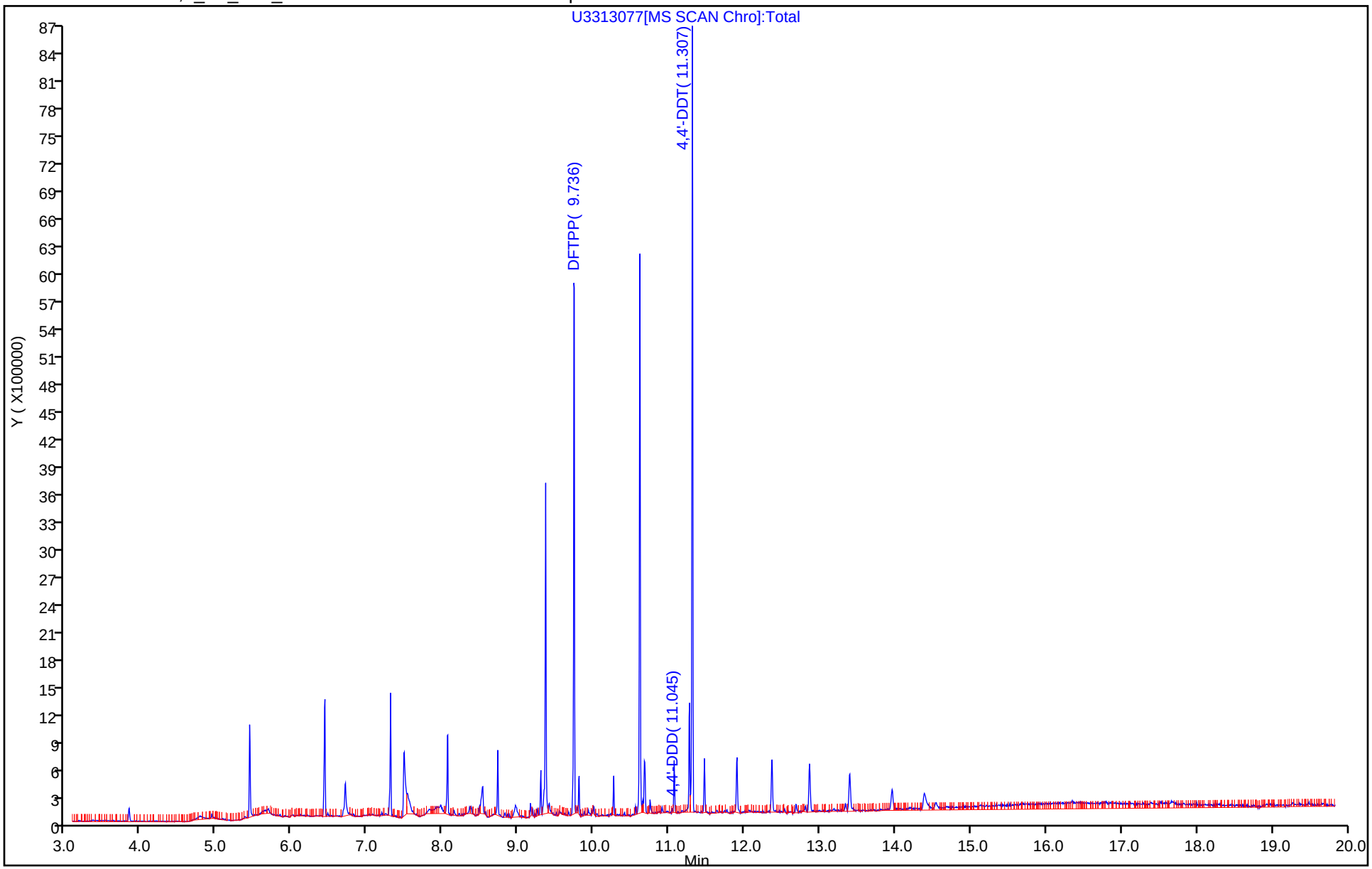
m/z	Y	m/z	Y	m/z	Y	m/z	Y
111.00	17384	196.00	12690	283.00	1241	435.00	551
112.00	2439	197.00	401	284.00	1246	436.00	1034
113.00	762	198.00	413888	285.00	2107	437.00	1461
114.00	671	199.00	30072	286.00	406	438.00	1831
115.00	410	200.00	2897	287.00	190	439.00	2201
116.00	2355	201.00	1885	288.00	238	440.00	1278
117.00	57936	202.00	535	289.00	682	441.00	50472
118.00	3829	203.00	4035	290.00	450	442.00	312384
119.00	319	204.00	19024	292.00	478	443.00	63240
120.00	1392	205.00	31376	293.00	2648	444.00	6558
121.00	581	206.00	126320	294.00	1098	445.00	604
122.00	4403	207.00	16504	295.00	1172		
123.00	8856	208.00	4049	296.00	35216		
124.00	3512	209.00	1480	297.00	5211		

Report Date: 09-Nov-2018 15:57:07 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D

Injection Date:	08-Nov-2018 11:51:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	DFTPP			Worklist Smp#:	2
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		

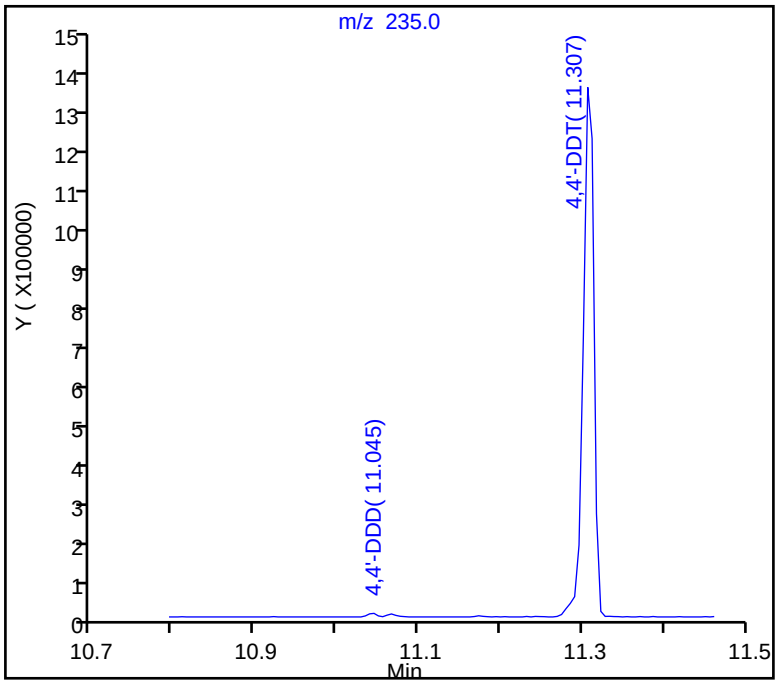


Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313077.D
Injection Date: 08-Nov-2018 11:51:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: MKP ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN



SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

6 4,4'-DDT, Area = 1175401
5 4,4'-DDD, Area = 6832
7 4,4'-DDE, Area = 0

%Breakdown: 0.58%, Max Limit: 20.00%
Passed

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313301.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 13-Nov-2018 17:23:30 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: DFTPP
Operator ID: DR Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 14-Nov-2018 10:30:07 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: Deconvolution ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0317

First Level Reviewer: richardsd Date: 14-Nov-2018 10:25:15

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
5 4,4'-DDD	235	10.848	10.848	0.000	94	48163		NR	
7 4,4'-DDE	246		11.099				ND		Ua
6 4,4'-DDT	235	11.099	11.099	0.000	96	1051286	NR	NR	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard
Review Flags
U - Marked Undetected
a - User Assigned ID

Reagents:

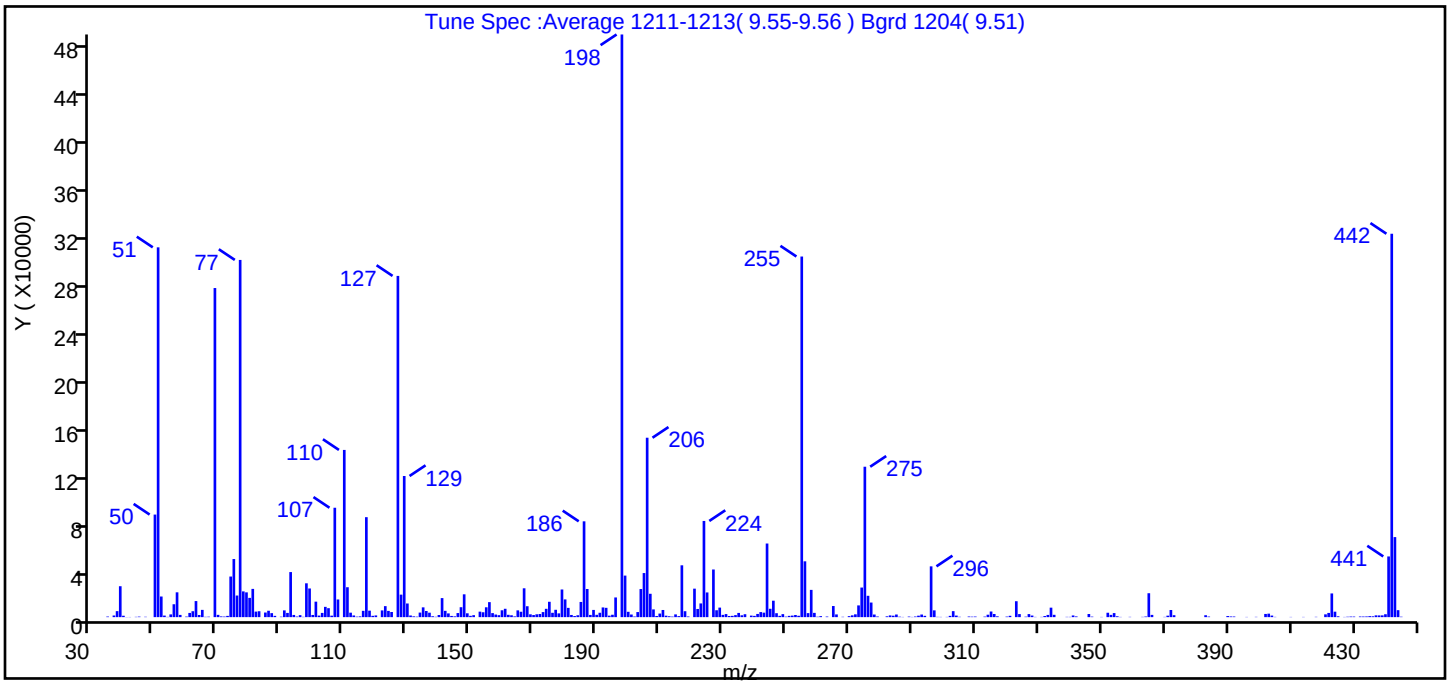
MB_DFTPP_WRK_00343 Amount Added: 1.00 Units: mL

MS Tune Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313301.D
Injection Date: 13-Nov-2018 17:23:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (152.0)
51	10-80% of the base peak	63.5
68	<2% of mass 69	0.0 (0.0)
69	Present	56.5
70	<2% of mass 69	0.4 (0.7)
127	10-80% of the base peak	58.6
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.1
275	10-60% of the base peak	25.8
365	>1% of mass 198	4.1
441	present but <24% of mass 442	10.4 (15.8)
442	base peak, or >50% of 198	65.8
443	15-24% of mass 442	13.7 (20.9)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313301.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 13-Nov-2018 17:23:30
Spectrum: Tune Spec :Average 1211-1213(9.55-9.56) Bgrd 1204(9.51)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 324

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	492	128.00	18648	211.00	5931	304.00	1291
37.00	1357	129.00	116952	212.00	1202	305.00	291
38.00	4975	130.00	11316	213.00	757	308.00	524
39.00	25624	131.00	1367	214.00	452	309.00	394
40.00	1156	132.00	647	215.00	2278	310.00	481
41.00	110	133.00	399	216.00	844	313.00	451
42.00	143	134.00	3767	217.00	42952	314.00	2006
44.00	243	135.00	8114	218.00	4912	315.00	4674
45.00	441	136.00	5083	219.00	548	316.00	2606
47.00	298	137.00	3681	221.00	23608	317.00	675
50.00	84992	138.00	731	222.00	6766	320.00	444
51.00	306432	139.00	280	223.00	11360	321.00	1107
52.00	17096	140.00	1759	224.00	79704	323.00	13199
53.00	1296	141.00	15779	225.00	20464	324.00	2530
54.00	212	142.00	5217	227.00	39488	326.00	383
55.00	2278	143.00	3093	228.00	5714	327.00	2537
56.00	10689	144.00	1005	229.00	7906	328.00	1319
57.00	20568	145.00	637	230.00	1890	329.00	195
58.00	1855	146.00	3390	231.00	2532	331.00	208
60.00	457	147.00	8224	232.00	950	332.00	899
61.00	3489	148.00	18920	233.00	1071	333.00	1832
62.00	4913	149.00	3184	234.00	1679	334.00	7860
63.00	13318	150.00	1101	235.00	3496	335.00	1930
64.00	1784	151.00	1647	236.00	1538	339.00	230
65.00	6020	153.00	4551	237.00	2428	340.00	221
66.00	264	154.00	4045	239.00	1274	341.00	1397
67.00	386	155.00	8165	240.00	1053	342.00	589
69.00	272704	156.00	12438	241.00	2658	346.00	2601
70.00	1894	157.00	3341	242.00	4194	347.00	427
71.00	605	158.00	2153	243.00	3707	350.00	177
72.00	470	159.00	1621	244.00	61008	352.00	3640
73.00	1046	160.00	5684	245.00	6932	353.00	1872
74.00	33648	161.00	6933	246.00	13626	354.00	3365

Report Date: 14-Nov-2018 10:30:08 Chrom Revision: 2.3 12-Oct-2018 08:24:38
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313301.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 13-Nov-2018 17:23:30
Spectrum: Tune Spec :Average 1211-1213(9.55-9.56) Bgrd 1204(9.51)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 324

m/z	Y	m/z	Y	m/z	Y	m/z	Y
75.00	48152	162.00	1923	247.00	3263	355.00	714
76.00	17912	163.00	1542	248.00	1082	356.00	181
77.00	296000	164.00	609	249.00	2491	359.00	230
78.00	21336	165.00	5624	250.00	403	363.00	228
79.00	20536	166.00	4465	251.00	1059	364.00	505
80.00	15962	167.00	23904	252.00	1278	365.00	19816
81.00	23408	168.00	9039	253.00	1776	366.00	1869
82.00	4589	169.00	2339	254.00	1133	370.00	198
83.00	4894	170.00	1753	255.00	298816	371.00	1204
85.00	3826	171.00	2355	256.00	46256	372.00	5922
86.00	5300	172.00	2602	257.00	3337	373.00	1604
87.00	3316	173.00	4188	258.00	22592	383.00	1589
88.00	1067	174.00	6906	259.00	3543	384.00	485
90.00	372	175.00	12734	260.00	349	390.00	902
91.00	5609	176.00	3593	261.00	839	391.00	560
92.00	3503	177.00	6098	263.00	495	392.00	518
93.00	37344	178.00	3128	265.00	9214	396.00	177
94.00	1817	179.00	22920	266.00	2253	399.00	242
95.00	495	180.00	14700	268.00	277	402.00	2649
96.00	1639	181.00	7682	270.00	822	403.00	2894
97.00	244	182.00	1798	271.00	1487	404.00	1299
98.00	28040	183.00	911	272.00	2335	405.00	210
99.00	23752	184.00	1571	273.00	9730	410.00	177
100.00	1807	185.00	12585	274.00	24520	414.00	181
101.00	12834	186.00	79400	275.00	124640	418.00	258
102.00	1290	187.00	23328	276.00	17688	421.00	2321
103.00	3508	188.00	1836	277.00	12094	422.00	3489
104.00	8523	189.00	5982	278.00	2169	423.00	19640
105.00	7420	190.00	1927	279.00	539	424.00	4529
106.00	1230	191.00	3628	282.00	675	425.00	702
107.00	90648	192.00	8039	283.00	1431	427.00	169
108.00	14643	193.00	7721	284.00	1199	428.00	337
110.00	138560	194.00	1242	285.00	2178	429.00	484
111.00	24784	195.00	1979	286.00	388	430.00	464

Report Date: 14-Nov-2018 10:30:08 Chrom Revision: 2.3 12-Oct-2018 08:24:38
Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313301.D\1,4_Dx_SIM_HP5973U.rslt\spe
Injection Date: 13-Nov-2018 17:23:30
Spectrum: Tune Spec :Average 1211-1213(9.55-9.56) Bgrd 1204(9.51)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 324

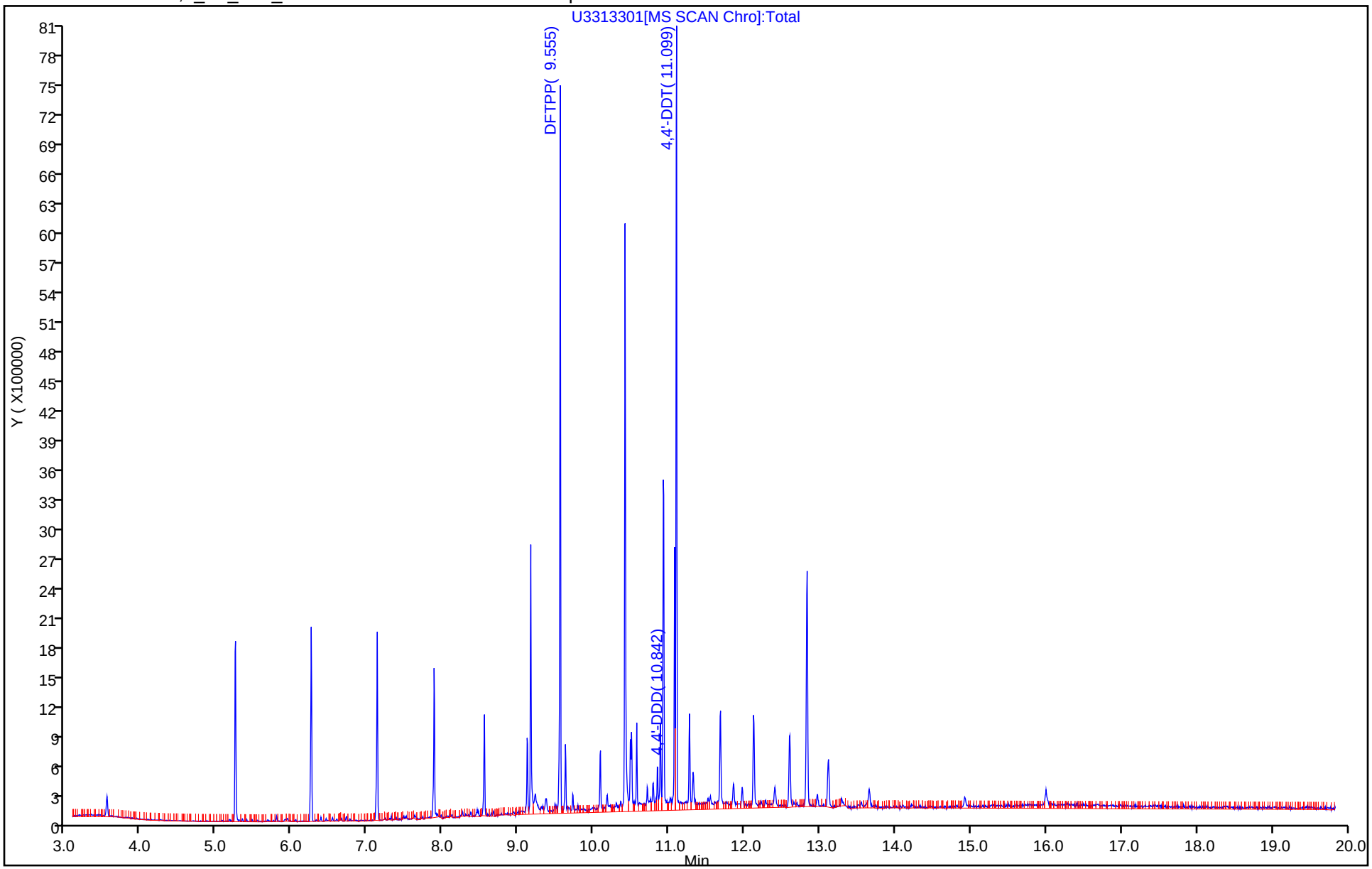
m/z	Y	m/z	Y	m/z	Y	m/z	Y
112.00	3697	196.00	16312	287.00	169	432.00	534
113.00	1402	198.00	482816	289.00	481	433.00	503
114.00	420	199.00	34424	290.00	177	434.00	564
115.00	632	200.00	4427	291.00	514	435.00	829
116.00	5233	201.00	2176	292.00	1210	436.00	693
117.00	82840	202.00	508	293.00	2160	437.00	1477
118.00	5381	203.00	4204	294.00	1093	438.00	1418
119.00	1100	204.00	23280	296.00	42088	439.00	1456
120.00	1417	205.00	36528	297.00	5616	440.00	2410
122.00	5583	206.00	148672	298.00	246	441.00	50296
123.00	9118	207.00	19360	299.00	198	442.00	317696
124.00	5174	208.00	6410	301.00	195	443.00	66328
125.00	4268	209.00	956	302.00	1063	444.00	5779
127.00	282752	210.00	2965	303.00	4966	445.00	355

Report Date: 14-Nov-2018 10:30:08 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313301.D

Injection Date:	13-Nov-2018 17:23:30	Instrument ID:	HP5973U	Operator ID:	DR
Lims ID:	DFTPP			Worklist Smp#:	2
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		

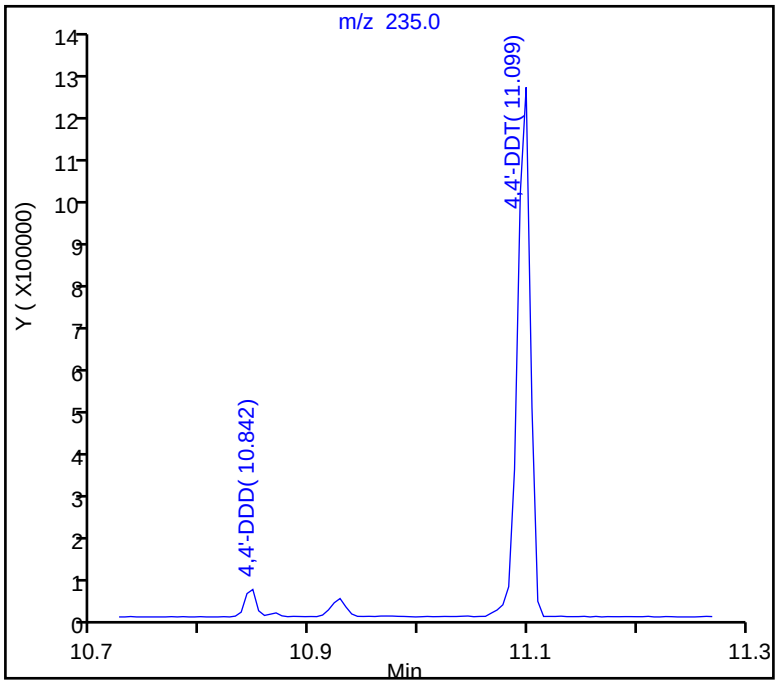


Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181113-76403.b\U3313301.D
Injection Date: 13-Nov-2018 17:23:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN



SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

6 4,4'-DDT, Area = 1051286
5 4,4'-DDD, Area = 48163
7 4,4'-DDE, Area = 0

%Breakdown: 4.38%, Max Limit: 20.00%
Passed

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-2

SDG No.:

Client Sample ID: | Lab Sample ID: MB 480-442693/1-A

Matrix: Water | Lab File ID: U3313085.D

Analysis Method: 8270D SIM ID | Date Collected:

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 1000(mL) | Date Analyzed: 11/08/2018 15:07

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	33		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313085.D
Lims ID: MB 480-442693/1-A
Client ID:
Sample Type: MB
Inject. Date: 08-Nov-2018 15:07:30 ALS Bottle#: 10 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-010
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:33

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.435	2.357	0.078	93	175998	10.0	3.26	
	3 1,4-Dioxane	88		2.394					ND	
*	2 1,4-Dichlorobenzene-d4	152	5.690	5.686	0.004	93	472154	4.00	4.00	

Reagents:

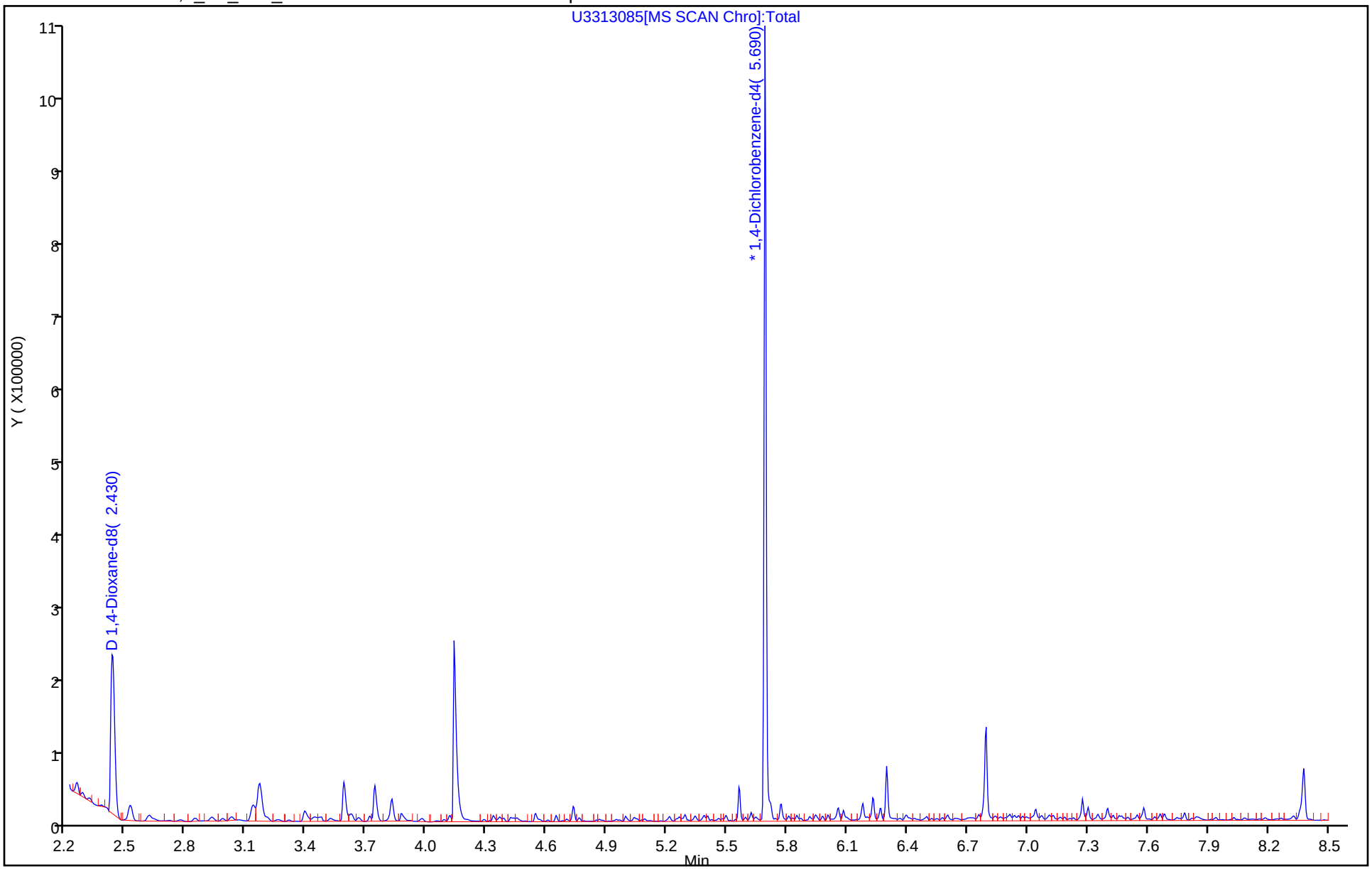
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:57:33 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313085.D

Injection Date:	08-Nov-2018 15:07:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	MB 480-442693/1-A			Worklist Smp#:	10
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



Report Date: 09-Nov-2018 15:57:34 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313085.D

Injection Date: 08-Nov-2018 15:07:30 Instrument ID: HP5973U

Lims ID: MB 480-442693/1-A

Client ID:

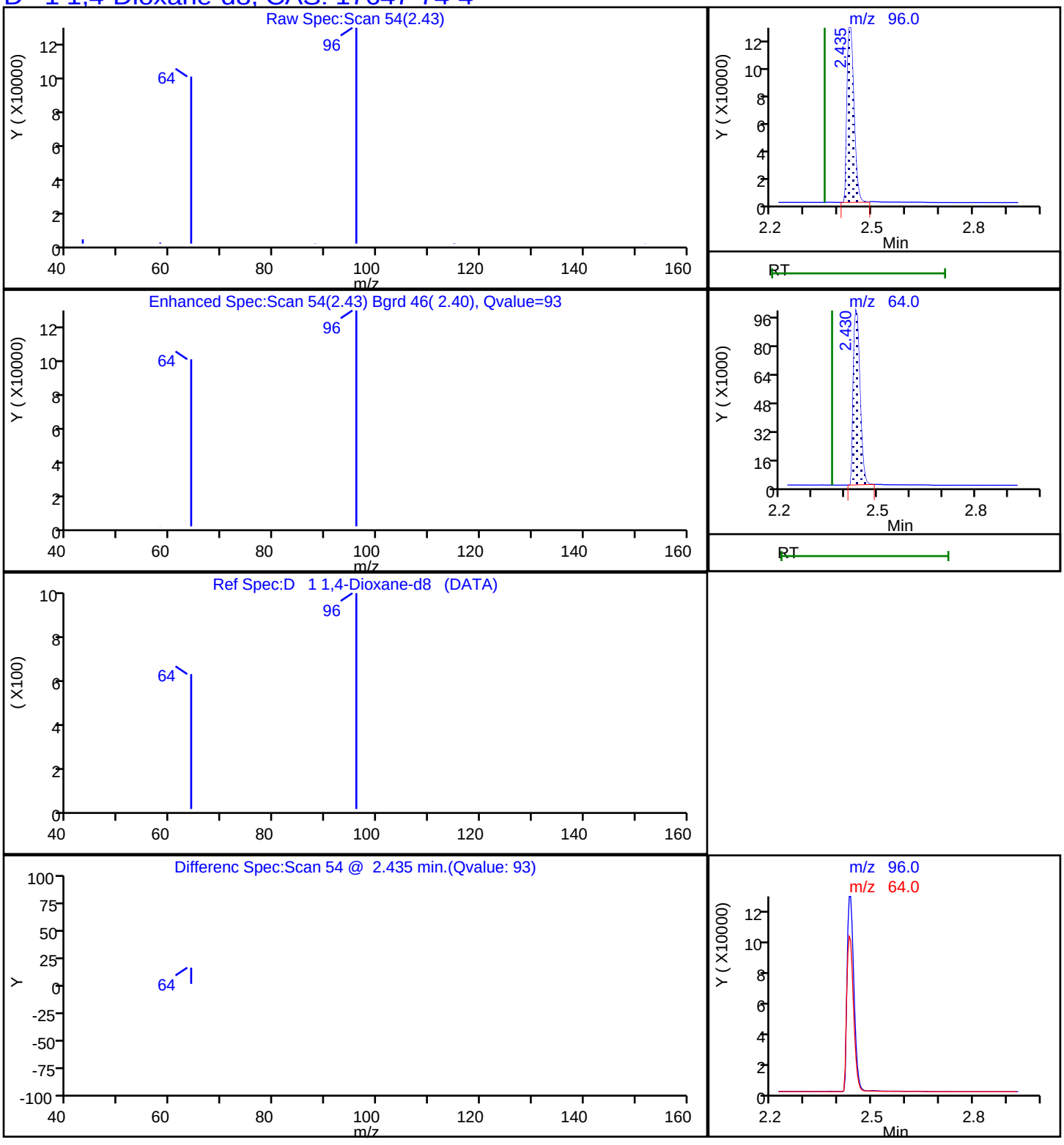
Operator ID: MKP ALS Bottle#: 10 Worklist Smp#: 10

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL

Column: Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-144153-2

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 480-442693/2-A

Matrix: Water | Lab File ID: U3313086.D

Analysis Method: 8270D SIM ID | Date Collected:

Extract. Method: 3510C | Date Extracted: 10/31/2018 07:26

Sample wt/vol: 1000(mL) | Date Analyzed: 11/08/2018 15:31

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 444395 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.05		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	36		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313086.D
Lims ID: LCS 480-442693/2-A
Client ID:
Sample Type: LCS
Inject. Date: 08-Nov-2018 15:31:30 ALS Bottle#: 11 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0076258-011
Operator ID: MKP Instrument ID: HP5973U

Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\1,4_Dx_SIM_HP5973U.m
Limit Group: MB - 8270D SIM ID ICAL
Last Update: 09-Nov-2018 15:57:12 Calib Date: 26-Oct-2018 19:56:30
Integrator: Picker ID Type: RT Order ID
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181026-75895.b\U3312598.D

Column 1 : Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: richardsd Date: 09-Nov-2018 15:57:37

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D	1 1,4-Dioxane-d8	96	2.483	2.357	0.126	91	205886	10.0	3.62	
	3 1,4-Dioxane	88	2.520	2.394	0.126	86	25621	1.00	1.05	
*	2 1,4-Dichlorobenzene-d4	152	5.694	5.686	0.008	93	496937	4.00	4.00	

Reagents:

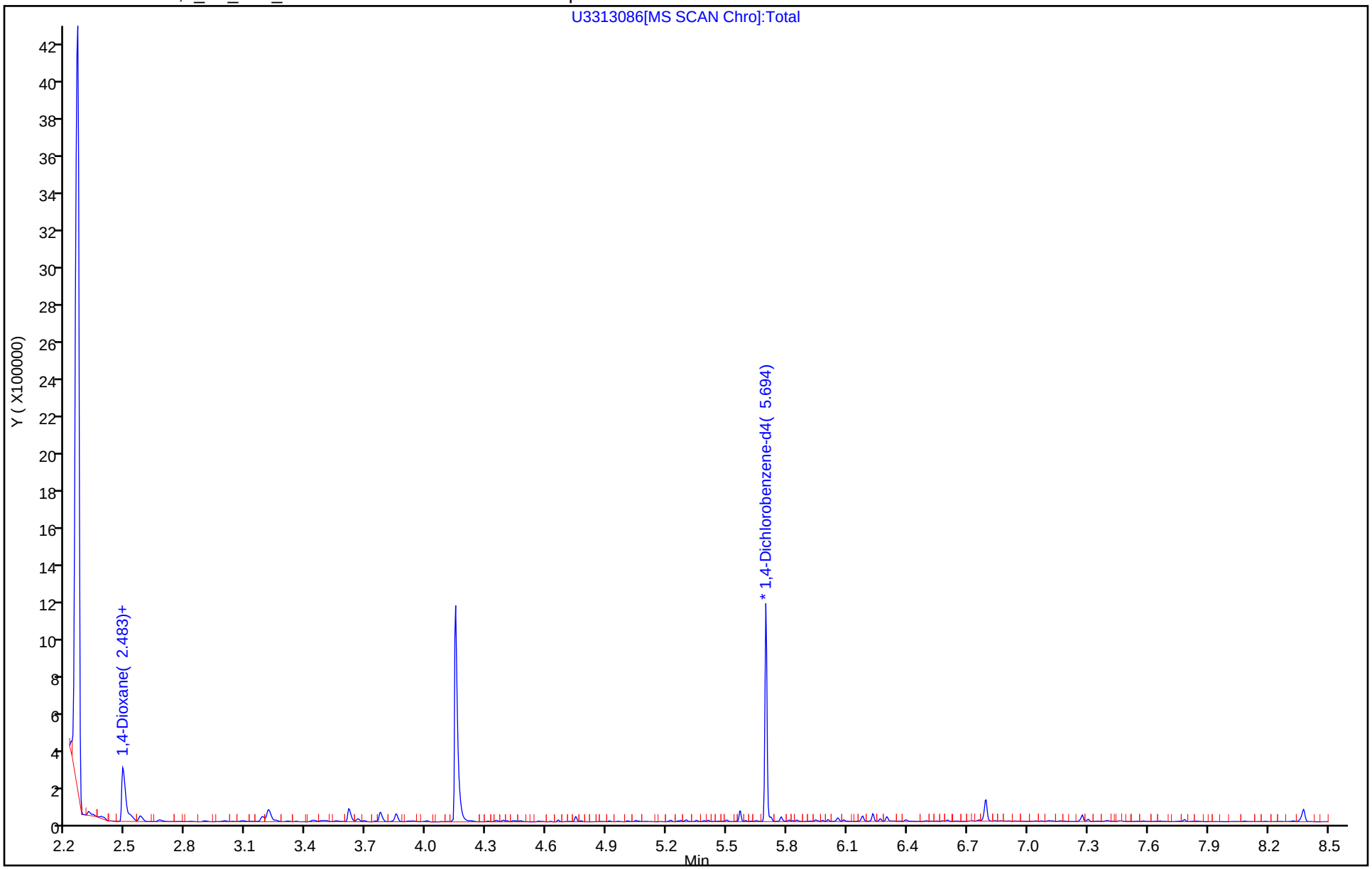
MB_LLIS_WRK_00157 Amount Added: 20.00 Units: uL Run Reagent

Report Date: 09-Nov-2018 15:57:38 Chrom Revision: 2.3 12-Oct-2018 08:24:38

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181108-76258.b\U3313086.D

Injection Date:	08-Nov-2018 15:31:30	Instrument ID:	HP5973U	Operator ID:	MKP
Lims ID:	LCS 480-442693/2-A			Worklist Smp#:	11
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	11
Method:	1,4_Dx_SIM_HP5973U	Limit Group:	MB - 8270D SIM ID ICAL		



GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Instrument ID: HP5973U Start Date: 10/26/2018 17:27

Analysis Batch Number: 442039 End Date: 10/26/2018 20:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-442039/2		10/26/2018 17:27	1	U3312592.D	RXI-5Sil MS(0.5 0.25(mm)
IC 480-442039/3		10/26/2018 17:56	1	U3312593.D	RXI-5Sil MS(0.5 0.25(mm)
IC 480-442039/4		10/26/2018 18:20	1	U3312594.D	RXI-5Sil MS(0.5 0.25(mm)
ICIS 480-442039/5		10/26/2018 18:45	1	U3312595.D	RXI-5Sil MS(0.5 0.25(mm)
IC 480-442039/6		10/26/2018 19:08	1	U3312596.D	RXI-5Sil MS(0.5 0.25(mm)
IC 480-442039/7		10/26/2018 19:32	1	U3312597.D	RXI-5Sil MS(0.5 0.25(mm)
IC 480-442039/8		10/26/2018 19:56	1	U3312598.D	RXI-5Sil MS(0.5 0.25(mm)
ICV 480-442039/9		10/26/2018 20:20	1	U3312599.D	RXI-5Sil MS(0.5 0.25(mm)

8270D SIM ID

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Instrument ID: HP5973U Start Date: 11/08/2018 11:51

Analysis Batch Number: 444395 End Date: 11/08/2018 22:46

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-444395/2		11/08/2018 11:51	1	U3313077.D	RXI-5Sil MS(0.5 0.25(mm)
CCVIS 480-444395/3		11/08/2018 12:21	1	U3313078.D	RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 12:45	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 13:09	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 13:32	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 13:56	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 14:20	100		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 14:43	100		RXI-5Sil MS(0.5 0.25(mm)
MB 480-442693/1-A		11/08/2018 15:07	1	U3313085.D	RXI-5Sil MS(0.5 0.25(mm)
LCS 480-442693/2-A		11/08/2018 15:31	1	U3313086.D	RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 15:55	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 16:19	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 16:43	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 17:07	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 17:31	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 17:55	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 18:20	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 18:44	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 19:09	1		RXI-5Sil MS(0.5 0.25(mm)
480-144153-5		11/08/2018 19:33	1	U3313096.D	RXI-5Sil MS(0.5 0.25(mm)
480-144153-6		11/08/2018 19:58	1	U3313097.D	RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 20:22	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 20:46	20		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 21:11	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 21:35	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 21:59	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 22:23	10		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/08/2018 22:46	10		RXI-5Sil MS(0.5 0.25(mm)

8270D SIM ID

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Instrument ID: HP5973U Start Date: 11/13/2018 17:23

Analysis Batch Number: 445333 End Date: 11/13/2018 19:52

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-445333/2		11/13/2018 17:23	1	U3313301.D	RXI-5Sil MS(0.5 0.25(mm)
CCVIS 480-445333/3		11/13/2018 17:51	1	U3313302.D	RXI-5Sil MS(0.5 0.25(mm)
480-144153-7		11/13/2018 18:16	1	U3313303.D	RXI-5Sil MS(0.5 0.25(mm)
480-144153-8		11/13/2018 18:40	1	U3313304.D	RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/13/2018 19:04	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/13/2018 19:28	1		RXI-5Sil MS(0.5 0.25(mm)
ZZZZZ		11/13/2018 19:52	1		RXI-5Sil MS(0.5 0.25(mm)

8270D SIM ID

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Batch Number: 442693 Batch Start Date: 10/31/18 07:26 Batch Analyst: Pollock, Jacob M

Batch Method: 3510C Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	SecondAdjustpH	OP_SIM_LCS 00005
MB 480-442693/1		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	>11 SU	
LCS 480-442693/2		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	>11 SU	1 mL
480-144153-A-5	BMW-01	3510C, 8270D SIM ID	T	980 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-6	MW-04	3510C, 8270D SIM ID	T	990 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-7	MW-01	3510C, 8270D SIM ID	T	940 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-8	TANK WS-01	3510C, 8270D SIM ID	T	860 mL	1 mL	7 SU	<2 SU	>11 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	OP_SimSurr 00011	AnalysisComment				
MB 480-442693/1		3510C, 8270D SIM ID		1 mL					
LCS 480-442693/2		3510C, 8270D SIM ID		1 mL					
480-144153-A-5	BMW-01	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-6	MW-04	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-7	MW-01	3510C, 8270D SIM ID	T	1 mL	Contains some sediment				
480-144153-A-8	TANK WS-01	3510C, 8270D SIM ID	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D SIM ID

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Batch Number: 442693 Batch Start Date: 10/31/18 07:26 Batch Analyst: Pollock, Jacob M

Batch Method: 3510C Batch End Date:

Batch Notes	
Acid Used for pH Adjustment ID	4932774
Analyst ID - Concentration	JP, SP
Analyst ID - Extraction	JP
Method/Fraction	3510C/8270D_SIM_MS_ID
Na2SO4 ID	4895626
Prep Solvent ID	4964719
Prep Solvent Volume Used	180 mL
Analyst ID - Spike Analyst	JP
Analyst ID - Spike Witness Analyst	JP
Sufficient Volume for Batch QC	Yes
Vial Lot Number	1709111094

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 7068593 **Workorder Name:** 31 Water St **Results Requested By:** 10/29/2018

Report / Invoice To	Subcontract To	
James Murphy Pace Analytical New York 2190 Technology Drive Schenectady, NY 12308 Phone (518)860-9724 Email: james.murphy@pacelabs.com	TA- Buffalo 10 Hazelwood Dr Amherst, NY	P.O. 102218JM2003

State of Sample Origin: NY

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: 1,4 DIOXANE via 8270 SIM	LAB USE ONLY
1	MW-01	10/19/2018 12:50	7068593001	Water	1	X	
2	MW-04	10/19/2018 14:20	7068593002	Water	1	X	
3	MW-01	10/19/2018 15:30	7068593003	Water	1	X	
4	TANK WS-01	10/19/2018 09:30	7068593004	Water	1	X	
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	Jacklyn Pastore	10/20/18	P Walker	10/24/18 0850
2				
3				

Comments

NYS CAT B DATA PKG
NYS EqUIS EDD

Cooler Temperature on Receipt 3.4 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

#1

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Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 480-144153-2

Login Number: 144153
List Number: 1
Creator: Wallace, Cameron

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	N/A	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-01
Lab Order:	C1810010	**Tag Number:**	438,561
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 2:29:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,2,4-Trimethylbenzene	0.17	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,3,5-Trimethylbenzene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 2:29:00 PM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
4-ethyltoluene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Acetone	9.5	3.0		ppbV	10	10/9/2018 2:51:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Benzene	0.19	0.15		ppbV	1	10/8/2018 2:29:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 2:29:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Chloromethane	0.41	0.15		ppbV	1	10/8/2018 2:29:00 PM
cis-1,2-Dichloroethene	0.21	0.040		ppbV	1	10/8/2018 2:29:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Cyclohexane	0.79	0.15		ppbV	1	10/8/2018 2:29:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Ethyl acetate	0.49	0.15		ppbV	1	10/8/2018 2:29:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-01
Lab Order:	C1810010	**Tag Number:**	438,561
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Freon 11	0.31	0.15		ppbV	1	10/8/2018 2:29:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Freon 12	0.39	0.15		ppbV	1	10/8/2018 2:29:00 PM
Heptane	0.42	0.15		ppbV	1	10/8/2018 2:29:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Hexane	0.25	0.15		ppbV	1	10/8/2018 2:29:00 PM
Isopropyl alcohol	4.2	1.5		ppbV	10	10/9/2018 2:51:00 PM
m&p-Xylene	0.23	0.30	J	ppbV	1	10/8/2018 2:29:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 2:29:00 PM
Methyl Ethyl Ketone	0.62	0.30		ppbV	1	10/8/2018 2:29:00 PM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 2:29:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Methylene chloride	0.69	0.15		ppbV	1	10/8/2018 2:29:00 PM
o-Xylene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Styrene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Toluene	0.89	0.15		ppbV	1	10/8/2018 2:29:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Trichloroethene	0.93	0.030		ppbV	1	10/8/2018 2:29:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 2:29:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 2:29:00 PM
Surr: Bromofluorobenzene	91.0	70-130		%REC	1	10/8/2018 2:29:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-01
Lab Order:	C1810010	**Tag Number:**	328,445
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	0.11	0.15	J	ppbV	1	10/9/2018 10:06:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,2,4-Trimethylbenzene	1.4	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,3,5-Trimethylbenzene	0.73	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 10:06:00 AM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
4-ethyltoluene	0.33	0.15		ppbV	1	10/9/2018 10:06:00 AM
Acetone	36	6.0		ppbV	20	10/10/2018 12:09:00 AM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Benzene	0.27	0.15		ppbV	1	10/9/2018 10:06:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Carbon tetrachloride	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Chloroform	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Chloromethane	0.32	0.15		ppbV	1	10/9/2018 10:06:00 AM
cis-1,2-Dichloroethene	0.16	0.15		ppbV	1	10/9/2018 10:06:00 AM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Cyclohexane	9.4	3.0		ppbV	20	10/10/2018 12:09:00 AM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Ethyl acetate	0.94	0.15		ppbV	1	10/9/2018 10:06:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-01
Lab Order:	C1810010	**Tag Number:**	328,445
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Freon 11	0.23	0.15		ppbV	1	10/9/2018 10:06:00 AM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Freon 12	0.48	0.15		ppbV	1	10/9/2018 10:06:00 AM
Heptane	0.98	0.15		ppbV	1	10/9/2018 10:06:00 AM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Hexane	0.91	0.15		ppbV	1	10/9/2018 10:06:00 AM
Isopropyl alcohol	1.9	0.15		ppbV	1	10/9/2018 10:06:00 AM
m&p-Xylene	0.41	0.30		ppbV	1	10/9/2018 10:06:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 10:06:00 AM
Methyl Ethyl Ketone	2.8	6.0	J	ppbV	20	10/10/2018 12:09:00 AM
Methyl Isobutyl Ketone	0.16	0.30	J	ppbV	1	10/9/2018 10:06:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Methylene chloride	3.4	3.0		ppbV	20	10/10/2018 12:09:00 AM
o-Xylene	0.22	0.15		ppbV	1	10/9/2018 10:06:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Styrene	0.30	0.15		ppbV	1	10/9/2018 10:06:00 AM
Tetrachloroethylene	0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Toluene	0.95	0.15		ppbV	1	10/9/2018 10:06:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Trichloroethene	1.4	0.15		ppbV	1	10/9/2018 10:06:00 AM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 10:06:00 AM
Surr: Bromofluorobenzene	99.0	70-130		%REC	1	10/9/2018 10:06:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-02
Lab Order:	C1810010	**Tag Number:**	96,376
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,2,4-Trimethylbenzene	1.5	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,3,5-Trimethylbenzene	0.77	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 12:38:00 AM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
4-ethyltoluene	0.34	0.15		ppbV	1	10/9/2018 12:38:00 AM
Acetone	47	12		ppbV	40	10/10/2018 1:23:00 AM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Benzene	0.53	0.15		ppbV	1	10/9/2018 12:38:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Carbon tetrachloride	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Chloroethane	0.12	0.15	J	ppbV	1	10/9/2018 12:38:00 AM
Chloroform	0.68	0.15		ppbV	1	10/9/2018 12:38:00 AM
Chloromethane	1.4	0.15		ppbV	1	10/9/2018 12:38:00 AM
cis-1,2-Dichloroethene	0.54	0.15		ppbV	1	10/9/2018 12:38:00 AM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Cyclohexane	3.6	1.5		ppbV	10	10/10/2018 12:46:00 AM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Ethyl acetate	1.5	0.15		ppbV	1	10/9/2018 12:38:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-02
Lab Order:	C1810010	**Tag Number:**	96,376
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Freon 11	0.58	0.15		ppbV	1	10/9/2018 12:38:00 AM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Freon 12	0.67	0.15		ppbV	1	10/9/2018 12:38:00 AM
Heptane	2.8	1.5		ppbV	10	10/10/2018 12:46:00 AM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Hexane	5.8	1.5		ppbV	10	10/10/2018 12:46:00 AM
Isopropyl alcohol	3.2	1.5		ppbV	10	10/10/2018 12:46:00 AM
m&p-Xylene	0.40	0.30		ppbV	1	10/9/2018 12:38:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 12:38:00 AM
Methyl Ethyl Ketone	2.2	3.0	J	ppbV	10	10/10/2018 12:46:00 AM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 12:38:00 AM
Methyl tert-butyl ether	0.29	0.15		ppbV	1	10/9/2018 12:38:00 AM
Methylene chloride	3.8	1.5		ppbV	10	10/10/2018 12:46:00 AM
o-Xylene	0.23	0.15		ppbV	1	10/9/2018 12:38:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Styrene	0.30	0.15		ppbV	1	10/9/2018 12:38:00 AM
Tetrachloroethylene	0.20	0.15		ppbV	1	10/9/2018 12:38:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Toluene	0.80	0.15		ppbV	1	10/9/2018 12:38:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Trichloroethene	6.3	1.5		ppbV	10	10/10/2018 12:46:00 AM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 12:38:00 AM
Surr: Bromofluorobenzene	106	70-130		%REC	1	10/9/2018 12:38:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-02
Lab Order:	C1810010	**Tag Number:**	237,456
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 3:09:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,2,4-Trimethylbenzene	0.23	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,3,5-Trimethylbenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,4-Dichlorobenzene	0.28	0.15		ppbV	1	10/8/2018 3:09:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 3:09:00 PM
2,2,4-trimethylpentane	0.16	0.15		ppbV	1	10/8/2018 3:09:00 PM
4-ethyltoluene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Acetone	11	3.0		ppbV	10	10/9/2018 3:27:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Benzene	0.26	0.15		ppbV	1	10/8/2018 3:09:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 3:09:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Chloromethane	0.53	0.15		ppbV	1	10/8/2018 3:09:00 PM
cis-1,2-Dichloroethene	0.96	0.040		ppbV	1	10/8/2018 3:09:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Cyclohexane	0.85	0.15		ppbV	1	10/8/2018 3:09:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Ethyl acetate	0.41	0.15		ppbV	1	10/8/2018 3:09:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-02
Lab Order:	C1810010	**Tag Number:**	237,456
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.18	0.15		ppbV	1	10/8/2018 3:09:00 PM
Freon 11	0.49	0.15		ppbV	1	10/8/2018 3:09:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Freon 12	0.40	0.15		ppbV	1	10/8/2018 3:09:00 PM
Heptane	0.45	0.15		ppbV	1	10/8/2018 3:09:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Hexane	0.39	0.15		ppbV	1	10/8/2018 3:09:00 PM
Isopropyl alcohol	3.8	1.5		ppbV	10	10/9/2018 3:27:00 PM
m&p-Xylene	0.61	0.30		ppbV	1	10/8/2018 3:09:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 3:09:00 PM
Methyl Ethyl Ketone	0.98	0.30		ppbV	1	10/8/2018 3:09:00 PM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 3:09:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Methylene chloride	0.50	0.15		ppbV	1	10/8/2018 3:09:00 PM
o-Xylene	0.21	0.15		ppbV	1	10/8/2018 3:09:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Styrene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Tetrachloroethylene	0.28	0.15		ppbV	1	10/8/2018 3:09:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Toluene	2.0	0.15		ppbV	1	10/8/2018 3:09:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Trichloroethene	5.9	0.30		ppbV	10	10/9/2018 3:27:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 3:09:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 3:09:00 PM
Surr: Bromofluorobenzene	91.0	70-130		%REC	1	10/8/2018 3:09:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-03
Lab Order:	C1810010	**Tag Number:**	457,434
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-005A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 3:49:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,2,4-Trimethylbenzene	0.12	0.15	J	ppbV	1	10/8/2018 3:49:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,2-Dichloroethane	0.24	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,3,5-Trimethylbenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 3:49:00 PM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
4-ethyltoluene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Acetone	13	3.0		ppbV	10	10/9/2018 4:04:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Benzene	0.20	0.15		ppbV	1	10/8/2018 3:49:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 3:49:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Chloromethane	0.50	0.15		ppbV	1	10/8/2018 3:49:00 PM
cis-1,2-Dichloroethene	1.1	0.040		ppbV	1	10/8/2018 3:49:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Cyclohexane	0.18	0.15		ppbV	1	10/8/2018 3:49:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Ethyl acetate	0.35	0.15		ppbV	1	10/8/2018 3:49:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-03
Lab Order:	C1810010	**Tag Number:**	457,434
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-005A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.12	0.15	J	ppbV	1	10/8/2018 3:49:00 PM
Freon 11	0.23	0.15		ppbV	1	10/8/2018 3:49:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Freon 12	0.40	0.15		ppbV	1	10/8/2018 3:49:00 PM
Heptane	1.5	0.15		ppbV	1	10/8/2018 3:49:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Hexane	0.28	0.15		ppbV	1	10/8/2018 3:49:00 PM
Isopropyl alcohol	11	1.5		ppbV	10	10/9/2018 4:04:00 PM
m&p-Xylene	0.27	0.30	J	ppbV	1	10/8/2018 3:49:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 3:49:00 PM
Methyl Ethyl Ketone	0.63	0.30		ppbV	1	10/8/2018 3:49:00 PM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 3:49:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Methylene chloride	0.43	0.15		ppbV	1	10/8/2018 3:49:00 PM
o-Xylene	0.10	0.15	J	ppbV	1	10/8/2018 3:49:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Styrene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Toluene	0.94	0.15		ppbV	1	10/8/2018 3:49:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Trichloroethene	2.4	0.030		ppbV	1	10/8/2018 3:49:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 3:49:00 PM
Surr: Bromofluorobenzene	89.0	70-130		%REC	1	10/8/2018 3:49:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-03
Lab Order:	C1810010	**Tag Number:**	459,304
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-006A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	0.19	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,1-Dichloroethene	4.0	1.4		ppbV	9	10/10/2018 2:04:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,2,4-Trimethylbenzene	1.2	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,3,5-Trimethylbenzene	0.70	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 10:45:00 AM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
4-ethyltoluene	0.30	0.15		ppbV	1	10/9/2018 10:45:00 AM
Acetone	19	2.7		ppbV	9	10/10/2018 2:04:00 AM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Benzene	1.5	0.15		ppbV	1	10/9/2018 10:45:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Carbon disulfide	1.6	0.15		ppbV	1	10/9/2018 10:45:00 AM
Carbon tetrachloride	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Chloroethane	0.22	0.15		ppbV	1	10/9/2018 10:45:00 AM
Chloroform	4.3	1.4		ppbV	9	10/10/2018 2:04:00 AM
Chloromethane	0.30	0.15		ppbV	1	10/9/2018 10:45:00 AM
cis-1,2-Dichloroethene	2300	1100		ppbV	7290	10/10/2018 1:15:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Cyclohexane	10	1.4		ppbV	9	10/10/2018 2:04:00 AM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Ethyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-03
Lab Order:	C1810010	**Tag Number:**	459,304
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-006A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.28	0.15		ppbV	1	10/9/2018 10:45:00 AM
Freon 11	0.26	0.15		ppbV	1	10/9/2018 10:45:00 AM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Freon 12	0.42	0.15		ppbV	1	10/9/2018 10:45:00 AM
Heptane	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Hexane	3.7	1.4		ppbV	9	10/10/2018 2:04:00 AM
Isopropyl alcohol	2.7	1.4		ppbV	9	10/10/2018 2:04:00 AM
m&p-Xylene	0.89	0.30		ppbV	1	10/9/2018 10:45:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 10:45:00 AM
Methyl Ethyl Ketone	1.7	2.7	J	ppbV	9	10/10/2018 2:04:00 AM
Methyl Isobutyl Ketone	0.59	0.30		ppbV	1	10/9/2018 10:45:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Methylene chloride	3.0	1.4		ppbV	9	10/10/2018 2:04:00 AM
o-Xylene	0.37	0.15		ppbV	1	10/9/2018 10:45:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Styrene	0.34	0.15		ppbV	1	10/9/2018 10:45:00 AM
Tetrachloroethylene	5.6	1.4		ppbV	9	10/10/2018 2:04:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Toluene	2.2	1.4		ppbV	9	10/10/2018 2:04:00 AM
trans-1,2-Dichloroethene	8.8	1.4		ppbV	9	10/10/2018 2:04:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Trichloroethene	4200	1100		ppbV	7290	10/10/2018 1:15:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 10:45:00 AM
Vinyl chloride	0.41	0.15		ppbV	1	10/9/2018 10:45:00 AM
Surr: Bromofluorobenzene	102	70-130		%REC	1	10/9/2018 10:45:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	FD-01-20181001
Lab Order:	C1810010	**Tag Number:**	95,304
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-007A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	0.18	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,1-Dichloroethene	3.7	1.4		ppbV	9	10/10/2018 3:21:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,2,4-Trimethylbenzene	1.2	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,3,5-Trimethylbenzene	0.74	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 2:01:00 AM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
4-ethyltoluene	0.29	0.15		ppbV	1	10/9/2018 2:01:00 AM
Acetone	17	2.7		ppbV	9	10/10/2018 3:21:00 AM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Benzene	1.5	0.15		ppbV	1	10/9/2018 2:01:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Carbon disulfide	1.5	0.15		ppbV	1	10/9/2018 2:01:00 AM
Carbon tetrachloride	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Chloroform	4.1	1.4		ppbV	9	10/10/2018 3:21:00 AM
Chloromethane	0.43	0.15		ppbV	1	10/9/2018 2:01:00 AM
cis-1,2-Dichloroethene	2000	1100		ppbV	7290	10/10/2018 1:52:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Cyclohexane	9.4	1.4		ppbV	9	10/10/2018 3:21:00 AM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Ethyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	FD-01-20181001
Lab Order:	C1810010	**Tag Number:**	95,304
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-007A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.26	0.15		ppbV	1	10/9/2018 2:01:00 AM
Freon 11	0.26	0.15		ppbV	1	10/9/2018 2:01:00 AM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Freon 12	0.37	0.15		ppbV	1	10/9/2018 2:01:00 AM
Heptane	2.2	1.4		ppbV	9	10/10/2018 3:21:00 AM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Hexane	3.3	1.4		ppbV	9	10/10/2018 3:21:00 AM
Isopropyl alcohol	1.5	0.15		ppbV	1	10/9/2018 2:01:00 AM
m&p-Xylene	0.84	0.30		ppbV	1	10/9/2018 2:01:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 2:01:00 AM
Methyl Ethyl Ketone	2.0	0.30		ppbV	1	10/9/2018 2:01:00 AM
Methyl Isobutyl Ketone	0.56	0.30		ppbV	1	10/9/2018 2:01:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Methylene chloride	3.0	1.4		ppbV	9	10/10/2018 3:21:00 AM
o-Xylene	0.35	0.15		ppbV	1	10/9/2018 2:01:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Styrene	0.35	0.15		ppbV	1	10/9/2018 2:01:00 AM
Tetrachloroethylene	5.8	1.4		ppbV	9	10/10/2018 3:21:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Toluene	2.2	1.4		ppbV	9	10/10/2018 3:21:00 AM
trans-1,2-Dichloroethene	8.4	1.4		ppbV	9	10/10/2018 3:21:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Trichloroethene	3100	1100		ppbV	7290	10/10/2018 1:52:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 2:01:00 AM
Vinyl chloride	0.42	0.15		ppbV	1	10/9/2018 2:01:00 AM
Surr: Bromofluorobenzene	108	70-130		%REC	1	10/9/2018 2:01:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-04
Lab Order:	C1810010	**Tag Number:**	554,399
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-008A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,2,4-Trimethylbenzene	1.1	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,3,5-Trimethylbenzene	0.58	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 2:42:00 AM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
4-ethyltoluene	0.28	0.15		ppbV	1	10/9/2018 2:42:00 AM
Acetone	15	3.0		ppbV	10	10/10/2018 4:35:00 AM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Benzene	0.31	0.15		ppbV	1	10/9/2018 2:42:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Carbon tetrachloride	0.21	0.15		ppbV	1	10/9/2018 2:42:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Chloroform	0.18	0.15		ppbV	1	10/9/2018 2:42:00 AM
Chloromethane	0.41	0.15		ppbV	1	10/9/2018 2:42:00 AM
cis-1,2-Dichloroethene	1.6	0.15		ppbV	1	10/9/2018 2:42:00 AM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Cyclohexane	1.3	0.15		ppbV	1	10/9/2018 2:42:00 AM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Ethyl acetate	0.70	0.15		ppbV	1	10/9/2018 2:42:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-04
Lab Order:	C1810010	**Tag Number:**	554,399
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-008A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.13	0.15	J	ppbV	1	10/9/2018 2:42:00 AM
Freon 11	0.52	0.15		ppbV	1	10/9/2018 2:42:00 AM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Freon 12	0.51	0.15		ppbV	1	10/9/2018 2:42:00 AM
Heptane	0.98	0.15		ppbV	1	10/9/2018 2:42:00 AM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Hexane	0.87	0.15		ppbV	1	10/9/2018 2:42:00 AM
Isopropyl alcohol	2.0	0.15		ppbV	1	10/9/2018 2:42:00 AM
m&p-Xylene	0.33	0.30		ppbV	1	10/9/2018 2:42:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 2:42:00 AM
Methyl Ethyl Ketone	1.5	0.30		ppbV	1	10/9/2018 2:42:00 AM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 2:42:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Methylene chloride	3.1	1.5		ppbV	10	10/10/2018 4:35:00 AM
o-Xylene	0.18	0.15		ppbV	1	10/9/2018 2:42:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Styrene	0.26	0.15		ppbV	1	10/9/2018 2:42:00 AM
Tetrachloroethylene	0.53	0.15		ppbV	1	10/9/2018 2:42:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Toluene	0.92	0.15		ppbV	1	10/9/2018 2:42:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Trichloroethene	4.0	1.5		ppbV	10	10/10/2018 4:35:00 AM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 2:42:00 AM
Surr: Bromofluorobenzene	99.0	70-130		%REC	1	10/9/2018 2:42:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-04
Lab Order:	C1810010	**Tag Number:**	318,432
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-009A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 4:30:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,2,4-Trimethylbenzene	0.29	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,3,5-Trimethylbenzene	0.20	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,4-Dichlorobenzene	1.9	0.15		ppbV	1	10/8/2018 4:30:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 4:30:00 PM
2,2,4-trimethylpentane	0.29	0.15		ppbV	1	10/8/2018 4:30:00 PM
4-ethyltoluene	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Acetone	18	3.0		ppbV	10	10/9/2018 4:41:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Benzene	0.21	0.15		ppbV	1	10/8/2018 4:30:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Carbon tetrachloride	0.080	0.030		ppbV	1	10/8/2018 4:30:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Chloromethane	0.72	0.15		ppbV	1	10/8/2018 4:30:00 PM
cis-1,2-Dichloroethene	1.8	0.040		ppbV	1	10/8/2018 4:30:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Cyclohexane	0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Ethyl acetate	0.53	0.15		ppbV	1	10/8/2018 4:30:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-04
Lab Order:	C1810010	**Tag Number:**	318,432
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-009A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.16	0.15		ppbV	1	10/8/2018 4:30:00 PM
Freon 11	1.5	0.15		ppbV	1	10/8/2018 4:30:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Freon 12	0.46	0.15		ppbV	1	10/8/2018 4:30:00 PM
Heptane	0.37	0.15		ppbV	1	10/8/2018 4:30:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Hexane	0.44	0.15		ppbV	1	10/8/2018 4:30:00 PM
Isopropyl alcohol	3.8	1.5		ppbV	10	10/9/2018 4:41:00 PM
m&p-Xylene	0.52	0.30		ppbV	1	10/8/2018 4:30:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 4:30:00 PM
Methyl Ethyl Ketone	0.81	0.30		ppbV	1	10/8/2018 4:30:00 PM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 4:30:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Methylene chloride	0.62	0.15		ppbV	1	10/8/2018 4:30:00 PM
o-Xylene	0.19	0.15		ppbV	1	10/8/2018 4:30:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Styrene	0.11	0.15	J	ppbV	1	10/8/2018 4:30:00 PM
Tetrachloroethylene	0.87	0.15		ppbV	1	10/8/2018 4:30:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Toluene	1.5	0.15		ppbV	1	10/8/2018 4:30:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Trichloroethene	2.9	0.30		ppbV	10	10/9/2018 4:41:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 4:30:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 4:30:00 PM
Surr: Bromofluorobenzene	93.0	70-130		%REC	1	10/8/2018 4:30:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-05
Lab Order:	C1810010	**Tag Number:**	542,373
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-010A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,2,4-Trimethylbenzene	1.1	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,3,5-Trimethylbenzene	0.56	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 4:02:00 AM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
4-ethyltoluene	0.27	0.15		ppbV	1	10/9/2018 4:02:00 AM
Acetone	26	3.0		ppbV	10	10/10/2018 5:12:00 AM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Benzene	0.29	0.15		ppbV	1	10/9/2018 4:02:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Carbon tetrachloride	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Chloroform	0.25	0.15		ppbV	1	10/9/2018 4:02:00 AM
Chloromethane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
cis-1,2-Dichloroethene	0.40	0.15		ppbV	1	10/9/2018 4:02:00 AM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Cyclohexane	2.6	1.5		ppbV	10	10/10/2018 5:12:00 AM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Ethyl acetate	0.71	0.15		ppbV	1	10/9/2018 4:02:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-05
Lab Order:	C1810010	**Tag Number:**	542,373
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-010A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.13	0.15	J	ppbV	1	10/9/2018 4:02:00 AM
Freon 11	0.47	0.15		ppbV	1	10/9/2018 4:02:00 AM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Freon 12	0.43	0.15		ppbV	1	10/9/2018 4:02:00 AM
Heptane	2.0	1.5		ppbV	10	10/10/2018 5:12:00 AM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Hexane	4.0	1.5		ppbV	10	10/10/2018 5:12:00 AM
Isopropyl alcohol	3.8	1.5		ppbV	10	10/10/2018 5:12:00 AM
m&p-Xylene	0.32	0.30		ppbV	1	10/9/2018 4:02:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 4:02:00 AM
Methyl Ethyl Ketone	1.6	0.30		ppbV	1	10/9/2018 4:02:00 AM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 4:02:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Methylene chloride	2.9	1.5		ppbV	10	10/10/2018 5:12:00 AM
o-Xylene	0.19	0.15		ppbV	1	10/9/2018 4:02:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Styrene	0.25	0.15		ppbV	1	10/9/2018 4:02:00 AM
Tetrachloroethylene	0.23	0.15		ppbV	1	10/9/2018 4:02:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Toluene	0.77	0.15		ppbV	1	10/9/2018 4:02:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Trichloroethene	2.8	1.5		ppbV	10	10/10/2018 5:12:00 AM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 4:02:00 AM
Surr: Bromofluorobenzene	103	70-130		%REC	1	10/9/2018 4:02:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-05
Lab Order:	C1810010	**Tag Number:**	479,446
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-011A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-8			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 5:12:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,2,4-Trimethylbenzene	0.45	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,3,5-Trimethylbenzene	0.30	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
1,4-Dichlorobenzene	1.8	1.5		ppbV	10	10/9/2018 5:18:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 5:12:00 PM
2,2,4-trimethylpentane	0.33	0.15		ppbV	1	10/8/2018 5:12:00 PM
4-ethyltoluene	0.11	0.15	J	ppbV	1	10/8/2018 5:12:00 PM
Acetone	25	3.0		ppbV	10	10/9/2018 5:18:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Benzene	0.29	0.15		ppbV	1	10/8/2018 5:12:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Carbon disulfide	0.89	0.15		ppbV	1	10/8/2018 5:12:00 PM
Carbon tetrachloride	0.080	0.030		ppbV	1	10/8/2018 5:12:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Chloromethane	0.74	0.15		ppbV	1	10/8/2018 5:12:00 PM
cis-1,2-Dichloroethene	3.3	0.40		ppbV	10	10/9/2018 5:18:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Cyclohexane	0.16	0.15		ppbV	1	10/8/2018 5:12:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Ethyl acetate	0.59	0.15		ppbV	1	10/8/2018 5:12:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-05
Lab Order:	C1810010	**Tag Number:**	479,446
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-011A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.19	0.15		ppbV	1	10/8/2018 5:12:00 PM
Freon 11	0.75	0.15		ppbV	1	10/8/2018 5:12:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Freon 12	0.44	0.15		ppbV	1	10/8/2018 5:12:00 PM
Heptane	0.38	0.15		ppbV	1	10/8/2018 5:12:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Hexane	0.48	0.15		ppbV	1	10/8/2018 5:12:00 PM
Isopropyl alcohol	7.0	1.5		ppbV	10	10/9/2018 5:18:00 PM
m&p-Xylene	0.75	0.30		ppbV	1	10/8/2018 5:12:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 5:12:00 PM
Methyl Ethyl Ketone	0.88	0.30		ppbV	1	10/8/2018 5:12:00 PM
Methyl Isobutyl Ketone	0.62	0.30		ppbV	1	10/8/2018 5:12:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Methylene chloride	0.52	0.15		ppbV	1	10/8/2018 5:12:00 PM
o-Xylene	0.28	0.15		ppbV	1	10/8/2018 5:12:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Styrene	0.14	0.15	J	ppbV	1	10/8/2018 5:12:00 PM
Tetrachloroethylene	2.7	1.5		ppbV	10	10/9/2018 5:18:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Toluene	1.8	0.15		ppbV	1	10/8/2018 5:12:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Trichloroethene	13	0.30		ppbV	10	10/9/2018 5:18:00 PM
Vinyl acetate	0.10	0.15	J	ppbV	1	10/8/2018 5:12:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 5:12:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 5:12:00 PM
Surr: Bromofluorobenzene	98.0	70-130		%REC	1	10/8/2018 5:12:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-06
Lab Order:	C1810010	**Tag Number:**	233,386
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-012A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	0.52	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,1-Dichloroethene	1.5	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,2,4-Trimethylbenzene	1.0	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,3,5-Trimethylbenzene	0.55	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 4:42:00 AM
2,2,4-trimethylpentane	0.18	0.15		ppbV	1	10/9/2018 4:42:00 AM
4-ethyltoluene	0.26	0.15		ppbV	1	10/9/2018 4:42:00 AM
Acetone	82	27		ppbV	90	10/10/2018 6:30:00 AM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Benzene	0.65	0.15		ppbV	1	10/9/2018 4:42:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Carbon disulfide	3.0	1.4		ppbV	9	10/10/2018 5:53:00 AM
Carbon tetrachloride	0.22	0.15		ppbV	1	10/9/2018 4:42:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Chloroethane	2.1	0.15		ppbV	1	10/9/2018 4:42:00 AM
Chloroform	50	14		ppbV	90	10/10/2018 6:30:00 AM
Chloromethane	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
cis-1,2-Dichloroethene	180	14		ppbV	90	10/10/2018 6:30:00 AM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Cyclohexane	8.8	1.4		ppbV	9	10/10/2018 5:53:00 AM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Ethyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-06
Lab Order:	C1810010	**Tag Number:**	233,386
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-012A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.13	0.15	J	ppbV	1	10/9/2018 4:42:00 AM
Freon 11	0.45	0.15		ppbV	1	10/9/2018 4:42:00 AM
Freon 113	0.74	0.15		ppbV	1	10/9/2018 4:42:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Freon 12	0.49	0.15		ppbV	1	10/9/2018 4:42:00 AM
Heptane	4.7	1.4		ppbV	9	10/10/2018 5:53:00 AM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Hexane	12	1.4		ppbV	9	10/10/2018 5:53:00 AM
Isopropyl alcohol	4.3	1.4		ppbV	9	10/10/2018 5:53:00 AM
m&p-Xylene	0.36	0.30		ppbV	1	10/9/2018 4:42:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 4:42:00 AM
Methyl Ethyl Ketone	2.1	0.30		ppbV	1	10/9/2018 4:42:00 AM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 4:42:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Methylene chloride	4.1	1.4		ppbV	9	10/10/2018 5:53:00 AM
o-Xylene	0.19	0.15		ppbV	1	10/9/2018 4:42:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Styrene	0.25	0.15		ppbV	1	10/9/2018 4:42:00 AM
Tetrachloroethylene	1.4	0.15		ppbV	1	10/9/2018 4:42:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Toluene	0.83	0.15		ppbV	1	10/9/2018 4:42:00 AM
trans-1,2-Dichloroethene	19	1.4		ppbV	9	10/10/2018 5:53:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Trichloroethene	610	40		ppbV	270	10/10/2018 2:29:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 4:42:00 AM
Vinyl chloride	0.64	0.15		ppbV	1	10/9/2018 4:42:00 AM
Surr: Bromofluorobenzene	100	70-130		%REC	1	10/9/2018 4:42:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-06
Lab Order:	C1810010	**Tag Number:**	327,453
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-013A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 5:53:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,2,4-Trimethylbenzene	0.26	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,2-Dichloroethane	0.33	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,3,5-Trimethylbenzene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,4-Dichlorobenzene	0.26	0.15		ppbV	1	10/8/2018 5:53:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 5:53:00 PM
2,2,4-trimethylpentane	0.79	0.15		ppbV	1	10/8/2018 5:53:00 PM
4-ethyltoluene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Acetone	14	3.0		ppbV	10	10/9/2018 5:55:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Benzene	0.51	0.15		ppbV	1	10/8/2018 5:53:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 5:53:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Chloromethane	0.57	0.15		ppbV	1	10/8/2018 5:53:00 PM
cis-1,2-Dichloroethene	3.5	0.40		ppbV	10	10/9/2018 5:55:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Cyclohexane	0.20	0.15		ppbV	1	10/8/2018 5:53:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Ethyl acetate	0.53	0.15		ppbV	1	10/8/2018 5:53:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-06
Lab Order:	C1810010	**Tag Number:**	327,453
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-013A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.19	0.15		ppbV	1	10/8/2018 5:53:00 PM
Freon 11	0.54	0.15		ppbV	1	10/8/2018 5:53:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Freon 12	0.48	0.15		ppbV	1	10/8/2018 5:53:00 PM
Heptane	0.36	0.15		ppbV	1	10/8/2018 5:53:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Hexane	0.62	0.15		ppbV	1	10/8/2018 5:53:00 PM
Isopropyl alcohol	3.0	1.5		ppbV	10	10/9/2018 5:55:00 PM
m&p-Xylene	0.63	0.30		ppbV	1	10/8/2018 5:53:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 5:53:00 PM
Methyl Ethyl Ketone	1.0	0.30		ppbV	1	10/8/2018 5:53:00 PM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 5:53:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Methylene chloride	0.32	0.15		ppbV	1	10/8/2018 5:53:00 PM
o-Xylene	0.22	0.15		ppbV	1	10/8/2018 5:53:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Styrene	0.11	0.15	J	ppbV	1	10/8/2018 5:53:00 PM
Tetrachloroethylene	1.7	0.15		ppbV	1	10/8/2018 5:53:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Toluene	1.8	0.15		ppbV	1	10/8/2018 5:53:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Trichloroethene	12	0.30		ppbV	10	10/9/2018 5:55:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 5:53:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 5:53:00 PM
Surr: Bromofluorobenzene	92.0	70-130		%REC	1	10/8/2018 5:53:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-07
Lab Order:	C1810010	**Tag Number:**	232,452
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-014A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,2,4-Trimethylbenzene	0.96	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,3,5-Trimethylbenzene	0.51	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 5:22:00 AM
2,2,4-trimethylpentane	0.27	0.15		ppbV	1	10/9/2018 5:22:00 AM
4-ethyltoluene	0.24	0.15		ppbV	1	10/9/2018 5:22:00 AM
Acetone	50	12		ppbV	40	10/10/2018 3:43:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Benzene	0.82	0.15		ppbV	1	10/9/2018 5:22:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Carbon disulfide	1.1	0.15		ppbV	1	10/9/2018 5:22:00 AM
Carbon tetrachloride	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Chloroethane	0.51	0.15		ppbV	1	10/9/2018 5:22:00 AM
Chloroform	3.6	1.5		ppbV	10	10/10/2018 3:06:00 PM
Chloromethane	0.60	0.15		ppbV	1	10/9/2018 5:22:00 AM
cis-1,2-Dichloroethene	2.9	1.5		ppbV	10	10/10/2018 3:06:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Cyclohexane	11	1.5		ppbV	10	10/10/2018 3:06:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Ethyl acetate	0.78	0.15		ppbV	1	10/9/2018 5:22:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-07
Lab Order:	C1810010	**Tag Number:**	232,452
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-014A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.12	0.15	J	ppbV	1	10/9/2018 5:22:00 AM
Freon 11	0.66	0.15		ppbV	1	10/9/2018 5:22:00 AM
Freon 113	0.11	0.15	J	ppbV	1	10/9/2018 5:22:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Freon 12	0.61	0.15		ppbV	1	10/9/2018 5:22:00 AM
Heptane	6.2	1.5		ppbV	10	10/10/2018 3:06:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Hexane	16	1.5		ppbV	10	10/10/2018 3:06:00 PM
Isopropyl alcohol	3.2	1.5		ppbV	10	10/10/2018 3:06:00 PM
m&p-Xylene	0.33	0.30		ppbV	1	10/9/2018 5:22:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 5:22:00 AM
Methyl Ethyl Ketone	1.9	0.30		ppbV	1	10/9/2018 5:22:00 AM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 5:22:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Methylene chloride	2.8	1.5		ppbV	10	10/10/2018 3:06:00 PM
o-Xylene	0.17	0.15		ppbV	1	10/9/2018 5:22:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Styrene	0.23	0.15		ppbV	1	10/9/2018 5:22:00 AM
Tetrachloroethylene	0.24	0.15		ppbV	1	10/9/2018 5:22:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Toluene	0.77	0.15		ppbV	1	10/9/2018 5:22:00 AM
trans-1,2-Dichloroethene	1.2	0.15		ppbV	1	10/9/2018 5:22:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Trichloroethene	18	1.5		ppbV	10	10/10/2018 3:06:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 5:22:00 AM
Vinyl chloride	0.44	0.15		ppbV	1	10/9/2018 5:22:00 AM
Surr: Bromofluorobenzene	100	70-130		%REC	1	10/9/2018 5:22:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-07
Lab Order:	C1810010	**Tag Number:**	1450,395
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-015A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 6:33:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,2,4-Trimethylbenzene	0.37	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,2-Dichloroethane	0.31	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,3,5-Trimethylbenzene	0.18	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,4-Dichlorobenzene	0.29	0.15		ppbV	1	10/8/2018 6:33:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 6:33:00 PM
2,2,4-trimethylpentane	0.84	0.15		ppbV	1	10/8/2018 6:33:00 PM
4-ethyltoluene	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Acetone	16	3.0		ppbV	10	10/9/2018 6:33:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Benzene	0.56	0.15		ppbV	1	10/8/2018 6:33:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 6:33:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Chloromethane	0.41	0.15		ppbV	1	10/8/2018 6:33:00 PM
cis-1,2-Dichloroethene	3.2	0.40		ppbV	10	10/9/2018 6:33:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Cyclohexane	0.18	0.15		ppbV	1	10/8/2018 6:33:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Ethyl acetate	0.49	0.15		ppbV	1	10/8/2018 6:33:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-07
Lab Order:	C1810010	**Tag Number:**	1450,395
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-015A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.21	0.15		ppbV	1	10/8/2018 6:33:00 PM
Freon 11	0.54	0.15		ppbV	1	10/8/2018 6:33:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Freon 12	0.43	0.15		ppbV	1	10/8/2018 6:33:00 PM
Heptane	0.34	0.15		ppbV	1	10/8/2018 6:33:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Hexane	0.74	0.15		ppbV	1	10/8/2018 6:33:00 PM
Isopropyl alcohol	2.0	0.15		ppbV	1	10/8/2018 6:33:00 PM
m&p-Xylene	0.68	0.30		ppbV	1	10/8/2018 6:33:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 6:33:00 PM
Methyl Ethyl Ketone	1.0	0.30		ppbV	1	10/8/2018 6:33:00 PM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 6:33:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Methylene chloride	0.30	0.15		ppbV	1	10/8/2018 6:33:00 PM
o-Xylene	0.24	0.15		ppbV	1	10/8/2018 6:33:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Styrene	0.11	0.15	J	ppbV	1	10/8/2018 6:33:00 PM
Tetrachloroethylene	1.3	0.15		ppbV	1	10/8/2018 6:33:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Toluene	2.1	0.15		ppbV	1	10/8/2018 6:33:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Trichloroethene	9.4	0.30		ppbV	10	10/9/2018 6:33:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 6:33:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 6:33:00 PM
Surr: Bromofluorobenzene	91.0	70-130		%REC	1	10/8/2018 6:33:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-08
Lab Order:	C1810010	**Tag Number:**	368,437
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-016A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,2,4-Trimethylbenzene	0.82	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,3,5-Trimethylbenzene	0.49	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 6:02:00 AM
2,2,4-trimethylpentane	0.21	0.15		ppbV	1	10/9/2018 6:02:00 AM
4-ethyltoluene	0.20	0.15		ppbV	1	10/9/2018 6:02:00 AM
Acetone	77	12		ppbV	40	10/10/2018 4:57:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Benzene	0.72	0.15		ppbV	1	10/9/2018 6:02:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Carbon disulfide	0.81	0.15		ppbV	1	10/9/2018 6:02:00 AM
Carbon tetrachloride	1.0	0.15		ppbV	1	10/9/2018 6:02:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Chloroethane	0.62	0.15		ppbV	1	10/9/2018 6:02:00 AM
Chloroform	0.28	0.15		ppbV	1	10/9/2018 6:02:00 AM
Chloromethane	1.1	0.15		ppbV	1	10/9/2018 6:02:00 AM
cis-1,2-Dichloroethene	0.97	0.15		ppbV	1	10/9/2018 6:02:00 AM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Cyclohexane	17	1.5		ppbV	10	10/10/2018 4:20:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Ethyl acetate	0.99	0.15		ppbV	1	10/9/2018 6:02:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-08
Lab Order:	C1810010	**Tag Number:**	368,437
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-016A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.14	0.15	J	ppbV	1	10/9/2018 6:02:00 AM
Freon 11	0.32	0.15		ppbV	1	10/9/2018 6:02:00 AM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Freon 12	0.48	0.15		ppbV	1	10/9/2018 6:02:00 AM
Heptane	3.9	1.5		ppbV	10	10/10/2018 4:20:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Hexane	9.6	1.5		ppbV	10	10/10/2018 4:20:00 PM
Isopropyl alcohol	56	6.0		ppbV	40	10/10/2018 4:57:00 PM
m&p-Xylene	0.35	0.30		ppbV	1	10/9/2018 6:02:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 6:02:00 AM
Methyl Ethyl Ketone	2.0	0.30		ppbV	1	10/9/2018 6:02:00 AM
Methyl Isobutyl Ketone	0.28	0.30	J	ppbV	1	10/9/2018 6:02:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Methylene chloride	3.1	1.5		ppbV	10	10/10/2018 4:20:00 PM
o-Xylene	0.17	0.15		ppbV	1	10/9/2018 6:02:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Styrene	0.23	0.15		ppbV	1	10/9/2018 6:02:00 AM
Tetrachloroethylene	0.46	0.15		ppbV	1	10/9/2018 6:02:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Toluene	2.2	1.5		ppbV	10	10/10/2018 4:20:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Trichloroethene	8.1	1.5		ppbV	10	10/10/2018 4:20:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 6:02:00 AM
Surr: Bromofluorobenzene	98.0	70-130		%REC	1	10/9/2018 6:02:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-08
Lab Order:	C1810010	**Tag Number:**	284,448
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-017A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 7:13:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,2,4-Trimethylbenzene	0.30	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,3,5-Trimethylbenzene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,4-Dichlorobenzene	0.42	0.15		ppbV	1	10/8/2018 7:13:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 7:13:00 PM
2,2,4-trimethylpentane	0.45	0.15		ppbV	1	10/8/2018 7:13:00 PM
4-ethyltoluene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Acetone	19	6.0		ppbV	20	10/9/2018 7:11:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Benzene	0.19	0.15		ppbV	1	10/8/2018 7:13:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 7:13:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Chloromethane	0.48	0.15		ppbV	1	10/8/2018 7:13:00 PM
cis-1,2-Dichloroethene	3.1	0.040		ppbV	1	10/8/2018 7:13:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Cyclohexane	0.13	0.15	J	ppbV	1	10/8/2018 7:13:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Ethyl acetate	0.28	0.15		ppbV	1	10/8/2018 7:13:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-08
Lab Order:	C1810010	**Tag Number:**	284,448
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-017A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.12	0.15	J	ppbV	1	10/8/2018 7:13:00 PM
Freon 11	0.90	0.15		ppbV	1	10/8/2018 7:13:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Freon 12	0.47	0.15		ppbV	1	10/8/2018 7:13:00 PM
Heptane	0.23	0.15		ppbV	1	10/8/2018 7:13:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Hexane	0.31	0.15		ppbV	1	10/8/2018 7:13:00 PM
Isopropyl alcohol	2.0	0.15		ppbV	1	10/8/2018 7:13:00 PM
m&p-Xylene	0.44	0.30		ppbV	1	10/8/2018 7:13:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 7:13:00 PM
Methyl Ethyl Ketone	0.67	0.30		ppbV	1	10/8/2018 7:13:00 PM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 7:13:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Methylene chloride	0.36	0.15		ppbV	1	10/8/2018 7:13:00 PM
o-Xylene	0.17	0.15		ppbV	1	10/8/2018 7:13:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Styrene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Tetrachloroethylene	0.28	0.15		ppbV	1	10/8/2018 7:13:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Toluene	1.1	0.15		ppbV	1	10/8/2018 7:13:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Trichloroethene	5.2	0.60		ppbV	20	10/9/2018 7:11:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 7:13:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 7:13:00 PM
Surr: Bromofluorobenzene	88.0	70-130		%REC	1	10/8/2018 7:13:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-09
Lab Order:	C1810010	**Tag Number:**	564,1171
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-018A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-3			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,2,4-Trimethylbenzene	0.88	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,3,5-Trimethylbenzene	0.53	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 6:43:00 AM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
4-ethyltoluene	0.26	0.15		ppbV	1	10/9/2018 6:43:00 AM
Acetone	50	12		ppbV	40	10/10/2018 6:12:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Benzene	0.16	0.15		ppbV	1	10/9/2018 6:43:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Carbon tetrachloride	0.11	0.15	J	ppbV	1	10/9/2018 6:43:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Chloroform	0.13	0.15	J	ppbV	1	10/9/2018 6:43:00 AM
Chloromethane	1.3	0.15		ppbV	1	10/9/2018 6:43:00 AM
cis-1,2-Dichloroethene	0.23	0.15		ppbV	1	10/9/2018 6:43:00 AM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Cyclohexane	0.50	0.15		ppbV	1	10/9/2018 6:43:00 AM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Ethyl acetate	0.75	0.15		ppbV	1	10/9/2018 6:43:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-09
Lab Order:	C1810010	**Tag Number:**	564,1171
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-018A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.14	0.15	J	ppbV	1	10/9/2018 6:43:00 AM
Freon 11	1.2	0.15		ppbV	1	10/9/2018 6:43:00 AM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Freon 12	0.49	0.15		ppbV	1	10/9/2018 6:43:00 AM
Heptane	0.48	0.15		ppbV	1	10/9/2018 6:43:00 AM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Hexane	0.69	0.15		ppbV	1	10/9/2018 6:43:00 AM
Isopropyl alcohol	13	1.5		ppbV	10	10/10/2018 5:34:00 PM
m&p-Xylene	0.36	0.30		ppbV	1	10/9/2018 6:43:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 6:43:00 AM
Methyl Ethyl Ketone	1.5	0.30		ppbV	1	10/9/2018 6:43:00 AM
Methyl Isobutyl Ketone	0.14	0.30	J	ppbV	1	10/9/2018 6:43:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Methylene chloride	4.0	1.5		ppbV	10	10/10/2018 5:34:00 PM
o-Xylene	0.19	0.15		ppbV	1	10/9/2018 6:43:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Styrene	0.22	0.15		ppbV	1	10/9/2018 6:43:00 AM
Tetrachloroethylene	0.14	0.15	J	ppbV	1	10/9/2018 6:43:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Toluene	2.1	0.15		ppbV	1	10/9/2018 6:43:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Trichloroethene	1.4	0.15		ppbV	1	10/9/2018 6:43:00 AM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 6:43:00 AM
Surr: Bromofluorobenzene	103	70-130		%REC	1	10/9/2018 6:43:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-09
Lab Order:	C1810010	**Tag Number:**	471,377
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-019A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	0.31	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 7:54:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,2,4-Trimethylbenzene	0.82	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,3,5-Trimethylbenzene	0.40	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,4-Dichlorobenzene	0.71	0.15		ppbV	1	10/8/2018 7:54:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 7:54:00 PM
2,2,4-trimethylpentane	0.34	0.15		ppbV	1	10/8/2018 7:54:00 PM
4-ethyltoluene	0.22	0.15		ppbV	1	10/8/2018 7:54:00 PM
Acetone	14	3.0		ppbV	10	10/9/2018 7:48:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Benzene	0.28	0.15		ppbV	1	10/8/2018 7:54:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 7:54:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Chloromethane	0.59	0.15		ppbV	1	10/8/2018 7:54:00 PM
cis-1,2-Dichloroethene	2.0	0.040		ppbV	1	10/8/2018 7:54:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Cyclohexane	0.23	0.15		ppbV	1	10/8/2018 7:54:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Ethyl acetate	0.90	0.15		ppbV	1	10/8/2018 7:54:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-09
Lab Order:	C1810010	**Tag Number:**	471,377
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-019A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.41	0.15		ppbV	1	10/8/2018 7:54:00 PM
Freon 11	3.0	1.5		ppbV	10	10/9/2018 7:48:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Freon 12	0.44	0.15		ppbV	1	10/8/2018 7:54:00 PM
Heptane	0.68	0.15		ppbV	1	10/8/2018 7:54:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Hexane	0.66	0.15		ppbV	1	10/8/2018 7:54:00 PM
Isopropyl alcohol	4.2	1.5		ppbV	10	10/9/2018 7:48:00 PM
m&p-Xylene	1.5	0.30		ppbV	1	10/8/2018 7:54:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 7:54:00 PM
Methyl Ethyl Ketone	1.7	0.30		ppbV	1	10/8/2018 7:54:00 PM
Methyl Isobutyl Ketone	0.14	0.30	J	ppbV	1	10/8/2018 7:54:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Methylene chloride	2.8	1.5		ppbV	10	10/9/2018 7:48:00 PM
o-Xylene	0.42	0.15		ppbV	1	10/8/2018 7:54:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Styrene	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Tetrachloroethylene	0.43	0.15		ppbV	1	10/8/2018 7:54:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Toluene	2.6	1.5		ppbV	10	10/9/2018 7:48:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Trichloroethene	2.3	0.30		ppbV	10	10/9/2018 7:48:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 7:54:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 7:54:00 PM
Surr: Bromofluorobenzene	95.0	70-130		%REC	1	10/8/2018 7:54:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-10
Lab Order:	C1810010	**Tag Number:**	221,379
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-020A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-4			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	0.10	0.15	J	ppbV	1	10/9/2018 7:25:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,2,4-Trimethylbenzene	1.2	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,3,5-Trimethylbenzene	0.62	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 7:25:00 AM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
4-ethyltoluene	0.29	0.15		ppbV	1	10/9/2018 7:25:00 AM
Acetone	24	12		ppbV	40	10/10/2018 7:35:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Benzene	0.19	0.15		ppbV	1	10/9/2018 7:25:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Carbon tetrachloride	0.16	0.15		ppbV	1	10/9/2018 7:25:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Chloroform	0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Chloromethane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
cis-1,2-Dichloroethene	0.25	0.15		ppbV	1	10/9/2018 7:25:00 AM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Cyclohexane	1.5	0.15		ppbV	1	10/9/2018 7:25:00 AM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Ethyl acetate	0.73	0.15		ppbV	1	10/9/2018 7:25:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-10
Lab Order:	C1810010	**Tag Number:**	221,379
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-020A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.14	0.15	J	ppbV	1	10/9/2018 7:25:00 AM
Freon 11	2.6	1.5		ppbV	10	10/10/2018 6:53:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Freon 12	0.53	0.15		ppbV	1	10/9/2018 7:25:00 AM
Heptane	0.69	0.15		ppbV	1	10/9/2018 7:25:00 AM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Hexane	1.6	0.15		ppbV	1	10/9/2018 7:25:00 AM
Isopropyl alcohol	2.8	1.5		ppbV	10	10/10/2018 6:53:00 PM
m&p-Xylene	0.38	0.30		ppbV	1	10/9/2018 7:25:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 7:25:00 AM
Methyl Ethyl Ketone	1.6	0.30		ppbV	1	10/9/2018 7:25:00 AM
Methyl Isobutyl Ketone	0.13	0.30	J	ppbV	1	10/9/2018 7:25:00 AM
Methyl tert-butyl ether	0.14	0.15	J	ppbV	1	10/9/2018 7:25:00 AM
Methylene chloride	3.0	1.5		ppbV	10	10/10/2018 6:53:00 PM
o-Xylene	0.20	0.15		ppbV	1	10/9/2018 7:25:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Styrene	0.25	0.15		ppbV	1	10/9/2018 7:25:00 AM
Tetrachloroethylene	0.13	0.15	J	ppbV	1	10/9/2018 7:25:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Toluene	0.93	0.15		ppbV	1	10/9/2018 7:25:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Trichloroethene	2.4	1.5		ppbV	10	10/10/2018 6:53:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 7:25:00 AM
Surr: Bromofluorobenzene	106	70-130		%REC	1	10/9/2018 7:25:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-10
Lab Order:	C1810010	**Tag Number:**	568,375
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-021A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	0.22	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 8:34:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,2,4-Trimethylbenzene	0.63	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,3,5-Trimethylbenzene	0.33	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,4-Dichlorobenzene	0.68	0.15		ppbV	1	10/8/2018 8:34:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 8:34:00 PM
2,2,4-trimethylpentane	0.31	0.15		ppbV	1	10/8/2018 8:34:00 PM
4-ethyltoluene	0.18	0.15		ppbV	1	10/8/2018 8:34:00 PM
Acetone	16	3.0		ppbV	10	10/9/2018 8:25:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Benzene	0.26	0.15		ppbV	1	10/8/2018 8:34:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 8:34:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Chloromethane	0.50	0.15		ppbV	1	10/8/2018 8:34:00 PM
cis-1,2-Dichloroethene	1.8	0.40		ppbV	10	10/9/2018 8:25:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Cyclohexane	0.76	0.15		ppbV	1	10/8/2018 8:34:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Ethyl acetate	1.0	0.15		ppbV	1	10/8/2018 8:34:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-10
Lab Order:	C1810010	**Tag Number:**	568,375
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-021A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.36	0.15		ppbV	1	10/8/2018 8:34:00 PM
Freon 11	2.0	0.15		ppbV	1	10/8/2018 8:34:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Freon 12	0.48	0.15		ppbV	1	10/8/2018 8:34:00 PM
Heptane	0.57	0.15		ppbV	1	10/8/2018 8:34:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Hexane	0.77	0.15		ppbV	1	10/8/2018 8:34:00 PM
Isopropyl alcohol	4.8	1.5		ppbV	10	10/9/2018 8:25:00 PM
m&p-Xylene	1.2	0.30		ppbV	1	10/8/2018 8:34:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 8:34:00 PM
Methyl Ethyl Ketone	1.8	0.30		ppbV	1	10/8/2018 8:34:00 PM
Methyl Isobutyl Ketone	0.20	0.30	J	ppbV	1	10/8/2018 8:34:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Methylene chloride	4.7	1.5		ppbV	10	10/9/2018 8:25:00 PM
o-Xylene	0.35	0.15		ppbV	1	10/8/2018 8:34:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Styrene	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Tetrachloroethylene	0.42	0.15		ppbV	1	10/8/2018 8:34:00 PM
Tetrahydrofuran	0.45	0.15		ppbV	1	10/8/2018 8:34:00 PM
Toluene	2.9	1.5		ppbV	10	10/9/2018 8:25:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Trichloroethene	4.9	0.30		ppbV	10	10/9/2018 8:25:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 8:34:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 8:34:00 PM
Surr: Bromofluorobenzene	96.0	70-130		%REC	1	10/8/2018 8:34:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	FD-02-20181001
Lab Order:	C1810010	**Tag Number:**	370,375
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-022A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	0.25	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 9:14:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,2,4-Trimethylbenzene	0.77	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,3,5-Trimethylbenzene	0.41	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,4-Dichlorobenzene	0.76	0.15		ppbV	1	10/8/2018 9:14:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 9:14:00 PM
2,2,4-trimethylpentane	0.33	0.15		ppbV	1	10/8/2018 9:14:00 PM
4-ethyltoluene	0.20	0.15		ppbV	1	10/8/2018 9:14:00 PM
Acetone	16	3.0		ppbV	10	10/9/2018 9:02:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Benzene	0.27	0.15		ppbV	1	10/8/2018 9:14:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 9:14:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Chloromethane	0.47	0.15		ppbV	1	10/8/2018 9:14:00 PM
cis-1,2-Dichloroethene	0.50	0.040		ppbV	1	10/8/2018 9:14:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Cyclohexane	0.76	0.15		ppbV	1	10/8/2018 9:14:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Ethyl acetate	1.1	0.15		ppbV	1	10/8/2018 9:14:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	FD-02-20181001
Lab Order:	C1810010	**Tag Number:**	370,375
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-022A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.38	0.15		ppbV	1	10/8/2018 9:14:00 PM
Freon 11	2.0	0.15		ppbV	1	10/8/2018 9:14:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Freon 12	0.48	0.15		ppbV	1	10/8/2018 9:14:00 PM
Heptane	0.60	0.15		ppbV	1	10/8/2018 9:14:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Hexane	0.82	0.15		ppbV	1	10/8/2018 9:14:00 PM
Isopropyl alcohol	4.6	1.5		ppbV	10	10/9/2018 9:02:00 PM
m&p-Xylene	1.3	0.30		ppbV	1	10/8/2018 9:14:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 9:14:00 PM
Methyl Ethyl Ketone	1.6	0.30		ppbV	1	10/8/2018 9:14:00 PM
Methyl Isobutyl Ketone	0.23	0.30	J	ppbV	1	10/8/2018 9:14:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Methylene chloride	4.6	1.5		ppbV	10	10/9/2018 9:02:00 PM
o-Xylene	0.39	0.15		ppbV	1	10/8/2018 9:14:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Styrene	0.13	0.15	J	ppbV	1	10/8/2018 9:14:00 PM
Tetrachloroethylene	0.44	0.15		ppbV	1	10/8/2018 9:14:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Toluene	2.9	1.5		ppbV	10	10/9/2018 9:02:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Trichloroethene	2.3	0.30		ppbV	10	10/9/2018 9:02:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 9:14:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 9:14:00 PM
Surr: Bromofluorobenzene	95.0	70-130		%REC	1	10/8/2018 9:14:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-11
Lab Order:	C1810010	**Tag Number:**	553,443
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-023A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,2,4-Trimethylbenzene	0.96	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,3,5-Trimethylbenzene	0.55	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 8:05:00 AM
2,2,4-trimethylpentane	0.26	0.15		ppbV	1	10/9/2018 8:05:00 AM
4-ethyltoluene	0.27	0.15		ppbV	1	10/9/2018 8:05:00 AM
Acetone	27	6.0		ppbV	20	10/10/2018 8:13:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Benzene	0.67	0.15		ppbV	1	10/9/2018 8:05:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Carbon disulfide	0.57	0.15		ppbV	1	10/9/2018 8:05:00 AM
Carbon tetrachloride	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Chloroform	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Chloromethane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
cis-1,2-Dichloroethene	0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Cyclohexane	6.0	3.0		ppbV	20	10/10/2018 8:13:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Ethyl acetate	0.67	0.15		ppbV	1	10/9/2018 8:05:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-11
Lab Order:	C1810010	**Tag Number:**	553,443
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-023A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.32	0.15		ppbV	1	10/9/2018 8:05:00 AM
Freon 11	9.4	3.0		ppbV	20	10/10/2018 8:13:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Freon 12	0.51	0.15		ppbV	1	10/9/2018 8:05:00 AM
Heptane	3.6	3.0		ppbV	20	10/10/2018 8:13:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Hexane	12	3.0		ppbV	20	10/10/2018 8:13:00 PM
Isopropyl alcohol	3.0	3.0		ppbV	20	10/10/2018 8:13:00 PM
m&p-Xylene	0.98	0.30		ppbV	1	10/9/2018 8:05:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 8:05:00 AM
Methyl Ethyl Ketone	1.9	0.30		ppbV	1	10/9/2018 8:05:00 AM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 8:05:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Methylene chloride	2.6	3.0	J	ppbV	20	10/10/2018 8:13:00 PM
o-Xylene	0.32	0.15		ppbV	1	10/9/2018 8:05:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Styrene	0.25	0.15		ppbV	1	10/9/2018 8:05:00 AM
Tetrachloroethylene	0.23	0.15		ppbV	1	10/9/2018 8:05:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Toluene	2.1	0.15		ppbV	1	10/9/2018 8:05:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Trichloroethene	0.99	0.15		ppbV	1	10/9/2018 8:05:00 AM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 8:05:00 AM
Surr: Bromofluorobenzene	95.0	70-130		%REC	1	10/9/2018 8:05:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-11
Lab Order:	C1810010	**Tag Number:**	1192,1160
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-024A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 9:55:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,2,4-Trimethylbenzene	1.7	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,3,5-Trimethylbenzene	0.51	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
1,4-Dichlorobenzene	0.14	0.15	J	ppbV	1	10/8/2018 9:55:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 9:55:00 PM
2,2,4-trimethylpentane	0.27	0.15		ppbV	1	10/8/2018 9:55:00 PM
4-ethyltoluene	0.59	0.15		ppbV	1	10/8/2018 9:55:00 PM
Acetone	14	3.0		ppbV	10	10/9/2018 9:39:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Benzene	0.64	0.15		ppbV	1	10/8/2018 9:55:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 9:55:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Chloromethane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
cis-1,2-Dichloroethene	0.19	0.040		ppbV	1	10/8/2018 9:55:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Cyclohexane	0.43	0.15		ppbV	1	10/8/2018 9:55:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Ethyl acetate	0.93	0.15		ppbV	1	10/8/2018 9:55:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-11
Lab Order:	C1810010	**Tag Number:**	1192,1160
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-024A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	1.0	0.15		ppbV	1	10/8/2018 9:55:00 PM
Freon 11	12	1.5		ppbV	10	10/9/2018 9:39:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Freon 12	0.48	0.15		ppbV	1	10/8/2018 9:55:00 PM
Heptane	1.0	0.15		ppbV	1	10/8/2018 9:55:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Hexane	1.8	0.15		ppbV	1	10/8/2018 9:55:00 PM
Isopropyl alcohol	3.8	1.5		ppbV	10	10/9/2018 9:39:00 PM
m&p-Xylene	4.0	0.30		ppbV	1	10/8/2018 9:55:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 9:55:00 PM
Methyl Ethyl Ketone	1.5	0.30		ppbV	1	10/8/2018 9:55:00 PM
Methyl Isobutyl Ketone	0.13	0.30	J	ppbV	1	10/8/2018 9:55:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Methylene chloride	1.0	0.15		ppbV	1	10/8/2018 9:55:00 PM
o-Xylene	1.1	0.15		ppbV	1	10/8/2018 9:55:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Styrene	0.12	0.15	J	ppbV	1	10/8/2018 9:55:00 PM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Toluene	3.4	1.5		ppbV	10	10/9/2018 9:39:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Trichloroethene	0.76	0.030		ppbV	1	10/8/2018 9:55:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 9:55:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 9:55:00 PM
Surr: Bromofluorobenzene	100	70-130		%REC	1	10/8/2018 9:55:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-12
Lab Order:	C1810010	**Tag Number:**	1181,374
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-025A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 10:35:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,2,4-Trimethylbenzene	1.4	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,3,5-Trimethylbenzene	0.58	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
1,4-Dichlorobenzene	0.10	0.15	J	ppbV	1	10/8/2018 10:35:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 10:35:00 PM
2,2,4-trimethylpentane	0.43	0.15		ppbV	1	10/8/2018 10:35:00 PM
4-ethyltoluene	0.36	0.15		ppbV	1	10/8/2018 10:35:00 PM
Acetone	13	3.0		ppbV	10	10/9/2018 10:16:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Benzene	0.78	0.15		ppbV	1	10/8/2018 10:35:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Carbon tetrachloride	0.060	0.030		ppbV	1	10/8/2018 10:35:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Chloromethane	0.43	0.15		ppbV	1	10/8/2018 10:35:00 PM
cis-1,2-Dichloroethene	0.11	0.040		ppbV	1	10/8/2018 10:35:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Cyclohexane	0.60	0.15		ppbV	1	10/8/2018 10:35:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Ethyl acetate	1.0	0.15		ppbV	1	10/8/2018 10:35:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-12
Lab Order:	C1810010	**Tag Number:**	1181,374
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-025A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.80	0.15		ppbV	1	10/8/2018 10:35:00 PM
Freon 11	10	1.5		ppbV	10	10/9/2018 10:16:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Freon 114	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Freon 12	0.47	0.15		ppbV	1	10/8/2018 10:35:00 PM
Heptane	1.2	0.15		ppbV	1	10/8/2018 10:35:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Hexane	2.2	1.5		ppbV	10	10/9/2018 10:16:00 PM
Isopropyl alcohol	6.8	1.5		ppbV	10	10/9/2018 10:16:00 PM
m&p-Xylene	3.1	0.30		ppbV	1	10/8/2018 10:35:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 10:35:00 PM
Methyl Ethyl Ketone	1.0	0.30		ppbV	1	10/8/2018 10:35:00 PM
Methyl Isobutyl Ketone	0.14	0.30	J	ppbV	1	10/8/2018 10:35:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Methylene chloride	1.2	0.15		ppbV	1	10/8/2018 10:35:00 PM
o-Xylene	0.91	0.15		ppbV	1	10/8/2018 10:35:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Styrene	0.10	0.15	J	ppbV	1	10/8/2018 10:35:00 PM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Toluene	4.0	1.5		ppbV	10	10/9/2018 10:16:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Trichloroethene	0.61	0.030		ppbV	1	10/8/2018 10:35:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 10:35:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 10:35:00 PM
Surr: Bromofluorobenzene	95.0	70-130		%REC	1	10/8/2018 10:35:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-12
Lab Order:	C1810010	**Tag Number:**	569,385
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-026A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,2,4-Trimethylbenzene	1.1	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,3,5-Trimethylbenzene	0.58	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 8:46:00 AM
2,2,4-trimethylpentane	0.16	0.15		ppbV	1	10/9/2018 8:46:00 AM
4-ethyltoluene	0.27	0.15		ppbV	1	10/9/2018 8:46:00 AM
Acetone	68	54		ppbV	180	10/10/2018 8:51:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Benzene	0.63	0.15		ppbV	1	10/9/2018 8:46:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Carbon disulfide	1.5	0.15		ppbV	1	10/9/2018 8:46:00 AM
Carbon tetrachloride	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Chloroform	0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Chloromethane	1.2	0.15		ppbV	1	10/9/2018 8:46:00 AM
cis-1,2-Dichloroethene	0.20	0.15		ppbV	1	10/9/2018 8:46:00 AM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Cyclohexane	11	1.4		ppbV	9	10/10/2018 7:47:00 AM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Ethyl acetate	0.74	0.15		ppbV	1	10/9/2018 8:46:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-12
Lab Order:	C1810010	**Tag Number:**	569,385
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-026A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Freon 11	1.5	0.15		ppbV	1	10/9/2018 8:46:00 AM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Freon 12	0.48	0.15		ppbV	1	10/9/2018 8:46:00 AM
Heptane	7.4	1.4		ppbV	9	10/10/2018 7:47:00 AM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Hexane	22	1.4		ppbV	9	10/10/2018 7:47:00 AM
Isopropyl alcohol	9.5	1.4		ppbV	9	10/10/2018 7:47:00 AM
m&p-Xylene	0.39	0.30		ppbV	1	10/9/2018 8:46:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 8:46:00 AM
Methyl Ethyl Ketone	1.7	2.7	J	ppbV	9	10/10/2018 7:47:00 AM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 8:46:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Methylene chloride	4.1	1.4		ppbV	9	10/10/2018 7:47:00 AM
o-Xylene	0.19	0.15		ppbV	1	10/9/2018 8:46:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Styrene	0.24	0.15		ppbV	1	10/9/2018 8:46:00 AM
Tetrachloroethylene	0.13	0.15	J	ppbV	1	10/9/2018 8:46:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Toluene	1.0	0.15		ppbV	1	10/9/2018 8:46:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Trichloroethene	1.2	0.15		ppbV	1	10/9/2018 8:46:00 AM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 8:46:00 AM
Surr: Bromofluorobenzene	102	70-130		%REC	1	10/9/2018 8:46:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-13
Lab Order:	C1810010	**Tag Number:**	85,267
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-027A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 11:15:00 PM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,2,4-Trimethylbenzene	0.14	0.15	J	ppbV	1	10/8/2018 11:15:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,3,5-Trimethylbenzene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/8/2018 11:15:00 PM
2,2,4-trimethylpentane	0.30	0.15		ppbV	1	10/8/2018 11:15:00 PM
4-ethyltoluene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Acetone	24	3.0		ppbV	10	10/9/2018 10:53:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Benzene	0.19	0.15		ppbV	1	10/8/2018 11:15:00 PM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 11:15:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Chloromethane	0.45	0.15		ppbV	1	10/8/2018 11:15:00 PM
cis-1,2-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 11:15:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Cyclohexane	0.16	0.15		ppbV	1	10/8/2018 11:15:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Ethyl acetate	0.31	0.15		ppbV	1	10/8/2018 11:15:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-13
Lab Order:	C1810010	**Tag Number:**	85,267
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-027A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Ethylbenzene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Freon 11	0.71	0.15		ppbV	1	10/8/2018 11:15:00 PM
Freon 113	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Freon 114	0.16	0.15		ppbV	1	10/8/2018 11:15:00 PM
Freon 12	0.46	0.15		ppbV	1	10/8/2018 11:15:00 PM
Heptane	0.42	0.15		ppbV	1	10/8/2018 11:15:00 PM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Hexane	0.21	0.15		ppbV	1	10/8/2018 11:15:00 PM
Isopropyl alcohol	18	1.5		ppbV	10	10/9/2018 10:53:00 PM
m&p-Xylene	0.29	0.30	J	ppbV	1	10/8/2018 11:15:00 PM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 11:15:00 PM
Methyl Ethyl Ketone	2.6	3.0	J	ppbV	10	10/9/2018 10:53:00 PM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/8/2018 11:15:00 PM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Methylene chloride	0.21	0.15		ppbV	1	10/8/2018 11:15:00 PM
o-Xylene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Propylene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Styrene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Tetrahydrofuran	4.0	1.5		ppbV	10	10/9/2018 10:53:00 PM
Toluene	0.91	0.15		ppbV	1	10/8/2018 11:15:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Trichloroethene	0.57	0.030		ppbV	1	10/8/2018 11:15:00 PM
Vinyl acetate	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/8/2018 11:15:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	10/8/2018 11:15:00 PM
Surr: Bromofluorobenzene	91.0	70-130		%REC	1	10/8/2018 11:15:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	OA-01
Lab Order:	C1810010	**Tag Number:**	98,449
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-028A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS			**FLD**			Analyst:
Lab Vacuum In	-25			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-13
Lab Order:	C1810010	**Tag Number:**	130,380
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-029A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		**FLD**				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	1.2	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,1,2,2-Tetrachloroethane	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,2,4-Trichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,2,4-Trimethylbenzene	1.2	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,2-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,2-Dichloroethane	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,3,5-Trimethylbenzene	0.65	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,3-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,4-Dichlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
1,4-Dioxane	< 0.30	0.30		ppbV	1	10/9/2018 9:26:00 AM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
4-ethyltoluene	0.32	0.15		ppbV	1	10/9/2018 9:26:00 AM
Acetone	110	54		ppbV	180	10/10/2018 9:29:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Benzene	1.0	0.15		ppbV	1	10/9/2018 9:26:00 AM
Benzyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Bromoform	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Bromomethane	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Carbon disulfide	5.4	1.4		ppbV	9	10/10/2018 8:28:00 AM
Carbon tetrachloride	0.67	0.15		ppbV	1	10/9/2018 9:26:00 AM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Chloroethane	0.16	0.15		ppbV	1	10/9/2018 9:26:00 AM
Chloroform	0.27	0.15		ppbV	1	10/9/2018 9:26:00 AM
Chloromethane	1.3	0.15		ppbV	1	10/9/2018 9:26:00 AM
cis-1,2-Dichloroethene	0.21	0.15		ppbV	1	10/9/2018 9:26:00 AM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Cyclohexane	11	1.4		ppbV	9	10/10/2018 8:28:00 AM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Ethyl acetate	0.80	0.15		ppbV	1	10/9/2018 9:26:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *15-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-13
Lab Order:	C1810010	**Tag Number:**	130,380
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-029A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Ethylbenzene	0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Freon 11	1.5	0.15		ppbV	1	10/9/2018 9:26:00 AM
Freon 113	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Freon 114	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Freon 12	0.52	0.15		ppbV	1	10/9/2018 9:26:00 AM
Heptane	8.0	1.4		ppbV	9	10/10/2018 8:28:00 AM
Hexachloro-1,3-butadiene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Hexane	22	1.4		ppbV	9	10/10/2018 8:28:00 AM
Isopropyl alcohol	32	1.4		ppbV	9	10/10/2018 8:28:00 AM
m&p-Xylene	0.40	0.30		ppbV	1	10/9/2018 9:26:00 AM
Methyl Butyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 9:26:00 AM
Methyl Ethyl Ketone	1.4	2.7	J	ppbV	9	10/10/2018 8:28:00 AM
Methyl Isobutyl Ketone	< 0.30	0.30		ppbV	1	10/9/2018 9:26:00 AM
Methyl tert-butyl ether	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Methylene chloride	4.5	1.4		ppbV	9	10/10/2018 8:28:00 AM
o-Xylene	0.21	0.15		ppbV	1	10/9/2018 9:26:00 AM
Propylene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Styrene	0.27	0.15		ppbV	1	10/9/2018 9:26:00 AM
Tetrachloroethylene	0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Tetrahydrofuran	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Toluene	0.96	0.15		ppbV	1	10/9/2018 9:26:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
trans-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Trichloroethene	4.0	1.4		ppbV	9	10/10/2018 8:28:00 AM
Vinyl acetate	2.0	0.15		ppbV	1	10/9/2018 9:26:00 AM
Vinyl Bromide	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	10/9/2018 9:26:00 AM
Surr: Bromofluorobenzene	100	70-130		%REC	1	10/9/2018 9:26:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	OA-01
Lab Order:	C1810032	**Tag Number:**	317,456
Project:	31 Water St	**Collection Date:**	10/10/2018
Lab ID:	C1810032-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/17/2018 5:21:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	10/17/2018 5:21:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/17/2018 5:21:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/17/2018 5:21:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/17/2018 5:21:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	10/17/2018 5:21:00 PM
1,2,4-Trimethylbenzene	0.74	0.74		ug/m3	1	10/17/2018 5:21:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/17/2018 5:21:00 PM
1,2-Dichlorobenzene	< 0.90	0.90		ug/m3	1	10/17/2018 5:21:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/17/2018 5:21:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/17/2018 5:21:00 PM
1,3,5-Trimethylbenzene	< 0.74	0.74		ug/m3	1	10/17/2018 5:21:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/17/2018 5:21:00 PM
1,3-Dichlorobenzene	< 0.90	0.90		ug/m3	1	10/17/2018 5:21:00 PM
1,4-Dichlorobenzene	< 0.90	0.90		ug/m3	1	10/17/2018 5:21:00 PM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	10/17/2018 5:21:00 PM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/17/2018 5:21:00 PM
4-ethyltoluene	< 0.74	0.74		ug/m3	1	10/17/2018 5:21:00 PM
Acetone	17	3.6		ug/m3	5	10/17/2018 5:58:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/17/2018 5:21:00 PM
Benzene	0.48	0.48		ug/m3	1	10/17/2018 5:21:00 PM
Benzyl chloride	< 0.86	0.86		ug/m3	1	10/17/2018 5:21:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/17/2018 5:21:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/17/2018 5:21:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/17/2018 5:21:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/17/2018 5:21:00 PM
Carbon tetrachloride	0.63	0.19		ug/m3	1	10/17/2018 5:21:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/17/2018 5:21:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/17/2018 5:21:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/17/2018 5:21:00 PM
Chloromethane	0.87	0.31		ug/m3	1	10/17/2018 5:21:00 PM
cis-1,2-Dichloroethene	< 0.16	0.16		ug/m3	1	10/17/2018 5:21:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/17/2018 5:21:00 PM
Cyclohexane	0.34	0.52	J	ug/m3	1	10/17/2018 5:21:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/17/2018 5:21:00 PM
Ethyl acetate	2.1	0.54		ug/m3	1	10/17/2018 5:21:00 PM
Ethylbenzene	< 0.65	0.65		ug/m3	1	10/17/2018 5:21:00 PM
Freon 11	1.6	0.84		ug/m3	1	10/17/2018 5:21:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/17/2018 5:21:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/17/2018 5:21:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	OA-01
Lab Order:	C1810032	**Tag Number:**	317,456
Project:	31 Water St	**Collection Date:**	10/10/2018
Lab ID:	C1810032-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Freon 12	2.6	0.74		ug/m3	1	10/17/2018 5:21:00 PM
Heptane	0.82	0.61		ug/m3	1	10/17/2018 5:21:00 PM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	10/17/2018 5:21:00 PM
Hexane	0.63	0.53		ug/m3	1	10/17/2018 5:21:00 PM
Isopropyl alcohol	3.5	0.37		ug/m3	1	10/17/2018 5:21:00 PM
m&p-Xylene	0.78	1.3	J	ug/m3	1	10/17/2018 5:21:00 PM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	10/17/2018 5:21:00 PM
Methyl Ethyl Ketone	1.8	0.88		ug/m3	1	10/17/2018 5:21:00 PM
Methyl Isobutyl Ketone	0.57	1.2	J	ug/m3	1	10/17/2018 5:21:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/17/2018 5:21:00 PM
Methylene chloride	< 0.52	0.52		ug/m3	1	10/17/2018 5:21:00 PM
o-Xylene	0.43	0.65	J	ug/m3	1	10/17/2018 5:21:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/17/2018 5:21:00 PM
Styrene	< 0.64	0.64		ug/m3	1	10/17/2018 5:21:00 PM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	10/17/2018 5:21:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/17/2018 5:21:00 PM
Toluene	2.6	0.57		ug/m3	1	10/17/2018 5:21:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/17/2018 5:21:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/17/2018 5:21:00 PM
Trichloroethene	< 0.16	0.16		ug/m3	1	10/17/2018 5:21:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/17/2018 5:21:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/17/2018 5:21:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/17/2018 5:21:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

DATA USABILITY SUMMARY REPORT (DUSR)

31 Water Street
Jamestown, NY
NYSDEC BCP # C907046

SDG: C1810010

29 air samples - Revised Form I's (ug/m3)

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213
Attention: John Berry

Revised: May 2019

EDU Environmental Data Usability 10028 Deer Park Dr. Dansville, NY 14437 585.991.9156

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-01
Lab Order:	C1810010	**Tag Number:**	438,561
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				**Analyst: RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 2:29:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/8/2018 2:29:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 2:29:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 2:29:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 2:29:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 2:29:00 PM
1,2,4-Trimethylbenzene	0.84	0.74	J	ug/m3	1	10/8/2018 2:29:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 2:29:00 PM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 2:29:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 2:29:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 2:29:00 PM
1,3,5-Trimethylbenzene	< 0.74	0.74	UJ	ug/m3	1	10/8/2018 2:29:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 2:29:00 PM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 2:29:00 PM
1,4-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 2:29:00 PM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 2:29:00 PM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/8/2018 2:29:00 PM
4-ethyltoluene	< 0.74	0.74	UJ	ug/m3	1	10/8/2018 2:29:00 PM
Acetone	23	7.1		ug/m3	10	10/9/2018 2:51:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 2:29:00 PM
Benzene	0.61	0.48		ug/m3	1	10/8/2018 2:29:00 PM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/8/2018 2:29:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 2:29:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 2:29:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 2:29:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 2:29:00 PM
Carbon tetrachloride	0.44	0.19		ug/m3	1	10/8/2018 2:29:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 2:29:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 2:29:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 2:29:00 PM
Chloromethane	0.85	0.31		ug/m3	1	10/8/2018 2:29:00 PM
cis-1,2-Dichloroethene	0.83	0.16		ug/m3	1	10/8/2018 2:29:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 2:29:00 PM
Cyclohexane	2.7	0.52		ug/m3	1	10/8/2018 2:29:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 2:29:00 PM
Ethyl acetate	1.8	0.54		ug/m3	1	10/8/2018 2:29:00 PM
Ethylbenzene	< 0.65	0.65		ug/m3	1	10/8/2018 2:29:00 PM
Freon 11	1.7	0.84		ug/m3	1	10/8/2018 2:29:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 2:29:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 2:29:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-01
Lab Order:	C1810010	**Tag Number:**	438,561
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Freon 12	1.9	0.74		ug/m3	1	10/8/2018 2:29:00 PM
Heptane	1.7	0.61		ug/m3	1	10/8/2018 2:29:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 2:29:00 PM
Hexane	0.88	0.53		ug/m3	1	10/8/2018 2:29:00 PM
Isopropyl alcohol	10 JN	3.7		ug/m3	10	10/9/2018 2:51:00 PM
m&p-Xylene	1.0	1.3	J	ug/m3	1	10/8/2018 2:29:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 2:29:00 PM
Methyl Ethyl Ketone	1.8	0.88		ug/m3	1	10/8/2018 2:29:00 PM
Methyl Isobutyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 2:29:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 2:29:00 PM
Methylene chloride	2.4	0.52		ug/m3	1	10/8/2018 2:29:00 PM
o-Xylene	< 0.65	0.65		ug/m3	1	10/8/2018 2:29:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 2:29:00 PM
Styrene	< 0.64	0.64		ug/m3	1	10/8/2018 2:29:00 PM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	10/8/2018 2:29:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 2:29:00 PM
Toluene	3.4	0.57		ug/m3	1	10/8/2018 2:29:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 2:29:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 2:29:00 PM
Trichloroethene	5.0	0.16		ug/m3	1	10/8/2018 2:29:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 2:29:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 2:29:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 2:29:00 PM

Qualifiers:					
	**	Quantitation Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
	S	Spike Recovery outside accepted recovery limits		

MEP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-01
Lab Order:	C1810010	**Tag Number:**	328,445
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: RJP
1,1,1-Trichloroethane	0.60	0.82	J	ug/m3	1	10/9/2018 10:06:00 AM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/9/2018 10:06:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 10:06:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 10:06:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 10:06:00 AM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 10:06:00 AM
1,2,4-Trimethylbenzene	6.6 J	0.74		ug/m3	1	10/9/2018 10:06:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 10:06:00 AM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 10:06:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 10:06:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 10:06:00 AM
1,3,5-Trimethylbenzene	3.6 UJ	0.74		ug/m3	1	10/9/2018 10:06:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 10:06:00 AM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 10:06:00 AM
1,4-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 10:06:00 AM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 10:06:00 AM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/9/2018 10:06:00 AM
4-ethyltoluene	1.6 UJ	0.74		ug/m3	1	10/9/2018 10:06:00 AM
Acetone	85	14		ug/m3	20	10/10/2018 12:09:00 AM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 10:06:00 AM
Benzene	0.86	0.48		ug/m3	1	10/9/2018 10:06:00 AM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/9/2018 10:06:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 10:06:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 10:06:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 10:06:00 AM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/9/2018 10:06:00 AM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	10/9/2018 10:06:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 10:06:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	10/9/2018 10:06:00 AM
Chloroform	< 0.73	0.73		ug/m3	1	10/9/2018 10:06:00 AM
Chloromethane	0.66	0.31		ug/m3	1	10/9/2018 10:06:00 AM
cis-1,2-Dichloroethene	0.63	0.59		ug/m3	1	10/9/2018 10:06:00 AM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 10:06:00 AM
Cyclohexane	32	10		ug/m3	20	10/10/2018 12:09:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 10:06:00 AM
Ethyl acetate	3.4	0.54		ug/m3	1	10/9/2018 10:06:00 AM
Ethylbenzene	0.65	0.65		ug/m3	1	10/9/2018 10:06:00 AM
Freon 11	1.3	0.84		ug/m3	1	10/9/2018 10:06:00 AM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 10:06:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 10:06:00 AM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- - Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

mrp 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-01
Lab Order:	C1810010	**Tag Number:**	328,445
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: RJP
Freon 12	2.4	0.74		ug/m3	1	10/9/2018 10:06:00 AM
Heptane	4.0	0.61		ug/m3	1	10/9/2018 10:06:00 AM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/9/2018 10:06:00 AM
Hexane	3.2	0.53		ug/m3	1	10/9/2018 10:06:00 AM
Isopropyl alcohol	4.7 JN	0.37		ug/m3	1	10/9/2018 10:06:00 AM
m&p-Xylene	1.8	1.3		ug/m3	1	10/9/2018 10:06:00 AM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 10:06:00 AM
Methyl Ethyl Ketone	8.3	18	J	ug/m3	20	10/10/2018 12:09:00 AM
Methyl Isobutyl Ketone	0.66 J	1.2	J	ug/m3	1	10/9/2018 10:06:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 10:06:00 AM
Methylene chloride	12	10		ug/m3	20	10/10/2018 12:09:00 AM
o-Xylene	0.96	0.65		ug/m3	1	10/9/2018 10:06:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 10:06:00 AM
Styrene	1.3	0.64		ug/m3	1	10/9/2018 10:06:00 AM
Tetrachloroethylene	1.0	1.0		ug/m3	1	10/9/2018 10:06:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 10:06:00 AM
Toluene	3.6	0.57		ug/m3	1	10/9/2018 10:06:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 10:06:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 10:06:00 AM
Trichloroethene	7.4	0.81		ug/m3	1	10/9/2018 10:06:00 AM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 10:06:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 10:06:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	10/9/2018 10:06:00 AM

Qualifiers:					
	**	Quantitation Limit	-	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
	S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-02
Lab Order:	C1810010	**Tag Number:**	96,376
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 12:38:00 AM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/9/2018 12:38:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 12:38:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 12:38:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 12:38:00 AM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 12:38:00 AM
1,2,4-Trimethylbenzene	7.2 J	0.74		ug/m3	1	10/9/2018 12:38:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 12:38:00 AM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 12:38:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 12:38:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 12:38:00 AM
1,3,5-Trimethylbenzene	3.8 J	0.74		ug/m3	1	10/9/2018 12:38:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 12:38:00 AM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 12:38:00 AM
1,4-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 12:38:00 AM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 12:38:00 AM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/9/2018 12:38:00 AM
4-ethyltoluene	1.7 J	0.74		ug/m3	1	10/9/2018 12:38:00 AM
Acetone	110	28		ug/m3	40	10/10/2018 1:23:00 AM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 12:38:00 AM
Benzene	1.7	0.48		ug/m3	1	10/9/2018 12:38:00 AM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/9/2018 12:38:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 12:38:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 12:38:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 12:38:00 AM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/9/2018 12:38:00 AM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	10/9/2018 12:38:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 12:38:00 AM
Chloroethane	0.32	0.40	J	ug/m3	1	10/9/2018 12:38:00 AM
Chloroform	3.3	0.73		ug/m3	1	10/9/2018 12:38:00 AM
Chloromethane	2.9	0.31		ug/m3	1	10/9/2018 12:38:00 AM
cis-1,2-Dichloroethene	2.1	0.59		ug/m3	1	10/9/2018 12:38:00 AM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 12:38:00 AM
Cyclohexane	12	5.2		ug/m3	10	10/10/2018 12:46:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 12:38:00 AM
Ethyl acetate	5.5	0.54		ug/m3	1	10/9/2018 12:38:00 AM
Ethylbenzene	0.65	0.65		ug/m3	1	10/9/2018 12:38:00 AM
Freon 11	3.3	0.84		ug/m3	1	10/9/2018 12:38:00 AM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 12:38:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 12:38:00 AM

Qualifiers:

**	Quantitation Limit	-	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MEP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-02
Lab Order:	C1810010	**Tag Number:**	96,376
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
Freon 12	3.3	0.74		ug/m3	1	10/9/2018 12:38:00 AM
Heptane	11	6.1		ug/m3	10	10/10/2018 12:46:00 AM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/9/2018 12:38:00 AM
Hexane	20	5.3		ug/m3	10	10/10/2018 12:46:00 AM
Isopropyl alcohol	7.9 JN	3.7		ug/m3	10	10/10/2018 12:46:00 AM
m&p-Xylene	1.7	1.3		ug/m3	1	10/9/2018 12:38:00 AM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 12:38:00 AM
Methyl Ethyl Ketone	6.5	6.8	J	ug/m3	10	10/10/2018 12:46:00 AM
Methyl Isobutyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 12:38:00 AM
Methyl tert-butyl ether	1.0	0.54		ug/m3	1	10/9/2018 12:38:00 AM
Methylene chloride	13	5.2		ug/m3	10	10/10/2018 12:46:00 AM
o-Xylene	1.0	0.65		ug/m3	1	10/9/2018 12:38:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 12:38:00 AM
Styrene	1.3	0.64		ug/m3	1	10/9/2018 12:38:00 AM
Tetrachloroethylene	1.4	1.0		ug/m3	1	10/9/2018 12:38:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 12:38:00 AM
Toluene	3.0	0.57		ug/m3	1	10/9/2018 12:38:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 12:38:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 12:38:00 AM
Trichloroethene	34	8.1		ug/m3	10	10/10/2018 12:46:00 AM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 12:38:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 12:38:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	10/9/2018 12:38:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
-	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MCP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-02
Lab Order:	C1810010	**Tag Number:**	237,456
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				**Analyst: RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 3:09:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/8/2018 3:09:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 3:09:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 3:09:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 3:09:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 3:09:00 PM
1,2,4-Trimethylbenzene	1.1	0.74	J	ug/m3	1	10/8/2018 3:09:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 3:09:00 PM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 3:09:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 3:09:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 3:09:00 PM
1,3,5-Trimethylbenzene	< 0.74	0.74	UJ	ug/m3	1	10/8/2018 3:09:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 3:09:00 PM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 3:09:00 PM
1,4-Dichlorobenzene	1.7	0.90	J	ug/m3	1	10/8/2018 3:09:00 PM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 3:09:00 PM
2,2,4-trimethylpentane	0.75	0.70		ug/m3	1	10/8/2018 3:09:00 PM
4-ethyltoluene	< 0.74	0.74	UJ	ug/m3	1	10/8/2018 3:09:00 PM
Acetone	25	7.1		ug/m3	10	10/9/2018 3:27:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 3:09:00 PM
Benzene	0.83	0.48		ug/m3	1	10/8/2018 3:09:00 PM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/8/2018 3:09:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 3:09:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 3:09:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 3:09:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 3:09:00 PM
Carbon tetrachloride	0.44	0.19		ug/m3	1	10/8/2018 3:09:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 3:09:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 3:09:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 3:09:00 PM
Chloromethane	1.1	0.31		ug/m3	1	10/8/2018 3:09:00 PM
cis-1,2-Dichloroethene	3.8	0.16		ug/m3	1	10/8/2018 3:09:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 3:09:00 PM
Cyclohexane	2.9	0.52		ug/m3	1	10/8/2018 3:09:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 3:09:00 PM
Ethyl acetate	1.5	0.54		ug/m3	1	10/8/2018 3:09:00 PM
Ethylbenzene	0.78	0.65		ug/m3	1	10/8/2018 3:09:00 PM
Freon 11	2.8	0.84		ug/m3	1	10/8/2018 3:09:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 3:09:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 3:09:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-02
Lab Order:	C1810010	**Tag Number:**	237,456
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Freon 12	2.0	0.74		ug/m3	1	10/8/2018 3:09:00 PM
Heptane	1.8	0.61		ug/m3	1	10/8/2018 3:09:00 PM
Hexachloro-1,3-butadiene	< 1.6	1.6	UJ	ug/m3	1	10/8/2018 3:09:00 PM
Hexane	1.4	0.53		ug/m3	1	10/8/2018 3:09:00 PM
Isopropyl alcohol	9.3	3.7	JN	ug/m3	10	10/9/2018 3:27:00 PM
m&p-Xylene	2.6	1.3		ug/m3	1	10/8/2018 3:09:00 PM
Methyl Butyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/8/2018 3:09:00 PM
Methyl Ethyl Ketone	2.9	0.88		ug/m3	1	10/8/2018 3:09:00 PM
Methyl Isobutyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/8/2018 3:09:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 3:09:00 PM
Methylene chloride	1.7	0.52		ug/m3	1	10/8/2018 3:09:00 PM
o-Xylene	0.91	0.65		ug/m3	1	10/8/2018 3:09:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 3:09:00 PM
Styrene	< 0.64	0.64		ug/m3	1	10/8/2018 3:09:00 PM
Tetrachloroethylene	1.9	1.0		ug/m3	1	10/8/2018 3:09:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 3:09:00 PM
Toluene	7.5	0.57		ug/m3	1	10/8/2018 3:09:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 3:09:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 3:09:00 PM
Trichloroethene	32	1.6		ug/m3	10	10/9/2018 3:27:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 3:09:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 3:09:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 3:09:00 PM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-03
Lab Order:	C1810010	**Tag Number:**	457,434
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-005A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD				Analyst:
Lab Vacuum In	-1			"Hg		10/5/2018
Lab Vacuum Out	-30			"Hg		10/5/2018
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,1,2,2-Tetrachloroethane	< 0.15 UJ	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,1,2-Trichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,1-Dichloroethene	< 0.040	0.040		ppbV	1	10/8/2018 3:49:00 PM
1,2,4-Trichlorobenzene	< 0.15 UJ	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,2,4-Trimethylbenzene	0.12 J	0.15	J	ppbV	1	10/8/2018 3:49:00 PM
1,2-Dibromoethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,2-Dichlorobenzene	< 0.15 UJ	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,2-Dichloroethane	0.24	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,2-Dichloropropane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,3,5-Trimethylbenzene	< 0.15 UJ	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,3-butadiene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,3-Dichlorobenzene	< 0.15 UJ	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,4-Dichlorobenzene	< 0.15 UJ	0.15		ppbV	1	10/8/2018 3:49:00 PM
1,4-Dioxane	< 0.30 UJ	0.30		ppbV	1	10/8/2018 3:49:00 PM
2,2,4-trimethylpentane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
4-ethyltoluene	< 0.15 UJ	0.15		ppbV	1	10/8/2018 3:49:00 PM
Acetone	13	3.0		ppbV	10	10/9/2018 4:04:00 PM
Allyl chloride	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Benzene	0.20	0.15		ppbV	1	10/8/2018 3:49:00 PM
Benzyl chloride	< 0.15 UJ	0.15		ppbV	1	10/8/2018 3:49:00 PM
Bromodichloromethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Bromoform	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Bromomethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Carbon disulfide	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Carbon tetrachloride	0.070	0.030		ppbV	1	10/8/2018 3:49:00 PM
Chlorobenzene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Chloroform	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Chloromethane	0.50	0.15		ppbV	1	10/8/2018 3:49:00 PM
cis-1,2-Dichloroethene	1.1	0.040		ppbV	1	10/8/2018 3:49:00 PM
cis-1,3-Dichloropropene	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Cyclohexane	0.18	0.15		ppbV	1	10/8/2018 3:49:00 PM
Dibromochloromethane	< 0.15	0.15		ppbV	1	10/8/2018 3:49:00 PM
Ethyl acetate	0.35	0.15		ppbV	1	10/8/2018 3:49:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MWP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-03
Lab Order:	C1810010	**Tag Number:**	457,434
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-005A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				**Analyst: RJP**
Freon 12	2.0	0.74		ug/m3	1	10/8/2018 3:49:00 PM
Heptane	6.0	0.61		ug/m3	1	10/8/2018 3:49:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 3:49:00 PM
Hexane	0.99	0.53		ug/m3	1	10/8/2018 3:49:00 PM
Isopropyl alcohol	27 JN	3.7		ug/m3	10	10/9/2018 4:04:00 PM
m&p-Xylene	1.2	1.3	J	ug/m3	1	10/8/2018 3:49:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 3:49:00 PM
Methyl Ethyl Ketone	1.9	0.88		ug/m3	1	10/8/2018 3:49:00 PM
Methyl Isobutyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 3:49:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 3:49:00 PM
Methylene chloride	1.5	0.52		ug/m3	1	10/8/2018 3:49:00 PM
o-Xylene	0.43	0.65	J	ug/m3	1	10/8/2018 3:49:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 3:49:00 PM
Styrene	< 0.64	0.64		ug/m3	1	10/8/2018 3:49:00 PM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	10/8/2018 3:49:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 3:49:00 PM
Toluene	3.5	0.57		ug/m3	1	10/8/2018 3:49:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 3:49:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 3:49:00 PM
Trichloroethene	13	0.16		ug/m3	1	10/8/2018 3:49:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 3:49:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 3:49:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 3:49:00 PM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-03
Lab Order:	C1810010	**Tag Number:**	459,304
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-006A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				**Analyst: RJP**
1,1,1-Trichloroethane	1.0	0.82		ug/m3	1	10/9/2018 10:45:00 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/9/2018 10:45:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 10:45:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 10:45:00 AM
1,1-Dichloroethene	16	5.6		ug/m3	9	10/10/2018 2:04:00 AM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/9/2018 10:45:00 AM
1,2,4-Trimethylbenzene	5.9	0.74	J	ug/m3	1	10/9/2018 10:45:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 10:45:00 AM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 10:45:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 10:45:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 10:45:00 AM
1,3,5-Trimethylbenzene	3.4	0.74	J	ug/m3	1	10/9/2018 10:45:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 10:45:00 AM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 10:45:00 AM
1,4-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 10:45:00 AM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/9/2018 10:45:00 AM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/9/2018 10:45:00 AM
4-ethyltoluene	1.5	0.74	J	ug/m3	1	10/9/2018 10:45:00 AM
Acetone	46	6.4		ug/m3	9	10/10/2018 2:04:00 AM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 10:45:00 AM
Benzene	4.8	0.48		ug/m3	1	10/9/2018 10:45:00 AM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/9/2018 10:45:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 10:45:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 10:45:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 10:45:00 AM
Carbon disulfide	5.1	0.47		ug/m3	1	10/9/2018 10:45:00 AM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	10/9/2018 10:45:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 10:45:00 AM
Chloroethane	0.58	0.40		ug/m3	1	10/9/2018 10:45:00 AM
Chloroform	21	6.8		ug/m3	9	10/10/2018 2:04:00 AM
Chloromethane	0.62	0.31		ug/m3	1	10/9/2018 10:45:00 AM
cis-1,2-Dichloroethene	9000	4400		ug/m3	7290	10/10/2018 1:15:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 10:45:00 AM
Cyclohexane	34	4.6		ug/m3	9	10/10/2018 2:04:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 10:45:00 AM
Ethyl acetate	< 0.54	0.54		ug/m3	1	10/9/2018 10:45:00 AM
Ethylbenzene	1.2	0.65		ug/m3	1	10/9/2018 10:45:00 AM
Freon 11	1.5	0.84		ug/m3	1	10/9/2018 10:45:00 AM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 10:45:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 10:45:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

mkp 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-03
Lab Order:	C1810010	**Tag Number:**	459,304
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-006A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
Freon 12	2.1	0.74		ug/m3	1	10/9/2018 10:45:00 AM
Heptane	< 0.61	0.61		ug/m3	1	10/9/2018 10:45:00 AM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/9/2018 10:45:00 AM
Hexane	13	4.9		ug/m3	9	10/10/2018 2:04:00 AM
Isopropyl alcohol	6.6 SH	3.4		ug/m3	9	10/10/2018 2:04:00 AM
m&p-Xylene	3.9	1.3		ug/m3	1	10/9/2018 10:45:00 AM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 10:45:00 AM
Methyl Ethyl Ketone	5.0	6.0	J	ug/m3	9	10/10/2018 2:04:00 AM
Methyl Isobutyl Ketone	2.4 J	1.2		ug/m3	1	10/9/2018 10:45:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 10:45:00 AM
Methylene chloride	10	4.9		ug/m3	9	10/10/2018 2:04:00 AM
o-Xylene	1.6	0.65		ug/m3	1	10/9/2018 10:45:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 10:45:00 AM
Styrene	1.4	0.64		ug/m3	1	10/9/2018 10:45:00 AM
Tetrachloroethylene	38	9.5		ug/m3	9	10/10/2018 2:04:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 10:45:00 AM
Toluene	8.5	5.3		ug/m3	9	10/10/2018 2:04:00 AM
trans-1,2-Dichloroethene	35	5.5		ug/m3	9	10/10/2018 2:04:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 10:45:00 AM
Trichloroethene	23000	5900		ug/m3	7290	10/10/2018 1:15:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 10:45:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 10:45:00 AM
Vinyl chloride	1.0	0.38		ug/m3	1	10/9/2018 10:45:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
-	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

mcp 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	FD-01-20181001
Lab Order:	C1810010	**Tag Number:**	95,304
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-007A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	0.98	0.82		ug/m3	1	10/9/2018 2:01:00 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/9/2018 2:01:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 2:01:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 2:01:00 AM
1,1-Dichloroethene	15	5.6		ug/m3	9	10/10/2018 3:21:00 AM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/9/2018 2:01:00 AM
1,2,4-Trimethylbenzene	6.1	0.74	J	ug/m3	1	10/9/2018 2:01:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 2:01:00 AM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 2:01:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 2:01:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 2:01:00 AM
1,3,5-Trimethylbenzene	3.6	0.74	J	ug/m3	1	10/9/2018 2:01:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 2:01:00 AM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 2:01:00 AM
1,4-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 2:01:00 AM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/9/2018 2:01:00 AM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/9/2018 2:01:00 AM
4-ethyltoluene	1.4	0.74	J	ug/m3	1	10/9/2018 2:01:00 AM
Acetone	41	5.4		ug/m3	9	10/10/2018 3:21:00 AM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 2:01:00 AM
Benzene	4.7	0.48		ug/m3	1	10/9/2018 2:01:00 AM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/9/2018 2:01:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 2:01:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 2:01:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 2:01:00 AM
Carbon disulfide	4.8	0.47		ug/m3	1	10/9/2018 2:01:00 AM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	10/9/2018 2:01:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 2:01:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	10/9/2018 2:01:00 AM
Chloroform	20	5.8		ug/m3	9	10/10/2018 3:21:00 AM
Chloromethane	0.89	0.31		ug/m3	1	10/9/2018 2:01:00 AM
cis-1,2-Dichloroethene	7800	4400		ug/m3	7290	10/10/2018 1:52:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 2:01:00 AM
Cyclohexane	32	4.8		ug/m3	9	10/10/2018 3:21:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 2:01:00 AM
Ethyl acetate	< 0.54	0.54		ug/m3	1	10/9/2018 2:01:00 AM
Ethylbenzene	1.1	0.65		ug/m3	1	10/9/2018 2:01:00 AM
Freon 11	1.5	0.84		ug/m3	1	10/9/2018 2:01:00 AM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 2:01:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 2:01:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

mmp 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	FD-01-20181001
Lab Order:	C1810010	**Tag Number:**	95,304
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-007A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
Freon 12	1.8	0.74		ug/m3	1	10/9/2018 2:01:00 AM
Heptane	8.9	5.7		ug/m3	9	10/10/2018 3:21:00 AM
Hexachloro-1,3-butadiene	< 1.6	1.6	UJ	ug/m3	1	10/9/2018 2:01:00 AM
Hexane	12	4.9		ug/m3	9	10/10/2018 3:21:00 AM
Isopropyl alcohol	3.8	0.37	JN	ug/m3	1	10/9/2018 2:01:00 AM
m&p-Xylene	3.6	1.3		ug/m3	1	10/9/2018 2:01:00 AM
Methyl Butyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/9/2018 2:01:00 AM
Methyl Ethyl Ketone	5.8	0.88		ug/m3	1	10/9/2018 2:01:00 AM
Methyl Isobutyl Ketone	2.3	1.2	J	ug/m3	1	10/9/2018 2:01:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 2:01:00 AM
Methylene chloride	10	4.9		ug/m3	9	10/10/2018 3:21:00 AM
o-Xylene	1.5	0.65		ug/m3	1	10/9/2018 2:01:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 2:01:00 AM
Styrene	1.5	0.64		ug/m3	1	10/9/2018 2:01:00 AM
Tetrachloroethylene	39	9.5		ug/m3	9	10/10/2018 3:21:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 2:01:00 AM
Toluene	8.1	5.3		ug/m3	9	10/10/2018 3:21:00 AM
trans-1,2-Dichloroethene	33	5.5		ug/m3	9	10/10/2018 3:21:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 2:01:00 AM
Trichloroethene	17000	5900		ug/m3	7290	10/10/2018 1:52:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 2:01:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 2:01:00 AM
Vinyl chloride	1.1	0.38		ug/m3	1	10/9/2018 2:01:00 AM

Qualifiers:	**	Quantitation Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
	S	Spike Recovery outside accepted recovery limits		

mkp 5/17/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-04
Lab Order:	C1810010	**Tag Number:**	554,399
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-008A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 2:42:00 AM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/9/2018 2:42:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 2:42:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 2:42:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 2:42:00 AM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 2:42:00 AM
1,2,4-Trimethylbenzene	5.5 J	0.74		ug/m3	1	10/9/2018 2:42:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 2:42:00 AM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 2:42:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 2:42:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 2:42:00 AM
1,3,5-Trimethylbenzene	2.9 J	0.74		ug/m3	1	10/9/2018 2:42:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 2:42:00 AM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 2:42:00 AM
1,4-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 2:42:00 AM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 2:42:00 AM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/9/2018 2:42:00 AM
4-ethyltoluene	1.4 J	0.74		ug/m3	1	10/9/2018 2:42:00 AM
Acetone	35	7.1		ug/m3	10	10/10/2018 4:35:00 AM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 2:42:00 AM
Benzene	0.99	0.48		ug/m3	1	10/9/2018 2:42:00 AM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/9/2018 2:42:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 2:42:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 2:42:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 2:42:00 AM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/9/2018 2:42:00 AM
Carbon tetrachloride	1.3	0.94		ug/m3	1	10/9/2018 2:42:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 2:42:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	10/9/2018 2:42:00 AM
Chloroform	0.88	0.73		ug/m3	1	10/9/2018 2:42:00 AM
Chloromethane	0.85	0.31		ug/m3	1	10/9/2018 2:42:00 AM
cis-1,2-Dichloroethene	6.3	0.59		ug/m3	1	10/9/2018 2:42:00 AM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 2:42:00 AM
Cyclohexane	4.6	0.52		ug/m3	1	10/9/2018 2:42:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 2:42:00 AM
Ethyl acetate	2.5	0.54		ug/m3	1	10/9/2018 2:42:00 AM
Ethylbenzene	0.56	0.65	J	ug/m3	1	10/9/2018 2:42:00 AM
Freon 11	2.9	0.84		ug/m3	1	10/9/2018 2:42:00 AM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 2:42:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 2:42:00 AM

Qualifiers:

**	Quantitation Limit	-	Results reported are not Blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

mcps 12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-04
Lab Order:	C1810010	**Tag Number:**	554,399
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-008A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 12	2.5	0.74		ug/m3	1	10/9/2018 2:42:00 AM
Heptane	4.0	0.61		ug/m3	1	10/9/2018 2:42:00 AM
Hexachloro-1,3-butadiene	< 1.6	1.6	UJ	ug/m3	1	10/9/2018 2:42:00 AM
Hexane	3.1	0.53		ug/m3	1	10/9/2018 2:42:00 AM
Isopropyl alcohol	5.0	0.37	JN	ug/m3	1	10/9/2018 2:42:00 AM
m&p-Xylene	1.4	1.3		ug/m3	1	10/9/2018 2:42:00 AM
Methyl Butyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/9/2018 2:42:00 AM
Methyl Ethyl Ketone	4.3	0.88		ug/m3	1	10/9/2018 2:42:00 AM
Methyl Isobutyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/9/2018 2:42:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 2:42:00 AM
Methylene chloride	11	5.2		ug/m3	10	10/10/2018 4:35:00 AM
o-Xylene	0.78	0.65		ug/m3	1	10/9/2018 2:42:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 2:42:00 AM
Styrene	1.1	0.64		ug/m3	1	10/9/2018 2:42:00 AM
Tetrachloroethylene	3.6	1.0		ug/m3	1	10/9/2018 2:42:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 2:42:00 AM
Toluene	3.5	0.57		ug/m3	1	10/9/2018 2:42:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 2:42:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 2:42:00 AM
Trichloroethene	21	8.1		ug/m3	10	10/10/2018 4:35:00 AM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 2:42:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 2:42:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	10/9/2018 2:42:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-04
Lab Order:	C1810010	**Tag Number:**	318,432
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-009A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				**Analyst: RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 4:30:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/8/2018 4:30:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 4:30:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 4:30:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 4:30:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 4:30:00 PM
1,2,4-Trimethylbenzene	1.4	0.74	J	ug/m3	1	10/8/2018 4:30:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 4:30:00 PM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 4:30:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 4:30:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 4:30:00 PM
1,3,5-Trimethylbenzene	0.98	0.74	J	ug/m3	1	10/8/2018 4:30:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 4:30:00 PM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 4:30:00 PM
1,4-Dichlorobenzene	12	0.90	J	ug/m3	1	10/8/2018 4:30:00 PM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 4:30:00 PM
2,2,4-trimethylpentane	1.4	0.70		ug/m3	1	10/8/2018 4:30:00 PM
4-ethyltoluene	< 0.74	0.74	UJ	ug/m3	1	10/8/2018 4:30:00 PM
Acetone	44	7.1		ug/m3	10	10/9/2018 4:41:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 4:30:00 PM
Benzene	0.67	0.48		ug/m3	1	10/8/2018 4:30:00 PM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/8/2018 4:30:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 4:30:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 4:30:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 4:30:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 4:30:00 PM
Carbon tetrachloride	0.50	0.19		ug/m3	1	10/8/2018 4:30:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 4:30:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 4:30:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 4:30:00 PM
Chloromethane	1.5	0.31		ug/m3	1	10/8/2018 4:30:00 PM
cis-1,2-Dichloroethene	7.1	0.16		ug/m3	1	10/8/2018 4:30:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 4:30:00 PM
Cyclohexane	0.52	0.52		ug/m3	1	10/8/2018 4:30:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 4:30:00 PM
Ethyl acetate	1.9	0.54		ug/m3	1	10/8/2018 4:30:00 PM
Ethylbenzene	0.69	0.65		ug/m3	1	10/8/2018 4:30:00 PM
Freon 11	8.5	0.84		ug/m3	1	10/8/2018 4:30:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 4:30:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 4:30:00 PM

Qualifiers:

**	Quantitation Limit	-	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte, Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-04
Lab Order:	C1810010	**Tag Number:**	318,432
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-009A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				**Analyst: RJP**
Freon 12	2.3	0.74		ug/m3	1	10/8/2018 4:30:00 PM
Heptane	1.5	0.61		ug/m3	1	10/8/2018 4:30:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 4:30:00 PM
Hexane	1.6	0.53		ug/m3	1	10/8/2018 4:30:00 PM
Isopropyl alcohol	9.3 JH	3.7		ug/m3	10	10/9/2018 4:41:00 PM
m&p-Xylene	2.3	1.3		ug/m3	1	10/8/2018 4:30:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 4:30:00 PM
Methyl Ethyl Ketone	2.4	0.88		ug/m3	1	10/8/2018 4:30:00 PM
Methyl Isobutyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 4:30:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 4:30:00 PM
Methylene chloride	2.2	0.52		ug/m3	1	10/8/2018 4:30:00 PM
o-Xylene	0.82	0.65		ug/m3	1	10/8/2018 4:30:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 4:30:00 PM
Styrene	0.47	0.64	J	ug/m3	1	10/8/2018 4:30:00 PM
Tetrachloroethylene	5.9	1.0		ug/m3	1	10/8/2018 4:30:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 4:30:00 PM
Toluene	5.7	0.57		ug/m3	1	10/8/2018 4:30:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 4:30:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 4:30:00 PM
Trichloroethene	16	1.6		ug/m3	10	10/9/2018 4:41:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 4:30:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 4:30:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 4:30:00 PM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
-	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-05
Lab Order:	C1810010	**Tag Number:**	542,373
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-010A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 4:02:00 AM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/9/2018 4:02:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 4:02:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 4:02:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 4:02:00 AM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 4:02:00 AM
1,2,4-Trimethylbenzene	5.4 J	0.74		ug/m3	1	10/9/2018 4:02:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 4:02:00 AM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 4:02:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 4:02:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 4:02:00 AM
1,3,5-Trimethylbenzene	2.8 J	0.74		ug/m3	1	10/9/2018 4:02:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 4:02:00 AM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 4:02:00 AM
1,4-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 4:02:00 AM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 4:02:00 AM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/9/2018 4:02:00 AM
4-ethyltoluene	1.3 J	0.74		ug/m3	1	10/9/2018 4:02:00 AM
Acetone	61	7.1		ug/m3	10	10/10/2018 5:12:00 AM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 4:02:00 AM
Benzene	0.93	0.48		ug/m3	1	10/9/2018 4:02:00 AM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/9/2018 4:02:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 4:02:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 4:02:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 4:02:00 AM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/9/2018 4:02:00 AM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	10/9/2018 4:02:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 4:02:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	10/9/2018 4:02:00 AM
Chloroform	1.2	0.73		ug/m3	1	10/9/2018 4:02:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	10/9/2018 4:02:00 AM
cis-1,2-Dichloroethene	1.6	0.59		ug/m3	1	10/9/2018 4:02:00 AM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 4:02:00 AM
Cyclohexane	8.9	5.2		ug/m3	10	10/10/2018 5:12:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 4:02:00 AM
Ethyl acetate	2.6	0.54		ug/m3	1	10/9/2018 4:02:00 AM
Ethylbenzene	0.56	0.65	J	ug/m3	1	10/9/2018 4:02:00 AM
Freon 11	2.6	0.84		ug/m3	1	10/9/2018 4:02:00 AM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 4:02:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 4:02:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKS 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-05
Lab Order:	C1810010	**Tag Number:**	542,373
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-010A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
Freon 12	2.1	0.74		ug/m3	1	10/9/2018 4:02:00 AM
Heptane	8.2	6.1		ug/m3	10	10/10/2018 5:12:00 AM
Hexachloro-1,3-butadiene	< 1.6	1.6	UJ	ug/m3	1	10/9/2018 4:02:00 AM
Hexane	14	5.3		ug/m3	10	10/10/2018 5:12:00 AM
Isopropyl alcohol	9.3	3.7	JN	ug/m3	10	10/10/2018 5:12:00 AM
m&p-Xylene	1.4	1.3		ug/m3	1	10/9/2018 4:02:00 AM
Methyl Butyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/9/2018 4:02:00 AM
Methyl Ethyl Ketone	4.6	0.88		ug/m3	1	10/9/2018 4:02:00 AM
Methyl Isobutyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/9/2018 4:02:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 4:02:00 AM
Methylene chloride	10	5.2		ug/m3	10	10/10/2018 5:12:00 AM
o-Xylene	0.82	0.65		ug/m3	1	10/9/2018 4:02:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 4:02:00 AM
Styrene	1.1	0.64		ug/m3	1	10/9/2018 4:02:00 AM
Tetrachloroethylene	1.6	1.0		ug/m3	1	10/9/2018 4:02:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 4:02:00 AM
Toluene	2.9	0.57		ug/m3	1	10/9/2018 4:02:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 4:02:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 4:02:00 AM
Trichloroethene	15	8.1		ug/m3	10	10/10/2018 5:12:00 AM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 4:02:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 4:02:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	10/9/2018 4:02:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-05
Lab Order:	C1810010	**Tag Number:**	479,446
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-011A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				**Analyst: RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 5:12:00 PM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/8/2018 5:12:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 5:12:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 5:12:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 5:12:00 PM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 5:12:00 PM
1,2,4-Trimethylbenzene	2.2 J	0.74		ug/m3	1	10/8/2018 5:12:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 5:12:00 PM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 5:12:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 5:12:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 5:12:00 PM
1,3,5-Trimethylbenzene	1.5 J	0.74		ug/m3	1	10/8/2018 5:12:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 5:12:00 PM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 5:12:00 PM
1,4-Dichlorobenzene	11 J	9.0		ug/m3	10	10/9/2018 5:18:00 PM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 5:12:00 PM
2,2,4-trimethylpentane	1.5	0.70		ug/m3	1	10/8/2018 5:12:00 PM
4-ethyltoluene	0.54 J	0.74	J	ug/m3	1	10/8/2018 5:12:00 PM
Acetone	60	7.1		ug/m3	10	10/9/2018 5:18:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 5:12:00 PM
Benzene	0.93	0.48		ug/m3	1	10/8/2018 5:12:00 PM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/8/2018 5:12:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 5:12:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 5:12:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 5:12:00 PM
Carbon disulfide	2.8	0.47		ug/m3	1	10/8/2018 5:12:00 PM
Carbon tetrachloride	0.50	0.19		ug/m3	1	10/8/2018 5:12:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 5:12:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 5:12:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 5:12:00 PM
Chloromethane	1.5	0.31		ug/m3	1	10/8/2018 5:12:00 PM
cis-1,2-Dichloroethene	13	1.6		ug/m3	10	10/9/2018 5:18:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 5:12:00 PM
Cyclohexane	0.55	0.52		ug/m3	1	10/8/2018 5:12:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 5:12:00 PM
Ethyl acetate	2.1	0.54		ug/m3	1	10/8/2018 5:12:00 PM
Ethylbenzene	0.82	0.65		ug/m3	1	10/8/2018 5:12:00 PM
Freon 11	4.2	0.84		ug/m3	1	10/8/2018 5:12:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 5:12:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 5:12:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	1A-05
Lab Order:	C1810010	**Tag Number:**	479,446
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-011A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Freon 12	2.2	0.74		ug/m3	1	10/8/2018 5:12:00 PM
Heptane	1.6	0.61		ug/m3	1	10/8/2018 5:12:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 5:12:00 PM
Hexane	1.7	0.53		ug/m3	1	10/8/2018 5:12:00 PM
Isopropyl alcohol	17 JN	3.7		ug/m3	10	10/9/2018 5:18:00 PM
m&p-Xylene	3.3	1.3		ug/m3	1	10/8/2018 5:12:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 5:12:00 PM
Methyl Ethyl Ketone	2.6	0.88		ug/m3	1	10/8/2018 5:12:00 PM
Methyl Isobutyl Ketone	2.5 J	1.2		ug/m3	1	10/8/2018 5:12:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 5:12:00 PM
Methylene chloride	1.8	0.52		ug/m3	1	10/8/2018 5:12:00 PM
o-Xylene	1.2	0.65		ug/m3	1	10/8/2018 5:12:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 5:12:00 PM
Styrene	0.60	0.64	J	ug/m3	1	10/8/2018 5:12:00 PM
Tetrachloroethylene	18	10		ug/m3	10	10/9/2018 5:18:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 5:12:00 PM
Toluene	6.9	0.57		ug/m3	1	10/8/2018 5:12:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 5:12:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 5:12:00 PM
Trichloroethene	70	1.6		ug/m3	10	10/9/2018 5:18:00 PM
Vinyl acetate	0.35	0.53	J	ug/m3	1	10/8/2018 5:12:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 5:12:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 5:12:00 PM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte, Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MFP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-06
Lab Order:	C1810010	**Tag Number:**	233,386
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-012A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: RJP
1,1,1-Trichloroethane	2.8	0.82		ug/m3	1	10/9/2018 4:42:00 AM
1,1,2,2-Tetrachloroethene	< 1.0 UJ	1.0		ug/m3	1	10/9/2018 4:42:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 4:42:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 4:42:00 AM
1,1-Dichloroethene	5.8	0.59		ug/m3	1	10/9/2018 4:42:00 AM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 4:42:00 AM
1,2,4-Trimethylbenzene	5.1 J	0.74		ug/m3	1	10/9/2018 4:42:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 4:42:00 AM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 4:42:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 4:42:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 4:42:00 AM
1,3,5-Trimethylbenzene	2.7 J	0.74		ug/m3	1	10/9/2018 4:42:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 4:42:00 AM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 4:42:00 AM
1,4-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 4:42:00 AM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 4:42:00 AM
2,2,4-trimethylpentane	0.84	0.70		ug/m3	1	10/9/2018 4:42:00 AM
4-ethyltoluene	1.3 J	0.74		ug/m3	1	10/9/2018 4:42:00 AM
Acetone	190	64		ug/m3	90	10/10/2018 6:30:00 AM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 4:42:00 AM
Benzene	2.1	0.48		ug/m3	1	10/9/2018 4:42:00 AM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/9/2018 4:42:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 4:42:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 4:42:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 4:42:00 AM
Carbon disulfide	9.2	4.4		ug/m3	9	10/10/2018 5:53:00 AM
Carbon tetrachloride	1.4	0.94		ug/m3	1	10/9/2018 4:42:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 4:42:00 AM
Chloroethane	5.5	0.40		ug/m3	1	10/9/2018 4:42:00 AM
Chloroform	240	68		ug/m3	90	10/10/2018 6:30:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	10/9/2018 4:42:00 AM
cis-1,2-Dichloroethene	730	55		ug/m3	90	10/10/2018 6:30:00 AM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 4:42:00 AM
Cyclohexane	30	4.8		ug/m3	9	10/10/2018 5:53:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 4:42:00 AM
Ethyl acetate	< 0.54	0.54		ug/m3	1	10/9/2018 4:42:00 AM
Ethylbenzene	0.56	0.65	J	ug/m3	1	10/9/2018 4:42:00 AM
Freon 11	2.5	0.84		ug/m3	1	10/9/2018 4:42:00 AM
Freon 113	5.7	1.1		ug/m3	1	10/9/2018 4:42:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 4:42:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-06
Lab Order:	C1810010	**Tag Number:**	233,386
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-012A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
Freon 12	2.4	0.74		ug/m3	1	10/9/2018 4:42:00 AM
Heptane	19	5.7		ug/m3	9	10/10/2018 5:53:00 AM
Hexachloro-1,3-butadiene	< 1.6	1.6	UJ	ug/m3	1	10/9/2018 4:42:00 AM
Hexane	43	4.9		ug/m3	9	10/10/2018 5:53:00 AM
Isopropyl alcohol	11	3.4	JN	ug/m3	9	10/10/2018 5:53:00 AM
m&p-Xylene	1.6	1.3		ug/m3	1	10/9/2018 4:42:00 AM
Methyl Butyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/9/2018 4:42:00 AM
Methyl Ethyl Ketone	6.1	0.88		ug/m3	1	10/9/2018 4:42:00 AM
Methyl Isobutyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/9/2018 4:42:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 4:42:00 AM
Methylene chloride	14	4.9		ug/m3	9	10/10/2018 5:53:00 AM
o-Xylene	0.62	0.65		ug/m3	1	10/9/2018 4:42:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 4:42:00 AM
Styrene	1.1	0.64		ug/m3	1	10/9/2018 4:42:00 AM
Tetrachloroethylene	9.5	1.0		ug/m3	1	10/9/2018 4:42:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 4:42:00 AM
Toluene	3.1	0.57		ug/m3	1	10/9/2018 4:42:00 AM
trans-1,2-Dichloroethene	76	5.5		ug/m3	9	10/10/2018 5:53:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 4:42:00 AM
Trichloroethene	3300	210		ug/m3	270	10/10/2018 2:29:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 4:42:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 4:42:00 AM
Vinyl chloride	1.6	0.38		ug/m3	1	10/9/2018 4:42:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
-	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-06
Lab Order:	C1810010	**Tag Number:**	327,453
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-013A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 5:53:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/8/2018 5:53:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 5:53:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 5:53:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 5:53:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 5:53:00 PM
1,2,4-Trimethylbenzene	1.3	0.74	J	ug/m3	1	10/8/2018 5:53:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 5:53:00 PM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 5:53:00 PM
1,2-Dichloroethane	1.3	0.61		ug/m3	1	10/8/2018 5:53:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 5:53:00 PM
1,3,5-Trimethylbenzene	< 0.74	0.74	UJ	ug/m3	1	10/8/2018 5:53:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 5:53:00 PM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 5:53:00 PM
1,4-Dichlorobenzene	1.6	0.90	J	ug/m3	1	10/8/2018 5:53:00 PM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 5:53:00 PM
2,2,4-trimethylpentane	3.7	0.70		ug/m3	1	10/8/2018 5:53:00 PM
4-ethyltoluene	< 0.74	0.74	UJ	ug/m3	1	10/8/2018 5:53:00 PM
Acetone	33	7.1		ug/m3	10	10/9/2018 5:55:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 5:53:00 PM
Benzene	1.6	0.48		ug/m3	1	10/8/2018 5:53:00 PM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/8/2018 5:53:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 5:53:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 5:53:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 5:53:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 5:53:00 PM
Carbon tetrachloride	0.44	0.19		ug/m3	1	10/8/2018 5:53:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 5:53:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 5:53:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 5:53:00 PM
Chloromethane	1.2	0.31		ug/m3	1	10/8/2018 5:53:00 PM
cis-1,2-Dichloroethene	14	1.6		ug/m3	10	10/9/2018 5:55:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 5:53:00 PM
Cyclohexane	0.69	0.52		ug/m3	1	10/8/2018 5:53:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 5:53:00 PM
Ethyl acetate	1.9	0.54		ug/m3	1	10/8/2018 5:53:00 PM
Ethylbenzene	0.82	0.65		ug/m3	1	10/8/2018 5:53:00 PM
Freon 11	3.0	0.84		ug/m3	1	10/8/2018 5:53:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 5:53:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 5:53:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

mrp 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-06
Lab Order:	C1810010	**Tag Number:**	327,453
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-013A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				**Analyst: RJP**
Freon 12	2.4	0.74		ug/m3	1	10/8/2018 5:53:00 PM
Heptane	1.5	0.61		ug/m3	1	10/8/2018 5:53:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 5:53:00 PM
Hexane	2.2	0.53		ug/m3	1	10/8/2018 5:53:00 PM
Isopropyl alcohol	7.4 JN	3.7		ug/m3	10	10/9/2018 5:55:00 PM
m&p-Xylene	2.7	1.3		ug/m3	1	10/8/2018 5:53:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 5:53:00 PM
Methyl Ethyl Ketone	2.9	0.86		ug/m3	1	10/8/2018 5:53:00 PM
Methyl Isobutyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 5:53:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 5:53:00 PM
Methylene chloride	1.1	0.52		ug/m3	1	10/8/2018 5:53:00 PM
o-Xylene	0.96	0.65		ug/m3	1	10/8/2018 5:53:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 5:53:00 PM
Styrene	0.47	0.64	J	ug/m3	1	10/8/2018 5:53:00 PM
Tetrachloroethylene	12	1.0		ug/m3	1	10/8/2018 5:53:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 5:53:00 PM
Toluene	6.8	0.57		ug/m3	1	10/8/2018 5:53:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 5:53:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 5:53:00 PM
Trichloroethene	66	1.6		ug/m3	10	10/9/2018 5:55:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 5:53:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 5:53:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 5:53:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-07
Lab Order:	C1810010	**Tag Number:**	232,452
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-014A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 5:22:00 AM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/9/2018 5:22:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 5:22:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 5:22:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 5:22:00 AM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 5:22:00 AM
1,2,4-Trimethylbenzene	4.7 J	0.74		ug/m3	1	10/9/2018 5:22:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 5:22:00 AM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 5:22:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 5:22:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 5:22:00 AM
1,3,5-Trimethylbenzene	2.5 J	0.74		ug/m3	1	10/9/2018 5:22:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 5:22:00 AM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 5:22:00 AM
1,4-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 5:22:00 AM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 5:22:00 AM
2,2,4-trimethylpentane	1.3	0.70		ug/m3	1	10/9/2018 5:22:00 AM
4-ethyltoluene	1.2 J	0.74		ug/m3	1	10/9/2018 5:22:00 AM
Acetone	120	28		ug/m3	40	10/10/2018 3:43:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 5:22:00 AM
Benzene	2.6	0.48		ug/m3	1	10/9/2018 5:22:00 AM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/9/2018 5:22:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 5:22:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 5:22:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 5:22:00 AM
Carbon disulfide	3.4	0.47		ug/m3	1	10/9/2018 5:22:00 AM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	10/9/2018 5:22:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 5:22:00 AM
Chloroethane	1.3	0.40		ug/m3	1	10/9/2018 5:22:00 AM
Chloroform	18	7.3		ug/m3	10	10/10/2018 3:06:00 PM
Chloromethane	1.2	0.31		ug/m3	1	10/9/2018 5:22:00 AM
cis-1,2-Dichloroethene	11	5.9		ug/m3	10	10/10/2018 3:06:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 5:22:00 AM
Cyclohexane	37	5.2		ug/m3	10	10/10/2018 3:06:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 5:22:00 AM
Ethyl acetate	2.8	0.54		ug/m3	1	10/9/2018 5:22:00 AM
Ethylbenzene	0.52	0.65	J	ug/m3	1	10/9/2018 5:22:00 AM
Freon 11	3.7	0.84		ug/m3	1	10/9/2018 5:22:00 AM
Freon 113	0.84	1.1	J	ug/m3	1	10/9/2018 5:22:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 5:22:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MM 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-07
Lab Order:	C1810010	**Tag Number:**	232,452
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-014A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
Freon 12	3.0	0.74		ug/m3	1	10/9/2018 5:22:00 AM
Heptane	25	6.1		ug/m3	10	10/10/2018 3:06:00 PM
Hexachloro-1,3-butadiene	< 1.6	1.6	UJ	ug/m3	1	10/9/2018 5:22:00 AM
Hexane	55	5.3		ug/m3	10	10/10/2018 3:06:00 PM
Isopropyl alcohol	7.9	3.7	JN	ug/m3	10	10/10/2018 3:06:00 PM
m&p-Xylene	1.4	1.3		ug/m3	1	10/9/2018 5:22:00 AM
Methyl Butyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/9/2018 5:22:00 AM
Methyl Ethyl Ketone	5.6	0.88		ug/m3	1	10/9/2018 5:22:00 AM
Methyl Isobutyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/9/2018 5:22:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 5:22:00 AM
Methylene chloride	9.7	5.2		ug/m3	10	10/10/2018 3:06:00 PM
o-Xylene	0.74	0.65		ug/m3	1	10/9/2018 5:22:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 5:22:00 AM
Styrene	0.98	0.64		ug/m3	1	10/9/2018 5:22:00 AM
Tetrachloroethylene	1.6	1.0		ug/m3	1	10/9/2018 5:22:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 5:22:00 AM
Toluene	2.9	0.57		ug/m3	1	10/9/2018 5:22:00 AM
trans-1,2-Dichloroethene	4.9	0.59		ug/m3	1	10/9/2018 5:22:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 5:22:00 AM
Trichloroethene	95	8.1		ug/m3	10	10/10/2018 3:06:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 5:22:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 5:22:00 AM
Vinyl chloride	1.1	0.38		ug/m3	1	10/9/2018 5:22:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
-	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-07
Lab Order:	C1810010	**Tag Number:**	1450,395
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-015A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 6:33:00 PM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/8/2018 6:33:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 6:33:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 6:33:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 6:33:00 PM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 6:33:00 PM
1,2,4-Trimethylbenzene	1.8 J	0.74		ug/m3	1	10/8/2018 6:33:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 6:33:00 PM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 6:33:00 PM
1,2-Dichloroethane	1.3	0.61		ug/m3	1	10/8/2018 6:33:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 6:33:00 PM
1,3,5-Trimethylbenzene	0.88 J	0.74		ug/m3	1	10/8/2018 6:33:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 6:33:00 PM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 6:33:00 PM
1,4-Dichlorobenzene	1.7 J	0.90		ug/m3	1	10/8/2018 6:33:00 PM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 6:33:00 PM
2,2,4-trimethylpentane	3.9	0.70		ug/m3	1	10/8/2018 6:33:00 PM
4-ethyltoluene	< 0.74 UJ	0.74		ug/m3	1	10/8/2018 6:33:00 PM
Acetone	37	7.1		ug/m3	10	10/9/2018 6:33:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 6:33:00 PM
Benzene	1.8	0.48		ug/m3	1	10/8/2018 6:33:00 PM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/8/2018 6:33:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 6:33:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 6:33:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 6:33:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 6:33:00 PM
Carbon tetrachloride	0.44	0.19		ug/m3	1	10/8/2018 6:33:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 6:33:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 6:33:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 6:33:00 PM
Chloromethane	0.85	0.31		ug/m3	1	10/8/2018 6:33:00 PM
cis-1,2-Dichloroethene	13	1.6		ug/m3	10	10/9/2018 6:33:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 6:33:00 PM
Cyclohexane	0.62	0.52		ug/m3	1	10/8/2018 6:33:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 6:33:00 PM
Ethyl acetate	1.8	0.54		ug/m3	1	10/8/2018 6:33:00 PM
Ethylbenzene	0.91	0.65		ug/m3	1	10/8/2018 6:33:00 PM
Freon 11	3.0	0.84		ug/m3	1	10/8/2018 6:33:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 6:33:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 6:33:00 PM

Qualifiers:

**	Quantitation Limit	-	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-07
Lab Order:	C1810010	**Tag Number:**	1450,395
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-015A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: RJP
Freon 12	2.1	0.74		ug/m3	1	10/8/2018 6:33:00 PM
Heptane	1.4	0.61		ug/m3	1	10/8/2018 6:33:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 6:33:00 PM
Hexane	2.6	0.53		ug/m3	1	10/8/2018 6:33:00 PM
Isopropyl alcohol	5.0 JN	0.37		ug/m3	1	10/8/2018 6:33:00 PM
m&p-Xylene	3.0	1.3		ug/m3	1	10/8/2018 6:33:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 6:33:00 PM
Methyl Ethyl Ketone	3.1	0.88		ug/m3	1	10/8/2018 6:33:00 PM
Methyl Isobutyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 6:33:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 6:33:00 PM
Methylene chloride	1.0	0.52		ug/m3	1	10/8/2018 6:33:00 PM
o-Xylene	1.0	0.65		ug/m3	1	10/8/2018 6:33:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 6:33:00 PM
Styrene	0.47	0.64	J	ug/m3	1	10/8/2018 6:33:00 PM
Tetrachloroethylene	9.1	1.0		ug/m3	1	10/8/2018 6:33:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 6:33:00 PM
Toluene	7.8	0.57		ug/m3	1	10/8/2018 6:33:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 6:33:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 6:33:00 PM
Trichloroethene	51	1.5		ug/m3	10	10/9/2018 6:33:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 6:33:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 6:33:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 6:33:00 PM

Qualifiers:					
	**	Quantitation Limit	.	Results reported are not blank corrected	
	B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit	
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection	
	S	Spike Recovery outside accepted recovery limits			

VKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-08
Lab Order:	C1810010	**Tag Number:**	368,437
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-016A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 6:02:00 AM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/9/2018 6:02:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 6:02:00 AM
1,1-Dichloroethene	< 0.61	0.61		ug/m3	1	10/9/2018 6:02:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 6:02:00 AM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 6:02:00 AM
1,2,4-Trimethylbenzene	4.0 J	0.74		ug/m3	1	10/9/2018 6:02:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 6:02:00 AM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 6:02:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 6:02:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 6:02:00 AM
1,3,5-Trimethylbenzene	2.4 J	0.74		ug/m3	1	10/9/2018 6:02:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 6:02:00 AM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 6:02:00 AM
1,4-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 6:02:00 AM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 6:02:00 AM
2,2,4-trimethylpentane	0.98	0.70		ug/m3	1	10/9/2018 6:02:00 AM
4-ethyltoluene	0.98 J	0.74		ug/m3	1	10/9/2018 6:02:00 AM
Acetone	180	28		ug/m3	40	10/10/2018 4:57:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 6:02:00 AM
Benzene	2.3	0.48		ug/m3	1	10/9/2018 6:02:00 AM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/9/2018 6:02:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 6:02:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 6:02:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 6:02:00 AM
Carbon disulfide	2.5	0.47		ug/m3	1	10/9/2018 6:02:00 AM
Carbon tetrachloride	6.5	0.94		ug/m3	1	10/9/2018 6:02:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 6:02:00 AM
Chloroethane	1.6	0.40		ug/m3	1	10/9/2018 6:02:00 AM
Chloroform	1.4	0.73		ug/m3	1	10/9/2018 6:02:00 AM
Chloromethane	2.3	0.31		ug/m3	1	10/9/2018 6:02:00 AM
cis-1,2-Dichloroethene	3.8	0.59		ug/m3	1	10/9/2018 6:02:00 AM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 6:02:00 AM
Cyclohexane	58	5.2		ug/m3	10	10/10/2018 4:20:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 6:02:00 AM
Ethyl acetate	3.6	0.54		ug/m3	1	10/9/2018 6:02:00 AM
Ethylbenzene	0.61	0.65	J	ug/m3	1	10/9/2018 6:02:00 AM
Freon 11	1.8	0.84		ug/m3	1	10/9/2018 6:02:00 AM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 6:02:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 6:02:00 AM

Qualifiers:

**	Quantitation Limit	-	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MMPS 11/2/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-08
Lab Order:	C1810010	**Tag Number:**	368,437
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-016A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
Freon 12	2.4	0.74		ug/m3	1	10/9/2018 6:02:00 AM
Heptane	16	6.1		ug/m3	10	10/10/2018 4:20:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/9/2018 6:02:00 AM
Hexane	34	5.3		ug/m3	10	10/10/2018 4:20:00 PM
Isopropyl alcohol	140 JN	15		ug/m3	40	10/10/2018 4:57:00 PM
m&p-Xylene	1.5	1.3		ug/m3	1	10/9/2018 6:02:00 AM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 6:02:00 AM
Methyl Ethyl Ketone	5.7	0.88		ug/m3	1	10/9/2018 6:02:00 AM
Methyl Isobutyl Ketone	1.1 J	1.2	J	ug/m3	1	10/9/2018 6:02:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 6:02:00 AM
Methylene chloride	11	5.2		ug/m3	10	10/10/2018 4:20:00 PM
o-Xylene	0.74	0.65		ug/m3	1	10/9/2018 6:02:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 6:02:00 AM
Styrene	0.98	0.64		ug/m3	1	10/9/2018 6:02:00 AM
Tetrachloroethylene	3.1	1.0		ug/m3	1	10/9/2018 6:02:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 6:02:00 AM
Toluene	8.3	5.7		ug/m3	10	10/10/2018 4:20:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 6:02:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 6:02:00 AM
Trichloroethene	44	8.1		ug/m3	10	10/10/2018 4:20:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 6:02:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 6:02:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	10/9/2018 6:02:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
-	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-08
Lab Order:	C1810010	**Tag Number:**	284,448
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-017A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				**Analyst: RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 7:13:00 PM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/8/2018 7:13:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 7:13:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 7:13:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 7:13:00 PM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 7:13:00 PM
1,2,4-Trimethylbenzene	1.5 J	0.74		ug/m3	1	10/8/2018 7:13:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 7:13:00 PM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 7:13:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 7:13:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 7:13:00 PM
1,3,5-Trimethylbenzene	< 0.74 UJ	0.74		ug/m3	1	10/8/2018 7:13:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 7:13:00 PM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 7:13:00 PM
1,4-Dichlorobenzene	2.5 J	0.90		ug/m3	1	10/8/2018 7:13:00 PM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 7:13:00 PM
2,2,4-trimethylpentane	2.1	0.70		ug/m3	1	10/8/2018 7:13:00 PM
4-ethyltoluene	< 0.74 UJ	0.74		ug/m3	1	10/8/2018 7:13:00 PM
Acetone	46	14		ug/m3	20	10/9/2018 7:11:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 7:13:00 PM
Benzene	0.61	0.48		ug/m3	1	10/8/2018 7:13:00 PM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/8/2018 7:13:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 7:13:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 7:13:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 7:13:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 7:13:00 PM
Carbon tetrachloride	0.44	0.19		ug/m3	1	10/8/2018 7:13:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 7:13:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 7:13:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 7:13:00 PM
Chloromethane	0.99	0.31		ug/m3	1	10/8/2018 7:13:00 PM
cis-1,2-Dichloroethene	12	0.16		ug/m3	1	10/8/2018 7:13:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 7:13:00 PM
Cyclohexane	0.45	0.52	J	ug/m3	1	10/8/2018 7:13:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 7:13:00 PM
Ethyl acetate	1.0	0.54		ug/m3	1	10/8/2018 7:13:00 PM
Ethylbenzene	0.52	0.65	J	ug/m3	1	10/8/2018 7:13:00 PM
Freon 11	5.1	0.84		ug/m3	1	10/8/2018 7:13:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 7:13:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 7:13:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

mnp 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-08
Lab Order:	C1810010	**Tag Number:**	284,448
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-017A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Freon 12	2.3	0.74		ug/m3	1	10/8/2018 7:13:00 PM
Heptane	0.94	0.61		ug/m3	1	10/8/2018 7:13:00 PM
Hexachloro-1,3-butadiene	< 1.6	1.6	UJ	ug/m3	1	10/8/2018 7:13:00 PM
Hexane	1.1	0.53		ug/m3	1	10/8/2018 7:13:00 PM
Isopropyl alcohol	4.8	0.37	JN	ug/m3	1	10/8/2018 7:13:00 PM
m&p-Xylene	1.9	1.3		ug/m3	1	10/8/2018 7:13:00 PM
Methyl Butyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/8/2018 7:13:00 PM
Methyl Ethyl Ketone	2.0	0.88		ug/m3	1	10/8/2018 7:13:00 PM
Methyl Isobutyl Ketone	< 1.2	1.2	UJ	ug/m3	1	10/8/2018 7:13:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 7:13:00 PM
Methylene chloride	1.3	0.52		ug/m3	1	10/8/2018 7:13:00 PM
o-Xylene	0.74	0.65		ug/m3	1	10/8/2018 7:13:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 7:13:00 PM
Styrene	< 0.64	0.64		ug/m3	1	10/8/2018 7:13:00 PM
Tetrachloroethylene	1.9	1.0		ug/m3	1	10/8/2018 7:13:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 7:13:00 PM
Toluene	4.2	0.57		ug/m3	1	10/8/2018 7:13:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 7:13:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 7:13:00 PM
Trichloroethene	28	3.2		ug/m3	20	10/9/2018 7:11:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 7:13:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 7:13:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 7:13:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MVP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-09
Lab Order:	C1810010	**Tag Number:**	564,1171
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-018A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 6:43:00 AM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/9/2018 6:43:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 6:43:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 6:43:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 6:43:00 AM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 6:43:00 AM
1,2,4-Trimethylbenzene	4.3 J	0.74		ug/m3	1	10/9/2018 6:43:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 6:43:00 AM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 6:43:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 6:43:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 6:43:00 AM
1,3,5-Trimethylbenzene	2.6 J	0.74		ug/m3	1	10/9/2018 6:43:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 6:43:00 AM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 6:43:00 AM
1,4-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 6:43:00 AM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 6:43:00 AM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/9/2018 6:43:00 AM
4-ethyltoluene	1.3 J	0.74		ug/m3	1	10/9/2018 6:43:00 AM
Acetone	120	28		ug/m3	40	10/10/2018 6:12:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 6:43:00 AM
Benzene	0.51	0.48		ug/m3	1	10/9/2018 6:43:00 AM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/9/2018 6:43:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 6:43:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 6:43:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 6:43:00 AM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/9/2018 6:43:00 AM
Carbon tetrachloride	0.69	0.94	J	ug/m3	1	10/9/2018 6:43:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 6:43:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	10/9/2018 6:43:00 AM
Chloroform	0.63	0.73	J	ug/m3	1	10/9/2018 6:43:00 AM
Chloromethane	2.6	0.31		ug/m3	1	10/9/2018 6:43:00 AM
cis-1,2-Dichloroethene	0.91	0.59		ug/m3	1	10/9/2018 6:43:00 AM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 6:43:00 AM
Cyclohexane	1.7	0.52		ug/m3	1	10/9/2018 6:43:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 6:43:00 AM
Ethyl acetate	2.7	0.54		ug/m3	1	10/9/2018 6:43:00 AM
Ethylbenzene	0.61	0.65	J	ug/m3	1	10/9/2018 6:43:00 AM
Freon 11	6.9	0.84		ug/m3	1	10/9/2018 6:43:00 AM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 6:43:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 6:43:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-09
Lab Order:	C1810010	**Tag Number:**	564,1171
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-018A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
Freon 12	2.4	0.74		ug/m3	1	10/9/2018 6:43:00 AM
Heptane	2.0	0.61		ug/m3	1	10/9/2018 6:43:00 AM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/9/2018 6:43:00 AM
Hexane	2.4	0.53		ug/m3	1	10/9/2018 6:43:00 AM
Isopropyl alcohol	32 JN	3.7		ug/m3	10	10/10/2018 5:34:00 PM
m&p-Xylene	1.6	1.3		ug/m3	1	10/9/2018 6:43:00 AM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 6:43:00 AM
Methyl Ethyl Ketone	4.3	0.88		ug/m3	1	10/9/2018 6:43:00 AM
Methyl Isobutyl Ketone	0.57 J	1.2	J	ug/m3	1	10/9/2018 6:43:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 6:43:00 AM
Methylene chloride	14	5.2		ug/m3	10	10/10/2018 5:34:00 PM
o-Xylene	0.82	0.65		ug/m3	1	10/9/2018 6:43:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 6:43:00 AM
Styrene	0.94	0.64		ug/m3	1	10/9/2018 6:43:00 AM
Tetrachloroethylene	0.95	1.0	J	ug/m3	1	10/9/2018 6:43:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 6:43:00 AM
Toluene	7.8	0.57		ug/m3	1	10/9/2018 6:43:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 6:43:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 6:43:00 AM
Trichloroethene	7.3	0.81		ug/m3	1	10/9/2018 6:43:00 AM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 6:43:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 6:43:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	10/9/2018 6:43:00 AM

Qualifiers:

**	Quantitation Limit	-	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT: BE3/Panamerican
Lab Order: C1810010
Project: 31 Water St - RI
Lab ID: C1810010-019A

Client Sample ID: IA-09
Tag Number: 471,377
Collection Date: 10/1/2018
Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: RJP
1,1,1-Trichloroethane	1.7	0.82		ug/m3	1	10/8/2018 7:54:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/8/2018 7:54:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 7:54:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 7:54:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 7:54:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 7:54:00 PM
1,2,4-Trimethylbenzene	4.0	0.74	J	ug/m3	1	10/8/2018 7:54:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 7:54:00 PM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 7:54:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 7:54:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 7:54:00 PM
1,3,5-Trimethylbenzene	2.0	0.74	J	ug/m3	1	10/8/2018 7:54:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 7:54:00 PM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 7:54:00 PM
1,4-Dichlorobenzene	4.3	0.90	J	ug/m3	1	10/8/2018 7:54:00 PM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 7:54:00 PM
2,2,4-trimethylpentane	1.6	0.70		ug/m3	1	10/8/2018 7:54:00 PM
4-ethyltoluene	1.1	0.74	J	ug/m3	1	10/8/2018 7:54:00 PM
Acetone	33	7.1		ug/m3	10	10/9/2018 7:48:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 7:54:00 PM
Benzene	0.89	0.48		ug/m3	1	10/8/2018 7:54:00 PM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/8/2018 7:54:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 7:54:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 7:54:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 7:54:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 7:54:00 PM
Carbon tetrachloride	0.44	0.19		ug/m3	1	10/8/2018 7:54:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 7:54:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 7:54:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 7:54:00 PM
Chloromethane	1.2	0.31		ug/m3	1	10/8/2018 7:54:00 PM
cis-1,2-Dichloroethene	8.0	0.16		ug/m3	1	10/8/2018 7:54:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 7:54:00 PM
Cyclohexane	0.79	0.52		ug/m3	1	10/8/2018 7:54:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 7:54:00 PM
Ethyl acetate	3.2	0.54		ug/m3	1	10/8/2018 7:54:00 PM
Ethylbenzene	1.6	0.65		ug/m3	1	10/8/2018 7:54:00 PM
Freon 11	17	8.4		ug/m3	10	10/9/2018 7:48:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 7:54:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 7:54:00 PM

Qualifiers:
- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- - Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

mvps 12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-09
Lab Order:	C1810010	**Tag Number:**	471,377
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-019A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				**Analyst: RJP**
Freon 12	2.2	0.74		ug/m3	1	10/8/2018 7:54:00 PM
Heptane	2.8	0.61		ug/m3	1	10/8/2018 7:54:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 7:54:00 PM
Hexane	2.3	0.53		ug/m3	1	10/8/2018 7:54:00 PM
Isopropyl alcohol	10 JN	3.7		ug/m3	10	10/9/2018 7:48:00 PM
m&p-Xylene	6.4	1.3		ug/m3	1	10/8/2018 7:54:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 7:54:00 PM
Methyl Ethyl Ketone	5.0	0.88		ug/m3	1	10/8/2018 7:54:00 PM
Methyl Isobutyl Ketone	0.57 J	1.2	J	ug/m3	1	10/8/2018 7:54:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 7:54:00 PM
Methylene chloride	9.7	5.2		ug/m3	10	10/9/2018 7:48:00 PM
o-Xylene	1.8	0.65		ug/m3	1	10/8/2018 7:54:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 7:54:00 PM
Styrene	< 0.64	0.64		ug/m3	1	10/8/2018 7:54:00 PM
Tetrachloroethylene	2.9	1.0		ug/m3	1	10/8/2018 7:54:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 7:54:00 PM
Toluene	9.8	5.7		ug/m3	10	10/9/2018 7:48:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 7:54:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 7:54:00 PM
Trichloroethene	12	1.6		ug/m3	10	10/9/2018 7:48:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 7:54:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 7:54:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 7:54:00 PM

Qualifiers:

**	Quantitation Limit	-	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-10
Lab Order:	C1810010	**Tag Number:**	221,379
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-020A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	0.55	0.82	J	ug/m3	1	10/9/2018 7:25:00 AM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/9/2018 7:25:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 7:25:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 7:25:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 7:25:00 AM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 7:25:00 AM
1,2,4-Trimethylbenzene	5.8 J	0.74		ug/m3	1	10/9/2018 7:25:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 7:25:00 AM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 7:25:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 7:25:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 7:25:00 AM
1,3,5-Trimethylbenzene	3.0 J	0.74		ug/m3	1	10/9/2018 7:25:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 7:25:00 AM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 7:25:00 AM
1,4-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/9/2018 7:25:00 AM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/9/2018 7:25:00 AM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/9/2018 7:25:00 AM
4-ethyltoluene	1.4 J	0.74		ug/m3	1	10/9/2018 7:25:00 AM
Acetone	56	28		ug/m3	40	10/10/2018 7:35:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 7:25:00 AM
Benzene	0.61	0.48		ug/m3	1	10/9/2018 7:25:00 AM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/9/2018 7:25:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 7:25:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 7:25:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 7:25:00 AM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/9/2018 7:25:00 AM
Carbon tetrachloride	1.0	0.94		ug/m3	1	10/9/2018 7:25:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 7:25:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	10/9/2018 7:25:00 AM
Chloroform	0.73	0.73		ug/m3	1	10/9/2018 7:25:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	10/9/2018 7:25:00 AM
cis-1,2-Dichloroethene	0.99	0.59		ug/m3	1	10/9/2018 7:25:00 AM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 7:25:00 AM
Cyclohexane	5.1	0.52		ug/m3	1	10/9/2018 7:25:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 7:25:00 AM
Ethyl acetate	2.6	0.54		ug/m3	1	10/9/2018 7:25:00 AM
Ethylbenzene	0.61	0.65	J	ug/m3	1	10/9/2018 7:25:00 AM
Freon 11	15	6.4		ug/m3	10	10/10/2018 6:53:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 7:25:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 7:25:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte, Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MM 5/2/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-10
Lab Order:	C1810010	**Tag Number:**	221,379
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-020A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 12	2.6	0.74		ug/m3	1	10/9/2018 7:25:00 AM
Heptane	2.8	0.61		ug/m3	1	10/9/2018 7:25:00 AM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/9/2018 7:25:00 AM
Hexane	5.7	0.53		ug/m3	1	10/9/2018 7:25:00 AM
Isopropyl alcohol	6.9 JN	3.7		ug/m3	10	10/10/2018 6:53:00 PM
m&p-Xylene	1.6	1.3		ug/m3	1	10/9/2018 7:25:00 AM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 7:25:00 AM
Methyl Ethyl Ketone	4.6	0.88		ug/m3	1	10/9/2018 7:25:00 AM
Methyl Isobutyl Ketone	0.53 J	1.2	J	ug/m3	1	10/9/2018 7:25:00 AM
Methyl tert-butyl ether	0.50	0.54	J	ug/m3	1	10/9/2018 7:25:00 AM
Methylene chloride	10	5.2		ug/m3	10	10/10/2018 6:53:00 PM
o-Xylene	0.87	0.65		ug/m3	1	10/9/2018 7:25:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 7:25:00 AM
Styrene	1.1	0.64		ug/m3	1	10/9/2018 7:25:00 AM
Tetrachloroethylene	0.88	1.0	J	ug/m3	1	10/9/2018 7:25:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 7:25:00 AM
Toluene	3.5	0.57		ug/m3	1	10/9/2018 7:25:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 7:25:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 7:25:00 AM
Trichloroethene	13	8.1		ug/m3	10	10/10/2018 6:53:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 7:25:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 7:25:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	10/9/2018 7:25:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	1A-10
Lab Order:	C1810010	**Tag Number:**	568,375
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-021A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: RJP
1,1,1-Trichloroethane	1.2	0.82		ug/m3	1	10/8/2018 8:34:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/8/2018 8:34:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 8:34:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 8:34:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 8:34:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 8:34:00 PM
1,2,4-Trimethylbenzene	3.1	0.74	J	ug/m3	1	10/8/2018 8:34:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 8:34:00 PM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 8:34:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 8:34:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 8:34:00 PM
1,3,5-Trimethylbenzene	1.6	0.74	J	ug/m3	1	10/8/2018 8:34:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 8:34:00 PM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 8:34:00 PM
1,4-Dichlorobenzene	4.1	0.90	J	ug/m3	1	10/8/2018 8:34:00 PM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 8:34:00 PM
2,2,4-trimethylpentane	1.4	0.70		ug/m3	1	10/8/2018 8:34:00 PM
4-ethyltoluene	0.86	0.74	J	ug/m3	1	10/8/2018 8:34:00 PM
Acetone	39	7.1		ug/m3	10	10/9/2018 8:25:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 8:34:00 PM
Benzene	0.83	0.48		ug/m3	1	10/8/2018 8:34:00 PM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/8/2018 8:34:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 8:34:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 8:34:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 8:34:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 8:34:00 PM
Carbon tetrachloride	0.44	0.19		ug/m3	1	10/8/2018 8:34:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 8:34:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 8:34:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 8:34:00 PM
Chloromethane	1.0	0.31		ug/m3	1	10/8/2018 8:34:00 PM
cis-1,2-Dichloroethene	7.1	1.6		ug/m3	10	10/9/2018 8:25:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 8:34:00 PM
Cyclohexane	2.6	0.52		ug/m3	1	10/8/2018 8:34:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 8:34:00 PM
Ethyl acetate	3.6	0.54		ug/m3	1	10/8/2018 8:34:00 PM
Ethylbenzene	1.6	0.65		ug/m3	1	10/8/2018 8:34:00 PM
Freon 11	11	0.84		ug/m3	1	10/8/2018 8:34:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 8:34:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 8:34:00 PM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MRP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	1A-10
Lab Order:	C1810010	**Tag Number:**	568,375
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-021A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: RJP
Freon 12	2.4	0.74		ug/m3	1	10/8/2018 8:34:00 PM
Heptane	2.3	0.61		ug/m3	1	10/8/2018 8:34:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 8:34:00 PM
Hexane	2.7	0.53		ug/m3	1	10/8/2018 8:34:00 PM
Isopropyl alcohol	12 JN	3.7		ug/m3	10	10/9/2018 8:25:00 PM
m&p-Xylene	5.1	1.3		ug/m3	1	10/8/2018 8:34:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 8:34:00 PM
Methyl Ethyl Ketone	5.3	0.88		ug/m3	1	10/8/2018 8:34:00 PM
Methyl Isobutyl Ketone	0.82 J	1.2	J	ug/m3	1	10/8/2018 8:34:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 8:34:00 PM
Methylene chloride	16	5.2		ug/m3	10	10/9/2018 8:25:00 PM
o-Xylene	1.5	0.65		ug/m3	1	10/8/2018 8:34:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 8:34:00 PM
Styrene	< 0.64	0.64		ug/m3	1	10/8/2018 8:34:00 PM
Tetrachloroethylene	2.8	1.0		ug/m3	1	10/8/2018 8:34:00 PM
Tetrahydrofuran	1.3	0.44		ug/m3	1	10/8/2018 8:34:00 PM
Toluene	11	5.7		ug/m3	10	10/9/2018 8:25:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 8:34:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 8:34:00 PM
Trichloroethene	26	1.6		ug/m3	10	10/9/2018 8:25:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 8:34:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 8:34:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 8:34:00 PM

Qualifiers:	**	Quantitation Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
	S	Spike Recovery outside accepted recovery limits		

MMD 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	FD-02-20181001
Lab Order:	C1810010	**Tag Number:**	370,375
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-022A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	1.4	0.82		ug/m3	1	10/8/2018 9:14:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/8/2018 9:14:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 9:14:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 9:14:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 9:14:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 9:14:00 PM
1,2,4-Trimethylbenzene	3.8	0.74	J	ug/m3	1	10/8/2018 9:14:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 9:14:00 PM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 9:14:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 9:14:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 9:14:00 PM
1,3,5-Trimethylbenzene	2.0	0.74	J	ug/m3	1	10/8/2018 9:14:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 9:14:00 PM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/8/2018 9:14:00 PM
1,4-Dichlorobenzene	4.6	0.90	J	ug/m3	1	10/8/2018 9:14:00 PM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/8/2018 9:14:00 PM
2,2,4-trimethylpentane	1.5	0.70		ug/m3	1	10/8/2018 9:14:00 PM
4-ethyltoluene	0.98	0.74	J	ug/m3	1	10/8/2018 9:14:00 PM
Acetone	39	7.1		ug/m3	10	10/9/2018 9:02:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 9:14:00 PM
Benzene	0.66	0.48		ug/m3	1	10/8/2018 9:14:00 PM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/8/2018 9:14:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 9:14:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 9:14:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 9:14:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 9:14:00 PM
Carbon tetrachloride	0.44	0.19		ug/m3	1	10/8/2018 9:14:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 9:14:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 9:14:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 9:14:00 PM
Chloromethane	0.97	0.31		ug/m3	1	10/8/2018 9:14:00 PM
cis-1,2-Dichloroethene	2.0	0.16		ug/m3	1	10/8/2018 9:14:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 9:14:00 PM
Cyclohexane	2.6	0.52		ug/m3	1	10/8/2018 9:14:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 9:14:00 PM
Ethyl acetate	3.9	0.54		ug/m3	1	10/8/2018 9:14:00 PM
Ethylbenzene	1.6	0.65		ug/m3	1	10/8/2018 9:14:00 PM
Freon 11	11	0.84		ug/m3	1	10/8/2018 9:14:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 9:14:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 9:14:00 PM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
,	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MRP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	FD-02-20181001
Lab Order:	C1810010	**Tag Number:**	370,375
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-022A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Freon 12	2.4	0.74		ug/m3	1	10/8/2018 9:14:00 PM
Heptane	2.5	0.61		ug/m3	1	10/8/2018 9:14:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 9:14:00 PM
Hexane	2.9	0.53		ug/m3	1	10/8/2018 9:14:00 PM
Isopropyl alcohol	11 JN	3.7		ug/m3	10	10/9/2018 9:02:00 PM
m&p-Xylene	5.8	1.3		ug/m3	1	10/8/2018 9:14:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 9:14:00 PM
Methyl Ethyl Ketone	4.7	0.88		ug/m3	1	10/8/2018 9:14:00 PM
Methyl Isobutyl Ketone	0.94 J	1.2	J	ug/m3	1	10/8/2018 9:14:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 9:14:00 PM
Methylene chloride	16	5.2		ug/m3	10	10/9/2018 9:02:00 PM
o-Xylene	1.7	0.65		ug/m3	1	10/8/2018 9:14:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 9:14:00 PM
Styrene	0.55	0.64	J	ug/m3	1	10/8/2018 9:14:00 PM
Tetrachloroethylene	3.0	1.0		ug/m3	1	10/8/2018 9:14:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 9:14:00 PM
Toluene	11	5.7		ug/m3	10	10/9/2018 9:02:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 9:14:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 9:14:00 PM
Trichloroethene	12	1.6		ug/m3	10	10/9/2018 9:02:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 9:14:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 9:14:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 9:14:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-11
Lab Order:	C1810010	**Tag Number:**	553,443
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-023A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 8:05:00 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/9/2018 8:05:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 8:05:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 8:05:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 8:05:00 AM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/9/2018 8:05:00 AM
1,2,4-Trimethylbenzene	4.7	0.74	J	ug/m3	1	10/9/2018 8:05:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 8:05:00 AM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 8:05:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 8:05:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 8:05:00 AM
1,3,5-Trimethylbenzene	2.7	0.74	J	ug/m3	1	10/9/2018 8:05:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 8:05:00 AM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 8:05:00 AM
1,4-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 8:05:00 AM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/9/2018 8:05:00 AM
2,2,4-trimethylpentane	1.2	0.70		ug/m3	1	10/9/2018 8:05:00 AM
4-ethyltoluene	1.3	0.74	J	ug/m3	1	10/9/2018 8:05:00 AM
Acetone	64	14		ug/m3	20	10/10/2018 8:13:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 8:05:00 AM
Benzene	2.1	0.48		ug/m3	1	10/9/2018 8:05:00 AM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/9/2018 8:05:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 8:05:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 8:05:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 8:05:00 AM
Carbon disulfide	1.8	0.47		ug/m3	1	10/9/2018 8:05:00 AM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	10/9/2018 8:05:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 8:05:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	10/9/2018 8:05:00 AM
Chloroform	< 0.73	0.73		ug/m3	1	10/9/2018 8:05:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	10/9/2018 8:05:00 AM
cis-1,2-Dichloroethene	0.59	0.59		ug/m3	1	10/9/2018 8:05:00 AM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 8:05:00 AM
Cyclohexane	21	10		ug/m3	20	10/10/2018 8:13:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 8:05:00 AM
Ethyl acetate	2.4	0.54		ug/m3	1	10/9/2018 8:05:00 AM
Ethylbenzene	1.4	0.65		ug/m3	1	10/9/2018 8:05:00 AM
Freon 11	53	17		ug/m3	20	10/10/2018 8:13:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 8:05:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 8:05:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-11
Lab Order:	C1810010	**Tag Number:**	553,443
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-023A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
Freon 12	2.5	0.74		ug/m3	1	10/9/2018 8:05:00 AM
Heptane	15	12		ug/m3	20	10/10/2018 8:13:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/9/2018 8:05:00 AM
Hexane	42	11		ug/m3	20	10/10/2018 8:13:00 PM
Isopropyl alcohol	7.4 JN	7.4		ug/m3	20	10/10/2018 8:13:00 PM
m&p-Xylene	4.3	1.3		ug/m3	1	10/9/2018 8:05:00 AM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 8:05:00 AM
Methyl Ethyl Ketone	5.5	0.88		ug/m3	1	10/9/2018 8:05:00 AM
Methyl Isobutyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 8:05:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 8:05:00 AM
Methylene chloride	9.0	10	J	ug/m3	20	10/10/2018 8:13:00 PM
o-Xylene	1.4	0.65		ug/m3	1	10/9/2018 8:05:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 8:05:00 AM
Styrene	1.1	0.64		ug/m3	1	10/9/2018 8:05:00 AM
Tetrachloroethylene	1.6	1.0		ug/m3	1	10/9/2018 8:05:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 8:05:00 AM
Toluene	7.8	0.57		ug/m3	1	10/9/2018 8:05:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 8:05:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 8:05:00 AM
Trichloroethene	5.3	0.81		ug/m3	1	10/9/2018 8:05:00 AM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 8:05:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 8:05:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	10/9/2018 8:05:00 AM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	j	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: 24-Oct-18

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-11
Lab Order:	C1810010	**Tag Number:**	1192,1160
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-024A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 9:55:00 PM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/8/2018 9:55:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 9:55:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 9:55:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 9:55:00 PM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 9:55:00 PM
1,2,4-Trimethylbenzene	8.2 J	0.74		ug/m3	1	10/8/2018 9:55:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 9:55:00 PM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 9:55:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 9:55:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 9:55:00 PM
1,3,5-Trimethylbenzene	2.5 J	0.74		ug/m3	1	10/8/2018 9:55:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 9:55:00 PM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 9:55:00 PM
1,4-Dichlorobenzene	0.84 J	0.90	J	ug/m3	1	10/8/2018 9:55:00 PM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 9:55:00 PM
2,2,4-trimethylpentane	1.3	0.70		ug/m3	1	10/8/2018 9:55:00 PM
4-ethyltoluene	2.9 J	0.74		ug/m3	1	10/8/2018 9:55:00 PM
Acetone	34	7.1		ug/m3	10	10/9/2018 9:39:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 9:55:00 PM
Benzene	2.0	0.48		ug/m3	1	10/8/2018 9:55:00 PM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/8/2018 9:55:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 9:55:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 9:55:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 9:55:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 9:55:00 PM
Carbon tetrachloride	0.44	0.19		ug/m3	1	10/8/2018 9:55:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 9:55:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 9:55:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 9:55:00 PM
Chloromethane	< 0.31	0.31		ug/m3	1	10/8/2018 9:55:00 PM
cis-1,2-Dichloroethene	0.75	0.16		ug/m3	1	10/8/2018 9:55:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 9:55:00 PM
Cyclohexane	1.5	0.52		ug/m3	1	10/8/2018 9:55:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 9:55:00 PM
Ethyl acetate	3.4	0.54		ug/m3	1	10/8/2018 9:55:00 PM
Ethylbenzene	4.5	0.65		ug/m3	1	10/8/2018 9:55:00 PM
Freon 11	70	8.4		ug/m3	10	10/9/2018 9:39:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 9:55:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 9:55:00 PM

Qualifiers:

- ** Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- JN Non-routine analyte. Quantitation estimated.
- S Spike Recovery outside accepted recovery limits
- - Results reported are not blank corrected
- E Estimated Value above quantitation range
- J Analyte detected below quantitation limit
- ND Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-11
Lab Order:	C1810010	**Tag Number:**	1192,1160
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-024A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Freon 12	2.4	0.74		ug/m3	1	10/8/2018 9:55:00 PM
Heptane	4.1	0.61		ug/m3	1	10/8/2018 9:55:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 9:55:00 PM
Hexane	6.2	0.53		ug/m3	1	10/8/2018 9:55:00 PM
Isopropyl alcohol	9.3 JN	3.7		ug/m3	10	10/9/2018 9:39:00 PM
m&p-Xylene	17	1.3		ug/m3	1	10/8/2018 9:55:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 9:55:00 PM
Methyl Ethyl Ketone	4.4	0.88		ug/m3	1	10/8/2018 9:55:00 PM
Methyl Isobutyl Ketone	0.53 J	1.2	J	ug/m3	1	10/8/2018 9:55:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 9:55:00 PM
Methylene chloride	3.5	0.52		ug/m3	1	10/8/2018 9:55:00 PM
o-Xylene	4.8	0.65		ug/m3	1	10/8/2018 9:55:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 9:55:00 PM
Styrene	0.51	0.64	J	ug/m3	1	10/8/2018 9:55:00 PM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	10/8/2018 9:55:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 9:55:00 PM
Toluene	13	5.7		ug/m3	10	10/9/2018 9:39:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 9:55:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 9:55:00 PM
Trichloroethene	4.1	0.16		ug/m3	1	10/8/2018 9:55:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 9:55:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 9:55:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 9:55:00 PM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKD 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-12
Lab Order:	C1810010	**Tag Number:**	1181,374
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-025A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				**Analyst: RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 10:35:00 PM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/8/2018 10:35:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 10:35:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 10:35:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 10:35:00 PM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 10:35:00 PM
1,2,4-Trimethylbenzene	6.6 J	0.74		ug/m3	1	10/8/2018 10:35:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 10:35:00 PM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 10:35:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 10:35:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 10:35:00 PM
1,3,5-Trimethylbenzene	2.9 J	0.74		ug/m3	1	10/8/2018 10:35:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 10:35:00 PM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 10:35:00 PM
1,4-Dichlorobenzene	0.60 J	0.90	J	ug/m3	1	10/8/2018 10:35:00 PM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 10:35:00 PM
2,2,4-trimethylpentane	2.0	0.70		ug/m3	1	10/8/2018 10:35:00 PM
4-ethyltoluene	1.8 J	0.74		ug/m3	1	10/8/2018 10:35:00 PM
Acetone	31	7.1		ug/m3	10	10/9/2018 10:16:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 10:35:00 PM
Benzene	2.5	0.48		ug/m3	1	10/8/2018 10:35:00 PM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/8/2018 10:35:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 10:35:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 10:35:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 10:35:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 10:35:00 PM
Carbon tetrachloride	0.38	0.19		ug/m3	1	10/8/2018 10:35:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 10:35:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 10:35:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 10:35:00 PM
Chloromethane	0.89	0.31		ug/m3	1	10/8/2018 10:35:00 PM
cis-1,2-Dichloroethene	0.44	0.16		ug/m3	1	10/8/2018 10:35:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 10:35:00 PM
Cyclohexane	2.1	0.62		ug/m3	1	10/8/2018 10:35:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 10:35:00 PM
Ethyl acetate	3.6	0.54		ug/m3	1	10/8/2018 10:35:00 PM
Ethylbenzene	3.6	0.65		ug/m3	1	10/8/2018 10:35:00 PM
Freon 11	57	8.4		ug/m3	10	10/9/2018 10:16:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 10:35:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/8/2018 10:35:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-12
Lab Order:	C1810010	**Tag Number:**	1181,374
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-025A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: **RJP**
Freon 12	2.3	0.74		ug/m3	1	10/8/2018 10:35:00 PM
Heptane	5.0	0.61		ug/m3	1	10/8/2018 10:35:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 10:35:00 PM
Hexane	7.8	5.3		ug/m3	10	10/9/2018 10:16:00 PM
Isopropyl alcohol	17 JN	3.7		ug/m3	10	10/9/2018 10:16:00 PM
m&p-Xylene	13	1.3		ug/m3	1	10/8/2018 10:35:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 10:35:00 PM
Methyl Ethyl Ketone	3.0	0.86		ug/m3	1	10/8/2018 10:35:00 PM
Methyl Isobutyl Ketone	0.57 J	1.2	J	ug/m3	1	10/8/2018 10:35:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 10:35:00 PM
Methylene chloride	4.2	0.52		ug/m3	1	10/8/2018 10:35:00 PM
o-Xylene	4.0	0.65		ug/m3	1	10/8/2018 10:35:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 10:35:00 PM
Styrene	0.43	0.64	J	ug/m3	1	10/8/2018 10:35:00 PM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	10/8/2018 10:35:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/8/2018 10:35:00 PM
Toluene	15	5.7		ug/m3	10	10/9/2018 10:16:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 10:35:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 10:35:00 PM
Trichloroethene	3.3	0.16		ug/m3	1	10/8/2018 10:35:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 10:35:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 10:35:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 10:35:00 PM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
-	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-12
Lab Order:	C1810010	**Tag Number:**	569,385
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-026A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 8:46:00 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/9/2018 8:46:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 8:46:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 8:46:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 8:46:00 AM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/9/2018 8:46:00 AM
1,2,4-Trimethylbenzene	5.5	0.74	J	ug/m3	1	10/9/2018 8:46:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 8:46:00 AM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 8:46:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 8:46:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 8:46:00 AM
1,3,5-Trimethylbenzene	2.9	0.74	J	ug/m3	1	10/9/2018 8:46:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 8:46:00 AM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 8:46:00 AM
1,4-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 8:46:00 AM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/9/2018 8:46:00 AM
2,2,4-trimethylpentane	0.75	0.70		ug/m3	1	10/9/2018 8:46:00 AM
4-ethyltoluene	1.3	0.74	J	ug/m3	1	10/9/2018 8:46:00 AM
Acetone	160	130		ug/m3	180	10/10/2018 8:51:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 8:46:00 AM
Benzene	2.0	0.48		ug/m3	1	10/9/2018 8:46:00 AM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/9/2018 8:46:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 8:46:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 8:46:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 8:46:00 AM
Carbon disulfide	4.7	0.47		ug/m3	1	10/9/2018 8:46:00 AM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	10/9/2018 8:46:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 8:46:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	10/9/2018 8:46:00 AM
Chloroform	0.73	0.73		ug/m3	1	10/9/2018 8:46:00 AM
Chloromethane	2.5	0.31		ug/m3	1	10/9/2018 8:46:00 AM
cis-1,2-Dichloroethene	0.79	0.59		ug/m3	1	10/9/2018 8:46:00 AM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 8:46:00 AM
Cyclohexane	37	4.8		ug/m3	9	10/10/2018 7:47:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 8:46:00 AM
Ethyl acetate	2.7	0.54		ug/m3	1	10/9/2018 8:46:00 AM
Ethylbenzene	0.65	0.65		ug/m3	1	10/9/2018 8:46:00 AM
Freon 11	8.6	0.84		ug/m3	1	10/9/2018 8:46:00 AM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 8:46:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 8:46:00 AM

Qualifiers:

**	Quantitation Limit	-	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MRP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-12
Lab Order:	C1810010	**Tag Number:**	569,385
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-026A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
Freon 12	2.4	0.74		ug/m3	1	10/9/2018 8:46:00 AM
Heptane	30	5.7		ug/m3	9	10/10/2018 7:47:00 AM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/9/2018 8:46:00 AM
Hexane	77	4.9		ug/m3	9	10/10/2018 7:47:00 AM
Isopropyl alcohol	23 JN	3.4		ug/m3	9	10/10/2018 7:47:00 AM
m&p-Xylene	1.7	1.3		ug/m3	1	10/9/2018 8:46:00 AM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 8:46:00 AM
Methyl Ethyl Ketone	5.0	8.0	J	ug/m3	9	10/10/2018 7:47:00 AM
Methyl Isobutyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 8:46:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 8:46:00 AM
Methylene chloride	14	4.9		ug/m3	9	10/10/2018 7:47:00 AM
o-Xylene	0.82	0.65		ug/m3	1	10/9/2018 8:46:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 8:46:00 AM
Styrene	1.0	0.64		ug/m3	1	10/9/2018 8:46:00 AM
Tetrachloroethylene	0.88	1.0	J	ug/m3	1	10/9/2018 8:46:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 8:46:00 AM
Toluene	3.9	0.57		ug/m3	1	10/9/2018 8:46:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 8:46:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 8:46:00 AM
Trichloroethene	6.6	0.81		ug/m3	1	10/9/2018 8:46:00 AM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/9/2018 8:46:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 8:46:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	10/9/2018 8:46:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-13
Lab Order:	C1810010	**Tag Number:**	85,267
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-027A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				**Analyst: RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 11:15:00 PM
1,1,2,2-Tetrachloroethane	< 1.0 UJ	1.0		ug/m3	1	10/8/2018 11:15:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/8/2018 11:15:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 11:15:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 11:15:00 PM
1,2,4-Trichlorobenzene	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 11:15:00 PM
1,2,4-Trimethylbenzene	0.69 J	0.74	J	ug/m3	1	10/8/2018 11:15:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/8/2018 11:15:00 PM
1,2-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 11:15:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/8/2018 11:15:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/8/2018 11:15:00 PM
1,3,5-Trimethylbenzene	< 0.74 UJ	0.74		ug/m3	1	10/8/2018 11:15:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/8/2018 11:15:00 PM
1,3-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 11:15:00 PM
1,4-Dichlorobenzene	< 0.90 UJ	0.90		ug/m3	1	10/8/2018 11:15:00 PM
1,4-Dioxane	< 1.1 UJ	1.1		ug/m3	1	10/8/2018 11:15:00 PM
2,2,4-trimethylpentane	1.4	0.70		ug/m3	1	10/8/2018 11:15:00 PM
4-ethyltoluene	< 0.74 UJ	0.74		ug/m3	1	10/8/2018 11:15:00 PM
Acetone	56	7.1		ug/m3	10	10/9/2018 10:53:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/8/2018 11:15:00 PM
Benzene	0.61	0.48		ug/m3	1	10/8/2018 11:15:00 PM
Benzyl chloride	< 0.86 UJ	0.86		ug/m3	1	10/8/2018 11:15:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/8/2018 11:15:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/8/2018 11:15:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/8/2018 11:15:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/8/2018 11:15:00 PM
Carbon tetrachloride	0.44	0.19		ug/m3	1	10/8/2018 11:15:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/8/2018 11:15:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/8/2018 11:15:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/8/2018 11:15:00 PM
Chloromethane	0.93	0.31		ug/m3	1	10/8/2018 11:15:00 PM
cis-1,2-Dichloroethene	< 0.16	0.16		ug/m3	1	10/8/2018 11:15:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 11:15:00 PM
Cyclohexane	0.55	0.52		ug/m3	1	10/8/2018 11:15:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/8/2018 11:15:00 PM
Ethyl acetate	1.1	0.54		ug/m3	1	10/8/2018 11:15:00 PM
Ethylbenzene	< 0.65	0.65		ug/m3	1	10/8/2018 11:15:00 PM
Freon 11	4.0	0.84		ug/m3	1	10/8/2018 11:15:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/8/2018 11:15:00 PM
Freon 114	1.1	1.0		ug/m3	1	10/8/2018 11:15:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MAPS 12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	IA-13
Lab Order:	C1810010	**Tag Number:**	85,267
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-027A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		TO-15				Analyst: RJP
Freon 12	2.3	0.74		ug/m3	1	10/8/2018 11:15:00 PM
Heptane	1.7	0.61		ug/m3	1	10/8/2018 11:15:00 PM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/8/2018 11:15:00 PM
Hexane	0.74	0.53		ug/m3	1	10/8/2018 11:15:00 PM
Isopropyl alcohol	45 JN	3.7		ug/m3	10	10/9/2018 10:53:00 PM
m&p-Xylene	1.3	1.3	J	ug/m3	1	10/8/2018 11:15:00 PM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 11:15:00 PM
Methyl Ethyl Ketone	7.7	8.8	J	ug/m3	10	10/9/2018 10:53:00 PM
Methyl Isobutyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/8/2018 11:15:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/8/2018 11:15:00 PM
Methylene chloride	0.73	0.52		ug/m3	1	10/8/2018 11:15:00 PM
o-Xylene	< 0.65	0.65		ug/m3	1	10/8/2018 11:15:00 PM
Propylene	< 0.26	0.26		ug/m3	1	10/8/2018 11:15:00 PM
Styrene	< 0.64	0.64		ug/m3	1	10/8/2018 11:15:00 PM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	10/8/2018 11:15:00 PM
Tetrahydrofuran	12	4.4		ug/m3	10	10/9/2018 10:53:00 PM
Toluene	3.4	0.57		ug/m3	1	10/8/2018 11:15:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/8/2018 11:15:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/8/2018 11:15:00 PM
Trichloroethene	3.1	0.16		ug/m3	1	10/8/2018 11:15:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	10/8/2018 11:15:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/8/2018 11:15:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	10/8/2018 11:15:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-13
Lab Order:	C1810010	**Tag Number:**	130,380
Project:	31 Water St - RJ	**Collection Date:**	10/1/2018
Lab ID:	C1810010-029A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	6.4	0.82		ug/m3	1	10/9/2018 9:26:00 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0	UJ	ug/m3	1	10/9/2018 9:26:00 AM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/9/2018 9:26:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 9:26:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 9:26:00 AM
1,2,4-Trichlorobenzene	< 1.1	1.1	UJ	ug/m3	1	10/9/2018 9:26:00 AM
1,2,4-Trimethylbenzene	6.1	0.74	J	ug/m3	1	10/9/2018 9:26:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/9/2018 9:26:00 AM
1,2-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 9:26:00 AM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/9/2018 9:26:00 AM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/9/2018 9:26:00 AM
1,3,5-Trimethylbenzene	3.2	0.74	J	ug/m3	1	10/9/2018 9:26:00 AM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/9/2018 9:26:00 AM
1,3-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 9:26:00 AM
1,4-Dichlorobenzene	< 0.90	0.90	UJ	ug/m3	1	10/9/2018 9:26:00 AM
1,4-Dioxane	< 1.1	1.1	UJ	ug/m3	1	10/9/2018 9:26:00 AM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/9/2018 9:26:00 AM
4-ethyltoluene	1.6	0.74	J	ug/m3	1	10/9/2018 9:26:00 AM
Acetone	250	130		ug/m3	180	10/10/2018 9:29:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/9/2018 9:26:00 AM
Benzene	3.2	0.48		ug/m3	1	10/9/2018 9:26:00 AM
Benzyl chloride	< 0.86	0.86	UJ	ug/m3	1	10/9/2018 9:26:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/9/2018 9:26:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	10/9/2018 9:26:00 AM
Bromomethane	< 0.58	0.58		ug/m3	1	10/9/2018 9:26:00 AM
Carbon disulfide	17	4.4		ug/m3	9	10/10/2018 8:28:00 AM
Carbon tetrachloride	4.2	0.94		ug/m3	1	10/9/2018 9:26:00 AM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/9/2018 9:26:00 AM
Chloroethane	0.42	0.40		ug/m3	1	10/9/2018 9:26:00 AM
Chloroform	1.3	0.73		ug/m3	1	10/9/2018 9:26:00 AM
Chloromethane	2.7	0.31		ug/m3	1	10/9/2018 9:26:00 AM
cis-1,2-Dichloroethene	0.83	0.59		ug/m3	1	10/9/2018 9:26:00 AM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 9:26:00 AM
Cyclohexane	37	4.8		ug/m3	9	10/10/2018 8:28:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/9/2018 9:26:00 AM
Ethyl acetate	2.9	0.54		ug/m3	1	10/9/2018 9:26:00 AM
Ethylbenzene	0.65	0.65		ug/m3	1	10/9/2018 9:26:00 AM
Freon 11	8.4	0.84		ug/m3	1	10/9/2018 9:26:00 AM
Freon 113	< 1.1	1.1		ug/m3	1	10/9/2018 9:26:00 AM
Freon 114	< 1.0	1.0		ug/m3	1	10/9/2018 9:26:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MLP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	SS-13
Lab Order:	C1810010	**Tag Number:**	130,380
Project:	31 Water St - RI	**Collection Date:**	10/1/2018
Lab ID:	C1810010-029A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
Freon 12	2.6	0.74		ug/m3	1	10/9/2018 9:26:00 AM
Heptane	33	5.7		ug/m3	9	10/10/2018 8:28:00 AM
Hexachloro-1,3-butadiene	< 1.6 UJ	1.6		ug/m3	1	10/9/2018 9:26:00 AM
Hexane	77	4.9		ug/m3	9	10/10/2018 8:28:00 AM
Isopropyl alcohol	78 JN	3.4		ug/m3	9	10/10/2018 8:28:00 AM
m&p-Xylene	1.7	1.3		ug/m3	1	10/9/2018 9:26:00 AM
Methyl Butyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 9:26:00 AM
Methyl Ethyl Ketone	4.2	8.0	J	ug/m3	9	10/10/2018 8:28:00 AM
Methyl Isobutyl Ketone	< 1.2 UJ	1.2		ug/m3	1	10/9/2018 9:26:00 AM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	10/9/2018 9:26:00 AM
Methylene chloride	16	4.9		ug/m3	9	10/10/2018 8:28:00 AM
o-Xylene	0.91	0.65		ug/m3	1	10/9/2018 9:26:00 AM
Propylene	< 0.26	0.26		ug/m3	1	10/9/2018 9:26:00 AM
Styrene	1.1	0.64		ug/m3	1	10/9/2018 9:26:00 AM
Tetrachloroethylene	1.0	1.0		ug/m3	1	10/9/2018 9:26:00 AM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	10/9/2018 9:26:00 AM
Toluene	3.6	0.57		ug/m3	1	10/9/2018 9:26:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	10/9/2018 9:26:00 AM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/9/2018 9:26:00 AM
Trichloroethene	21	7.5		ug/m3	9	10/10/2018 8:28:00 AM
Vinyl acetate	6.9	0.53		ug/m3	1	10/9/2018 9:26:00 AM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	10/9/2018 9:26:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	10/9/2018 9:26:00 AM

Qualifiers:

**	Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Estimated Value above quantitation range
J	Analyte detected below quantitation limit
ND	Not Detected at the Limit of Detection

MKP 5/12/19

Centek Laboratories, LLC

Date: *24-Oct-18*

CLIENT:	BE3/Panamerican	**Client Sample ID:**	OA-01
Lab Order:	C1810032	**Tag Number:**	317,456
Project:	31 Water St	**Collection Date:**	10/10/2018
Lab ID:	C1810032-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.2UG/M3 CT-TCE-VC-DCE-1,1DCE		**TO-15**				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	10/17/2018 5:21:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	10/17/2018 5:21:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	10/17/2018 5:21:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	10/17/2018 5:21:00 PM
1,1-Dichloroethene	< 0.16	0.16		ug/m3	1	10/17/2018 5:21:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	10/17/2018 5:21:00 PM
1,2,4-Trimethylbenzene	0.74	0.74		ug/m3	1	10/17/2018 5:21:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	10/17/2018 5:21:00 PM
1,2-Dichlorobenzene	< 0.90	0.90		ug/m3	1	10/17/2018 5:21:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	10/17/2018 5:21:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	10/17/2018 5:21:00 PM
1,3,5-Trimethylbenzene	< 0.74	0.74		ug/m3	1	10/17/2018 5:21:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	10/17/2018 5:21:00 PM
1,3-Dichlorobenzene	< 0.90	0.90		ug/m3	1	10/17/2018 5:21:00 PM
1,4-Dichlorobenzene	< 0.90	0.90		ug/m3	1	10/17/2018 5:21:00 PM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	10/17/2018 5:21:00 PM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	10/17/2018 5:21:00 PM
4-ethyltoluene	< 0.74	0.74		ug/m3	1	10/17/2018 5:21:00 PM
Acetone	17	3.6		ug/m3	5	10/17/2018 5:58:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	10/17/2018 5:21:00 PM
Benzene	0.48	0.48		ug/m3	1	10/17/2018 5:21:00 PM
Benzyl chloride	< 0.86	0.86		ug/m3	1	10/17/2018 5:21:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	10/17/2018 5:21:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	10/17/2018 5:21:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	10/17/2018 5:21:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	10/17/2018 5:21:00 PM
Carbon tetrachloride	0.63	0.19		ug/m3	1	10/17/2018 5:21:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	10/17/2018 5:21:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	10/17/2018 5:21:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	10/17/2018 5:21:00 PM
Chloromethane	0.87	0.31		ug/m3	1	10/17/2018 5:21:00 PM
cis-1,2-Dichloroethene	< 0.16	0.16		ug/m3	1	10/17/2018 5:21:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	10/17/2018 5:21:00 PM
Cyclohexane	0.34	0.52	J	ug/m3	1	10/17/2018 5:21:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	10/17/2018 5:21:00 PM
Ethyl acetate	2.1	0.54		ug/m3	1	10/17/2018 5:21:00 PM
Ethylbenzene	< 0.65	0.65		ug/m3	1	10/17/2018 5:21:00 PM
Freon 11	1.6	0.84		ug/m3	1	10/17/2018 5:21:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	10/17/2018 5:21:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	10/17/2018 5:21:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

mmp 5/12/19

Table 6-1 TO-15

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
OA-01	Benzyl Chloride	J detects	LCS/LCSD >130 %	Detected results are estimated
OA-01	Methyl Butyl Ketone	J detects UJ non-detects	LCSD < 70 %; LCS ok	Results may be biased low
All samples except OA-01	1,1,2,2-Tetrachloroethane 1,2,2-Trichlorobenzene 1,2,4—Trimethylbenzene 1,3,5-Trimetylbenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 4-Ethyltoluene Benzyl Chloride Hexachlorobutadiene Methyl Butyl Ketone Methyl Isobutyl Ketone	J detects UJ non-detects	LCSD < 70 %; LCS ok	All results may be biased low
OA-01	Benzyl Chloride	J detects UJ non-detects	CCV < 30 %	All results are estimated
All samples	Isopropyl Alcohol	JN detects	Relative Intensity of characteristic ions not +/- 30 %	Compounds are tentatively identified and results are estimated

DATA USABILITY SUMMARY REPORT (DUSR)

31 Water Street
Jamestown, NY
NYSDEC BCP # C907046

SDG: 7070584

2 sediment samples

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

February 2019

EDU Environmental Data Usability 10028 Deer Park Dr. Dansville, NY 14437 585.991.9156

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REVIEWER'S NARRATIVE
SDG 7070584

The data associated with this Sample Delivery Group (SDG) 7070584, analyzed by Pace Analytical Services, LLC, Melville, NY have been reviewed in accordance with assessment criteria provided by the New York State Department of Environmental Conservation following the review procedures provided in the USEPA Functional Guidelines for evaluating organic and inorganic data.

All analytical results reported by the laboratory are considered valid and acceptable except results that have been qualified as rejected, "R". Results qualified as estimated "J", or as non-detects, "U", are considered usable for the purpose of evaluating water and/or soil quality. However, these qualifiers indicate that the accuracy and/or precision of the analytical result is questionable. A summary of all data that have been qualified and the reasons for qualification are provided in the following data usability summary report (DUSR).

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

Reviewer's Signature: Michael K. Perry Date: 2/11/19

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	31 Water St. Jamestown, NY
SAMPLING DATE:	October 19, 2018
SAMPLE TYPE:	2 sediment samples
LABORATORY:	Pace Analytical Services, LLC Melville, NY
SDG No.:	7070584

2.0 INTRODUCTION

This data usability summary report (DUSR) was prepared in accordance with guidance provided by the New York State Department of Environmental Conservation (NYSDEC). The DUSR is based on a review and evaluation of the laboratory analytical data package. Specifically, the NYSDEC guidance recommends review and evaluation of the following elements of the data package:

- Completeness of the data package as defined under the requirements of the NYSDEC Analytical Services Protocols (ASP) Category B or the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) deliverables,
- Compliance with established analyte holding times,
- Adherence to quality control (QC) limits and specifications for blanks, instrument tuning and calibration, surrogate recoveries, spike recoveries, laboratory duplicate analyses, and other QC criteria,
- Adherence to established analytical protocols,
- Conformance of data summary sheets with raw analytical data, and
- Use of correct data qualifiers.

Data deficiencies, analytical protocol deviations, and quality control problems identified using the review criteria above and their effect on the analytical results are discussed in this report.

3.0 SAMPLE AND ANALYSIS SUMMARY

The data package consists of analytical results for two sediment samples collected on October 19, 2018. These samples were analyzed for PFAAs by EPA 537 (modified).

All analyses were sent to Pace Analytical Services, LLC, Melville, NY and analyzed as SDG 7070584. The analysis was subcontracted to Lancaster Laboratories in Lancaster, PA and analyzed as SDG# TAA75. The analytical results were provided in NYSDEC ASP Category B format, which includes all raw analytical data and laboratory QC data.

4.0 GUIDANCE DOCUMENTS AND DATA REVIEW CRITERIA

The guidance documents used for reviewing laboratory quality control (QC) data and assigning data qualifiers (flags) to analytical results are listed in Table 4-1. The QC limits established in the documents applicable to this data review were used to assess the quality of the analytical results. In some cases, however, QC limits established internally by the laboratory were taken into account to determine data quality.

The QC criteria considered for assessing the usability of the reported analytical results provided for each analyte type (i.e. VOCs, SVOCs, metals, etc.) are listed in Table 4-2. These criteria may vary with the analytical method utilized by the laboratory. These criteria comply with the guidance recommended in Section 2.0 above.

5.0 DATA VALIDATION QUALIFIERS

The letter qualifiers (flags) used to define data usability are described briefly below. These letters are assigned by the data validator to analytical results having questionable accuracy and/or precision as determined by reviewing the laboratory QC data associated with the analytical results.

TABLE 4-1

DATA VALIDATION GUIDANCE DOCUMENTS

Analyte Type	Validation Guidance
VOCs	USEPA, 2008, Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry; SW-846 Method 8260B; SOP # HW-24, Rev. 2. USEPA, 2008, Statement of Work for Organic Analysis of Low/Medium Concentration of Volatile Organic Compounds SOM01.2; SOP HW-33, Rev. 2.
SVOCs	USEPA, 2007, Statement of Work for Organic Analysis of Low/Medium Concentration of Semivolatile Organic Compounds SOM01.2; SOP HW-35, Rev. 1.
Pesticides/PCBs	USEPA, 2006, CLP Organics Data Review and Preliminary Review (CLP/SOW OLMO 4.3); SOP # HW-6, Rev. 14, Part C.
Metals	USEPA, 2006, Validation of Metals for the Contract Laboratory Program (CLP) based on SOW ILMO 5.3 (SOP Revision 13), SOP # HW-2, Rev. 13.
Gen Chemistry	NYSDEC, 2005, Analytical Services Protocols (ASP)
VOCs (Ambient air)	USEPA, 2006, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canister by Method TO-15; SOP # HW-31, Rev. 4.

TABLE 4-2

QUALITY CONTROL CRITERIA USED FOR VALIDATING
LABORATORY ANALYTICAL DATA

VOCs	SVOCs	Pesticides/PCBs	Metals	Gen Chemistry	Method TO-15
Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg
Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition
Holding Time	Holding Time	Holding Time	Holding Time	Holding Times	Holding Time
System Monitoring Compounds	Surrogate Recoveries	Surrogate Recoveries	Initial/Continuing Calibration	Calibration	Canister Certification
Lab Control Sample	Lab Control Sample	Matrix Spikes	CRDL Standards	Lab Control Samples	Lab Control Sample
Matrix Spikes	Matrix Spikes	Blanks	Blanks	Blanks	Instrument Tuning
Blanks	Blanks	Instrument Calibration & Verification	Interference Check Sample	Spike Recoveries	Blanks
Instrument Tuning	Instrument Tuning	Analyte ID	Spike Recoveries	Lab Duplicates	Initial Calibration & System Performance
Internal Standards	Internal Standards	Lab Qualifiers	Lab Duplicate		Daily Calibration
Initial Calibration	Initial Calibration	Field Duplicate	Lab Control Sample		Field Duplicate
Continuing Calibration	Continuing Calibration		ICP Serial Dilutions		
Lab Qualifiers	Lab Qualifiers		Lab Qualifiers		
Field Duplicate	Field Duplicate		Field Duplicate		

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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

JN The analyte is considered to be "presumptively present." The associated numerical value represents its *approximate* concentration.

The validated analytical results are attached to this report. Validation qualifiers (flags) are indicated using red ink. Data sheets having qualified data are signed and dated by the data reviewer.

6.0 RESULTS OF THE DATA REVIEW

The results of the data review are summarized in Table 6-1. The tables list the samples where QC criteria were found to exceed acceptable limits and the actions taken to qualify the associated analytical results.

7.0 TOTAL USABLE DATA

For SDG 7070584 two samples were analyzed and results were reported for 42 analytes. Even though some results were flagged with a "J" as estimated, all results (100 %) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

Table 6-1 PFAAs – EPA 537 (modified)

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	All analytes	J detects UJ non-detects	Samples extracted outside 28 day holding time	All data is estimated

ACRONYMS

BSP	Blank Spike
CCAL	Continuing Calibration
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
%D	Percent Difference
ICAL	Initial Calibration
ICB	Initial Calibration Blank
IS	Internal Standard
LCS	Laboratory Control Sample
MS/MSD	Matrix Spike/Matrix Spike Duplicate
QA	Quality Assurance
QC	Quality Control
%R	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
%RSD	Percent Relative Standard Deviation
TAL	Target Analyte List (metals)
TCL	Target Compound List (organics)

Appendix A

Validated Analytical Results

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2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

NYSDEC ASP Category B Data Package

Prepared for:

TestAmerica
880 Riverside Parkway
West Sacramento CA 95605

Project: Pace PFAS Testing
Solid Samples
Collected on 10/19/18

SDG# TAA75

GROUP	SAMPLE NUMBERS
2011123	9907715-9907716

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-18-27
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

Authorized by: Dana M Kauffman **Date: 01/23/2019**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Wendy Kozma at (717) 556-7257.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Reference List for SDG Number TAA75 with a Data Package Type of NYSDEC B

01042 - TestAmerica

Project: Pace PFAS Testing

Lab Sample Number	Client Sample ID	Collection Date	Date Received
9907715	SED-01(320-45267-1)	10/19/2018 08:15	11/20/2018 10:40
9907716	SED-02(320-45267-2)	10/19/2018 08:30	11/20/2018 10:40

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

WO#: 7070584

7070584

r Number or

JMT

Company: BE3 Corp	Billing Information: ← Same
Address: 1270 Niagara St Buffalo, NY 14213	
Report To: Jason Brydges	Email To: Jbrydges@be3corp.com
Copy To: abrennen@be3corp.com	Site Collection Info/Address:
Customer Project Name/Number: 31 WATER ST RI	State: NY County/City: Jamestown Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 716-946-9133 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 375 VOC + TICs	375 SVOC + TICs, Inorgs	PFAS	Lab Profile/Line:
Sed-01	SL	G	10/9	0815				4	X	X	X	
Sed-02	SL	G	10/9	0830				4	X	X	X	

Lab Profile/Line:

Lab Sample Receipt Checklist:
Custody Seals Present/Intact: Y N NA
Custody Signatures Present: Y N NA
Collector Signature Present: Y N NA
Bottles Intact: Y N NA
Correct Bottles: Y N NA
Sufficient Volume: Y N NA
Samples Received on Ice: Y N NA
VOA - Headspace Acceptable: Y N NA
USDA Regulated Soils: Y N NA
Samples in Holding Time: Y N NA
Residual Chlorine Present: Y N NA
Cl Strips:
Sample pH Acceptable: Y N NA
pH Strips:
Sulfide Present: Y N NA
Lead Acetate Strips:

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards: Please hold analysis on PFAS until contacted

Type of Ice Used: Wet Blue Dry None

Packing Material Used: Ziploc bag/wrap

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 8119 8193 7570

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: TH091
Cooler 1 Temp Upon Receipt: 3.1 °C
Cooler 1 Therm Corr. Factor: 0.0 °C
Cooler 1 Corrected Temp: 3.1 °C
Comments:

	Date/Time		Date/Time	
Relinquished by/Company: (Signature)	10/9 1630	Received by/Company: (Signature)	10/10 1000	MTJL LAB USE ONLY Table #:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	PM: PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

TestAmerica Sacramento 01042/201123/470121576
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 373-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kellmann, Jill	Carrier Tracking No(s):	COC No: 320-135240.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: jill.kellmann@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Env LLC		Accreditations Required (See note): NELAP - New York		Job #: 320-45267-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 12/10/2018			
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Pace PFAS Testing	Project #: 32010619			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (PFAS, Standard List (21 Analytes))/ PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SED-01 (320-45267-1)	10/19/18	08:15 Eastern		Solid			X		
SED-02 (320-45267-2)	10/19/18	08:30 Eastern		Solid			X		

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:				
Relinquished by:	Date/Time: 11/19/18 1600	Company TAL	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 11/20/18 1040	Company ELLE

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0

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Case Narrative/Conformance Summary

CLIENT: TestAmerica
SDG: TAA75

PFAS Group

Fraction: PFAS by LC/MS/MS

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
9907715	SED-01(320-45267-1)		X	1	
9907716	SED-02(320-45267-2)		X	1	

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

(Sample number(s): 9907715: Analysis: 14027)
A target analyte(s) in the closing continuing calibration verification standard is outside the QC acceptance limits. Since the result is high and the target analyte(s) is not detected in the sample, the data is reported.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

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FORM 01
SAMPLE DATA SUMMARY
LC/MS/MS

SDG No.: TAA75

Matrix: SOIL
Instrument ID: 24960
Sample (wt): 1.07 (g)
Sample Prep: SONC
Concentration Extract Volume: 1.00 (uL)
Injection Volume: 1.00 (uL)
% Moisture: 12.3

Lab Sample ID: 9907716
Lab File ID: 18NOV28-137.WIFF
Date Collected: 10/19/2018 08:30
Date Extracted: 11/21/2018 11:10
Date Analyzed: 11/28/2018 18:25
Dilution Factor: 1.0

Concentration Units: ng/g
Limit: MDL

CAS NO.	Compound	Concentration	Q
335-67-1	Perfluorooctanoic acid	0.21	U
375-95-1	Perfluorononanoic acid	0.21	U
335-76-2	Perfluorodecanoic acid	0.21	U
2058-94-8	Perfluoroundecanoic acid	0.21	U
307-55-1	Perfluorododecanoic acid	0.21	U
72629-94-8	Perfluorotridecanoic acid	0.21	U
376-06-7	Perfluorotetradecanoic acid	0.21	U
307-24-4	Perfluorohexanoic acid	0.21	U
375-85-9	Perfluoroheptanoic acid	0.21	U
375-73-5	Perfluorobutanesulfonate	0.21	U
355-46-4	Perfluorohexanesulfonate	0.21	U
1763-23-1	Perfluoro-octanesulfonate	0.32	U
2991-50-6	NEtFOSAA	0.53	U
2355-31-9	NMeFOSAA	0.53	U
27619-97-2	6:2 fluorotelomersulfonate	0.64	U
375-92-8	Perfluoroheptanesulfonate	0.21	U
335-77-3	Perfluorodecanesulfonate	0.32	U
375-22-4	Perfluorobutanoic acid	0.21	U
2706-90-3	Perfluoropentanoic acid	0.21	U
39108-34-4	8:2 fluorotelomersulfonate	0.64	U
754-91-6	Perfluorooctanesulfonamide	0.21	U

Qualifiers:
B = Detected in Method Blank
U = Undetected
J = Estimated concentration between MDL and LOQ
D = Dilution performed

MRP 2/8/19

eurofins | Lancaster Laboratories Environmental

FORM 01
SAMPLE DATA SUMMARY
LC/MS/MS

SDG No.: TAA75

Matrix: SOIL
Sample (wt): 1.04 (g)
Sample Prep: SONC
Concentration Extract Volume: 1.00 (uL)
Injection Volume: 1.00 (uL)
% Moisture: 19.6

Instrument ID: 24960

Lab Sample ID: 9907715
Lab File ID: 18NOV28-134.WIFF
Date Collected: 10/19/2018 08:15
Date Extracted: 11/21/2018 11:10
Date Analyzed: 11/28/2018 17:58
Dilution Factor: 1.0

Concentration Units: ng/g

Limit: MDL

CAS NO.	Compound	Concentration	Q
335-67-1	Perfluorooctanoic acid	0.24	U
375-95-1	Perfluorononanoic acid	0.24	U
335-76-2	Perfluorodecanoic acid	0.24	U
2058-94-8	Perfluoroundecanoic acid	0.24	U
307-55-1	Perfluorododecanoic acid	0.24	U
72629-94-8	Perfluorotridecanoic acid	0.24	U
376-06-7	Perfluorotetradecanoic acid	0.24	U
307-24-4	Perfluorohexanoic acid	0.24	U
375-85-9	Perfluoroheptanoic acid	0.24	U
375-73-5	Perfluorobutanesulfonate	0.24	U
355-46-4	Perfluorohexanesulfonate	0.24	U
1763-23-1	Perfluoro-octanesulfonate	0.36	U
2991-50-6	NEtFOSAA	0.60	U
2355-31-9	NMeFOSAA	0.60	U
27619-97-2	6:2 fluorotelomersulfonate	0.72	U
375-92-8	Perfluoroheptanesulfonate	0.24	U
335-77-3	Perfluorodecanesulfonate	0.36	U
375-22-4	Perfluorobutanoic acid	0.24	U
2706-90-3	Perfluoropentanoic acid	0.24	U
39108-34-4	8:2 fluorotelomersulfonate	0.72	U
754-91-6	Perfluorooctanesulfonamide	0.24	U

Qualifiers:
B = Detected in Method Blank
U = Undetected
J = Estimated concentration between MDL and LOQ
D = Dilution performed

MKP 2/8/19

Appendix B

Laboratory QC Documentation

Organic Extraction Batchlog Assigned to: 12698 Courtney Fatta Reviewed by: DMW102762 Start Date: 11/21/18 Start time: ~~11~~ 11:10

18325005 Tech 1: CF12698 Tech 2: CF12698

③ CF12698 11/21/18

Analyses on Batch: PFAS in Soil by LC/MS/MS

Dept: 33 Prep Analysis: 14090 PFAS Solid Prep

③ mL CF12698 11/21/18

Port #	QC	Sample Code	Amt (g)	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV ~~(uL)~~	IS Amt (uL)	BC	Comments
Z	9907715MS	MS	1.02	SSMODX1833CD	.05	MSMODX1833AT	.04	1.0	20	170A	pebbles, water layer
	BLANKA	BLK325005	1.0	SSMODX1833CD	.05	N/A	N/A	1.0	20	Z	
	LCSA	LCS325005	1.0	SSMODX1833CD	.05	MSMODX1833AT	.04	1.0	20		
Z	LCSDA	LCSD325005	1.0	SSMODX1833CD	.05	MSMODX1833AT	.04	1.0	20		

Spike Solutions: Witness: RGB / 375 Instrument: LM24960

MSMODX1833AT PFAS 537 Native Spike

SSMODX1833CD PFAS 537 Modified Extraction/Surrogate Spik Sequence: 18NOV27MOD-18NOV28

③ mL

Port#		Sample #	Sample Code	Amt (g)	SS/IS Sol.	Amt (mL)	FV ~~(uL)~~	IS Amt (uL)	BC	Comments	Analyses	Due	Pri
Z	1	9907715	Z	1.04	SSMODX1833CD	.05	1.0	20	170a	pebbles, water layer	14027	12/03/2018	N
Z	2	9907716	Z	1.07	SSMODX1833CD	.05	1.0	20	170a	↓	14027	12/03/2018	N

Reagents used During Extraction

Reagent/Material/Equip	Lot No./ID No.
1:1 MeOH:ACN	12698111618 33A
Auto-pipette (dilutions)	N/A
Auto-pipette (extract vialin	P1000-2
Internal Standard	IS1833133A
Methanol	DV136-US
Sand	MKBW7349V
Syringe (IS)	PFAS 11
Syringe (MS)	PFAS 10
Syringe (SS)	PFAS 13

18325005

N/A DMW 11/28/18

Appendix C

Validator Qualifications

KENNETH R. APPLIN
Geochemist/Data Validator

Ph.D., Geochemistry and Mineralogy, The Pennsylvania State University

M.S., Geochemistry and Mineralogy, The Pennsylvania State University

B.A., Geological Sciences, SUNY at Geneseo, NY

Dr. Applin has over 35 years of experience working with the geochemistry of natural waters. His prior experience includes working as an Assistant Professor of Geology at the University of Missouri-Columbia and as Chief Hydrogeologist and Geochemist with a leading engineering firm in Rochester, NY. In 1993, he established KR Applin and Associates, a small consulting business that focuses on the geochemistry of natural waters, especially as applied to problems involving the contamination of groundwater and surface water.

Dr. Applin is also an experienced analytical data validator and has provided data validation services since 1994 to a variety of clients performing brownfield cleanup projects, hazardous waste remediation, groundwater monitoring at solid waste facilities, and other projects requiring third-party data validation. Dr. Applin has several years of hands-on experience with the laboratory analysis of natural waters and has successfully completed the USEPA Region II certification courses for performing inorganic and organic analytical data validation.

MICHAEL K. PERRY
Chemist/Data Validator

B.S. Chemistry, Georgia State University, Atlanta, GA

A.A.S., Chemical Technology, Alfred State College, Alfred, NY

Mr. Perry has over 30 years of experience in the analytical laboratory business. During his early career, he spent several years as a laboratory analyst performing the analysis of soil, water, and air samples for inorganic and organic chemical parameters. During his last 20 years in the environmental laboratory business, he managed and directed two major analytical laboratories in Rochester, NY. His management responsibilities included oversight of the daily operations of the lab, staff training and supervision, the selection, purchase, and maintenance of analytical instruments, the introduction of new laboratory methods, analytical quality assurance and quality control, data acquisition and management, and other business-related activities.

Mr. Perry has an extensive working knowledge of the methods and procedures used for sampling and analyzing both inorganic and organic analytes in soil, water, and air. He is an accomplished laboratory chemist and is familiar with the analytical methods and procedures established under the USEPA Contract Laboratory Protocols (CLP), the NYSDEC Analytical Services Protocols (ASP), and the NYSDOH Environmental Laboratory Approval Program (ELAP).

DATA USABILITY SUMMARY REPORT (DUSR)

31 Water Street
Jamestown, NY
NYSDEC BCP # C907046

SDG: 7066870

12 soil samples

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

January 2019

EDU Environmental Data Usability 10028 Deer Park Dr. Dansville, NY 14437 585.991.9156

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REVIEWER'S NARRATIVE
SDG 7066870

The data associated with this Sample Delivery Group (SDG) 7066870, analyzed by Pace Analytical Services, LLC, Melville, NY have been reviewed in accordance with assessment criteria provided by the New York State Department of Environmental Conservation following the review procedures provided in the USEPA Functional Guidelines for evaluating organic and inorganic data.

All analytical results reported by the laboratory are considered valid and acceptable except results that have been qualified as rejected, "R". Results qualified as estimated "J", or as non-detects, "U", are considered usable for the purpose of evaluating water and/or soil quality. However, these qualifiers indicate that the accuracy and/or precision of the analytical result is questionable. A summary of all data that have been qualified and the reasons for qualification are provided in the following data usability summary report (DUSR).

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

Reviewer's Signature: Michael K. Perry Date: 1/9/19

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	31 Water St. Jamestown, NY
SAMPLING DATE:	October 03, 2018
SAMPLE TYPE:	12 soil samples
LABORATORY:	Pace Analytical Services, LLC Melville, NY
SDG No.:	7066870-01

2.0 INTRODUCTION

This data usability summary report (DUSR) was prepared in accordance with guidance provided by the New York State Department of Environmental Conservation (NYSDEC). The DUSR is based on a review and evaluation of the laboratory analytical data package. Specifically, the NYSDEC guidance recommends review and evaluation of the following elements of the data package:

- Completeness of the data package as defined under the requirements of the NYSDEC Analytical Services Protocols (ASP) Category B or the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) deliverables,
- Compliance with established analyte holding times,
- Adherence to quality control (QC) limits and specifications for blanks, instrument tuning and calibration, surrogate recoveries, spike recoveries, laboratory duplicate analyses, and other QC criteria,
- Adherence to established analytical protocols,
- Conformance of data summary sheets with raw analytical data, and
- Use of correct data qualifiers.

Data deficiencies, analytical protocol deviations, and quality control problems identified using the review criteria above and their effect on the analytical results are discussed in this report.

3.0 SAMPLE AND ANALYSIS SUMMARY

The data package consists of analytical results for twelve soil samples collected on October 03, 2018. These samples were analyzed for the Part 375 list of Volatile Organic Compounds, Semi-volatile Organic Compounds, PCBs, Pesticides, TCN, Herbicides, Hexavalent Chromium, and Metals.

All analyses were performed by Pace Analytical Services, LLC, Melville, NY and analyzed as SDG 7066870. The analytical results were provided in NYSDEC ASP Category B format, which includes all raw analytical data and laboratory QC data.

4.0 GUIDANCE DOCUMENTS AND DATA REVIEW CRITERIA

The guidance documents used for reviewing laboratory quality control (QC) data and assigning data qualifiers (flags) to analytical results are listed in Table 4-1. The QC limits established in the documents applicable to this data review were used to assess the quality of the analytical results. In some cases, however, QC limits established internally by the laboratory were taken into account to determine data quality.

The QC criteria considered for assessing the usability of the reported analytical results provided for each analyte type (i.e. VOCs, SVOCs, metals, etc.) are listed in Table 4-2. These criteria may vary with the analytical method utilized by the laboratory. These criteria comply with the guidance recommended in Section 2.0 above.

5.0 DATA VALIDATION QUALIFIERS

The letter qualifiers (flags) used to define data usability are described briefly below. These letters are assigned by the data validator to analytical results having questionable accuracy and/or precision as determined by reviewing the laboratory QC data associated with the analytical results.

TABLE 4-1

DATA VALIDATION GUIDANCE DOCUMENTS

Analyte Type	Validation Guidance
VOCs	USEPA, 2008, Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry; SW-846 Method 8260B; SOP # HW-24, Rev. 2. USEPA, 2008, Statement of Work for Organic Analysis of Low/Medium Concentration of Volatile Organic Compounds SOM01.2; SOP HW-33, Rev. 2.
SVOCs	USEPA, 2007, Statement of Work for Organic Analysis of Low/Medium Concentration of Semivolatile Organic Compounds SOM01.2; SOP HW-35, Rev. 1.
Pesticides/PCBs	USEPA, 2006, CLP Organics Data Review and Preliminary Review (CLP/SOW OLMO 4.3); SOP # HW-6, Rev. 14, Part C.
Metals	USEPA, 2006, Validation of Metals for the Contract Laboratory Program (CLP) based on SOW ILMO 5.3 (SOP Revision 13), SOP # HW-2, Rev. 13.
Gen Chemistry	NYSDEC, 2005, Analytical Services Protocols (ASP)
VOCs (Ambient air)	USEPA, 2006, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canister by Method TO-15; SOP # HW-31, Rev. 4.

TABLE 4-2

QUALITY CONTROL CRITERIA USED FOR VALIDATING
LABORATORY ANALYTICAL DATA

VOCs	SVOCs	Pesticides/PCBs	Metals	Gen Chemistry	Method TO-15
Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg
Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition
Holding Time	Holding Time	Holding Time	Holding Time	Holding Times	Holding Time
System Monitoring Compounds	Surrogate Recoveries	Surrogate Recoveries	Initial/Continuing Calibration	Calibration	Canister Certification
Lab Control Sample	Lab Control Sample	Matrix Spikes	CRDL Standards	Lab Control Samples	Lab Control Sample
Matrix Spikes	Matrix Spikes	Blanks	Blanks	Blanks	Instrument Tuning
Blanks	Blanks	Instrument Calibration & Verification	Interference Check Sample	Spike Recoveries	Blanks
Instrument Tuning	Instrument Tuning	Analyte ID	Spike Recoveries	Lab Duplicates	Initial Calibration & System Performance
Internal Standards	Internal Standards	Lab Qualifiers	Lab Duplicate		Daily Calibration
Initial Calibration	Initial Calibration	Field Duplicate	Lab Control Sample		Field Duplicate
Continuing Calibration	Continuing Calibration		ICP Serial Dilutions		
Lab Qualifiers	Lab Qualifiers		Lab Qualifiers		
Field Duplicate	Field Duplicate		Field Duplicate		

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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

JN The analyte is considered to be "presumptively present." The associated numerical value represents its *approximate* concentration.

The validated analytical results are attached to this report. Validation qualifiers (flags) are indicated using red ink. Data sheets having qualified data are signed and dated by the data reviewer.

6.0 RESULTS OF THE DATA REVIEW

The results of the data review are summarized in Tables 6-1 through 6-8. The tables list the samples where QC criteria were found to exceed acceptable limits and the actions taken to qualify the associated analytical results.

7.0 TOTAL USABLE DATA

For SDG 7066870, twelve samples were analyzed and results were reported for 1128 analytes. Twelve results were rejected. Even though some results were flagged with a "J" as estimated, all other results (99 %) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

Table 6-1 VOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
BH-8 (8-12)	Acetone	J -detects	Lab Duplicate > 20 % RPD	Data is estimated
BH-4 (0-4) BH-6 (0-4)	n-Butylbenzene 1,2,4-Trichlorobenzene	J -detects/UJ non-detects	Internal Std area for DCB-d4 < QC limit	Data is estimated
All samples	1,4-Dioxane	R	Initial calibration RRF < 0.005	Based on the new low responders rule from SOM2.1, the RRF <0.005 is used
BH-1 thru BH-09	Acetone MEK 1,1,1-Trichloroethane	J -detects/UJ non-detects	CCV % D > QC limit	Data is estimated
BH-11 (0-4) BH-12 (0-4)	Acetone MEK Carbon Tetrachloride Tetrachloroethene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane	J -detects/UJ non-detects	CCV % D > QC limit	Data is estimated
BH-10 (13-14)	MEK 1,4-Dioxane	J -detects/UJ non-detects	CCV % D > QC limit	Data is estimated

Table 6-2 SVOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	TICs detected in Method blank	TIC < 5X blank value, R TIC	Tentatively Identified Compounds were detected in the method blank	TICs were rejected

Table 6-3 Pesticides

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
BH-2 (1-3) BH-3 (1-4) BH-4 (0-4) BH-6 (0-4) BH-8 (8-12) BH-9 (4-7) BH-11 (0-4) BH-12 (0-4)	4,4'-DDT 4,4'-DDD 4,4'-DDE	4,4'-DDT: J detects/UJ non-detects 4,4'-DDD and 4,4'-DDE: JN detects	PEM for 4,4'DDT > 20 %	Data is estimated
BH-2 (1-3) BH-3 (1-4) BH-4 (0-4) BH-6 (0-4) BH-8 (8-12) BH-9 (4-7) BH-11 (0-4) BH-12 (0-4)	4,4'-DDT 4,4'-DDD	J -detects/UJ non-detects	CCV % D > 25 %QC limit	Data is estimated
BH-8 (8-12)	b-BHC	JN	>25 % D between dual column analysis	Matrix interference suspected
BH-9 (4-7)	b-BHC a-Chlordane Dieldrin Endosulfan II	JN J J JN	>25 % D between dual column analysis	Matrix interference suspected

Table 6-4 PCBs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
BH-8 (8-12)	PCB 1248	J	>25 % D between dual column analysis	Matrix interference suspected
BH-9 (4-7)	PCB 1254	J	>25 % D between dual column analysis	Matrix interference suspected

Table 6-5 Herbicides

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-6 Metals

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	Arsenic Manganese Selenium Zinc	sample results < 5x MB flagged J	Metals were detected in the method blank (MB) <PQL but >MDL	Selenium data should be considered estimated. Arsenic, Manganese and Zinc data were not affected
BH-1 (7-8)	Copper	J detect	Serial dilution > 10 %	Data should be considered estimated

Table 6-7 TCN

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-8 Hexavalent Chromium

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
BH-1 (7-8)	Cr+6	UJ non-detect	Matrix spike rec < QC limit	Data should be considered estimated

ACRONYMS

BSP	Blank Spike
CCAL	Continuing Calibration
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
%D	Percent Difference
ICAL	Initial Calibration
ICB	Initial Calibration Blank
IS	Internal Standard
LCS	Laboratory Control Sample
MS/MSD	Matrix Spike/Matrix Spike Duplicate
QA	Quality Assurance
QC	Quality Control
%R	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
%RSD	Percent Relative Standard Deviation
TAL	Target Analyte List (metals)
TCL	Target Compound List (organics)

Appendix A

Validated Analytical Results



Analytical Data Package

Prepared by:

Pace Analytical Services

Pace Project No.: 7066870

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

December 06, 2018

Jason Brydges
BE3 Environmental
1270 Niagara St
Buffalo, NY 14213

RE: Project: 31 WATER ST RI
Pace Project No.: 7066870

Dear Jason Brydges:
Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Report revised 12/6/18 with updated qualifiers

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Murphy
james.murphy@pacelabs.com
(518)860-9724
Project Manager

Enclosures

cc: Alex Brennen, BE3 Corp

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE SUMMARY

Project: 31 WATER ST RI
Pace Project No.: 7066870

Lab ID	Sample ID	Matrix	Date Collected	Date Received
7066870001	BH-1 (7-8)	Solid	10/03/18 08:30	10/04/18 10:30
7066870002	BH-2 (1-3)	Solid	10/03/18 09:30	10/04/18 10:30
7066870003	BH-3 (1-4)	Solid	10/03/18 10:00	10/04/18 10:30
7066870004	BH-4 (0-4)	Solid	10/03/18 11:00	10/04/18 10:30
7066870005	BH-6 (0-4)	Solid	10/03/18 11:45	10/04/18 10:30
7066870006	BH-5 (8-12)	Solid	10/03/18 12:15	10/04/18 10:30
7066870007	BH-7 (0-4)	Solid	10/03/18 13:30	10/04/18 10:30
7066870008	BH-8 (8-12)	Solid	10/03/18 14:00	10/04/18 10:30
7066870009	BH-9 (4-7)	Solid	10/03/18 14:45	10/04/18 10:30
7066870010	BH-9 (13-14)	Solid	10/03/18 15:00	10/04/18 10:30
7066870011	BH-11 (0-4)	Solid	10/03/18 15:50	10/04/18 10:30
7066870012	BH-12 (0-4)	Solid	10/03/18 16:20	10/04/18 10:30

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix W [redacted] ALL SH[redacted] Pace Workorder Number or

WO#: 7066870

7066870

Container Preservat [redacted]

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Company: BE3 Corp	Billing Information: ← Same
Address: 1270 Niagara St Buffalo, NY 14213	
Report To: Jbrydges@be3corp.com	Email To: Jason Brydges
Copy To: abrennen@be3corp.com	Site Collection Info/Address: 31 Water St, Jamestown
Customer Project Name/Number: 31 WATER ST RI	State: NY / County/City: Jamestown / Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: ~~716-~~ 716-249-6880 / Email:	Site/Facility ID #: / Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [ ] No / Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: [redacted]	Rvt 375 VOC+TICs	[redacted]	375 SVOC+TICs, Metal, PCB, Pest	[redacted]	375 Herb	[redacted]	Lab Profile/Line:
BH-1 (7-8)	SO	C	10/3	0830				2		X		X				001
BH-2 (1-3)		C	10/3	0930						X		X		X		002
BH-3 (1-4)		C	10/3	1000						X		X				003
BH-4 (0-4)		C	10/3	1100						X		X		X		004
BH-6 (0-4)		C	10/3	1145						X		X		X		005
BH-5 (8-12)		C	10/3	1215						X		X				006
BH-7 (0-4)		C	10/3	1330						X		X		X		007
BH-8 (8-12)		C	10/3	1400						X		X				008
BH-9 (4-7)		G	10/3	1445						X		X		X		009
BH-9 (13-14)		G	10/3	1500						X		X				010

Lab Profile/Line:

Lab Sample Receipt Checklist:			
Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

LAB USE ONLY:
Lab Sample # / Comments: [redacted]

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: Bubble wrap/bag [redacted]

Radchem sample(s) screened (<500 cpm): Y N (NA)

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #: 7830 7483 3457 [redacted]

Samples received via: (FEDEX) UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: (Y) N NA
Therm ID#: TH091
Cooler 1 Temp Upon Receipt: 5.3 oC
Cooler 1 Therm Corr. Factor: 0.0 oC
Cooler 1 Corrected Temp: 5 oC
Comments: [redacted]

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
BE3	10/3 / 1730	[redacted] Pace	10/4/18 1030
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum: [redacted]
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other [redacted]

Non Conformance(s): YES / NO

Page: 1 of: 2

CHAIN-OF-CUSTODY Analytical Request Document

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Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- AF [redacted] ALL

WO#: 7066870 [redacted]

PM: JM2 [redacted] Due Date: 10/11/18

CLIENT: BE3 [redacted]

Container Pres

Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Company: BE3 Corp	Billing Information: ← Same	
Address: 1270 Niagara St Buffalo, NY 14213		
Report To: Jason Brydges	Email To: Jbrydges@be3corp.com	
Copy To: abrennen@be3corp.com	Site Collection Info/Address: 31 Water St	
Customer Project Name/Number: 31 WATER ST RI	State: County/City: NY/ Jamestown [ ]PT [ ]MT [ ]CT [X]ET	Time Zone Collected:
Phone: 716-249-6880 Email:	Site/Facility ID #:	Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order # : Quote #:	DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required:	Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day (Expedite Charges Apply)	Field Filtered (if applicable): [ ] Yes [X] No Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Part 375 VOC + TICs	[redacted]	375 SVOC+TICs, Metals, PCBs, Pest	[redacted]	375 Herb	[redacted]	[redacted]	Lab Sample # / Comments
BH-10 (0-4)	SO	C	10/3	1550				2	X		X		X			011
BH-12 (0-4)				1620				2	X		X		X			012

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: _____
Sample pH Acceptable Y N NA
pH Strips: _____
Sulfide Present Y N NA
Lead Acetate Strips: _____

LAB USE ONLY: [redacted]
Lab Sample # / Comments: [redacted]

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: Bubble wrap 1049

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): N N/A

Lab Tracking #: 7830 7483 3457

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: IT091
Cooler 1 Temp Upon Receipt: 5.2 °C
Cooler 1 Therm Corr. Factor: 0.0 °C
Cooler 1 Corrected Temp: 5.2 °C
Comments: [redacted]

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
BE3	10/3/1730	[signature]	10/4/18 10:30
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 2 of: 2

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Date: December 06, 2018

DUP (Lab ID: 398496)

- Method 8260C: The internal standard response exceeded the lower acceptance limits and confirmed by reanalysis. Results may be biased high.

BH-2 (1-3) (Lab ID: 7066870002)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-3 (1-4) (Lab ID: 7066870003)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-4 (0-4) (Lab ID: 7066870004)

- Method 8260C: The internal standard response exceeded the lower acceptance limits and confirmed by reanalysis. Results may be biased high.
- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-6 (0-4) (Lab ID: 7066870005)

- Method 8260C: The internal standard response exceeded the lower acceptance limits and confirmed by reanalysis. Results may be biased high.
- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-8 (8-12) (Lab ID: 7066870008)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-9 (4-7) (Lab ID: 7066870009)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-11 (0-4) (Lab ID: 7066870011)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-12 (0-4) (Lab ID: 7066870012)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8081B
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: December 06, 2018

General Information:
12 samples were analyzed for EPA 8081B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: 85846

IC: The initial calibration for this compound was outside of method control limits. The result is estimated.

- BH-1 (7-8) (Lab ID: 7066870001)
  - alpha-Chlordane
- BH-11 (0-4) (Lab ID: 7066870011)
  - alpha-Chlordane
- BH-12 (0-4) (Lab ID: 7066870012)
  - alpha-Chlordane
- BH-2 (1-3) (Lab ID: 7066870002)
  - alpha-Chlordane
- BH-3 (1-4) (Lab ID: 7066870003)
  - alpha-Chlordane
- BH-4 (0-4) (Lab ID: 7066870004)
  - alpha-Chlordane
- BH-5 (8-12) (Lab ID: 7066870006)
  - alpha-Chlordane
- BH-7 (0-4) (Lab ID: 7066870007)
  - alpha-Chlordane
- BH-8 (8-12) (Lab ID: 7066870008)
  - alpha-Chlordane
- BH-9 (13-14) (Lab ID: 7066870010)
  - alpha-Chlordane
- BLANK (Lab ID: 394915)
  - alpha-Chlordane
- MS (Lab ID: 394918)
  - alpha-Chlordane
- MSD (Lab ID: 394919)
  - alpha-Chlordane

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8081B
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: December 06, 2018

QC Batch: 85846

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BH-11 (0-4) (Lab ID: 7066870011)
  - 4,4'-DDT
  - alpha-Chlordane
- BH-12 (0-4) (Lab ID: 7066870012)
  - 4,4'-DDT
  - alpha-Chlordane
- BH-2 (1-3) (Lab ID: 7066870002)
  - 4,4'-DDT
  - alpha-Chlordane
- BH-3 (1-4) (Lab ID: 7066870003)
  - 4,4'-DDT
  - alpha-Chlordane
- BH-4 (0-4) (Lab ID: 7066870004)
  - 4,4'-DDT
  - alpha-Chlordane
- BH-6 (0-4) (Lab ID: 7066870005)
  - 4,4'-DDT
- BH-8 (8-12) (Lab ID: 7066870008)
  - 4,4'-DDT
  - alpha-Chlordane
- BH-9 (4-7) (Lab ID: 7066870009)
  - 4,4'-DDT

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 85846

C2: Relative percent difference between results from each column was greater than 40%. The lower of the two results was reported.

- BH-6 (0-4) (Lab ID: 7066870005)
  - beta-BHC
  - gamma-BHC (Lindane)

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8081B
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: December 06, 2018

Analyte Comments:

QC Batch: 85846

C2: Relative percent difference between results from each column was greater than 40%. The lower of the two results was reported.

- BH-6 (0-4) (Lab ID: 7066870005)
  - Dieldrin
- BH-8 (8-12) (Lab ID: 7066870008)
  - beta-BHC
- BH-9 (4-7) (Lab ID: 7066870009)
  - beta-BHC
  - Dieldrin
  - Endosulfan II

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8082A
Description: 8082 GCS PCB
Client: BE3 Environmental
Date: December 06, 2018

General Information:
12 samples were analyzed for EPA 8082A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 85854

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066870004

R1: RPD value was outside control limits.

- MSD (Lab ID: 394973)
  - PCB-1260 (Aroclor 1260)

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8151A
Description: 8151 Chlorinated Herbicides
Client: BE3 Environmental
Date: December 06, 2018

General Information:
12 samples were analyzed for EPA 8151A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 8151A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 85932

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066870001

R1: RPD value was outside control limits.

- MSD (Lab ID: 395229)
  - 2,4,5-TP (Silvex)

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 6010C
Description: 6010 MET ICP
Client: BE3 Environmental
Date: December 06, 2018

General Information:
12 samples were analyzed for EPA 6010C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 85841

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066870001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 394914)
  - Barium
  - Manganese

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 85841

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 394913)
  - Manganese

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 7471B
Description: 7471 Mercury
Client: BE3 Environmental
Date: December 06, 2018

General Information:
12 samples were analyzed for EPA 7471B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8270D
Description: 8270 MSSV
Client: BE3 Environmental
Date: December 06, 2018

General Information:
12 samples were analyzed for EPA 8270D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3545A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 85805

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-11 (0-4) (Lab ID: 7066870011)
  - 2,4,6-Tribromophenol (S)
- BH-12 (0-4) (Lab ID: 7066870012)
  - 2,4,6-Tribromophenol (S)
- BH-2 (1-3) (Lab ID: 7066870002)
  - 2,4,6-Tribromophenol (S)
- BH-3 (1-4) (Lab ID: 7066870003)
  - 2,4,6-Tribromophenol (S)
- BH-4 (0-4) (Lab ID: 7066870004)
  - 2,4,6-Tribromophenol (S)
- BH-6 (0-4) (Lab ID: 7066870005)
  - 2,4,6-Tribromophenol (S)
- BH-8 (8-12) (Lab ID: 7066870008)
  - 2,4,6-Tribromophenol (S)
- BH-9 (4-7) (Lab ID: 7066870009)
  - 2,4,6-Tribromophenol (S)
- MS (Lab ID: 394859)
  - 2,4,6-Tribromophenol (S)
- MSD (Lab ID: 394860)
  - 2,4,6-Tribromophenol (S)

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8270D
Description: 8270 MSSV
Client: BE3 Environmental
Date: December 06, 2018

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 85805

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066870012

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
- MSD (Lab ID: 394860)
  - Dibenz(a,h)anthracene
  - Indeno(1,2,3-cd)pyrene

R1: RPD value was outside control limits.
- MSD (Lab ID: 394860)
  - Benzo(g,h,i)perylene
  - Dibenz(a,h)anthracene

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8260C
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: December 06, 2018

General Information:
12 11 samples were analyzed for EPA 8260C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A-L with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86468

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-5 (8-12) (Lab ID: 7066870006)
  - 2-Butanone (MEK)
  - Acetone
- BH-8 (8-12) (Lab ID: 7066870008)
  - 2-Butanone (MEK)
  - Acetone
- BH-9 (4-7) (Lab ID: 7066870009)
  - Acetone
- BLANK (Lab ID: 397701)
  - 1,2-Dichloroethane-d4 (S)
- DUP (Lab ID: 398496)
  - 2-Butanone (MEK)
  - Acetone
- LCS (Lab ID: 397702)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride
- MS (Lab ID: 397703)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 1,2-Dichloroethane-d4 (S)
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride

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MRP 1/7/19

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8260C
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: December 06, 2018

QC Batch: 86669

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-12 (0-4) (Lab ID: 7066870012)
  - Tetrachloroethene
- DUP (Lab ID: 398792)
  - Acetone
- LCS (Lab ID: 398789)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride
  - Tetrachloroethene
- MS (Lab ID: 401714)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride
  - Tetrachloroethene

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 86669

S1: Surrogate recovery outside laboratory control limits (confirmed by re-analysis).

- DUP (Lab ID: 398792)
  - 1,2-Dichloroethane-d4 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86468

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066645002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 397703)

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(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8260C
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: December 06, 2018

QC Batch: 86468

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066645002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Acetone
- cis-1,2-Dichloroethene

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 86468

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 398496)
  - Acetone

QC Batch: 86669

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 398792)
  - Acetone
  - Methylene Chloride
  - Trichloroethene
  - Xylene (Total)
  - o-Xylene

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8260C
Description: 8260 MSV 5035A-H Med Level
Client: BE3 Environmental
Date: December 06, 2018

General Information:
1 sample was analyzed for EPA 8260C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A-H/5030C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86646

IH: This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.

- LCS (Lab ID: 398743)
  - Acetone
- MS (Lab ID: 401911)
  - Acetone

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86646

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 398743)
  - 1,4-Dioxane (p-Dioxane)
- MS (Lab ID: 401911)
  - 1,4-Dioxane (p-Dioxane)

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BH-9 (13-14) (Lab ID: 7066870010)
  - 2-Butanone (MEK)
- BLANK (Lab ID: 398742)
  - 2-Butanone (MEK)
- DUP (Lab ID: 401910)
  - 2-Butanone (MEK)
- LCS (Lab ID: 398743)
  - 2-Butanone (MEK)
- MS (Lab ID: 401911)
  - 2-Butanone (MEK)

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8260C
Description: 8260 MSV 5035A-H Med Level
Client: BE3 Environmental
Date: December 06, 2018

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86646

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067073002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 401911)
  - Tetrachloroethene
  - cis-1,2-Dichloroethene

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 86646

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 401910)
  - Trichloroethene
  - cis-1,2-Dichloroethene

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 8260
Description: TIC MSV Soil
Client: BE3 Environmental
Date: December 06, 2018

General Information:
10 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: EPA 7196A
Description: 7196 Chromium, Hexavalent
Client: BE3 Environmental
Date: December 06, 2018

General Information:
12 samples were analyzed for EPA 7196A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3060A with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86148

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7066870001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 396308)
  - Chromium, Hexavalent

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **Trivalent Chromium Calculation**
Description: Trivalent Chromium Calculation
Client: BE3 Environmental
Date: December 06, 2018

General Information:
12 samples were analyzed for Trivalent Chromium Calculation. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST RI
Pace Project No.: 7066870

Method: **EPA 9014 Total Cyanide**
Description: 9014 Cyanide, Total
Client: BE3 Environmental
Date: December 06, 2018

General Information:
12 samples were analyzed for EPA 9014 Total Cyanide. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 9010C with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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SAMPLE NO.

BH-1 (7-8)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870

Date Extracted: 10/09/2018 12:09
Lab Sample ID: 7066870001

Date Analyzed: 10/09/2018 18:48
Lab File ID: 100918.B\F91189.D

Initial wt/vol: 5.46 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV4 Percent Moisture: 15.2%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<2.2 UJ	~~U~~
71-43-2	Benzene	<2.2	U
78-93-3	2-Butanone (MEK)	<2.2 UJ	~~U~~
104-51-8	n-Butylbenzene	<2.2	U
135-98-8	sec-Butylbenzene	<2.2	U
98-06-6	tert-Butylbenzene	<2.2	U
56-23-5	Carbon tetrachloride	<2.2	U
108-90-7	Chlorobenzene	<2.2	U
67-66-3	Chloroform	<2.2	U
95-50-1	1,2-Dichlorobenzene	<2.2	U
541-73-1	1,3-Dichlorobenzene	<2.2	U
106-46-7	1,4-Dichlorobenzene	<2.2	U
75-34-3	1,1-Dichloroethane	<2.2	U
107-06-2	1,2-Dichloroethane	<2.2	U
75-35-4	1,1-Dichloroethene	<2.2	U
156-59-2	cis-1,2-Dichloroethene	<2.2	U
156-60-5	trans-1,2-Dichloroethene	<2.2	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<54.0~~ K	U
100-41-4	Ethylbenzene	<2.2	U
75-09-2	Methylene Chloride	1.4	J
1634-04-4	Methyl-tert-butyl ether	<2.2	U
103-65-1	n-Propylbenzene	<2.2	U
127-18-4	Tetrachloroethene	<2.2	U
108-88-3	Toluene	<2.2	U
120-82-1	1,2,4-Trichlorobenzene	<2.2	U
71-55-6	1,1,1-Trichloroethane	<2.2 UJ	~~U~~
79-01-6	Trichloroethene	<2.2	U
95-63-6	1,2,4-Trimethylbenzene	<2.2	U
108-67-8	1,3,5-Trimethylbenzene	<2.2	U
75-01-4	Vinyl chloride	<2.2	U
1330-20-7	Xylene (Total)	<4.3	U
179601-23-1	m&p-Xylene	<4.3	U
95-47-6	o-Xylene	<2.2	U

SAMPLE NO.

BH-2 (1-3)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30 Matrix: Solid SDG No.: 7066870

Date Extracted: 10/09/2018 12:09 Lab Sample ID: 7066870002

Date Analyzed: 10/09/2018 19:12 Lab File ID: 100918.B\F91190.D

Initial wt/vol: 4.46 g Final wt/vol: 5 mL Dilution: 1 Instrument: 70MSV4 Percent Moisture: 12.0%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<2.5 MS	~~U~~
71-43-2	Benzene	<2.5	U
78-93-3	2-Butanone (MEK)	<2.5 MS	~~U~~
104-51-8	n-Butylbenzene	<2.5	U
135-98-8	sec-Butylbenzene	<2.5	U
98-06-6	tert-Butylbenzene	<2.5	U
56-23-5	Carbon tetrachloride	<2.5	U
108-90-7	Chlorobenzene	<2.5	U
67-66-3	Chloroform	<2.5	U
95-50-1	1,2-Dichlorobenzene	<2.5	U
541-73-1	1,3-Dichlorobenzene	<2.5	U
106-46-7	1,4-Dichlorobenzene	<2.5	U
75-34-3	1,1-Dichloroethane	<2.5	U
107-06-2	1,2-Dichloroethane	<2.5	U
75-35-4	1,1-Dichloroethene	<2.5	U
156-59-2	cis-1,2-Dichloroethene	<2.5	U
156-60-5	trans-1,2-Dichloroethene	<2.5	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<68.7~~ R	U
100-41-4	Ethylbenzene	<2.5	U
75-09-2	Methylene Chloride	2.2	J
1634-04-4	Methyl-tert-butyl ether	<2.5	U
103-65-1	n-Propylbenzene	<2.5	U
127-18-4	Tetrachloroethene	<2.5	U
108-88-3	Toluene	<2.5	U
120-82-1	1,2,4-Trichlorobenzene	<2.5	U
71-55-6	1,1,1-Trichloroethane	<2.5 MS	~~U~~
79-01-6	Trichloroethene	1.7	J
95-63-6	1,2,4-Trimethylbenzene	<2.5	U
108-67-8	1,3,5-Trimethylbenzene	<2.5	U
75-01-4	Vinyl chloride	<2.5	U
1330-20-7	Xylene (Total)	<5.1	U
179601-23-1	m&p-Xylene	<5.1	U
95-47-6	o-Xylene	<2.5	U

SAMPLE NO.

BH-3 (1-4)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870

Date Extracted: 10/09/2018 12:09
Lab Sample ID: 7066870003

Date Analyzed: 10/09/2018 19:36
Lab File ID: 100918.B\F91191.D

Initial wt/vol: 4.53 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV4 Percent Moisture: 7.1%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<2.4 UJ	~~U~~
71-43-2	Benzene	<2.4	U
78-93-3	2-Butanone (MEK)	<2.4 UJ	~~U~~
104-51-8	n-Butylbenzene	<2.4	U
135-98-8	sec-Butylbenzene	<2.4	U
98-06-6	tert-Butylbenzene	<2.4	U
56-23-5	Carbon tetrachloride	<2.4	U
108-90-7	Chlorobenzene	<2.4	U
67-66-3	Chloroform	<2.4	U
95-50-1	1,2-Dichlorobenzene	<2.4	U
541-73-1	1,3-Dichlorobenzene	<2.4	U
106-46-7	1,4-Dichlorobenzene	<2.4	U
75-34-3	1,1-Dichloroethane	<2.4	U
107-06-2	1,2-Dichloroethane	<2.4	U
75-35-4	1,1-Dichloroethene	<2.4	U
156-59-2	cis-1,2-Dichloroethene	1.3	J
156-60-5	trans-1,2-Dichloroethene	<2.4	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<59.4~~ R	U
100-41-4	Ethylbenzene	<2.4	U
75-09-2	Methylene Chloride	2.2	J
1634-04-4	Methyl-tert-butyl ether	<2.4	U
103-65-1	n-Propylbenzene	<2.4	U
127-18-4	Tetrachloroethene	<2.4	U
108-88-3	Toluene	<2.4	U
120-82-1	1,2,4-Trichlorobenzene	<2.4	U
71-55-6	1,1,1-Trichloroethane	<2.4 UJ	~~U~~
79-01-6	Trichloroethene	3.5	
95-63-6	1,2,4-Trimethylbenzene	<2.4	U
108-67-8	1,3,5-Trimethylbenzene	<2.4	U
75-01-4	Vinyl chloride	<2.4	U
1330-20-7	Xylene (Total)	2.4	J
179601-23-1	m&p-Xylene	2.4	J
95-47-6	o-Xylene	<2.4	U

SAMPLE NO.

BH-4 (0-4)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30 Matrix: Solid SDG No.: 7066870

Date Extracted: 10/09/2018 12:09 Lab Sample ID: 7066870004

Date Analyzed: 10/09/2018 20:00 Lab File ID: 100918.B\F91192.D

Initial wt/vol: 4.72 g Final wt/vol: 5 mL Dilution: 1 Instrument: 70MSV4 Percent Moisture: 21.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<2.7 UJ	~~U~~
71-43-2	Benzene	<2.7	U
78-93-3	2-Butanone (MEK)	<2.7 UJ	~~U~~
104-51-8	n-Butylbenzene	<2.7 UJ	~~U~~
135-98-8	sec-Butylbenzene	<2.7	U
98-06-6	tert-Butylbenzene	<2.7	U
56-23-5	Carbon tetrachloride	<2.7	U
108-90-7	Chlorobenzene	<2.7	U
67-66-3	Chloroform	<2.7	U
95-50-1	1,2-Dichlorobenzene	<2.7	U
541-73-1	1,3-Dichlorobenzene	<2.7	U
106-46-7	1,4-Dichlorobenzene	<2.7	U
75-34-3	1,1-Dichloroethane	<2.7	U
107-06-2	1,2-Dichloroethane	<2.7	U
75-35-4	1,1-Dichloroethene	<2.7	U
156-59-2	cis-1,2-Dichloroethene	<2.7	U
156-60-5	trans-1,2-Dichloroethene	<2.7	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<67.6~~ R	U
100-41-4	Ethylbenzene	<2.7	U
75-09-2	Methylene Chloride	25.3	
1634-04-4	Methyl-tert-butyl ether	<2.7	U
103-65-1	n-Propylbenzene	<2.7	U
127-18-4	Tetrachloroethene	<2.7	U
108-88-3	Toluene	<2.7	U
120-82-1	1,2,4-Trichlorobenzene	<2.7	U
71-55-6	1,1,1-Trichloroethane	<2.7 UJ	~~U~~
79-01-6	Trichloroethene	<2.7	U
95-63-6	1,2,4-Trimethylbenzene	<2.7 UJ	~~U~~
108-67-8	1,3,5-Trimethylbenzene	<2.7	U
75-01-4	Vinyl chloride	<2.7	U
1330-20-7	Xylene (Total)	<5.4	U
179601-23-1	m&p-Xylene	<5.4	U
95-47-6	o-Xylene	<2.7	U

11/28/2018 4:00

MTP 1/7/19

SAMPLE NO.

BH-6 (0-4)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30 Matrix: Solid SDG No.: 7066870

Date Extracted: 10/09/2018 12:09 Lab Sample ID: 7066870005

Date Analyzed: 10/09/2018 20:25 Lab File ID: 100918.B\F91193.D

Initial wt/vol: 4.12 g Final wt/vol: 5 mL Dilution: 1 Instrument: 70MSV4 Percent Moisture: 6.2%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<2.6 UJ	U
71-43-2	Benzene	<2.6	U
78-93-3	2-Butanone (MEK)	<2.6 UJ	U
104-51-8	n-Butylbenzene	<2.6 UJ	U
135-98-8	sec-Butylbenzene	<2.6	U
98-06-6	tert-Butylbenzene	<2.6	U
56-23-5	Carbon tetrachloride	<2.6	U
108-90-7	Chlorobenzene	<2.6	U
67-66-3	Chloroform	<2.6	U
95-50-1	1,2-Dichlorobenzene	<2.6	U
541-73-1	1,3-Dichlorobenzene	<2.6	U
106-46-7	1,4-Dichlorobenzene	<2.6	U
75-34-3	1,1-Dichloroethane	<2.6	U
107-06-2	1,2-Dichloroethane	<2.6	U
75-35-4	1,1-Dichloroethene	<2.6	U
156-59-2	cis-1,2-Dichloroethene	<2.6	U
156-60-5	trans-1,2-Dichloroethene	<2.6	U
123-91-1	1,4-Dioxane (p-Dioxane)	<64.7 R	U
100-41-4	Ethylbenzene	<2.6	U
75-09-2	Methylene Chloride	3.9	
1634-04-4	Methyl-tert-butyl ether	<2.6	U
103-65-1	n-Propylbenzene	<2.6	U
127-18-4	Tetrachloroethene	<2.6	U
108-88-3	Toluene	<2.6	U
120-82-1	1,2,4-Trichlorobenzene	<2.6 UJ	U
71-55-6	1,1,1-Trichloroethane	<2.6 UJ	U
79-01-6	Trichloroethene	2.6	J
95-63-6	1,2,4-Trimethylbenzene	<2.6	U
108-67-8	1,3,5-Trimethylbenzene	<2.6	U
75-01-4	Vinyl chloride	<2.6	U
1330-20-7	Xylene (Total)	<5.2	U
179601-23-1	m&p-Xylene	<5.2	U
95-47-6	o-Xylene	<2.6	U

SAMPLE NO.

BH-5 (8-12)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30 Matrix: Solid SDG No.: 7066870

Date Extracted: 10/09/2018 12:09 Lab Sample ID: 7066870006

Date Analyzed: 10/09/2018 20:49 Lab File ID: 100918.B\F91194.D

Initial wt/vol: 5.21 g Final wt/vol: 5 mL Dilution: 1 Instrument: 70MSV4 Percent Moisture: 14.8%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	22.3 J	
71-43-2	Benzene	<2.3	U
78-93-3	2-Butanone (MEK)	4.7 J	
104-51-8	n-Butylbenzene	<2.3	U
135-98-8	sec-Butylbenzene	<2.3	U
98-06-6	tert-Butylbenzene	<2.3	U
56-23-5	Carbon tetrachloride	<2.3	U
108-90-7	Chlorobenzene	<2.3	U
67-66-3	Chloroform	<2.3	U
95-50-1	1,2-Dichlorobenzene	<2.3	U
541-73-1	1,3-Dichlorobenzene	<2.3	U
106-46-7	1,4-Dichlorobenzene	<2.3	U
75-34-3	1,1-Dichloroethane	<2.3	U
107-06-2	1,2-Dichloroethane	<2.3	U
75-35-4	1,1-Dichloroethene	<2.3	U
156-59-2	cis-1,2-Dichloroethene	<2.3	U
156-60-5	trans-1,2-Dichloroethene	<2.3	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<56.3~~ R	U
100-41-4	Ethylbenzene	~~<2.3~~	U
75-09-2	Methylene Chloride	<2.3	U
1634-04-4	Methyl-tert-butyl ether	<2.3	U
103-65-1	n-Propylbenzene	<2.3	U
127-18-4	Tetrachloroethene	<2.3	U
108-88-3	Toluene	<2.3	U
120-82-1	1,2,4-Trichlorobenzene	<2.3	U
71-55-6	1,1,1-Trichloroethane	<2.3 UJ	~~U~~
79-01-6	Trichloroethene	<2.3	U
95-63-6	1,2,4-Trimethylbenzene	<2.3	U
108-67-8	1,3,5-Trimethylbenzene	<2.3	U
75-01-4	Vinyl chloride	<2.3	U
1330-20-7	Xylene (Total)	<4.5	U
179601-23-1	m&p-Xylene	<4.5	U
95-47-6	o-Xylene	<2.3	U

11/28/2018 4:00

MKP 1/7/19

SAMPLE NO.

BH-7 (0-4)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870

Date Extracted: 10/09/2018 12:09
Lab Sample ID: 7066870007

Date Analyzed: 10/09/2018 21:14
Lab File ID: 100918.B\F91195.D

Initial wt/vol: 4.67 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV4 Percent Moisture: 13.9%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<2.5 UJ	~~U~~
71-43-2	Benzene	<2.5	U
78-93-3	2-Butanone (MEK)	<2.5 UJ	~~U~~
104-51-8	n-Butylbenzene	<2.5	U
135-98-8	sec-Butylbenzene	<2.5	U
98-06-6	tert-Butylbenzene	<2.5	U
56-23-5	Carbon tetrachloride	<2.5	U
108-90-7	Chlorobenzene	<2.5	U
67-66-3	Chloroform	<2.5	U
95-50-1	1,2-Dichlorobenzene	<2.5	U
541-73-1	1,3-Dichlorobenzene	<2.5	U
106-46-7	1,4-Dichlorobenzene	<2.5	U
75-34-3	1,1-Dichloroethane	<2.5	U
107-06-2	1,2-Dichloroethane	<2.5	U
75-35-4	1,1-Dichloroethene	<2.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	J
156-60-5	trans-1,2-Dichloroethene	<2.5	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<62.2~~ R	U
100-41-4	Ethylbenzene	<2.5	U
75-09-2	Methylene Chloride	<2.5	U
1634-04-4	Methyl-tert-butyl ether	<2.5	U
103-65-1	n-Propylbenzene	<2.5	U
127-18-4	Tetrachloroethene	<2.5	U
108-88-3	Toluene	<2.5	U
120-82-1	1,2,4-Trichlorobenzene	<2.5	U
71-55-6	1,1,1-Trichloroethane	<2.5 UJ	~~U~~
79-01-6	Trichloroethene	14.5	
95-63-6	1,2,4-Trimethylbenzene	<2.5	U
108-67-8	1,3,5-Trimethylbenzene	<2.5	U
75-01-4	Vinyl chloride	<2.5	U
1330-20-7	Xylene (Total)	<5.0	U
179601-23-1	m&p-Xylene	<5.0	U
95-47-6	o-Xylene	<2.5	U

11/28/2018 4:00

MAP 1/7/19

SAMPLE NO.

BH-8 (8-12)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30 Matrix: Solid SDG No.: 7066870

Date Extracted: 10/09/2018 12:09 Lab Sample ID: 7066870008

Date Analyzed: 10/09/2018 21:38 Lab File ID: 100918.B\F91196.D

Initial wt/vol: 3.94 g Final wt/vol: 5 mL Dilution: 1 Instrument: 70MSV4 Percent Moisture: 22.9%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	197 J	
71-43-2	Benzene	<3.3	U
78-93-3	2-Butanone (MEK)	44.6 J	
104-51-8	n-Butylbenzene	<3.3	U
135-98-8	sec-Butylbenzene	<3.3	U
98-06-6	tert-Butylbenzene	<3.3	U
56-23-5	Carbon tetrachloride	<3.3	U
108-90-7	Chlorobenzene	<3.3	U
67-66-3	Chloroform	<3.3	U
95-50-1	1,2-Dichlorobenzene	<3.3	U
541-73-1	1,3-Dichlorobenzene	<3.3	U
106-46-7	1,4-Dichlorobenzene	<3.3	U
75-34-3	1,1-Dichloroethane	<3.3	U
107-06-2	1,2-Dichloroethane	<3.3	U
75-35-4	1,1-Dichloroethene	<3.3	U
156-59-2	cis-1,2-Dichloroethene	<3.3	U
156-60-5	trans-1,2-Dichloroethene	<3.3	U
123-91-1	1,4-Dioxane (p-Dioxane)	<82.3 R	U
100-41-4	Ethylbenzene	<3.3	U
75-09-2	Methylene Chloride	<3.3	U
1634-04-4	Methyl-tert-butyl ether	<3.3	U
103-65-1	n-Propylbenzene	<3.3	U
127-18-4	Tetrachloroethene	<3.3	U
108-88-3	Toluene	<3.3	U
120-82-1	1,2,4-Trichlorobenzene	<3.3	U
71-55-6	1,1,1-Trichloroethane	<3.3 UJ	~~U~~
79-01-6	Trichloroethene	<3.3	U
95-63-6	1,2,4-Trimethylbenzene	3.1	J
108-67-8	1,3,5-Trimethylbenzene	2.0	J
75-01-4	Vinyl chloride	<3.3	U
1330-20-7	Xylene (Total)	<6.6	U
179601-23-1	m&p-Xylene	<6.6	U
95-47-6	o-Xylene	<3.3	U

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MMP 1/7/19

SAMPLE NO.

BH-9 (4-7)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870

Date Extracted: 10/09/2018 12:09
Lab Sample ID: 7066870009

Date Analyzed: 10/09/2018 22:27
Lab File ID: 100918.B\F91198.D

Initial wt/vol: 5.38 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV4 Percent Moisture: 20.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	32.4 J	
71-43-2	Benzene	<2.3	U
78-93-3	2-Butanone (MEK)	<2.3 UJ	~~U~~
104-51-8	n-Butylbenzene	<2.3	U
135-98-8	sec-Butylbenzene	<2.3	U
98-06-6	tert-Butylbenzene	<2.3	U
56-23-5	Carbon tetrachloride	<2.3	U
108-90-7	Chlorobenzene	<2.3	U
67-66-3	Chloroform	<2.3	U
95-50-1	1,2-Dichlorobenzene	<2.3	U
541-73-1	1,3-Dichlorobenzene	<2.3	U
106-46-7	1,4-Dichlorobenzene	<2.3	U
75-34-3	1,1-Dichloroethane	<2.3	U
107-06-2	1,2-Dichloroethane	<2.3	U
75-35-4	1,1-Dichloroethene	<2.3	U
156-59-2	cis-1,2-Dichloroethene	7.0	
156-60-5	trans-1,2-Dichloroethene	<2.3	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<58.5~~ R	U
100-41-4	Ethylbenzene	<2.3	U
75-09-2	Methylene Chloride	<2.3	U
1634-04-4	Methyl-tert-butyl ether	<2.3	U
103-65-1	n-Propylbenzene	<2.3	U
127-18-4	Tetrachloroethene	<2.3	U
108-88-3	Toluene	<2.3	U
120-82-1	1,2,4-Trichlorobenzene	<2.3	U
71-55-6	1,1,1-Trichloroethane	<2.3 UJ	~~U~~
79-01-6	Trichloroethene	4.1	
95-63-6	1,2,4-Trimethylbenzene	<2.3	U
108-67-8	1,3,5-Trimethylbenzene	<2.3	U
75-01-4	Vinyl chloride	3.5	
1330-20-7	Xylene (Total)	<4.7	U
179601-23-1	m&p-Xylene	<4.7	U
95-47-6	o-Xylene	<2.3	U

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SAMPLE NO.

BH-9 (13-14)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870

Date Extracted: 10/11/2018 08:40
Lab Sample ID: 7066870010

Date Analyzed: 10/11/2018 13:56
Lab File ID: 101118.B\J49625.D

Initial wt/vol: 6.37 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV6 Percent Moisture: 19.6%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<97.7	U
71-43-2	Benzene	<97.7	U
78-93-3	2-Butanone (MEK)	<97.7 MS	U
104-51-8	n-Butylbenzene	<97.7	U
135-98-8	sec-Butylbenzene	<97.7	U
98-06-6	tert-Butylbenzene	<97.7	U
56-23-5	Carbon tetrachloride	<97.7	U
108-90-7	Chlorobenzene	<97.7	U
67-66-3	Chloroform	<97.7	U
95-50-1	1,2-Dichlorobenzene	<97.7	U
541-73-1	1,3-Dichlorobenzene	<97.7	U
106-46-7	1,4-Dichlorobenzene	<97.7	U
75-34-3	1,1-Dichloroethane	<97.7	U
107-06-2	1,2-Dichloroethane	<97.7	U
75-35-4	1,1-Dichloroethene	<97.7	U
156-59-2	cis-1,2-Dichloroethene	3150	
156-60-5	trans-1,2-Dichloroethene	<97.7	U
123-91-1	1,4-Dioxane (p-Dioxane)	<2440 R MS	U
100-41-4	Ethylbenzene	<97.7	U
75-09-2	Methylene Chloride	<97.7	U
1634-04-4	Methyl-tert-butyl ether	<97.7	U
103-65-1	n-Propylbenzene	<97.7	U
127-18-4	Tetrachloroethene	80.5	J
108-88-3	Toluene	<97.7	U
71-55-6	1,1,1-Trichloroethane	<97.7	U
95-63-6	1,2,4-Trimethylbenzene	<97.7	U
108-67-8	1,3,5-Trimethylbenzene	<97.7	U
75-01-4	Vinyl chloride	<97.7	U
1330-20-7	Xylene (Total)	<195	U
179601-23-1	m&p-Xylene	<195	U
95-47-6	o-Xylene	<97.7	U

SAMPLE NO.

BH-11 (0-4)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/11/2018 08:27
Lab Sample ID: 7066870011
Date Analyzed: 10/11/2018 11:33
Lab File ID: 101118.B\F91211.D
Initial wt/vol: 1.29 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV4 Percent Moisture: 10.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<8.6 UJ	~~U~~
71-43-2	Benzene	<8.6	U
78-93-3	2-Butanone (MEK)	<8.6 UJ	~~U~~
104-51-8	n-Butylbenzene	<8.6	U
135-98-8	sec-Butylbenzene	<8.6	U
98-06-6	tert-Butylbenzene	<8.6	U
56-23-5	Carbon tetrachloride	<8.6 UJ	~~U~~
108-90-7	Chlorobenzene	<8.6	U
67-66-3	Chloroform	<8.6	U
95-50-1	1,2-Dichlorobenzene	<8.6	U
541-73-1	1,3-Dichlorobenzene	<8.6	U
106-46-7	1,4-Dichlorobenzene	<8.6	U
75-34-3	1,1-Dichloroethane	<8.6	U
107-06-2	1,2-Dichloroethane	<8.6	U
75-35-4	1,1-Dichloroethene	<8.6	U
156-59-2	cis-1,2-Dichloroethene	<8.6	U
156-60-5	trans-1,2-Dichloroethene	<8.6	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<216~~ R	U
100-41-4	Ethylbenzene	<8.6	U
75-09-2	Methylene Chloride	<8.6	U
1634-04-4	Methyl-tert-butyl ether	<8.6	U
103-65-1	n-Propylbenzene	<8.6	U
127-18-4	Tetrachloroethene	<8.6 UJ	~~U~~
108-88-3	Toluene	<8.6	U
120-82-1	1,2,4-Trichlorobenzene	<8.6 UJ	~~U~~
71-55-6	1,1,1-Trichloroethane	<8.6 UJ	~~U~~
79-01-6	Trichloroethene	137	
95-63-6	1,2,4-Trimethylbenzene	<8.6	U
108-67-8	1,3,5-Trimethylbenzene	<8.6	U
75-01-4	Vinyl chloride	<8.6	U
1330-20-7	Xylene (Total)	<17.3	U
179601-23-1	m&p-Xylene	<17.3	U
95-47-6	o-Xylene	<8.6	U

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BH-12 (0-4)

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/11/2018 08:27
Lab Sample ID: 7066870012
Date Analyzed: 10/11/2018 11:58
Lab File ID: 101118.B\F91212.D
Initial wt/vol: 1.38 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV4 Percent Moisture: 12.0%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<8.2 UJ	~~U~~
71-43-2	Benzene	<8.2	U
78-93-3	2-Butanone (MEK)	<8.2 UJ	~~U~~
104-51-8	n-Butylbenzene	<8.2	U
135-98-8	sec-Butylbenzene	<8.2	U
98-06-6	tert-Butylbenzene	<8.2	U
56-23-5	Carbon tetrachloride	<8.2 UJ	~~U~~
108-90-7	Chlorobenzene	<8.2	U
67-66-3	Chloroform	<8.2	U
95-50-1	1,2-Dichlorobenzene	<8.2	U
541-73-1	1,3-Dichlorobenzene	<8.2	U
106-46-7	1,4-Dichlorobenzene	<8.2	U
75-34-3	1,1-Dichloroethane	<8.2	U
107-06-2	1,2-Dichloroethane	<8.2	U
75-35-4	1,1-Dichloroethene	<8.2	U
156-59-2	cis-1,2-Dichloroethene	6.0	J
156-60-5	trans-1,2-Dichloroethene	<8.2	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<200~~ R	U
100-41-4	Ethylbenzene	<8.2	U
75-09-2	Methylene Chloride	15.6	
1634-04-4	Methyl-tert-butyl ether	<8.2	U
103-65-1	n-Propylbenzene	<8.2	U
127-18-4	Tetrachloroethene	19.2 J	
108-88-3	Toluene	<8.2	U
120-82-1	1,2,4-Trichlorobenzene	<8.2 UJ	~~U~~
71-55-6	1,1,1-Trichloroethane	<8.2 UJ	~~U~~
79-01-6	Trichloroethene	385	
95-63-6	1,2,4-Trimethylbenzene	<8.2	U
108-67-8	1,3,5-Trimethylbenzene	<8.2	U
75-01-4	Vinyl chloride	<8.2	U
1330-20-7	Xylene (Total)	<16.5	U
179601-23-1	m&p-Xylene	<16.5	U
95-47-6	o-Xylene	<8.2	U

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mrp 1/7/19

SAMPLE NO.

BH-1 (7-8)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/09/2018 17:19
Initial wt/vol: 15.01 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870001
Lab File ID: 8270-100918.B\R46784.D
Instrument: 70MSS3 Percent Moisture: 15.2%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown Aldol Condensate	4.277	~~1010~~ R	J
	Unknown Aldol Condensate	4.357	~~271~~ R	J
	Unknown Amide	13.128	~~418~~ R	J
	Unknown Ketone	5.628	~~170~~ R	J
	Unknown Ketone	2.872	~~202~~ R	J
	Unknown Ketone	3.416	~~304~~ R	J
	Unknown Ketone	3.256	~~4870~~ R	J
	Unknown Ketone	3.657	~~53000~~ R	J
	Unknown Organic Acid	9.667	~~498~~ R	J
	Unknown Petroleum Alkane	4.581	~~1880~~ R	J
	Unknown Petroleum Alkane	4.693	~~323~~ R	J

SAMPLE NO.

BH-2 (1-3)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/10/2018 15:00
Initial wt/vol: 15.07 Final wt/vol: 1 mL Dilution: 10

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870002
Lab File ID: 8270-101018.B\R46810.D
Instrument: 70MSS3 Percent Moisture: 12.0%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
198-55-0	Perylene	13.647	2470	N J
2531-84-2	Phenanthrene, 2-methyl-	9.635	1890	N J
	Unknown Aldol Condensate	9.918	~~2200~~ R	J
	Unknown Hydrocarbon	10.452	1930	J
	Unknown Hydrocarbon	9.715	2570	J
	Unknown Ketone	3.208	~~5180~~ R	J
	Unknown Ketone	3.545	~~80900~~ R	J

SAMPLE NO.

BH-3 (1-4)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/10/2018 15:27
Initial wt/vol: 15.16 Final wt/vol: 1 mL Dilution: 10

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870003
Lab File ID: 8270-101018.B\R46811.D
Instrument: 70MSS3 Percent Moisture: 7.1%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
198-55-0	Perylene	13.941	1540	N J
	Unknown Hydrocarbon	9.715	1520	J
	Unknown Ketone	3.214	~~3710~~ R	J
	Unknown Ketone	3.539	~~55000~~ R	J

12/06/2018 10:57

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SAMPLE NO.

BH-4 (0-4)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/10/2018 15:55
Initial wt/vol: 15.04 Final wt/vol: 1 mL Dilution: 10

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870004
Lab File ID: 8270-101018.B\R46812.D
Instrument: 70MSS3 Percent Moisture: 21.7%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
17851-53-5	1,2-Benzenedicarboxylic acid, butyl 2-me	9.679	3290	N J
198-55-0	Perylene	4.551	2480	N J
	Unknown Aldol Condensate	4.257	~~1930~~ R	J
	Unknown Ketone	3.21	~~5190~~ R	J
	Unknown Ketone	3.541	~~83500~~ R	J

SAMPLE NO.

BH-6 (0-4)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/10/2018 16:23
Initial wt/vol: 15.04 Final wt/vol: 1 mL Dilution: 10

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870005
Lab File ID: 8270-101018.B\R46813.D
Instrument: 70MSS3 Percent Moisture: 6.2%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown Ketone	4.553	2250	J
	Unknown Ketone	3.212	4340	J
	Unknown Ketone	3.543	71500	J

SAMPLE NO.

BH-5 (8-12)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/09/2018 17:48
Initial wt/vol: 15.12 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870006
Lab File ID: 8270-100918.B\R46785.D
Instrument: 70MSS3 Percent Moisture: 14.8%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
198-55-0	Perylene	14.194	194	N J
	Unknown Aldol Condensate	4.279	~~786~~ R	J
	Unknown Amide	13.131	~~217~~ R	J
	Unknown Ketone	2.869	~~168~~ R	J
	Unknown Ketone	3.253	~~3880~~ R	J
	Unknown Ketone	3.643	~~45200~~ R	J
	Unknown Ketone	3.446	~~593~~ R	J
	Unknown Organic Acid	4.552	299	J
	Unknown Organic Acid	13.329	338	J
	Unknown Organic Acid	9.669	~~500~~ R	J
	Unknown Petroleum Alkane	4.578	1790	J

12/06/2018 10:57

MKP 1/7/19

SAMPLE NO.

BH-7 (0-4)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/09/2018 18:16
Initial wt/vol: 15.16 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870007
Lab File ID: 8270-100918.B\R46786.D
Instrument: 70MSS3 Percent Moisture: 13.9%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown Aldol Condensate	4.284	~~1320~~ J	J
	Unknown Amide	13.125	~~230~~ R	J
	Unknown Ketone	4.583	1950 J	J
	Unknown Ketone	2.868	~~235~~ R	J
	Unknown Ketone	3.258	~~4940~~ R	J
	Unknown Ketone	3.664	~~54700~~ R	J
	Unknown Ketone	3.493	~~573~~ R	J
	Unknown Organic Acid	11.72	155 J	J
	Unknown Organic Acid	9.669	~~408~~ R	J
	Unknown Petroleum Alkane	4.695	~~209~~ R	J

mm 1/7/19

SAMPLE NO.

BH-8 (8-12)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/11/2018 13:45
Initial wt/vol: 15.06 Final wt/vol: 1 mL Dilution: 2

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870008
Lab File ID: 8270-101118.B\R46826.D
Instrument: 70MSS3 Percent Moisture: 22.9%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
79-63-0	Lanosterol	17.936	3780	N J
	Unknown	10.996	1850	J
	Unknown	15.735	2130	J
	Unknown	9.463	3060	J
	Unknown Alcohol	17.439	18600	J
	Unknown Alcohol	13.918	996	J
	Unknown Aldol Condensate	4.34	~~1140~~ R	J
	Unknown Column Bleed	16.611	~~1660~~ R	J
	Unknown Hydrocarbon	14.047	825	J
	Unknown Ketone	16.039	1130	J
	Unknown Ketone	15.649	2630	J
	Unknown Ketone	16.686	515	J
	Unknown Ketone	3.223	~~5230~~ R	J
	Unknown Ketone	3.592	~~55000~~ R	J
	Unknown Ketone	16.963	6340	J
	Unknown Ketone	16.402	686	J
	Unknown Ketone	16.488	805	J
	Unknown Ketone	3.384	857	J
	Unknown Organic Acid	9.666	~~1150~~ R	J

SAMPLE NO.

BH-9 (4-7)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/10/2018 14:04
Initial wt/vol: 15.12 Final wt/vol: 1 mL Dilution: 5

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870009
Lab File ID: 8270-101018.B\R46808.D
Instrument: 70MSS3 Percent Moisture: 20.5%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown Aldol Condensate	4.257	~~2180~~ R	J
	Unknown Ketone	4.556	1080	J
	Unknown Ketone	3.215	~~5840~~ R	J
	Unknown Ketone	3.37	839	J
	Unknown Ketone	3.562	~~84300~~ R	J

SAMPLE NO.

BH-9 (13-14)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/09/2018 18:44
Initial wt/vol: 15.08 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870010
Lab File ID: 8270-100918.B\R46787.D
Instrument: 70MSS3 Percent Moisture: 19.6%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
79-01-6	Trichloroethylene	2.655	~~1030~~ R - VOA	N J
	Unknown Aldol Condensate	3.648	~~46900~~ R	J
	Unknown Aldol Condensate	4.273	~~688~~ R	J
	Unknown Amide	13.13	~~258~~ R	J
	Unknown Ketone	4.572	1760	J
	Unknown Ketone	2.874	~~178~~ R	J
	Unknown Ketone	3.488	~~283~~ R	J
	Unknown Ketone	3.258	~~3960~~ R	J
	Unknown Organic Acid	9.674	~~596~~ R	J

SAMPLE NO.

BH-11 (0-4)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/10/2018 12:13
Initial wt/vol: 15.09 Final wt/vol: 1 mL Dilution: 5

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870011
Lab File ID: 8270-101018.B\R46804.D
Instrument: 70MSS3 Percent Moisture: 10.3%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown	4.556	3050	J
	Unknown Aldol Condensate	4.257	~~1440~~ R	J
	Unknown Ketone	3.215	~~6360~~ R	J
	Unknown Ketone	3.375	765	J
	Unknown Ketone	3.573	~~84800~~ R	J

MDVP 1/7/19

SAMPLE NO.

BH-12 (0-4)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/11/2018 14:13
Initial wt/vol: 15.04 Final wt/vol: 1 mL Dilution: 5

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870012
Lab File ID: 8270-101118.B\R46827.D
Instrument: 70MSS3 Percent Moisture: 12.0%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown Aldol Condensate	4.255	1510 R	J
	Unknown Ketone	4.554	2260	J
	Unknown Ketone	3.213	5230 R	J
	Unknown Ketone	3.566	76100 R	J
	Unknown Ketone	3.363	996	J

MMP 1/3/19

SAMPLE NO.

BH-1 (7-8)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870001
Date Analyzed: 10/11/2018 12:55
Lab File ID: 101018-1.B\311443.D
Initial wt/vol: 15.01 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 15.2%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.0	U
319-84-6	alpha-BHC	<2.0	U
319-85-7	beta-BHC	<2.0	U
319-86-8	delta-BHC	<2.0	U
58-89-9	gamma-BHC (Lindane)	<2.0	U
5103-71-9	alpha-Chlordane	<2.0	U
72-54-8	4,4'-DDD	<3.9	U
72-55-9	4,4'-DDE	<3.9	U
50-29-3	4,4'-DDT	<3.9	U
60-57-1	Dieldrin	<3.9	U
959-98-8	Endosulfan I	<2.0	U
33213-65-9	Endosulfan II	<3.9	U
1031-07-8	Endosulfan sulfate	<3.9	U
72-20-8	Endrin	<3.9	U
76-44-8	Heptachlor	<2.0	U

SAMPLE NO.

BH-2 (1-3)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870002
Date Analyzed: 10/11/2018 16:22
Lab File ID: 101018-1.B\311456.D
Initial wt/vol: 15.05 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 12.0%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<1.9	U
319-84-6	alpha-BHC	<1.9	U
319-85-7	beta-BHC	<1.9	U
319-86-8	delta-BHC	<1.9	U
58-89-9	gamma-BHC (Lindane)	<1.9	U
5103-71-9	alpha-Chlordane	<1.9	U
72-54-8	4,4'-DDD	<3.7 UJ	~~U~~
72-55-9	4,4'-DDE	<3.7	U
50-29-3	4,4'-DDT	<3.7 UJ	~~U~~
60-57-1	Dieldrin	<3.7	U
959-98-8	Endosulfan I	<1.9	U
33213-65-9	Endosulfan II	<3.7	U
1031-07-8	Endosulfan sulfate	<3.7	U
72-20-8	Endrin	<3.7	U
76-44-8	Heptachlor	<1.9	U

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SAMPLE NO.

BH-3 (1-4)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 13:13
Date Analyzed: 10/11/2018 16:36
Initial wt/vol: 15.04 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870003
Lab File ID: 101018-1.B\311457.D
Instrument: 70GCS3 Percent Moisture: 7.1%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<1.8	U
319-84-6	alpha-BHC	<1.8	U
319-85-7	beta-BHC	<1.8	U
319-86-8	delta-BHC	<1.8	U
58-89-9	gamma-BHC (Lindane)	<1.8	U
5103-71-9	alpha-Chlordane	<1.8	U
72-54-8	4,4'-DDD	<3.5 UJ	~~U~~
72-55-9	4,4'-DDE	<3.5	U
50-29-3	4,4'-DDT	<3.5 UJ	~~U~~
60-57-1	Dieldrin	<3.5	U
959-98-8	Endosulfan I	<1.8	U
33213-65-9	Endosulfan II	<3.5	U
1031-07-8	Endosulfan sulfate	<3.5	U
72-20-8	Endrin	<3.5	U
76-44-8	Heptachlor	<1.8	U

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SAMPLE NO.

BH-4 (0-4)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870004
Date Analyzed: 10/11/2018 16:51
Lab File ID: 101018-1.B\311458.D
Initial wt/vol: 15.13 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 21.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.2	U
319-84-6	alpha-BHC	<2.2	U
319-85-7	beta-BHC	<2.2	U
319-86-8	delta-BHC	<2.2	U
58-89-9	gamma-BHC (Lindane)	<2.2	U
5103-71-9	alpha-Chlordane	<2.2	U
72-54-8	4,4'-DDD	<4.2 UJ	~~U~~
72-55-9	4,4'-DDE	<4.2	U
50-29-3	4,4'-DDT	<4.2 UJ	~~U~~
60-57-1	Dieldrin	<4.2	U
959-98-8	Endosulfan I	<2.2	U
33213-65-9	Endosulfan II	<4.2	U
1031-07-8	Endosulfan sulfate	<4.2	U
72-20-8	Endrin	<4.2	U
76-44-8	Heptachlor	<2.2	U

SAMPLE NO.

BH-6 (0-4)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870005
Date Analyzed: 10/11/2018 17:06
Lab File ID: 101018-1.B\311459.D
Initial wt/vol: 15.11 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 6.2%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<1.8	U
319-84-6	alpha-BHC	<1.8	U
319-85-7	beta-BHC	2.5	
319-86-8	delta-BHC	<1.8	U
72-54-8	4,4'-DDD	<3.5 UJ	~~U~~
50-29-3	4,4'-DDT	<3.5 UJ	~~U~~
60-57-1	Dieldrin	18.3 JN	
959-98-8	Endosulfan I	<1.8	U
33213-65-9	Endosulfan II	<3.5	U
1031-07-8	Endosulfan sulfate	<3.5	U
72-20-8	Endrin	<3.5	U
76-44-8	Heptachlor	<1.8	U

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SAMPLE NO.

BH-6 (0-4)

PESTICIDES - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870

Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870005

Date Analyzed: 10/11/2018 17:06
Lab File ID: 101018-2.B\311459.D

Initial wt/vol: 15.11 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 6.2%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
58-89-9	gamma-BHC (Lindane)	4.5	
5103-71-9	alpha-Chlordane	6.7	

SAMPLE NO.

BH-6 (0-4)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870005
Date Analyzed: 10/13/2018 07:37
Lab File ID: 101218-1.B\311565.D
Initial wt/vol: 15.11 g Final wt/vol: 5 mL Dilution: 5
Instrument: 70GCS3 Percent Moisture: 6.2%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
72-55-9	4,4'-DDE	152 JN	

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SAMPLE NO.

BH-5 (8-12)

PESTICIDES - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870

Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870006

Date Analyzed: 10/11/2018 13:10
Lab File ID: 101018-1.B\311444.D

Initial wt/vol: 15.17 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 14.8%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.0	U
319-84-6	alpha-BHC	<2.0	U
319-85-7	beta-BHC	<2.0	U
319-86-8	delta-BHC	<2.0	U
58-89-9	gamma-BHC (Lindane)	<2.0	U
5103-71-9	alpha-Chlordane	<2.0	U
72-54-8	4,4'-DDD	<3.8	U
72-55-9	4,4'-DDE	<3.8	U
50-29-3	4,4'-DDT	<3.8	U
60-57-1	Dieldrin	<3.8	U
959-98-8	Endosulfan I	<2.0	U
33213-65-9	Endosulfan II	<3.8	U
1031-07-8	Endosulfan sulfate	<3.8	U
72-20-8	Endrin	<3.8	U
76-44-8	Heptachlor	<2.0	U

SAMPLE NO.

BH-7 (0-4)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870007
Date Analyzed: 10/11/2018 14:09
Lab File ID: 101018-1.B\311448.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 13.9%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.0	U
319-84-6	alpha-BHC	<2.0	U
319-85-7	beta-BHC	<2.0	U
319-86-8	delta-BHC	<2.0	U
58-89-9	gamma-BHC (Lindane)	<2.0	U
5103-71-9	alpha-Chlordane	<2.0	U
72-54-8	4,4'-DDD	<3.8	U
72-55-9	4,4'-DDE	<3.8	U
50-29-3	4,4'-DDT	<3.8	U
60-57-1	Dieldrin	<3.8	U
959-98-8	Endosulfan I	<2.0	U
33213-65-9	Endosulfan II	<3.8	U
1031-07-8	Endosulfan sulfate	<3.8	U
72-20-8	Endrin	<3.8	U
76-44-8	Heptachlor	<2.0	U

SAMPLE NO.

BH-8 (8-12)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870008
Date Analyzed: 10/11/2018 16:07
Lab File ID: 101018-1.B\311455.D
Initial wt/vol: 15.06 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 22.9%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.2	U
319-84-6	alpha-BHC	<2.2	U
319-86-8	delta-BHC	<2.2	U
58-89-9	gamma-BHC (Lindane)	<2.2	U
5103-71-9	alpha-Chlordane	<2.2	U
72-54-8	4,4'-DDD	<4.3 UJ	~~U~~
72-55-9	4,4'-DDE	<4.3	U
50-29-3	4,4'-DDT	<4.3 UJ	~~U~~
60-57-1	Dieldrin	<4.3	U
959-98-8	Endosulfan I	<2.2	U
33213-65-9	Endosulfan II	<4.3	U
1031-07-8	Endosulfan sulfate	<4.3	U
72-20-8	Endrin	<4.3	U
76-44-8	Heptachlor	<2.2	U

SAMPLE NO.

BH-8 (8-12)

PESTICIDES - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870

Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870008

Date Analyzed: 10/11/2018 16:07
Lab File ID: 101018-2.B\311455.D

Initial wt/vol: 15.06 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 22.9%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
319-85-7	beta-BHC	6.0 J N	

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SAMPLE NO.

BH-9 (4-7)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Date Received: 10/04/2018 10:30
Date Extracted: 10/05/2018 13:13
Date Analyzed: 10/11/2018 15:52
Initial wt/vol: 15.08 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 7066870009
Lab File ID: 101018-1.B\311454.D
Instrument: 70GCS3 Percent Moisture: 20.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.1	U
319-84-6	alpha-BHC	<2.1	U
319-86-8	delta-BHC	<2.1	U
58-89-9	gamma-BHC (Lindane)	<2.1	U
72-54-8	4,4'-DDD	<4.1 UJ	~~U~~
50-29-3	4,4'-DDT	<4.1 UJ	~~U~~
60-57-1	Dieldrin	32.9 J N	
33213-65-9	Endosulfan II	8.4 JN	
1031-07-8	Endosulfan sulfate	<4.1	U
72-20-8	Endrin	<4.1	U
76-44-8	Heptachlor	<2.1	U

MAP 12/7/18

SAMPLE NO.

BH-9 (4-7)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870009
Date Analyzed: 10/11/2018 15:52
Lab File ID: 101018-2.B\311454.D
Initial wt/vol: 15.08 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 20.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
319-85-7	beta-BHC	4.8 JN	
5103-71-9	alpha-Chlordane	2.2 J	
72-55-9	4,4'-DDE	44.8 JN	
959-98-8	Endosulfan I	<2.1	U

SAMPLE NO.

BH-9 (13-14)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870010
Date Analyzed: 10/11/2018 13:54
Lab File ID: 101018-1.B\311447.D
Initial wt/vol: 15.15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 19.6%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.1	U
319-84-6	alpha-BHC	<2.1	U
319-85-7	beta-BHC	<2.1	U
319-86-8	delta-BHC	<2.1	U
58-89-9	gamma-BHC (Lindane)	<2.1	U
5103-71-9	alpha-Chlordane	<2.1	U
72-54-8	4,4'-DDD	<4.1	U
72-55-9	4,4'-DDE	<4.1	U
50-29-3	4,4'-DDT	<4.1	U
60-57-1	Dieldrin	<4.1	U
959-98-8	Endosulfan I	<2.1	U
33213-65-9	Endosulfan II	<4.1	U
1031-07-8	Endosulfan sulfate	<4.1	U
72-20-8	Endrin	<4.1	U
76-44-8	Heptachlor	<2.1	U

SAMPLE NO.

BH-11 (0-4)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870011
Date Analyzed: 10/11/2018 15:23
Lab File ID: 101018-1.B\311452.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 10.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<1.9	U
319-84-6	alpha-BHC	<1.9	U
319-85-7	beta-BHC	<1.9	U
319-86-8	delta-BHC	<1.9	U
58-89-9	gamma-BHC (Lindane)	<1.9	U
5103-71-9	alpha-Chlordane	<1.9	U
72-54-8	4,4'-DDD	<3.7 UJ	~~U~~
72-55-9	4,4'-DDE	<3.7	U
50-29-3	4,4'-DDT	<3.7 UJ	~~U~~
60-57-1	Dieldrin	<3.7	U
959-98-8	Endosulfan I	<1.9	U
33213-65-9	Endosulfan II	<3.7	U
1031-07-8	Endosulfan sulfate	<3.7	U
72-20-8	Endrin	<3.7	U
76-44-8	Heptachlor	<1.9	U

SAMPLE NO.

BH-12 (0-4)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870012
Date Analyzed: 10/11/2018 17:21
Lab File ID: 101018-1.B\311460.D
Initial wt/vol: 15.05 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 12.0%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<1.9	U
319-84-6	alpha-BHC	<1.9	U
319-85-7	beta-BHC	<1.9	U
319-86-8	delta-BHC	<1.9	U
58-89-9	gamma-BHC (Lindane)	<1.9	U
5103-71-9	alpha-Chlordane	<1.9	U
72-54-8	4,4'-DDD	<3.7 VJ	~~U~~
72-55-9	4,4'-DDE	<3.7	U
50-29-3	4,4'-DDT	<3.7 VJ	~~U~~
60-57-1	Dieldrin	<3.7	U
959-98-8	Endosulfan I	<1.9	U
33213-65-9	Endosulfan II	<3.7	U
1031-07-8	Endosulfan sulfate	<3.7	U
72-20-8	Endrin	<3.7	U
76-44-8	Heptachlor	<1.9	U

MP 1/8/19

SAMPLE NO.

BH-8 (8-12)

PCB - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870008
Date Analyzed: 10/11/2018 15:21
Lab File ID: 101018-1.B\211914.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS2 Percent Moisture: 22.9%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<42.8	U
11104-28-2	PCB-1221 (Aroclor 1221)	<86.9	U
11141-16-5	PCB-1232 (Aroclor 1232)	<42.8	U
53469-21-9	PCB-1242 (Aroclor 1242)	<42.8	U
11097-69-1	PCB-1254 (Aroclor 1254)	<42.8	U
11096-82-5	PCB-1260 (Aroclor 1260)	<42.8	U

SAMPLE NO.

BH-8 (8-12)

PCB - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870
Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870008
Date Analyzed: 10/11/2018 15:21
Lab File ID: 101018-2.B\211914.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS2 Percent Moisture: 22.9%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	51.9 J	

11/13/2018 4:01

mmp 1/7/19

SAMPLE NO.

BH-9 (4-7)

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870

Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870009

Date Analyzed: 10/11/2018 14:55
Lab File ID: 101018-1.B\211912.D

Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 5
Instrument: 70GCS2 Percent Moisture: 20.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<208	U
11104-28-2	PCB-1221 (Aroclor 1221)	<422	U
11141-16-5	PCB-1232 (Aroclor 1232)	<208	U
53469-21-9	PCB-1242 (Aroclor 1242)	<208	U
12672-29-6	PCB-1248 (Aroclor 1248)	<208	U
11096-82-5	PCB-1260 (Aroclor 1260)	<208	U

SAMPLE NO.

BH-9 (4-7)

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI

Date Received: 10/04/2018 10:30
Matrix: Solid SDG No.: 7066870

Date Extracted: 10/05/2018 13:13
Lab Sample ID: 7066870009

Date Analyzed: 10/11/2018 14:55
Lab File ID: 101018-2.B\211912.D

Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 5
Instrument: 70GCS2 Percent Moisture: 20.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
11097-69-1	PCB-1254 (Aroclor 1254)	1600	J

11/13/2018 4:03

MMP 1/7/19

SAMPLE NO.

BH-1 (7-8)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI

Lab Sample ID: 7066870001 Percent Moisture: 15.2

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	10		mg/kg	1	10/05/2018 16:32
7440-39-3	Barium	204		mg/kg	1	10/05/2018 16:32
7440-41-7	Beryllium	0.39		mg/kg	1	10/05/2018 16:32
7440-43-9	Cadmium	0.12	J	mg/kg	1	10/05/2018 16:32
7440-47-3	Chromium	12.8		mg/kg	1	10/05/2018 16:32
7440-50-8	Copper	7.5	J	mg/kg	1	10/05/2018 16:32
7439-92-1	Lead	12.2		mg/kg	1	10/05/2018 16:32
7439-96-5	Manganese	754		mg/kg	1	10/05/2018 16:32
7440-02-0	Nickel	16.4		mg/kg	1	10/05/2018 16:32
7782-49-2	Selenium	0.84	J	mg/kg	1	10/05/2018 16:32
7440-22-4	Silver	<0.62	U	mg/kg	1	10/05/2018 16:32
7440-66-6	Zinc	48.2		mg/kg	1	10/05/2018 16:32

MMP 1/7/19

SAMPLE NO.

BH-2 (1-3)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI

Lab Sample ID: 7066870002 Percent Moisture: 12.0

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	10.5		mg/kg	1	10/05/2018 16:38
7440-39-3	Barium	102		mg/kg	1	10/05/2018 16:38
7440-41-7	Beryllium	0.32		mg/kg	1	10/05/2018 16:38
7440-43-9	Cadmium	0.075	J	mg/kg	1	10/05/2018 16:38
7440-47-3	Chromium	12.9		mg/kg	1	10/05/2018 16:38
7440-50-8	Copper	32.2		mg/kg	1	10/05/2018 16:38
7439-92-1	Lead	96.3		mg/kg	1	10/05/2018 16:38
7439-96-5	Manganese	400		mg/kg	1	10/05/2018 16:38
7440-02-0	Nickel	16.8		mg/kg	1	10/05/2018 16:38
7782-49-2	Selenium	0.99	J	mg/kg	1	10/05/2018 16:38
7440-22-4	Silver	<0.60	U	mg/kg	1	10/05/2018 16:38
7440-66-6	Zinc	66.8		mg/kg	1	10/05/2018 16:38

MKP 1/7/19

SAMPLE NO.

BH-3 (1-4)

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI
Lab Sample ID: 7066870003 Percent Moisture: 7.1

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	7.6		mg/kg	1	10/05/2018 16:39
7440-39-3	Barium	102		mg/kg	1	10/05/2018 16:39
7440-41-7	Beryllium	0.46		mg/kg	1	10/05/2018 16:39
7440-43-9	Cadmium	0.11	J	mg/kg	1	10/05/2018 16:39
7440-47-3	Chromium	9.1		mg/kg	1	10/05/2018 16:39
7440-50-8	Copper	21.2		mg/kg	1	10/05/2018 16:39
7439-92-1	Lead	30.8		mg/kg	1	10/05/2018 16:39
7439-96-5	Manganese	676		mg/kg	1	10/05/2018 16:39
7440-02-0	Nickel	14.5		mg/kg	1	10/05/2018 16:39
7782-49-2	Selenium	0.48	J	mg/kg	1	10/05/2018 16:39
7440-22-4	Silver	<0.55	U	mg/kg	1	10/05/2018 16:39
7440-66-6	Zinc	65.4		mg/kg	1	10/05/2018 16:39

MKP 1/7/19

SAMPLE NO.

BH-4 (0-4)

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI
Lab Sample ID: 7066870004 Percent Moisture: 21.7

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	16.7		mg/kg	1	10/05/2018 16:40
7440-39-3	Barium	520		mg/kg	1	10/05/2018 16:40
7440-41-7	Beryllium	0.76		mg/kg	1	10/05/2018 16:40
7440-43-9	Cadmium	0.50		mg/kg	1	10/05/2018 16:40
7440-47-3	Chromium	14.4		mg/kg	1	10/05/2018 16:40
7440-50-8	Copper	150		mg/kg	1	10/05/2018 16:40
7439-92-1	Lead	192		mg/kg	1	10/05/2018 16:40
7439-96-5	Manganese	175		mg/kg	1	10/05/2018 16:40
7440-02-0	Nickel	14.9		mg/kg	1	10/05/2018 16:40
7782-49-2	Selenium	1.6	J	mg/kg	1	10/05/2018 16:40
7440-22-4	Silver	<0.67	U	mg/kg	1	10/05/2018 16:40
7440-66-6	Zinc	142		mg/kg	1	10/05/2018 16:40

MEP 1/9/19

SAMPLE NO.

BH-6 (0-4)

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI
Lab Sample ID: 7066870005 Percent Moisture: 6.2

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	28.9		mg/kg	1	10/05/2018 16:43
7440-39-3	Barium	165		mg/kg	1	10/05/2018 16:43
7440-41-7	Beryllium	0.58		mg/kg	1	10/05/2018 16:43
7440-43-9	Cadmium	1.5		mg/kg	1	10/05/2018 16:43
7440-47-3	Chromium	16.1		mg/kg	1	10/05/2018 16:43
7440-50-8	Copper	660		mg/kg	1	10/05/2018 16:43
7439-92-1	Lead	81.2		mg/kg	1	10/05/2018 16:43
7439-96-5	Manganese	292		mg/kg	1	10/05/2018 16:43
7440-02-0	Nickel	21.4		mg/kg	1	10/05/2018 16:43
7782-49-2	Selenium	1.3	J	mg/kg	1	10/05/2018 16:43
7440-22-4	Silver	<0.58	U	mg/kg	1	10/05/2018 16:43
7440-66-6	Zinc	423		mg/kg	1	10/05/2018 16:43

MMP 1/7/19

SAMPLE NO.

BH-5 (8-12)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI

Lab Sample ID: 7066870006 Percent Moisture: 14.8

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	6.2		mg/kg	1	10/05/2018 16:44
7440-39-3	Barium	81.2		mg/kg	1	10/05/2018 16:44
7440-41-7	Beryllium	0.26	J	mg/kg	1	10/05/2018 16:44
7440-43-9	Cadmium	0.084	J	mg/kg	1	10/05/2018 16:44
7440-47-3	Chromium	9.0		mg/kg	1	10/05/2018 16:44
7440-50-8	Copper	48.2		mg/kg	1	10/05/2018 16:44
7439-92-1	Lead	9.2		mg/kg	1	10/05/2018 16:44
7439-96-5	Manganese	179		mg/kg	1	10/05/2018 16:44
7440-02-0	Nickel	17.4		mg/kg	1	10/05/2018 16:44
7782-49-2	Selenium	0.88	J	mg/kg	1	10/05/2018 16:44
7440-22-4	Silver	<0.54	U	mg/kg	1	10/05/2018 16:44
7440-66-6	Zinc	46.4		mg/kg	1	10/05/2018 16:44

7/19

SAMPLE NO.

BH-7 (0-4)

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI
Lab Sample ID: 7066870007 Percent Moisture: 13.9

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	10.3		mg/kg	1	10/05/2018 16:46
7440-39-3	Barium	84.7		mg/kg	1	10/05/2018 16:46
7440-41-7	Beryllium	0.26	J	mg/kg	1	10/05/2018 16:46
7440-43-9	Cadmium	0.097	J	mg/kg	1	10/05/2018 16:46
7440-47-3	Chromium	11.8		mg/kg	1	10/05/2018 16:46
7440-50-8	Copper	21.4		mg/kg	1	10/05/2018 16:46
7439-92-1	Lead	21.0		mg/kg	1	10/05/2018 16:46
7439-96-5	Manganese	532		mg/kg	1	10/05/2018 16:46
7440-02-0	Nickel	16.6		mg/kg	1	10/05/2018 16:46
7782-49-2	Selenium	0.79	J	mg/kg	1	10/05/2018 16:46
7440-22-4	Silver	<0.55	U	mg/kg	1	10/05/2018 16:46
7440-66-6	Zinc	57.4		mg/kg	1	10/05/2018 16:46

MMP1 7/1/19

SAMPLE NO.

BH-8 (8-12)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI

Lab Sample ID: 7066870008 Percent Moisture: 22.9

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	9.0		mg/kg	1	10/05/2018 16:47
7440-39-3	Barium	73.5		mg/kg	1	10/05/2018 16:47
7440-41-7	Beryllium	0.074	J	mg/kg	1	10/05/2018 16:47
7440-43-9	Cadmium	0.36		mg/kg	1	10/05/2018 16:47
7440-47-3	Chromium	195		mg/kg	1	10/05/2018 16:47
7440-50-8	Copper	51.5		mg/kg	1	10/05/2018 16:47
7439-92-1	Lead	67.0		mg/kg	1	10/05/2018 16:47
7439-96-5	Manganese	322		mg/kg	1	10/05/2018 16:47
7440-02-0	Nickel	11.5		mg/kg	1	10/05/2018 16:47
7782-49-2	Selenium	<0.64	U	mg/kg	1	10/05/2018 16:47
7440-22-4	Silver	<0.64	U	mg/kg	1	10/05/2018 16:47
7440-66-6	Zinc	68.3		mg/kg	1	10/05/2018 16:47

SAMPLE NO.

BH-9 (4-7)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI

Lab Sample ID: 7066870009 Percent Moisture: 20.5

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	14.6		mg/kg	1	10/05/2018 16:48
7440-39-3	Barium	133		mg/kg	1	10/05/2018 16:48
7440-41-7	Beryllium	0.33		mg/kg	1	10/05/2018 16:48
7440-43-9	Cadmium	0.24		mg/kg	1	10/05/2018 16:48
7440-47-3	Chromium	48.3		mg/kg	1	10/05/2018 16:48
7440-50-8	Copper	33.7		mg/kg	1	10/05/2018 16:48
7439-92-1	Lead	33.3		mg/kg	1	10/05/2018 16:48
7439-96-5	Manganese	321		mg/kg	1	10/05/2018 16:48
7440-02-0	Nickel	19.4		mg/kg	1	10/05/2018 16:48
7782-49-2	Selenium	0.93	J	mg/kg	1	10/05/2018 16:48
7440-22-4	Silver	<0.58	U	mg/kg	1	10/05/2018 16:48
7440-66-6	Zinc	108		mg/kg	1	10/05/2018 16:48

mmp 1/2/19

SAMPLE NO.

BH-9 (13-14)

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI
Lab Sample ID: 7066870010 Percent Moisture: 19.6

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	13.4		mg/kg	1	10/05/2018 16:49
7440-39-3	Barium	81.7		mg/kg	1	10/05/2018 16:49
7440-41-7	Beryllium	0.82		mg/kg	1	10/05/2018 16:49
7440-43-9	Cadmium	0.21		mg/kg	1	10/05/2018 16:49
7440-47-3	Chromium	23.6		mg/kg	1	10/05/2018 16:49
7440-50-8	Copper	21.4		mg/kg	1	10/05/2018 16:49
7439-92-1	Lead	16.3		mg/kg	1	10/05/2018 16:49
7439-96-5	Manganese	457		mg/kg	1	10/05/2018 16:49
7440-02-0	Nickel	37.0		mg/kg	1	10/05/2018 16:49
7782-49-2	Selenium	0.72	J	mg/kg	1	10/05/2018 16:49
7440-22-4	Silver	<0.66	U	mg/kg	1	10/05/2018 16:49
7440-66-6	Zinc	75.0		mg/kg	1	10/05/2018 16:49

MKP 1/7/19

SAMPLE NO.

BH-11 (0-4)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI

Lab Sample ID: 7066870011 Percent Moisture: 10.3

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	23.3		mg/kg	1	10/05/2018 16:50
7440-39-3	Barium	858		mg/kg	1	10/05/2018 16:50
7440-41-7	Beryllium	0.58		mg/kg	1	10/05/2018 16:50
7440-43-9	Cadmium	1.8		mg/kg	1	10/05/2018 16:50
7440-47-3	Chromium	30.7		mg/kg	1	10/05/2018 16:50
7440-50-8	Copper	1500		mg/kg	1	10/05/2018 16:50
7439-92-1	Lead	132		mg/kg	1	10/05/2018 16:50
7439-96-5	Manganese	346		mg/kg	1	10/05/2018 16:50
7440-02-0	Nickel	38.1		mg/kg	1	10/05/2018 16:50
7782-49-2	Selenium	1.1	J	mg/kg	1	10/05/2018 16:50
7440-22-4	Silver	<0.60	U	mg/kg	1	10/05/2018 16:50
7440-66-6	Zinc	997		mg/kg	1	10/05/2018 16:50

1/7/19

SAMPLE NO.

BH-1 (7-8)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI

Lab Sample ID: 7066870001 Percent Moisture: 15.2

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.2	U	mg/kg	1	10/09/2018 11:53
57-12-5	Cyanide	0.27	J	mg/kg	1	10/09/2018 15:09

MCP 1/7/19

Appendix B

Laboratory QC Documentation

MSV - FORM III VOA-1

SOLID VOLATILE SAMPLE/DUPLICATE RECOVERY

Lab Name: Pace Analytical - New York
Date Extracted: 10/09/2018
Instrument 70MSV4
Lab Sample ID: BH-8 (8-12)

Duplicate Sample No: 7066870008DUP
Date Analyzed: 10/09/2018
Lab File ID: 100918.B\F91197.D
SDG No.: 7066870

COMPOUND	SAMPLE CONCENTRATION (ug/kg)	DUPLICATE CONCENTRATION (ug/kg)	RPD	RPD LIMITS
1,1,1-Trichloroethane	<3.3	<2.4		0-20
1,1-Dichloroethane	<3.3	<2.4		0-20
1,1-Dichloroethene	<3.3	<2.4		0-20
1,2,4-Trichlorobenzene	<3.3	<2.4		0-20
1,2,4-Trimethylbenzene	3.1J	2.9		0-20
1,2-Dichlorobenzene	<3.3	<2.4		0-20
1,2-Dichloroethane	<3.3	<2.4		0-20
1,3,5-Trimethylbenzene	2.0J	1.7J		0-20
1,3-Dichlorobenzene	<3.3	<2.4		0-20
1,4-Dichlorobenzene	<3.3	<2.4		0-20
1,4-Dioxane (p-Dioxane)	<82.3	<60.6		0-20
2-Butanone (MEK)	44.6	39.0	14	0-20
Acetone	197	151	27	0-20
Benzene	<3.3	<2.4		0-20
Carbon tetrachloride	<3.3	<2.4		0-20
Chlorobenzene	<3.3	<2.4		0-20
Chloroform	<3.3	<2.4		0-20
Ethylbenzene	<3.3	<2.4		0-20
Methyl-tert-butyl ether	<3.3	<2.4		0-20
Methylene Chloride	<3.3	<2.4		0-20
Tetrachloroethene	<3.3	<2.4		0-20
Toluene	<3.3	<2.4		0-20
Trichloroethene	<3.3	1.2J		0-20
Vinyl chloride	<3.3	<2.4		0-20
Xylene (Total)	<6.6	<4.9		0-20
cis-1,2-Dichloroethene	<3.3	<2.4		0-20
m&p-Xylene	<6.6	<4.9		0-20
n-Butylbenzene	<3.3	<2.4		0-20
n-Propylbenzene	<3.3	<2.4		0-20
o-Xylene	<3.3	<2.4		0-20
sec-Butylbenzene	<3.3	<2.4		0-20
tert-Butylbenzene	<3.3	<2.4		0-20
trans-1,2-Dichloroethene	<3.3	<2.4		0-20

RPD: 1 out of 2 outside limits.

MSV - FORM VIII VOA-1

MSV INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Pace Analytical - New York SDG No.: 7066870 Contract: 31 WATER ST RI

Sample ID : 10775690CCV Date Analyzed: 10/09/2018

Instrument ID: 70MSV4 GC Column: Col 1 Time Analyzed: 14:35

Lab File ID: 100918.B\F91183.D

		AREA CBZ	RT	AREA DCB	RT	AREA DFB	RT	AREA PFB	RT
12 HOUR STD		233781	6.806	217893	9.056	454688	4.136	307541	3.522
UPPER LIMIT		467562	7.306	435786	9.556	909376	4.636	615082	4.022
LOWER LIMIT		116890.5	6.306	108946.5	8.556	227344	3.636	153770.5	3.022
LAB SAMPLE ID	SAMPLE NO.								
397701	397701BLANK	248443	6.803	217391	9.06	458483	4.14	324658	3.519
397702	397702LCS	236263	6.803	224040	9.059	484923	4.139	322541	3.519
398496	398496DUP	175377	6.802	98232*	9.058	390644	4.139	255678	3.518
7066870001	BH-1 (7-8)	224582	6.805	185133	9.061	440106	4.142	314946	3.521
7066870002	BH-2 (1-3)	209986	6.806	180919	9.062	445942	4.136	299289	3.516
7066870003	BH-3 (1-4)	197140	6.804	121135	9.06	417159	4.141	285575	3.52
7066870004	BH-4 (0-4)	130052	6.806	62471*	9.062	370253	4.136	266771	3.522
7066870005	BH-6 (0-4)	144236	6.803	69480*	9.059	367562	4.14	272880	3.519
7066870006	BH-5 (8-12)	235943	6.804	210990	9.06	454966	4.14	308947	3.52
7066870007	BH-7 (0-4)	208631	6.803	167140	9.059	419074	4.139	286627	3.519
7066870008	BH-8 (8-12)	185037	6.804	111477	9.06	399329	4.14	271106	3.52
7066870009	BH-9 (4-7)	176294	6.803	134318	9.059	374617	4.139	261858	3.519

CBZ = Chlorobenzene-D5 (IS)

DCB = 1,4-Dichlorobenzene-d4 (IS)

DFB = 1,4-Difluorobenzene (IS)

PFB = Pentafluorobenzene (IS)

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

* Values outside of QC Limits

MSV - FORM VI VOA-3

MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York Instrument ID: 70MSV6 GC Column: Col 1 SDG No.: 7066870

Calibration Date(s): 07/31/2018 07/31/2018 Calibration Time(s): 15:32 17:38

LAB FILE ID

CAL1 = 073118.B\J47621.D CAL2 = 073118.B\J47622.D CAL3 = 073118.B\J47623.D

CAL4 = 073118.B\J47624.D CAL5 = 073118.B\J47625.D CAL6 = 073118.B\J47626.D

CAL7 = 073118.B\J47627.D CAL8 = 073118.B\J47628.D

COMPOUND	CURVE TYPE	%RSD	R2	A1	A2	A3
Acetone	Averaged	7.46012			0.15668	
Benzene	Averaged	1.80474			1.48372	
2-Butanone (MEK)	Averaged	9.70327			0.44165	
n-Butylbenzene	Averaged	8.50341			2.87453	
sec-Butylbenzene	Averaged	2.52090			3.57724	
tert-Butylbenzene	Averaged	2.32351			2.54480	
Carbon tetrachloride	Averaged	4.38968			0.43591	
Chlorobenzene	Averaged	2.19292			1.87841	
Chloroform	Averaged	2.37906			1.04244	
1,2-Dichlorobenzene	Averaged	3.66983			1.46988	
1,3-Dichlorobenzene	Averaged	3.85919			1.56915	
1,4-Dichlorobenzene	Averaged	2.98101			1.62311	
1,1-Dichloroethane	Averaged	2.72534			1.13449	
1,2-Dichloroethane	Averaged	2.58047			0.76043	
1,1-Dichloroethene	Averaged	7.64778			0.51546	
cis-1,2-Dichloroethene	Averaged	2.37939			0.69858	
trans-1,2-Dichloroethene	Averaged	3.18468			0.63141	
1,4-Dioxane (p-Dioxane)	Averaged	11.97842			0.00286	
Ethylbenzene	Averaged	3.31046			1.02223	
Methylene Chloride	Averaged	2.90233			0.64501	
Methyl-tert-butyl ether	Averaged	4.23720			1.72280	
n-Propylbenzene	Averaged	3.10414			4.75077	
Tetrachloroethene	Averaged	2.69313			0.66537	
Toluene	Averaged	1.46406			1.59527	
1,1,1-Trichloroethane	Averaged	3.93866			0.51435	
Trichloroethene	Averaged	1.91394			0.35917	
1,2,4-Trimethylbenzene	Averaged	2.99771			2.98435	
1,3,5-Trimethylbenzene	Averaged	1.75283			3.10629	
Vinyl chloride	Averaged	1.89761			0.68378	
m&p-Xylene	Averaged	4.62226			1.24043	
o-Xylene	Averaged	4.20291			1.21066	
4-Bromofluorobenzene (S)	Averaged	1.67665			0.87336	
1,2-Dichloroethane-d4 (S)	Averaged	3.13249			0.35662	
Toluene-d8 (S)	Averaged	0.53381			2.43612	

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

11/28/2018 4:00

SAMPLE NO.

10488642ICV

MSV - FORM VII VOA-1
MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York
Calibration Date: 07/31/2018 Time: 19:21

Instrument ID: 70MSV6 GC Column: Col 1
Init. Calib. Date(s): 07/31/2018 07/31/2018

Lab File ID: 073118.B\J47630.D
Init. Calib. Time(s): 15:32 17:38

SDG No.: 7066870

COMPOUND	CURVE	$\overline{\text{RRF}}$ or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Averaged	0.15668	0.21682	0.0100	38.3818	30.0000
Benzene	Averaged	1.48372	1.32819	0.0100	-10.4824	30.0000
2-Butanone (MEK)	Averaged	0.44165	0.46335	0.0100	4.9117	30.0000
n-Butylbenzene	Averaged	2.87453	2.54999	0.0100	-11.2904	30.0000
sec-Butylbenzene	Averaged	3.57724	3.00713	0.0100	-15.9370	30.0000
tert-Butylbenzene	Averaged	2.54480	2.14646	0.0100	-15.6533	30.0000
Carbon tetrachloride	Averaged	0.43591	0.37892	0.0100	-13.0746	30.0000
Chlorobenzene	Averaged	1.87841	1.67519	0.0100	-10.8183	30.0000
Chloroform	Averaged	1.04244	0.97127	0.0100	-6.8270	30.0000
1,2-Dichlorobenzene	Averaged	1.46988	1.28107	0.0100	-12.8456	30.0000
1,3-Dichlorobenzene	Averaged	1.56915	1.37694	0.0100	-12.2496	30.0000
1,4-Dichlorobenzene	Averaged	1.62311	1.41216	0.0100	-12.9968	30.0000
1,1-Dichloroethane	Averaged	1.13449	1.02112	0.0100	-9.9928	30.0000
1,2-Dichloroethane	Averaged	0.76043	0.74939	0.0100	-1.4523	30.0000
1,1-Dichloroethene	Averaged	0.51546	0.46717	0.0100	-9.3670	30.0000
cis-1,2-Dichloroethene	Averaged	0.69858	0.63835	0.0100	-8.6218	30.0000
trans-1,2-Dichloroethene	Averaged	0.63141	0.54910	0.0100	-13.0362	30.0000
1,4-Dioxane (p-Dioxane)	Averaged	0.00286	0.00322	0.0100	12.5405	30.0000
Ethylbenzene	Averaged	1.02223	0.90964	0.0100	-11.0142	30.0000
Methylene Chloride	Averaged	0.64501	0.58032	0.0100	-10.0287	30.0000
Methyl-tert-butyl ether	Averaged	1.72280	1.69710	0.0100	-1.4921	30.0000
n-Propylbenzene	Averaged	4.75077	4.16205	0.0100	-12.3923	30.0000
Tetrachloroethene	Averaged	0.66537	0.56906	0.0100	-14.4740	30.0000
Toluene	Averaged	1.59527	1.44068	0.0100	-9.6906	30.0000
1,1,1-Trichloroethane	Averaged	0.51435	0.46228	0.0100	-10.1227	30.0000
Trichloroethene	Averaged	0.35917	0.33124	0.0100	-7.7756	30.0000
1,2,4-Trimethylbenzene	Averaged	2.98435	2.70297	0.0100	-9.4285	30.0000
1,3,5-Trimethylbenzene	Averaged	3.10629	2.77473	0.0100	-10.6740	30.0000
Vinyl chloride	Averaged	0.68378	0.62014	0.0100	-9.3070	30.0000
m&p-Xylene	Averaged	1.24043	1.12781	0.0100	-9.0792	30.0000
o-Xylene	Averaged	1.21066	1.06186	0.0100	-12.2908	30.0000
4-Bromofluorobenzene (S)	Averaged	0.87336	0.89443	0.0100	2.4122	30.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.35662	0.36020	0.0100	1.0058	30.0000
Toluene-d8 (S)	Averaged	2.43612	2.35781	0.0100	-3.2147	30.0000

RF < 0.005

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

11/28/2018 4:00

MSV - FORM VI VOA-2

MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York Instrument ID: 70MSV4 GC Column: Col 1 SDG No.: 7066870

Calibration Date(s): 08/31/2018 08/31/2018 Calibration Time(s): 16:25 18:40

LAB FILE ID

CAL1 = 083118.B\F90826.D CAL2 = 083118.B\F90827.D CAL3 = 083118.B\F90828.D

CAL4 = 083118.B\F90829.D CAL5 = 083118.B\F90830.D CAL6 = 083118.B\F90831.D

CAL7 = 083118.B\F90832.D

COMPOUND	CURVE TYPE	CAL7	%RSD	R2	A1	A2	A3
Acetone	Linear	0.11911		0.99745	0.01395930	0.11784	
Benzene	Averaged	1.71525	4.58293			1.84742	
2-Butanone (MEK)	Averaged	0.15945	8.37438			0.17118	
* n-Butylbenzene	Averaged	4.58180	7.70431			4.70312	
sec-Butylbenzene	Averaged	4.83103	7.49096			4.90367	
tert-Butylbenzene	Averaged	3.73376	3.88753			3.77619	
Carbon tetrachloride	Averaged	0.51810	2.20797			0.53405	
Chlorobenzene	Averaged	2.38903	3.32840			2.48338	
Chloroform	Averaged	1.18280	3.75950			1.26526	
1,2-Dichlorobenzene	Averaged	1.88756	4.16560			1.87410	
1,3-Dichlorobenzene	Averaged	2.06091	5.46330			2.06407	
1,4-Dichlorobenzene	Averaged	1.96481	5.35241			2.09908	
1,1-Dichloroethane	Averaged	1.31119	5.38422			1.43978	
1,2-Dichloroethane	Averaged	0.70378	3.73915			0.75284	
1,1-Dichloroethene	Averaged	0.63361	6.61199			0.69833	
cis-1,2-Dichloroethene	Averaged	0.76787	5.72519			0.82969	
trans-1,2-Dichloroethene	Averaged	0.69521	5.28248			0.75214	
1,4-Dioxane (p-Dioxane)	Linear	0.00229		0.99882	0.00502089	0.00224	
Ethylbenzene	Averaged	1.25827	4.99581			1.35708	
Methylene Chloride	Averaged	0.68968	15.14539			0.80344	
Methyl-tert-butyl ether	Averaged	1.58823	4.53777			1.67992	
n-Propylbenzene	Averaged	5.23456	4.96784			5.72671	
Tetrachloroethene	Averaged	0.89163	6.45475			0.91431	
Toluene	Averaged	1.77896	5.18791			1.96192	
* 1,2,4-Trichlorobenzene	Averaged	1.23438	7.85650			1.14597	
1,1,1-Trichloroethane	Averaged	0.59148	4.28432			0.63348	
Trichloroethene	Averaged	0.40930	4.26402			0.43664	
1,2,4-Trimethylbenzene	Averaged	3.55938	19.66654			4.26874	
1,3,5-Trimethylbenzene	Averaged	3.63790	6.03716			3.96593	
Vinyl chloride	Averaged	1.01175	5.70991			1.09760	
m&p-Xylene	Averaged	1.60290	12.37826			1.78382	
o-Xylene	Averaged	1.59967	5.78610			1.67306	
4-Bromofluorobenzene (S)	Averaged	0.83511	2.15600			0.82543	
1,2-Dichloroethane-d4 (S)	Averaged	0.24663	3.76039			0.25492	
Toluene-d8 (S)	Averaged	2.42306	1.59130			2.38195	

RF 20.005

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

11/28/2018 4:00

SAMPLE NO.

10621090ICV

MSV - FORM VII VOA-1
MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York
Calibration Date: 08/31/2018 Time: 19:25

Instrument ID: 70MSV4 GC Column: Col 1
Init. Calib. Date(s): 08/31/2018 08/31/2018

Lab File ID: 083118.B\F90834.D
Init. Calib. Time(s): 16:25 18:40

SDG No.: 7066870

COMPOUND	CURVE	$\overline{RRF}$ or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Linear	50	55.33137	0.0100	10.6628	30.0000
Benzene	Averaged	1.84742	1.84985	0.0100	0.1315	30.0000
2-Butanone (MEK)	Averaged	0.17118	0.16949	0.0100	-0.9877	30.0000
n-Butylbenzene	Averaged	4.70312	4.71192	0.0100	0.1873	30.0000
sec-Butylbenzene	Averaged	4.90367	4.67718	0.0100	-4.6188	30.0000
tert-Butylbenzene	Averaged	3.77619	3.57882	0.0100	-5.2269	30.0000
Carbon tetrachloride	Averaged	0.53405	0.56726	0.0100	6.2180	30.0000
Chlorobenzene	Averaged	2.48338	2.45679	0.3000	-1.0706	30.0000
Chloroform	Averaged	1.26526	1.30045	0.0100	2.7811	30.0000
1,2-Dichlorobenzene	Averaged	1.87410	1.77123	0.0100	-5.4886	30.0000
1,3-Dichlorobenzene	Averaged	2.06407	1.98323	0.0100	-3.9163	30.0000
1,4-Dichlorobenzene	Averaged	2.09908	1.96479	0.0100	-6.3977	30.0000
1,1-Dichloroethane	Averaged	1.43978	1.47162	0.1000	2.2116	30.0000
1,2-Dichloroethane	Averaged	0.75284	0.79512	0.0100	5.6166	30.0000
1,1-Dichloroethene	Averaged	0.69833	0.73217	0.0100	4.8456	30.0000
cis-1,2-Dichloroethene	Averaged	0.82969	0.84248	0.0100	1.5423	30.0000
trans-1,2-Dichloroethene	Averaged	0.75214	0.76416	0.0100	1.5988	30.0000
1,4-Dioxane (p-Dioxane)	Linear	1250	1180.155	0.0100	-5.5875	30.0000
Ethylbenzene	Averaged	1.35708	1.34277	0.0100	-1.0540	30.0000
Methylene Chloride	Averaged	0.80344	0.73579	0.0100	-8.4199	30.0000
Methyl-tert-butyl ether	Averaged	1.67992	1.66956	0.0100	-0.6166	30.0000
n-Propylbenzene	Averaged	5.72671	5.44039	0.0100	-4.9999	30.0000
Tetrachloroethene	Averaged	0.91431	0.92765	0.0100	1.4590	30.0000
Toluene	Averaged	1.96192	1.92959	0.0100	-1.6479	30.0000
1,2,4-Trichlorobenzene	Averaged	1.14597	1.15097	0.0100	0.4361	30.0000
1,1,1-Trichloroethane	Averaged	0.63348	0.64651	0.0100	2.0556	30.0000
Trichloroethene	Averaged	0.43664	0.46093	0.0100	5.5640	30.0000
1,2,4-Trimethylbenzene	Averaged	4.26874	3.66602	0.0100	-14.1195	30.0000
1,3,5-Trimethylbenzene	Averaged	3.96593	3.71692	0.0100	-6.2787	30.0000
Vinyl chloride	Averaged	1.09760	0.96644	0.0100	-11.9497	30.0000
m&p-Xylene	Averaged	1.78382	1.67083	0.0100	-6.3342	30.0000
o-Xylene	Averaged	1.67306	1.60382	0.0100	-4.1382	30.0000
4-Bromofluorobenzene (S)	Averaged	0.82543	0.83778	0.0100	1.4970	30.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.25492	0.26322	0.0100	3.2564	30.0000
Toluene-d8 (S)	Averaged	2.38195	2.39587	0.0100	0.5847	30.0000

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

11/28/2018 4:00

SAMPLE NO.

10775690CCV

MSV - FORM VII VOA-1
MSV CONTINUING CALIBRATION DATA

Lab Name: Pace Analytical - New York
Calibration Date: 10/09/2018 Time: 14:35

Instrument ID: 70MSV4 GC Column: Col 1
Init. Calib. Date(s): 08/31/2018 08/31/2018

Lab File ID: 100918.B\F91183.D
Init. Calib. Time(s): 16:25 18:40

SDG No.: 7066870

COMPOUND	CURVE	$\overline{RRF}$ or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Linear	50	93.13743	0.0100	86.2749	20.0000
Benzene	Averaged	1.84742	1.83820	0.0100	-0.4992	20.0000
2-Butanone (MEK)	Averaged	0.17118	0.24124	0.0100	40.9311	20.0000
n-Butylbenzene	Averaged	4.70312	5.13036	0.0100	9.0842	20.0000
sec-Butylbenzene	Averaged	4.90367	5.26138	0.0100	7.2947	20.0000
tert-Butylbenzene	Averaged	3.77619	3.90532	0.0100	3.4195	20.0000
Carbon tetrachloride	Averaged	0.53405	0.70020	0.0100	31.1120	20.0000
Chlorobenzene	Averaged	2.48338	2.52510	0.3000	1.6802	20.0000
Chloroform	Averaged	1.26526	1.25790	0.0100	-0.5817	20.0000
1,2-Dichlorobenzene	Averaged	1.87410	1.97484	0.0100	5.3754	20.0000
1,3-Dichlorobenzene	Averaged	2.06407	2.24996	0.0100	9.0059	20.0000
1,4-Dichlorobenzene	Averaged	2.09908	2.21204	0.0100	5.3812	20.0000
1,1-Dichloroethane	Averaged	1.43978	1.32984	0.1000	-7.6359	20.0000
1,2-Dichloroethane	Averaged	0.75284	0.81303	0.0100	7.9951	20.0000
1,1-Dichloroethene	Averaged	0.69833	0.60959	0.0100	-12.7084	20.0000
cis-1,2-Dichloroethene	Averaged	0.82969	0.74206	0.0100	-10.5613	20.0000
trans-1,2-Dichloroethene	Averaged	0.75214	0.68222	0.0100	-9.2961	20.0000
1,4-Dioxane (p-Dioxane)	Linear	1250	1226.111	0.0100	-1.9110	20.0000
Ethylbenzene	Averaged	1.35708	1.31374	0.0100	-3.1932	20.0000
Methylene Chloride	Averaged	0.80344	0.64636	0.0100	-19.5505	20.0000
Methyl-tert-butyl ether	Averaged	1.67992	1.56321	0.0100	-6.9473	20.0000
n-Propylbenzene	Averaged	5.72671	5.76611	0.0100	0.6880	20.0000
Tetrachloroethene	Averaged	0.91431	1.03375	0.0100	13.0627	20.0000
Toluene	Averaged	1.96192	1.91558	0.0100	-2.3620	20.0000
1,2,4-Trichlorobenzene	Averaged	1.14597	1.40310	0.0100	22.4380	20.0000
1,1,1-Trichloroethane	Averaged	0.63348	0.76717	0.0100	21.1029	20.0000
Trichloroethene	Averaged	0.43664	0.45312	0.0100	3.7738	20.0000
1,2,4-Trimethylbenzene	Averaged	4.26874	3.88412	0.0100	-9.0103	20.0000
1,3,5-Trimethylbenzene	Averaged	3.96593	3.94030	0.0100	-0.6464	20.0000
Vinyl chloride	Averaged	1.09760	0.97360	0.0100	-11.2973	20.0000
m&p-Xylene	Averaged	1.78382	1.70461	0.0100	-4.4404	20.0000
o-Xylene	Averaged	1.67306	1.63222	0.0100	-2.4410	20.0000
4-Bromofluorobenzene (S)	Averaged	0.82543	0.86875	0.0100	5.2492	20.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.25492	0.34504	0.0100	35.3493	20.0000
Toluene-d8 (S)	Averaged	2.38195	2.43571	0.0100	2.2572	20.0000

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

11/28/2018 4:00

SAMPLE NO.

10781473CCV

MSV - FORM VII VOA-1
MSV CONTINUING CALIBRATION DATA

Lab Name: Pace Analytical - New York
Calibration Date: 10/11/2018 Time: 06:52

Instrument ID: 70MSV4 GC Column: Col 1
Init. Calib. Date(s): 08/31/2018 08/31/2018

Lab File ID: 101118.B\F91206.D
Init. Calib. Time(s): 16:25 18:40

SDG No.: 7066870

COMPOUND	CURVE	$\overline{RRF}$ or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Linear	50	112.9609	0.0100	125.9218	20.0000
Benzene	Averaged	1.84742	1.92471	0.0100	4.1835	20.0000
2-Butanone (MEK)	Averaged	0.17118	0.26173	0.0100	52.9011	20.0000
n-Butylbenzene	Averaged	4.70312	5.19901	0.0100	10.5440	20.0000
sec-Butylbenzene	Averaged	4.90367	5.33629	0.0100	8.8224	20.0000
tert-Butylbenzene	Averaged	3.77619	3.95980	0.0100	4.8621	20.0000
Carbon tetrachloride	Averaged	0.53405	0.76372	0.0100	43.0054	20.0000
Chlorobenzene	Averaged	2.48338	2.54366	0.3000	2.4274	20.0000
Chloroform	Averaged	1.26526	1.27746	0.0100	0.9636	20.0000
1,2-Dichlorobenzene	Averaged	1.87410	1.91669	0.0100	2.2727	20.0000
1,3-Dichlorobenzene	Averaged	2.06407	2.20957	0.0100	7.0492	20.0000
1,4-Dichlorobenzene	Averaged	2.09908	2.20478	0.0100	5.0357	20.0000
1,1-Dichloroethane	Averaged	1.43978	1.33599	0.1000	-7.2090	20.0000
1,2-Dichloroethane	Averaged	0.75284	0.84614	0.0100	12.3934	20.0000
1,1-Dichloroethene	Averaged	0.69833	0.64101	0.0100	-8.2089	20.0000
cis-1,2-Dichloroethene	Averaged	0.82969	0.74431	0.0100	-10.2901	20.0000
trans-1,2-Dichloroethene	Averaged	0.75214	0.69403	0.0100	-7.7258	20.0000
1,4-Dioxane (p-Dioxane)	Linear	1250	1173.221	0.0100	-6.1423	20.0000
Ethylbenzene	Averaged	1.35708	1.36991	0.0100	0.9458	20.0000
Methylene Chloride	Averaged	0.80344	0.67050	0.0100	-16.5463	20.0000
Methyl-tert-butyl ether	Averaged	1.67992	1.62174	0.0100	-3.4632	20.0000
n-Propylbenzene	Averaged	5.72671	5.69092	0.0100	-0.6251	20.0000
Tetrachloroethene	Averaged	0.91431	1.17245	0.0100	28.2334	20.0000
Toluene	Averaged	1.96192	1.98237	0.0100	1.0425	20.0000
1,2,4-Trichlorobenzene	Averaged	1.14597	1.38979	0.0100	21.2765	20.0000
1,1,1-Trichloroethane	Averaged	0.63348	0.83715	0.0100	32.1494	20.0000
Trichloroethene	Averaged	0.43664	0.50288	0.0100	15.1701	20.0000
1,2,4-Trimethylbenzene	Averaged	4.26874	3.88776	0.0100	-8.9249	20.0000
1,3,5-Trimethylbenzene	Averaged	3.96593	3.98553	0.0100	0.4941	20.0000
Vinyl chloride	Averaged	1.09760	0.99226	0.0100	-9.5976	20.0000
m&p-Xylene	Averaged	1.78382	1.74763	0.0100	-2.0287	20.0000
o-Xylene	Averaged	1.67306	1.69142	0.0100	1.0974	20.0000
4-Bromofluorobenzene (S)	Averaged	0.82543	0.87590	0.0100	6.1150	20.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.25492	0.35310	0.0100	38.5141	20.0000
Toluene-d8 (S)	Averaged	2.38195	2.38593	0.0100	0.1671	20.0000

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10780707CCV

MSV - FORM VII VOA-1
MSV CONTINUING CALIBRATION DATA

Lab Name: Pace Analytical - New York
Calibration Date: 10/11/2018 Time: 09:33
Instrument ID: 70MSV6 GC Column: Col 1
Init. Calib. Date(s): 07/31/2018 07/31/2018
Lab File ID: 101118.B\J49619.D
Init. Calib. Time(s): 15:32 17:38
SDG No.: 7066870

COMPOUND	CURVE	$\overline{RRF}$ or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Averaged	0.15668	0.12585	0.0100	-19.6788	20.0000
Benzene	Averaged	1.48372	1.37667	0.0100	-7.2152	20.0000
2-Butanone (MEK)	Averaged	0.44165	0.32684	0.0100	-25.9959	20.0000
n-Butylbenzene	Averaged	2.87453	2.73927	0.0100	-4.7054	20.0000
sec-Butylbenzene	Averaged	3.57724	3.31169	0.0100	-7.4233	20.0000
tert-Butylbenzene	Averaged	2.54480	2.40634	0.0100	-5.4407	20.0000
Carbon tetrachloride	Averaged	0.43591	0.44563	0.0100	2.2297	20.0000
Chlorobenzene	Averaged	1.87841	2.03110	0.0100	8.1292	20.0000
Chloroform	Averaged	1.04244	0.97184	0.0100	-6.7729	20.0000
1,2-Dichlorobenzene	Averaged	1.46988	1.47002	0.0100	0.0095	20.0000
1,3-Dichlorobenzene	Averaged	1.56915	1.57328	0.0100	0.2628	20.0000
1,4-Dichlorobenzene	Averaged	1.62311	1.60582	0.0100	-1.0655	20.0000
1,1-Dichloroethane	Averaged	1.13449	0.99520	0.0100	-12.2779	20.0000
1,2-Dichloroethane	Averaged	0.76043	0.70024	0.0100	-7.9154	20.0000
1,1-Dichloroethene	Averaged	0.51546	0.47697	0.0100	-7.4666	20.0000
cis-1,2-Dichloroethene	Averaged	0.69858	0.66039	0.0100	-5.4671	20.0000
trans-1,2-Dichloroethene	Averaged	0.63141	0.57578	0.0100	-8.8105	20.0000
1,4-Dioxane (p-Dioxane)	Averaged	0.00286	0.00354	0.0100	-23.5908	20.0000
Ethylbenzene	Averaged	1.02223	1.06385	0.0100	4.0720	20.0000
Methylene Chloride	Averaged	0.64501	0.53041	0.0100	-17.7658	20.0000
Methyl-tert-butyl ether	Averaged	1.72280	1.53381	0.0100	-10.9701	20.0000
n-Propylbenzene	Averaged	4.75077	4.30871	0.0100	-9.3052	20.0000
Tetrachloroethene	Averaged	0.66537	0.74658	0.0100	12.2046	20.0000
Toluene	Averaged	1.59527	1.55115	0.0100	-2.7657	20.0000
1,1,1-Trichloroethane	Averaged	0.51435	0.51639	0.0100	0.3971	20.0000
Trichloroethene	Averaged	0.35917	0.35061	0.0100	-2.3834	20.0000
1,2,4-Trimethylbenzene	Averaged	2.98435	2.81572	0.0100	-5.6502	20.0000
1,3,5-Trimethylbenzene	Averaged	3.10629	2.85463	0.0100	-8.1016	20.0000
Vinyl chloride	Averaged	0.68378	0.58508	0.0100	-14.4340	20.0000
m&p-Xylene	Averaged	1.24043	1.32280	0.0100	6.6399	20.0000
o-Xylene	Averaged	1.21066	1.27829	0.0100	5.5862	20.0000
4-Bromofluorobenzene (S)	Averaged	0.87336	0.91924	0.0100	5.2534	20.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.35662	0.32419	0.0100	-9.0925	20.0000
Toluene-d8 (S)	Averaged	2.43612	2.42717	0.0100	-0.3674	20.0000

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

BLANK

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 09:30
Date Extracted: 10/05/2018 09:50
Date Analyzed: 10/09/2018 16:24
Initial wt/vol: 15 g Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST RI
Matrix: Solid SDG No.: 7066870
Lab Sample ID: 394832
Lab File ID: 8270-100918.B\R46782.D
Instrument: 70MSS3 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
119-61-9	Benzophenone	8.358	310	N J
	Unknown	4.095	170	J
	Unknown	8.005	171	J
	Unknown	5.922	184	J
	Unknown Aldol Condensate	4.362	1350	J
	Unknown Amide	13.128	136	J
	Unknown Amine	5.035	412	J
	Unknown Ketone	5.628	146	J
	Unknown Ketone	2.866	196	J
	Unknown Ketone	3.256	4360	J
	Unknown Ketone	3.662	46900	J
	Unknown Ketone	3.475	811	J
	Unknown Organic Acid	9.666	176	J
	Unknown Petroleum Alkane	4.693	171	J
	Unknown Petroleum Alkane	4.196	248	J

Subtract from Samples

SAMPLE NO.

394915BLANK

PESTICIDES - FORM IV SVOA-1
SEMI-VOLATILE METHOD BLANK SUMMARY

Lab Name: Pace Analytical - New York SDG No.: 7066870 Contract: 31 WATER ST RI

Instrument ID: 70GCS3 Matrix: Solid Lab Sample ID: 394915

Lab File ID (1): 101018-1.B\311437.D Date Analyzed (1): 10/11/2018 Time (1):11:27

Lab File ID (2): 101018-2.B\311437.D Date Analyzed (2): 10/11/2018 Time (2):11:27

SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	ANALYZED	
394916LCS	394916	101018-1.B\311438.D	10/11/2018 11:42	
394916LCS	394916	101018-2.B\311438.D	10/11/2018 11:42	
394917LCS	394917	101018-1.B\311439.D	10/11/2018 11:56	
394917LCS	394917	101018-2.B\311439.D	10/11/2018 11:56	
BH-1 (7-8)	7066870001	101018-1.B\311443.D	10/11/2018 12:55	
BH-1 (7-8)	7066870001	101018-2.B\311443.D	10/11/2018 12:55	
BH-5 (8-12)	7066870006	101018-1.B\311444.D	10/11/2018 13:10	
BH-5 (8-12)	7066870006	101018-2.B\311444.D	10/11/2018 13:10	
394918MS	394918	101018-1.B\311445.D	10/11/2018 13:25	
394918MS	394918	101018-2.B\311445.D	10/11/2018 13:25	
394919MSD	394919	101018-1.B\311446.D	10/11/2018 13:39	
394919MSD	394919	101018-2.B\311446.D	10/11/2018 13:39	
BH-9 (13-14)	7066870010	101018-1.B\311447.D	10/11/2018 13:54	
BH-9 (13-14)	7066870010	101018-2.B\311447.D	10/11/2018 13:54	
BH-7 (0-4)	7066870007	101018-1.B\311448.D	10/11/2018 14:09	
BH-7 (0-4)	7066870007	101018-2.B\311448.D	10/11/2018 14:09	PEM In
BH-11 (0-4)	7066870011	101018-1.B\311452.D	10/11/2018 15:23	
BH-11 (0-4)	7066870011	101018-2.B\311452.D	10/11/2018 15:23	
BH-9 (4-7)	7066870009	101018-1.B\311454.D	10/11/2018 15:52	
BH-9 (4-7)	7066870009	101018-2.B\311454.D	10/11/2018 15:52	
BH-8 (8-12)	7066870008	101018-1.B\311455.D	10/11/2018 16:07	
BH-8 (8-12)	7066870008	101018-2.B\311455.D	10/11/2018 16:07	
BH-2 (1-3)	7066870002	101018-1.B\311456.D	10/11/2018 16:22	
BH-2 (1-3)	7066870002	101018-2.B\311456.D	10/11/2018 16:22	
BH-3 (1-4)	7066870003	101018-1.B\311457.D	10/11/2018 16:36	
BH-3 (1-4)	7066870003	101018-2.B\311457.D	10/11/2018 16:36	
BH-4 (0-4)	7066870004	101018-1.B\311458.D	10/11/2018 16:51	
BH-4 (0-4)	7066870004	101018-2.B\311458.D	10/11/2018 16:51	
BH-6 (0-4)	7066870005	101018-1.B\311459.D	10/11/2018 17:06	
BH-6 (0-4)	7066870005	101018-2.B\311459.D	10/11/2018 17:06	
BH-12 (0-4)	7066870012	101018-1.B\311460.D	10/11/2018 17:21	
BH-12 (0-4)	7066870012	101018-2.B\311460.D	10/11/2018 17:21	PEM out
BH-6 (0-4)	7066870005	101218-1.B\311565.D	10/13/2018 07:37	
BH-6 (0-4)	7066870005	101218-2.B\311565.D	10/13/2018 07:37	

Flag data

PESTICIDES - FORM VI PEST-2

PESTICIDES INITIAL CALIBRATION (MULTIPOINT)

Lab Name: Pace Analytical - New York Instrument ID: 70GCS3 GC Column: Col 1 SDG No.: 7066870

Calibration Date(s): 10/11/2018 10/11/2018 Calibration Time(s): 05:34 06:32

LAB FILE ID

CAL1 = 101018-1.B\311417.D CAL2 = 101018-1.B\311416.D CAL3 = 101018-1.B\311415.D

CAL4 = 101018-1.B\311414.D CAL5 = 101018-1.B\311413.D

COMPOUND	PEAK	CURVE TYPE	%RSD	R2	A1	A2	A3
Aldrin		Averaged	4.59			123233347.5	
alpha-BHC		Averaged	8.90			129442532.5	
beta-BHC		Averaged	5.63			63692692.50	
delta-BHC		Averaged	7.70			117722390.0	
gamma-BHC (Lindane)		Averaged	5.85			124481647.5	
alpha-Chlordane		Averaged	28.24			166907205.0	
4,4'-DDD		Averaged	5.80			88868862.50	
4,4'-DDE		Averaged	7.87			106909167.5	
4,4'-DDT		Averaged	7.27			97466076.25	
Dieldrin		Averaged	5.85			119350893.7	
Endosulfan I		Averaged	8.17			120184995.0	
Endosulfan II		Averaged	4.41			109556873.7	
Endosulfan sulfate		Averaged	5.20			106936325.0	
Endrin		Averaged	5.49			106141410.0	
Heptachlor		Averaged	4.45			141849725.0	
Decachlorobiphenyl (S)		Averaged	4.95			101289550.0	
Tetrachloro-m-xylene		Averaged	1.75			97118260.00	

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

PESTICIDES - FORM VI PEST-2

PESTICIDES INITIAL CALIBRATION (MULTIPOINT)

Lab Name: Pace Analytical - New York Instrument ID: 70GCS3 GC Column: Col 2 SDG No.: 7066870

Calibration Date(s): 10/11/2018 10/11/2018 Calibration Time(s): 05:34 06:32

LAB FILE ID

CAL1 = 101018-2.B\311417.D CAL2 = 101018-2.B\311416.D CAL3 = 101018-2.B\311415.D

CAL4 = 101018-2.B\311414.D CAL5 = 101018-2.B\311413.D

COMPOUND	PEAK	CURVE TYPE	%RSD	R2	A1	A2	A3
Aldrin		Averaged	3.28			129992160.0	
alpha-BHC		Averaged	5.64			132164397.5	
beta-BHC		Averaged	5.61			65487920.00	
delta-BHC		Averaged	5.00			125070775.0	
gamma-BHC (Lindane)		Averaged	4.09			127454812.5	
alpha-Chlordane		Averaged	7.18			130011855.0	
4,4'-DDD		Averaged	4.69			93035165.00	
4,4'-DDE		Averaged	5.34			111285060.0	
4,4'-DDT		Averaged	4.18			102697948.7	
Dieldrin		Averaged	4.52			120664165.0	
Endosulfan I		Averaged	6.31			123772775.0	
Endosulfan II		Averaged	6.29			111437810.0	
Endosulfan sulfate		Averaged	6.46			103865040.0	
Endrin		Averaged	4.52			108442040.0	
Heptachlor		Averaged	4.62			142079110.0	
Decachlorobiphenyl (S)		Averaged	5.37			93966347.50	
Tetrachloro-m-xylene		Averaged	7.28			96690740.00	

OK

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10786200PEM

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Instrument ID: 70GCS3 GC Column: Col 1
Lab File ID: 101018-1.B\311467.D

Analysis Date: 10/11/2018 Time: 19:04
SDG: 7066870
Init. Calib. Date(s): 10/11/2018 10/11/2018
Init. Calib. Time(s): 05:34 07:02

4,4'-DDT % 63.04*

Endrin %Breakdown: 4.00

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

10786192PEM

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Instrument ID: 70GCS3 GC Column: Col 2
Lab File ID: 101018-2.B\311467.D

Analysis Date: 10/11/2018 Time: 19:04
SDG: 7066870
Init. Calib. Date(s): 10/11/2018 10/11/2018
Init. Calib. Time(s): 05:04 10:28

4,4'-DDT % 65.70*

Endrin %Breakdown: 3.13

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

10795232PEM

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Instrument ID: 70GCS3 GC Column: Col 2
Lab File ID: 101218-2.B\311572.D

Analysis Date: 10/13/2018 Time: 09:20
SDG: 7066870
Init. Calib. Date(s): 10/12/2018 10/12/2018
Init. Calib. Time(s): 17:09 20:06

4,4'-DDT % 42.96*

Endrin %Breakdown: 1.33

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

10795234PEM

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST RI
Instrument ID: 70GCS3 GC Column: Col 1
Lab File ID: 101218-1.B\311572.D

Analysis Date: 10/13/2018 Time: 09:20
SDG: 7066870
Init. Calib. Date(s): 10/12/2018 10/12/2018
Init. Calib. Time(s): 17:24 18:52

4,4'-DDT % 43.16*

Endrin %Breakdown: 1.21

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

10786215CCV

PESTICIDES - FORM VII PEST-1
PESTICIDES CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York

Calibration Date: 10/11/2018 Time: 19:19

Instrument ID: 70GCS3 GC Column: Col 1

Init. Calib. Date(s): 10/11/2018 10/11/2018

Lab File ID: 101018-1.B\311468.D

Init. Calib. Time(s): 05:34 07:02

SDG No.: 7066870

COMPOUND	PEAK	CURVE	RT	RT WINDOW		$\overline{RRF}$ or Amount	RRF or Amount	%D
				FROM	TO			
Aldrin		Averaged	4.304	4.274	4.334	123233347.	125774650.	2.0622
alpha-BHC		Averaged	3.107	3.077	3.137	129442532.	128528550.	-0.7061
beta-BHC		Averaged	3.506	3.474	3.534	63692692.5	62433650.0	-1.9767
delta-BHC		Averaged	3.702	3.67	3.73	117722390.	121067600.	2.8416
gamma-BHC (Lindane)		Averaged	3.42	3.389	3.449	124481647.	116295600.	-6.5761
alpha-Chlordane		Averaged	5.493	5.464	5.524	166907205.	132452400.	-20.6431
4,4'-DDD		Averaged	6.469	6.438	6.498	88868862.5	118222400.	33.0302
4,4'-DDE		Averaged	5.623	5.592	5.652	106909167.	99284250.0	-7.1321
4,4'-DDT		Averaged	6.794	6.764	6.824	97466076.2	19652550.0	-79.8365
Dieldrin		Averaged	6.058	6.028	6.088	119350893.	109205975.	-8.5001
Endosulfan I		Averaged	5.701	5.67	5.73	120184995.	104900550.	-12.7174
Endosulfan II		Averaged	6.637	6.607	6.667	109556873.	96370550.0	-12.0361
Endosulfan sulfate		Averaged	7.524	7.495	7.555	106936325.	89335300.0	-16.4594
Endrin		Averaged	6.367	6.335	6.395	106141410.	96972225.0	-8.6387
Heptachlor		Averaged	3.94	3.909	3.969	141849725.	120700900.	-14.9093
Decachlorobiphenyl (S)		Averaged	8.628	8.599	8.659	101289550.	81176750.0	-19.8567
Tetrachloro-m-xylene		Averaged	2.619	2.589	2.649	97118260.0	92341200.0	-4.9188

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10786207CCV

PESTICIDES - FORM VII PEST-1
PESTICIDES CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York

Calibration Date: 10/11/2018 Time: 19:19

Instrument ID: 70GCS3 GC Column: Col 2

Init. Calib. Date(s): 10/11/2018 10/11/2018

Lab File ID: 101018-2.B\311468.D

Init. Calib. Time(s): 05:04 10:28

SDG No.: 7066870

COMPOUND	PEAK	CURVE	RT	RT WINDOW		$\overline{RRF}$ or Amount	RRF or Amount	%D
				FROM	TO			
Aldrin		Averaged	4.225	4.194	4.254	129992160.	124144400.	-4.4985
alpha-BHC		Averaged	3.011	2.98	3.04	132164397.	130438000.	-1.3063
beta-BHC		Averaged	3.438	3.407	3.467	65487920.0	64811450.0	-1.0330
delta-BHC		Averaged	3.762	3.73	3.79	125070775.	124208650.	-0.6893
gamma-BHC (Lindane)		Averaged	3.357	3.327	3.387	127454812.	120297800.	-5.6153
alpha-Chlordane		Averaged	5.492	5.46	5.52	130011855.	115282050.	-11.3296
4,4'-DDD		Averaged	6.573	6.542	6.602	93035165.0	129150525.	38.8190
4,4'-DDE		Averaged	5.786	5.756	5.816	111285060.	104025025.	-6.5238
4,4'-DDT		Averaged	6.918	6.886	6.946	102697948.	21262875.0	-79.2957
Dieldrin		Averaged	5.996	5.964	6.024	120664165.	112723350.	-6.5809
Endosulfan I		Averaged	5.572	5.541	5.601	123772775.	110334150.	-10.8575
Endosulfan II		Averaged	6.657	6.624	6.684	111437810.	108496850.	-2.6391
Endosulfan sulfate		Averaged	7.302	7.254	7.314	103865040.	85276100.0	-17.8972
Endrin		Averaged	6.398	6.367	6.427	108442040.	97988650.0	-9.6396
Heptachlor		Averaged	3.837	3.806	3.866	142079110.	117719950.	-17.1448
Decachlorobiphenyl (S)		Averaged	8.822	8.79	8.85	93966347.5	97929450.0	4.2176
Tetrachloro-m-xylene		Averaged	2.5	2.469	2.529	96690740.0	90521550.0	-6.3803

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10795235CCV

PESTICIDES - FORM VII PEST-1
PESTICIDES CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York
Calibration Date: 10/13/2018 Time: 09:35

Instrument ID: 70GCS3 GC Column: Col 1
Init. Calib. Date(s): 10/12/2018 10/12/2018

Lab File ID: 101218-1.B\311573.D
Init. Calib. Time(s): 17:24 18:52

SDG No.: 7066870

COMPOUND	PEAK	CURVE	RT	RT WINDOW		$\overline{RRF}$ or Amount	RRF or Amount	%D
				FROM	TO			
Aldrin		Averaged	4.259	4.231	4.291	149582452.	135937350.	-9.1221
alpha-BHC		Averaged	3.073	3.045	3.105	134506525.	133679550.	-0.6148
beta-BHC		Averaged	3.467	3.439	3.499	65624857.5	67296350.0	2.5470
delta-BHC		Averaged	3.661	3.633	3.693	130051320.	126420150.	-2.7921
gamma-BHC (Lindane)		Averaged	3.383	3.355	3.415	129909130.	124066550.	-4.4974
alpha-Chlordane		Averaged	5.44	5.412	5.472	141617237.	132880000.	-6.1696
4,4'-DDD		Averaged	6.427	6.399	6.459	88562862.5	123018700.	38.9055
4,4'-DDE		Averaged	5.57	5.543	5.603	109149993.	106467150.	-2.4579
4,4'-DDT		Averaged	6.755	6.727	6.787	101837370.	42006850.0	-58.7510
Dieldrin		Averaged	6.008	5.979	6.039	117392508.	117434025.	0.0354
Endosulfan I		Averaged	5.645	5.617	5.677	114703442.	116623100.	1.6736
Endosulfan II		Averaged	6.595	6.567	6.627	112201832.	111892175.	-0.2760
Endosulfan sulfate		Averaged	7.49	7.462	7.522	84957772.5	83035775.0	-2.2623
Endrin		Averaged	6.32	6.291	6.351	110175726.	110838175.	0.6013
Heptachlor		Averaged	3.897	3.87	3.93	140896367.	131122200.	-6.9371
Decachlorobiphenyl (S)		Averaged	8.595	8.567	8.627	78202300.0	92444200.0	18.2116
Tetrachloro-m-xylene		Averaged	2.59	2.589	2.649	98708437.5	95142000.0	-3.6131

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10795228CCV

PESTICIDES - FORM VII PEST-1
PESTICIDES CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York
Calibration Date: 10/13/2018 Time: 09:35

Instrument ID: 70GCS3 GC Column: Col 2
Init. Calib. Date(s): 10/12/2018 10/12/2018

Lab File ID: 101218-2.B\311573.D
Init. Calib. Time(s): 17:09 20:06

SDG No.: 7066870

COMPOUND	PEAK	CURVE	RT	RT WINDOW		$\overline{RRF}$ or Amount	RRF or Amount	%D
				FROM	TO			
Aldrin		Averaged	4.181	4.15	4.21	126876350.	131910150.	3.9675
alpha-BHC		Averaged	2.98	2.95	3.01	135897497.	136569750.	0.4947
beta-BHC		Averaged	3.403	3.374	3.434	69485250.0	72152950.0	3.8392
delta-BHC		Averaged	3.724	3.693	3.753	128513935.	131252350.	2.1308
gamma-BHC (Lindane)		Averaged	3.322	3.292	3.352	131590600.	130476600.	-0.8466
alpha-Chlordane		Averaged	5.44	5.41	5.47	128798510.	130085000.	0.9988
4,4'-DDD		Averaged	6.535	6.505	6.565	94265977.5	127092075.	34.8228
4,4'-DDE		Averaged	5.734	5.704	5.764	116542427.	114313675.	-1.9124
4,4'-DDT		Averaged	6.883	6.853	6.913	105151325.	45533825.0	-56.6969
Dieldrin		Averaged	5.945	5.915	5.975	129331768.	125806200.	-2.7260
Endosulfan I		Averaged	5.519	5.489	5.549	121112790.	123572350.	2.0308
Endosulfan II		Averaged	6.615	6.586	6.646	110824800.	114779750.	3.5687
Endosulfan sulfate		Averaged	7.268	7.238	7.298	103163847.	99829675.0	-3.2319
Endrin		Averaged	6.353	6.324	6.384	111658821.	112678475.	0.9132
Heptachlor		Averaged	3.797	3.767	3.827	144997600.	137068800.	-5.4682
Decachlorobiphenyl (S)		Averaged	8.788	8.757	8.817	74084302.5	84952600.0	14.6702
Tetrachloro-m-xylene		Averaged	2.473	2.443	2.503	98765545.0	95862800.0	-2.9390

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

BH-8 (8-12)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST RI

Lab Sample ID: 7066870008 SDG No.: 7066870 Date(s) Analyzed: 10/11/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
beta-BHC	1	3.50677	308	192
	2	3.46677	6.0	

JN

SAMPLE NO.

BH-9 (4-7)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST RI

Lab Sample ID: 7066870009 SDG No.: 7066870 Date(s) Analyzed: 10/11/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD	
beta-BHC	1	3.5127	13.1	92.1	JN
	2	3.4402	4.8		
alpha-Chlordane	1	5.46687	2.9	25.8	J
	2	5.48437	2.2		
4,4'-DDE	1	5.6052	47.0	4.6	
	2	5.8052	44.8		
Dieldrin	1	6.06187	32.9	100	JN
	2	5.98187	99.1		
Endosulfan II	1	6.6377	8.4	112	JN
	2	6.68103	29.8		

SAMPLE NO.

BH-8 (8-12)

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST RI

Lab Sample ID: 7066870008 SDG No.: 7066870 Date(s) Analyzed: 10/11/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.3674	76.4	38.2
	2	3.93657	51.9	

J

SAMPLE NO.

BH-9 (4-7)

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST RI

Lab Sample ID: 7066870009 SDG No.: 7066870 Date(s) Analyzed: 10/11/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 5

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1254 (Aroclor 1254)	1	6.45218	2130	28.8
	2	5.09302	1600	

J

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract : 31 WATER ST RI

Method Blank Matrix: Solid Instrument ID: 70ICP3

Method Blank Concentration Units: mg/kg

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)								Method Blank	
	10/05/2018 16:23	C	10/05/2018 16:29	C	10/05/2018 16:42	C	10/05/2018 16:56	C	394911	C
Arsenic	6.3	U	6.3	U	6.3	U	6.3	U	0.34	J
Barium	0.10	U	0.10	U	0.20	J	0.10	U	<10.0	U
Beryllium	0.020	U	0.020	U	0.020	U	0.020	U	<0.25	U
Cadmium	0.23	U	0.23	U	0.23	U	0.23	U	<0.13	U
Chromium	0.60	U	0.60	U	0.60	U	0.60	U	<0.50	U
Copper	3.1	U	3.1	U	3.1	U	3.1	U	<1.3	U
Lead	2.7	U	2.7	U	2.7	U	2.7	U	<0.25	U
Manganese	-0.14	J	-0.12	J	0.10	U	0.20	J	0.12	J
Nickel	-1.5	J	-1.6	J	-2.1	J	-2.6	J	<2.0	U
Selenium	7.8	J	6.7	U	6.7	U	-7.7	J	0.28	J
Silver	1.0	U	1.0	U	1.0	U	1.0	U	<0.50	U
Zinc	2.8	U	2.8	U	2.8	U	2.8	U	0.16	J

FORM VIII INORGANIC-1
SERIAL DILUTIONS

SAMPLE NO.
395127SD

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI

Matrix: Solid Parent Sample ID: BH-1 (7-8)

Analyte	Units	Initial Sample Result	Serial Dilution Result	% Difference	Control Limit %D
Arsenic	ug/L	160	156	2.5	10
Barium	ug/L	3270	3260	0.3	10
Beryllium	ug/L	6.2	6.2J	0.6	10
Cadmium	ug/L	1.9J	1.5U		10
Chromium	ug/L	206	204	0.7	10
Copper	ug/L	121	74.0J	38.8*	10
Lead	ug/L	196	206	5.4	10
Manganese	ug/L	12100	12600	3.7	10
Nickel	ug/L	263	254	3.2	10
Selenium	ug/L	13.5	26.3U		10
Silver	ug/L	1.3U	6.3U		10
Zinc	ug/L	773	785	1.6	10

* Indicates that the % Difference exceeds the control limit.
No difference is calculated if either result is a non-detect.

11/13/2018 14:53

SAMPLE NO.

396308MS

FORM V INORGANIC-2
MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI

Matrix: Solid Basis: Dry Parent Sample ID: BH-1 (7-8)

Percent Moisture: 15.2

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Chromium, Hexavalent	mg/kg	85-115	0.76J	<1.2	4.7	16*

* Spike Recovery outside QC Limits

11/20/2018 10:15

FORM IX INORGANIC-2
METHOD DETECTION LIMITS

Lab Name: Pace Analytical - New York SDG No. : 7066870 Contract: 31 WATER ST RI

Preparation Method: EPA 3050B Instrument ID: 70ICP3

Concentration Units: mg/kg

Analyte	PQL	MDL	MDL Date
Arsenic	0.50	0.15	02/20/2017
Barium	10.0	0.76	02/20/2017
Beryllium	0.25	0.032	02/20/2017
Cadmium	0.12	0.015	02/20/2017
Chromium	0.50	0.048	02/20/2017
Copper	1.2	0.091	02/20/2017
Lead	0.25	0.12	02/20/2017
Manganese	0.75	0.043	02/20/2017
Nickel	2.0	0.18	02/20/2017
Selenium	0.50	0.26	02/20/2017
Silver	0.50	0.063	02/20/2017
Zinc	1.0	0.064	02/20/2017

Appendix C

Validator Qualifications

KENNETH R. APPLIN
Geochemist/Data Validator

Ph.D., Geochemistry and Mineralogy, The Pennsylvania State University

M.S., Geochemistry and Mineralogy, The Pennsylvania State University

B.A., Geological Sciences, SUNY at Geneseo, NY

Dr. Applin has over 35 years of experience working with the geochemistry of natural waters. His prior experience includes working as an Assistant Professor of Geology at the University of Missouri-Columbia and as Chief Hydrogeologist and Geochemist with a leading engineering firm in Rochester, NY. In 1993, he established KR Applin and Associates, a small consulting business that focuses on the geochemistry of natural waters, especially as applied to problems involving the contamination of groundwater and surface water.

Dr. Applin is also an experienced analytical data validator and has provided data validation services since 1994 to a variety of clients performing brownfield cleanup projects, hazardous waste remediation, groundwater monitoring at solid waste facilities, and other projects requiring third-party data validation. Dr. Applin has several years of hands-on experience with the laboratory analysis of natural waters and has successfully completed the USEPA Region II certification courses for performing inorganic and organic analytical data validation.

MICHAEL K. PERRY
Chemist/Data Validator

B.S. Chemistry, Georgia State University, Atlanta, GA

A.A.S., Chemical Technology, Alfred State College, Alfred, NY

Mr. Perry has over 30 years of experience in the analytical laboratory business. During his early career, he spent several years as a laboratory analyst performing the analysis of soil, water, and air samples for inorganic and organic chemical parameters. During his last 20 years in the environmental laboratory business, he managed and directed two major analytical laboratories in Rochester, NY. His management responsibilities included oversight of the daily operations of the lab, staff training and supervision, the selection, purchase, and maintenance of analytical instruments, the introduction of new laboratory methods, analytical quality assurance and quality control, data acquisition and management, and other business-related activities.

Mr. Perry has an extensive working knowledge of the methods and procedures used for sampling and analyzing both inorganic and organic analytes in soil, water, and air. He is an accomplished laboratory chemist and is familiar with the analytical methods and procedures established under the USEPA Contract Laboratory Protocols (CLP), the NYSDEC Analytical Services Protocols (ASP), and the NYSDOH Environmental Laboratory Approval Program (ELAP).

DATA USABILITY SUMMARY REPORT (DUSR)

31 Water Street
Jamestown, NY
NYSDEC BCP # C907046

SDG: 7067073

11 soil samples

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

January 2019

EDU Environmental Data Usability 10028 Deer Park Dr. Dansville, NY 14437 585.991.9156

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APPENDIX A Validated Analytical Results
APPENDIX B Laboratory QC Documentation
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Tables

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Summaries of Validated Results
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REVIEWER'S NARRATIVE
SDG 7067073

The data associated with this Sample Delivery Group (SDG) 7067073, analyzed by Pace Analytical Services, LLC, Melville, NY have been reviewed in accordance with assessment criteria provided by the New York State Department of Environmental Conservation following the review procedures provided in the USEPA Functional Guidelines for evaluating organic and inorganic data.

All analytical results reported by the laboratory are considered valid and acceptable except results that have been qualified as rejected, "R". Results qualified as estimated "J", or as non-detects, "U", are considered usable for the purpose of evaluating water and/or soil quality. However, these qualifiers indicate that the accuracy and/or precision of the analytical result is questionable. A summary of all data that have been qualified and the reasons for qualification are provided in the following data usability summary report (DUSR).

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

Reviewer's Signature: Michael K. Perry Date: 1/9/19

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	31 Water St. Jamestown, NY
SAMPLING DATE:	October 04, 2018
SAMPLE TYPE:	11 soil samples
LABORATORY:	Pace Analytical Services, LLC Melville, NY
SDG No.:	7067073

2.0 INTRODUCTION

This data usability summary report (DUSR) was prepared in accordance with guidance provided by the New York State Department of Environmental Conservation (NYSDEC). The DUSR is based on a review and evaluation of the laboratory analytical data package. Specifically, the NYSDEC guidance recommends review and evaluation of the following elements of the data package:

- Completeness of the data package as defined under the requirements of the NYSDEC Analytical Services Protocols (ASP) Category B or the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) deliverables,
- Compliance with established analyte holding times,
- Adherence to quality control (QC) limits and specifications for blanks, instrument tuning and calibration, surrogate recoveries, spike recoveries, laboratory duplicate analyses, and other QC criteria,
- Adherence to established analytical protocols,
- Conformance of data summary sheets with raw analytical data, and
- Use of correct data qualifiers.

Data deficiencies, analytical protocol deviations, and quality control problems identified using the review criteria above and their effect on the analytical results are discussed in this report.

3.0 SAMPLE AND ANALYSIS SUMMARY

The data package consists of analytical results for eleven soil samples collected on October 04, 2018. These samples were analyzed for the Part 375 list of Volatile Organic Compounds, Semi-volatile Organic Compounds, PCBs, Pesticides, TCN, Herbicides, Hexavalent Chromium, and Metals.

All analyses were performed by Pace Analytical Services, LLC, Melville, NY and analyzed as SDG 7067073. The analytical results were provided in NYSDEC ASP Category B format, which includes all raw analytical data and laboratory QC data.

4.0 GUIDANCE DOCUMENTS AND DATA REVIEW CRITERIA

The guidance documents used for reviewing laboratory quality control (QC) data and assigning data qualifiers (flags) to analytical results are listed in Table 4-1. The QC limits established in the documents applicable to this data review were used to assess the quality of the analytical results. In some cases, however, QC limits established internally by the laboratory were taken into account to determine data quality.

The QC criteria considered for assessing the usability of the reported analytical results provided for each analyte type (i.e. VOCs, SVOCs, metals, etc.) are listed in Table 4-2. These criteria may vary with the analytical method utilized by the laboratory. These criteria comply with the guidance recommended in Section 2.0 above.

5.0 DATA VALIDATION QUALIFIERS

The letter qualifiers (flags) used to define data usability are described briefly below. These letters are assigned by the data validator to analytical results having questionable accuracy and/or precision as determined by reviewing the laboratory QC data associated with the analytical results.

TABLE 4-1

DATA VALIDATION GUIDANCE DOCUMENTS

Analyte Type	Validation Guidance
VOCs	USEPA, 2008, Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry; SW-846 Method 8260B; SOP # HW-24, Rev. 2. USEPA, 2008, Statement of Work for Organic Analysis of Low/Medium Concentration of Volatile Organic Compounds SOM01.2; SOP HW-33, Rev. 2.
SVOCs	USEPA, 2007, Statement of Work for Organic Analysis of Low/Medium Concentration of Semivolatile Organic Compounds SOM01.2; SOP HW-35, Rev. 1.
Pesticides/PCBs	USEPA, 2006, CLP Organics Data Review and Preliminary Review (CLP/SOW OLMO 4.3); SOP # HW-6, Rev. 14, Part C.
Metals	USEPA, 2006, Validation of Metals for the Contract Laboratory Program (CLP) based on SOW ILMO 5.3 (SOP Revision 13), SOP # HW-2, Rev. 13.
Gen Chemistry	NYSDEC, 2005, Analytical Services Protocols (ASP)
VOCs (Ambient air)	USEPA, 2006, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canister by Method TO-15; SOP # HW-31, Rev. 4.

TABLE 4-2

QUALITY CONTROL CRITERIA USED FOR VALIDATING
LABORATORY ANALYTICAL DATA

VOCs	SVOCs	Pesticides/PCBs	Metals	Gen Chemistry	Method TO-15
Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg
Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition
Holding Time	Holding Time	Holding Time	Holding Time	Holding Times	Holding Time
System Monitoring Compounds	Surrogate Recoveries	Surrogate Recoveries	Initial/Continuing Calibration	Calibration	Canister Certification
Lab Control Sample	Lab Control Sample	Matrix Spikes	CRDL Standards	Lab Control Samples	Lab Control Sample
Matrix Spikes	Matrix Spikes	Blanks	Blanks	Blanks	Instrument Tuning
Blanks	Blanks	Instrument Calibration & Verification	Interference Check Sample	Spike Recoveries	Blanks
Instrument Tuning	Instrument Tuning	Analyte ID	Spike Recoveries	Lab Duplicates	Initial Calibration & System Performance
Internal Standards	Internal Standards	Lab Qualifiers	Lab Duplicate		Daily Calibration
Initial Calibration	Initial Calibration	Field Duplicate	Lab Control Sample		Field Duplicate
Continuing Calibration	Continuing Calibration		ICP Serial Dilutions		
Lab Qualifiers	Lab Qualifiers		Lab Qualifiers		
Field Duplicate	Field Duplicate		Field Duplicate		

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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

JN The analyte is considered to be "presumptively present." The associated numerical value represents its *approximate* concentration.

The validated analytical results are attached to this report. Validation qualifiers (flags) are indicated using red ink. Data sheets having qualified data are signed and dated by the data reviewer.

6.0 RESULTS OF THE DATA REVIEW

The results of the data review are summarized in Tables 6-1 through 6-8. The tables list the samples where QC criteria were found to exceed acceptable limits and the actions taken to qualify the associated analytical results.

7.0 TOTAL USABLE DATA

For SDG 7067073, eleven samples were analyzed and results were reported for 1026 analytes. Eleven results were rejected. Even though some results were flagged with a "J" as estimated, all other results (99 %) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

Table 6-1 VOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
BH-16 (10-11) BH-18 (0-4)	All analytes	J -detects	Surrogate rec for 1,2-DCEd4 > QC limit	Detects are estimated
BH-14 (15-16)	Acetone Tetrachloroethene	J -detects	Matrix spike > QC limit	Detects are estimated
BH-14 (18-20)	Trichloroethene cis-1,2-Dichloroethene	J -detects	Lab Duplicate > 20 % RPD	Data is estimated
All samples	1,4-Dioxane	R	Initial calibration RRF < 0.005	Based on the new low responders rule from SOM2.1, the RRF <0.005 is used
~~BH-14 (18-20)~~ BH-14 (15-16) BH-18 (14-15)	Acetone	J -detects/UJ non-detects	CCV % D > QC limit	Data is estimated
BH-16 (10-11) BH-18 (0-4)	~~Acetone~~ ~~MEK~~ Carbon Tetrachloride Tetrachloroethene ~~1,1,1-Trichloroethane~~	J -detects/UJ non-detects	CCV % D > QC limit	Data is estimated
BH-19 (0-9) BH-15 (12-16) BH-21 (0-4) BH-20 (0-4) BH-20 (8-7) BMW-91 (24.2-25)	Acetone MEK	J -detects/UJ non-detects	CCV % D > QC limit	Data is estimated

Table 6-2 SVOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	Fluoranthene	J -detects/UJ non-detects	CCV % D > QC limit	Data is estimated
All samples	TICs detected in Method blank	TIC < 5X blank value, R TIC	Tentatively Identified Compounds were detected in the method blank	TICs were rejected

Table 6-3 Pesticides

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	4,4'-DDT 4,4'-DDD 4,4'-DDE	4,4'-DDT: J detects/UJ non-detects 4,4'-DDD and 4,4'-DDE: JN detects	PEM for 4,4'DDT > 20 %	Data is estimated
All samples	4,4'-DDT 4,4'-DDD 4,4'DDE	J -detects/UJ non-detects	CCV % D > 25 %QC limit	Data is estimated
BH-21 (0-4)	g-BHC a-Chlordane 4,4'-DDT Dieldrin	JN JN JN JN	>25 % D between dual column analysis	Matrix interference suspected

BH-20 (0-4)	b-BHC Endosulfan II Endosulfan Sulfate Endrin	JN JN JN JN	>25 % D between dual column analysis	Matrix interference suspected
BH-20 (0-4)	g-BHC a-Chlordane Dieldrin Heptachlor	JN JN JN J	>25 % D between dual column analysis	Matrix interference suspected
BH-20 (6-7)	4,4'-DDE 4,4'-DDT	JN JN	>25 % D between dual column analysis	Matrix interference suspected

Table 6-4 PCBs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
BH-16 (10-11)	PCB 1248	J	>25 % D between dual column analysis	Matrix interference suspected
BH-21 (0-4)	PCB 1248	J	>25 % D between dual column analysis	Matrix interference suspected
BH-20 (0-4)	PCB 1248	J	>25 % D between dual column analysis	Matrix interference suspected
BH-20 (6-7)	PCB 1248	J	>25 % D between dual column analysis	Matrix interference suspected

Table 6-5 Herbicides

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-6 Metals

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	Arsenic Manganese	none	Metals were detected in the method blank (MB) <PQL but >MDL	No data was affected

Table 6-7 TCN

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	TCN	UJ non-detect	Analyzed outside 14 day HT	Data should be considered estimated

Table 6-8 Hexavalent Chromium

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
BH-14 (18-20)	Cr+6	J -detects/UJ non-detects	Matrix spike rec < QC limit	Data should be considered estimated

ACRONYMS

BSP	Blank Spike
CCAL	Continuing Calibration
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
%D	Percent Difference
ICAL	Initial Calibration
ICB	Initial Calibration Blank
IS	Internal Standard
LCS	Laboratory Control Sample
MS/MSD	Matrix Spike/Matrix Spike Duplicate
QA	Quality Assurance
QC	Quality Control
%R	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
%RSD	Percent Relative Standard Deviation
TAL	Target Analyte List (metals)
TCL	Target Compound List (organics)

Appendix A

Validated Analytical Results



Analytical Data Package

Prepared by:

Pace Analytical Services

Pace Project No.: 7067073

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

December 21, 2018

Jason Brydges
BE3 Environmental
1270 Niagara St
Buffalo, NY 14213

RE: Project: 31 WATER ST
Pace Project No.: 7067073

Dear Jason Brydges:
Enclosed are the analytical results for sample(s) received by the laboratory on October 05, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Report revised 11/5 to include missing analytes

Report revised 12/21/18 with updated qualifiers

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Murphy
james.murphy@pacelabs.com
(518)860-9724
Project Manager

Enclosures

cc: Alex Brennen, BE3 Corp

NELAP ACCREDITED TNI LABORATORY

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE SUMMARY

Project: 31 WATER ST
Pace Project No.: 7067073

Lab ID	Sample ID	Matrix	Date Collected	Date Received
7067073001	BH-14 (18-20)	Solid	10/04/18 08:30	10/05/18 10:45
7067073002	BH-14 (15-16)	Solid	10/04/18 08:40	10/05/18 10:45
7067073003	BH-16 (10-11)	Solid	10/04/18 10:07	10/05/18 10:45
7067073004	BH-18 (0-4)	Solid	10/04/18 11:10	10/05/18 10:45
7067073005	BH-18 (14-15)	Solid	10/04/18 11:10	10/05/18 10:45
7067073006	BH-19 (0-9)	Solid	10/04/18 13:05	10/05/18 10:45
7067073007	BH-15 (12-16)	Solid	10/04/18 13:50	10/05/18 10:45
7067073008	BH-21 (0-4)	Solid	10/04/18 15:15	10/05/18 10:45
7067073009	BH-20 (0-4)	Solid	10/04/18 14:30	10/05/18 10:45
7067073010	BH-20 (6-7')	Solid	10/04/18 14:40	10/05/18 10:45
7067073011	BMW-91 (24.2-25)	Solid	10/04/18 15:15	10/05/18 10:45

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CHAIN-OF-CUSTODY Analytical Request Document

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Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- WO#: 7067073

AL 7067073

Container Preservative Type: JM2

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Company: BE3 Corp	Billing Information: ← Same
Address: 1270 Niagara St Buffalo, NY 14213	
Report To: Jason Brydges	Email To: Jbrydges@be3corp.com
Copy To: abrennen@be3corp.com	Site Collection Info/Address: 31 Water St.
Customer Project Name/Number: 31 WATER ST RI	State: NY County/City: Jamestown Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 716-249-6880 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order # : Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: Part 375 VOCs TIC	Part 375 Metals, PCB Pest, SVOCs	375 Herb	Lab Sample # / Comments:
BH-14 (18-20)	SO	G	10/14	0830				2	X	X		001
BH-14 (15-16)				0840				2	X	X		002
BH-16 (10-11')				1007				2	X	X	X	003
BH-18 (0-4)				1110				2	X	X	X	004
BH-18 (14-15)				1110				2	X	X		005
BH-19 (0-3)				1305				2	X	X		006
BH-15 (12-14)				1350				2	X	X		007
BH-21 (0-4)				1515				2	X	X	X	008
BH-20 (0-4)				1430				2	X	X		009
BH-20 (6-7')	↓	↓	↓	1440				2	X	X		010

Lab Profile/Line:

Lab Sample Receipt Checklist:	
Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips: _____	
Sample pH Acceptable	Y N NA
pH Strips: _____	
Sulfide Present	Y N NA
Lead Acetate Strips: _____	

LAB USE ONLY:

Customer Remarks / Special Conditions / Possible Hazards:

BMW-01 (24.2-25) @ 1515

375 VOC, 375 INORG + ORG

~~NOT~~ HERBS

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: Bubble bags

Radchem sample(s) screened (<500 cpm): Y N (NA)

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 8119 2993 7851

Samples received via: (FEDEX) UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: _____

Cooler 1 Temp Upon Receipt: __oC

Cooler 1 Therm Corr. Factor: __oC

Cooler 1 Corrected Temp: _____oC

Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	MTJL LAB USE ONLY
	10/14 1700		10/18 1045	Table #:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	PM: PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Date: December 21, 2018

MS (Lab ID: 396127)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

MSD (Lab ID: 396128)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-14 (18-20) (Lab ID: 7067073001)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-14 (15-16) (Lab ID: 7067073002)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-16 (10-11) (Lab ID: 7067073003)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-18 (0-4) (Lab ID: 7067073004)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-18 (14-15) (Lab ID: 7067073005)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-19 (0-9) (Lab ID: 7067073006)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

BH-15 (12-16) (Lab ID: 7067073007)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-20 (0-4) (Lab ID: 7067073009)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-20 (6-7') (Lab ID: 7067073010)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BMW-91 (24.2-25) (Lab ID: 7067073011)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix

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(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 8081B
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: December 21, 2018

General Information:
11 samples were analyzed for EPA 8081B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86092

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-14 (15-16) (Lab ID: 7067073002)
  - Decachlorobiphenyl (S)
- BH-14 (18-20) (Lab ID: 7067073001)
  - Decachlorobiphenyl (S)
- BH-15 (12-16) (Lab ID: 7067073007)
  - 4,4'-DDE
- BH-16 (10-11) (Lab ID: 7067073003)
  - Decachlorobiphenyl (S)
- BH-18 (0-4) (Lab ID: 7067073004)
  - Decachlorobiphenyl (S)
- BH-18 (14-15) (Lab ID: 7067073005)
  - Decachlorobiphenyl (S)
- BH-19 (0-9) (Lab ID: 7067073006)
  - Decachlorobiphenyl (S)
- BH-20 (6-7') (Lab ID: 7067073010)
  - 4,4'-DDE
- BMW-91 (24.2-25) (Lab ID: 7067073011)
  - Decachlorobiphenyl (S)
- LCS (Lab ID: 396090)
  - Decachlorobiphenyl (S)
- MS (Lab ID: 396127)
  - 4,4'-DDD
  - 4,4'-DDE
  - Dieldrin
  - delta-BHC
- MSD (Lab ID: 396128)
  - 4,4'-DDD

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 8081B
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: December 21, 2018

QC Batch: 86092

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
- 4,4'-DDE
- Dieldrin
- delta-BHC

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
- BH-14 (15-16) (Lab ID: 7067073002)
  - 4,4'-DDT
- BH-14 (18-20) (Lab ID: 7067073001)
  - 4,4'-DDT
- BH-15 (12-16) (Lab ID: 7067073007)
  - 4,4'-DDT
  - Heptachlor
- BH-16 (10-11) (Lab ID: 7067073003)
  - 4,4'-DDT
- BH-18 (0-4) (Lab ID: 7067073004)
  - 4,4'-DDT
- BH-18 (14-15) (Lab ID: 7067073005)
  - 4,4'-DDT
- BH-19 (0-9) (Lab ID: 7067073006)
  - 4,4'-DDT
- BH-20 (6-7') (Lab ID: 7067073010)
  - 4,4'-DDT
- BLANK (Lab ID: 396089)
  - 4,4'-DDT
- BMW-91 (24.2-25) (Lab ID: 7067073011)
  - 4,4'-DDT
- MS (Lab ID: 396127)
  - 4,4'-DDT
- MSD (Lab ID: 396128)
  - 4,4'-DDT

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 86092

S0: Surrogate recovery outside laboratory control limits.
- BH-15 (12-16) (Lab ID: 7067073007)
  - Decachlorobiphenyl (S)
- BH-20 (0-4) (Lab ID: 7067073009)
  - Decachlorobiphenyl (S)
- BH-20 (6-7') (Lab ID: 7067073010)
  - Decachlorobiphenyl (S)
- MS (Lab ID: 396127)
  - Decachlorobiphenyl (S)
- MSD (Lab ID: 396128)

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Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 8081B
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: December 21, 2018

QC Batch: 86092

S0: Surrogate recovery outside laboratory control limits.
- Decachlorobiphenyl (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86092

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067135003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 396127)
  - 4,4'-DDD
  - 4,4'-DDE
  - 4,4'-DDT
  - Aldrin
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endosulfan sulfate
  - Heptachlor
  - alpha-Chlordane
  - delta-BHC
  - gamma-BHC (Lindane)
- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - 4,4'-DDE
  - 4,4'-DDT
  - Aldrin
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endrin
  - Heptachlor
  - alpha-BHC
  - alpha-Chlordane
  - beta-BHC
  - delta-BHC
  - gamma-BHC (Lindane)

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 8081B
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: December 21, 2018

QC Batch: 86092

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067135003

R1: RPD value was outside control limits.

- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - 4,4'-DDE
  - 4,4'-DDT
  - Aldrin
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endosulfan sulfate
  - Endrin
  - Heptachlor
  - alpha-BHC
  - alpha-Chlordane
  - beta-BHC
  - delta-BHC
  - gamma-BHC (Lindane)

Additional Comments:

Analyte Comments:

QC Batch: 86092

1j: Surrogate recovery high due to unresolved interferences.

- BH-15 (12-16) (Lab ID: 7067073007)
  - Decachlorobiphenyl (S)
- BH-20 (0-4) (Lab ID: 7067073009)
  - Decachlorobiphenyl (S)
- BH-20 (6-7') (Lab ID: 7067073010)
  - Decachlorobiphenyl (S)

C2: Relative percent difference between results from each column was greater than 40%. The lower of the two results was reported.

- BH-20 (0-4) (Lab ID: 7067073009)
  - beta-BHC
  - gamma-BHC (Lindane)
  - alpha-Chlordane
  - Dieldrin
  - Endosulfan II
  - Endrin
  - Endosulfan sulfate
- BH-20 (6-7') (Lab ID: 7067073010)
  - 4,4'-DDE
  - 4,4'-DDT
- BH-21 (0-4) (Lab ID: 7067073008)
  - 4,4'-DDT

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: December 21, 2018

Analyte Comments:

QC Batch: 86092

C2: Relative percent difference between results from each column was greater than 40%. The lower of the two results was reported.

- BH-21 (0-4) (Lab ID: 7067073008)
  - gamma-BHC (Lindane)
  - alpha-Chlordane
  - Dieldrin
- MS (Lab ID: 396127)
  - 4,4'-DDD
  - Aldrin
  - beta-BHC
  - delta-BHC
  - gamma-BHC (Lindane)
  - alpha-Chlordane
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endrin
  - Endosulfan sulfate
- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - Aldrin
  - alpha-BHC
  - beta-BHC
  - delta-BHC
  - gamma-BHC (Lindane)
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endrin
  - Endosulfan sulfate
  - Heptachlor

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- BH-15 (12-16) (Lab ID: 7067073007)
  - Decachlorobiphenyl (S)
- BH-20 (0-4) (Lab ID: 7067073009)
  - Decachlorobiphenyl (S)
- BH-20 (6-7') (Lab ID: 7067073010)
  - Decachlorobiphenyl (S)
- MS (Lab ID: 396127)
  - 4,4'-DDE
  - 4,4'-DDT
  - Decachlorobiphenyl (S)
  - Aldrin
  - gamma-BHC (Lindane)

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 8081B
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: December 21, 2018

Analyte Comments:

QC Batch: 86092

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 396127)
  - alpha-Chlordane
  - Dieldrin
  - Endosulfan I
  - Heptachlor
- MSD (Lab ID: 396128)
  - 4,4'-DDD
  - 4,4'-DDE
  - 4,4'-DDT
  - Decachlorobiphenyl (S)
  - Aldrin
  - beta-BHC
  - delta-BHC
  - gamma-BHC (Lindane)
  - alpha-Chlordane
  - Dieldrin
  - Endosulfan I
  - Endosulfan II
  - Endrin
  - Heptachlor

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 8082A
Description: 8082 GCS PCB
Client: BE3 Environmental
Date: December 21, 2018

General Information:
11 samples were analyzed for EPA 8082A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 86094

C2: Relative percent difference between results from each column was greater than 40%. The lower of the two results was reported.

- BH-16 (10-11) (Lab ID: 7067073003)
  - PCB-1248 (Aroclor 1248)
- BH-20 (0-4) (Lab ID: 7067073009)
  - PCB-1248 (Aroclor 1248)

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 8151A
Description: 8151 Chlorinated Herbicides
Client: BE3 Environmental
Date: December 21, 2018

General Information:
3 samples were analyzed for EPA 8151A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 8151A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 6010C
Description: 6010 MET ICP
Client: BE3 Environmental
Date: December 21, 2018

General Information:
11 samples were analyzed for EPA 6010C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 85986

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.
- DUP (Lab ID: 395657)
  - Copper
  - Manganese

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 7471B
Description: 7471 Mercury
Client: BE3 Environmental
Date: December 21, 2018

General Information:
11 samples were analyzed for EPA 7471B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7471B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8270D**
Description: 8270 MSSV
Client: BE3 Environmental
Date: December 21, 2018

General Information:
11 samples were analyzed for EPA 8270D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3545A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86032

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-14 (15-16) (Lab ID: 7067073002)
  - 2-Fluorophenol (S)
- BH-14 (18-20) (Lab ID: 7067073001)
  - 2-Fluorophenol (S)
- BH-15 (12-16) (Lab ID: 7067073007)
  - 2-Fluorophenol (S)
- BH-16 (10-11) (Lab ID: 7067073003)
  - 2-Fluorophenol (S)
- BH-18 (0-4) (Lab ID: 7067073004)
  - 2-Fluorophenol (S)
- BH-18 (14-15) (Lab ID: 7067073005)
  - 2-Fluorophenol (S)
- BH-19 (0-9) (Lab ID: 7067073006)
  - 2-Fluorophenol (S)
- BH-20 (0-4) (Lab ID: 7067073009)
  - 2-Fluorophenol (S)
  - Fluoranthene
- BH-20 (6-7') (Lab ID: 7067073010)
  - 2-Fluorophenol (S)
  - Fluoranthene
- BH-21 (0-4) (Lab ID: 7067073008)
  - 2-Fluorophenol (S)
  - Fluoranthene
- BLANK (Lab ID: 395824)
  - 2-Fluorophenol (S)
- BMW-91 (24.2-25) (Lab ID: 7067073011)
  - 2-Fluorophenol (S)

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 8270D
Description: 8270 MSSV
Client: BE3 Environmental
Date: December 21, 2018

QC Batch: 86032

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
- LCS (Lab ID: 395825)
  - 2-Fluorophenol (S)
  - Fluoranthene
- MS (Lab ID: 395866)
  - 2-Fluorophenol (S)
  - Fluoranthene
- MSD (Lab ID: 395867)
  - 2-Fluorophenol (S)
  - Fluoranthene

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 86032

S0: Surrogate recovery outside laboratory control limits.
- BH-19 (0-9) (Lab ID: 7067073006)
  - 2-Fluorophenol (S)
- MS (Lab ID: 395866)
  - Nitrobenzene-d5 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8260C**
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: December 21, 2018

General Information:
8 samples were analyzed for EPA 8260C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A-L with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86669

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-18 (0-4) (Lab ID: 7067073004)
  - Tetrachloroethene
- DUP (Lab ID: 398792)
  - Acetone
- LCS (Lab ID: 398789)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride
  - Tetrachloroethene
- MS (Lab ID: 401714)
  - 1,1,1-Trichloroethane
  - 1,2,4-Trichlorobenzene
  - 2-Butanone (MEK)
  - Acetone
  - Carbon tetrachloride
  - Tetrachloroethene

QC Batch: 87239

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- BH-15 (12-16) (Lab ID: 7067073007)
  - Acetone
- BH-19 (0-9) (Lab ID: 7067073006)
  - 2-Butanone (MEK)
  - Acetone
- BH-20 (0-4) (Lab ID: 7067073009)

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8260C**
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: December 21, 2018

QC Batch: 87239

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
- 2-Butanone (MEK)
- Acetone
- BH-20 (6-7') (Lab ID: 7067073010)
  - 2-Butanone (MEK)
  - Acetone
- LCS (Lab ID: 401843)
  - 2-Butanone (MEK)
  - Acetone
- MS (Lab ID: 401844)
  - 2-Butanone (MEK)
  - Acetone

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
- BLANK (Lab ID: 401842)
  - Chlorodifluoromethane
- BMW-91 (24.2-25) (Lab ID: 7067073011)
  - Chlorodifluoromethane
- DUP (Lab ID: 401845)
  - Chlorodifluoromethane
- LCS (Lab ID: 401843)
  - Chlorodifluoromethane
- MS (Lab ID: 401844)
  - Chlorodifluoromethane

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 86669

S1: Surrogate recovery outside laboratory control limits (confirmed by re-analysis).
- BH-16 (10-11) (Lab ID: 7067073003)
  - 1,2-Dichloroethane-d4 (S)
- DUP (Lab ID: 398792)
  - 1,2-Dichloroethane-d4 (S)

S7: Surrogate recovery outside control limits (not confirmed by re-analysis).
- BH-18 (0-4) (Lab ID: 7067073004)
  - 1,2-Dichloroethane-d4 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 8260C**
Description: 8260C MSV 5035A-L Low Level
Client: BE3 Environmental
Date: December 21, 2018

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 87239

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 401843)
  - n-Butylbenzene
  - n-Propylbenzene
  - sec-Butylbenzene

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 86669

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 398792)
  - Acetone
  - Methylene Chloride
  - Trichloroethene
  - Xylene (Total)
  - o-Xylene

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 8260C
Description: 8260 MSV 5035A-H Med Level
Client: BE3 Environmental
Date: December 21, 2018

General Information:
3 samples were analyzed for EPA 8260C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A-H/5030C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86646

IH: This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.

- LCS (Lab ID: 398743)
  - Acetone
- MS (Lab ID: 401911)
  - Acetone

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 86646

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 398743)
  - 1,4-Dioxane (p-Dioxane)
- MS (Lab ID: 401911)
  - 1,4-Dioxane (p-Dioxane)

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BH-14 (15-16) (Lab ID: 7067073002)
  - 2-Butanone (MEK)
- BH-14 (18-20) (Lab ID: 7067073001)
  - 2-Butanone (MEK)
- BH-18 (14-15) (Lab ID: 7067073005)
  - Acetone
- BLANK (Lab ID: 398742)
  - 2-Butanone (MEK)
- DUP (Lab ID: 401910)
  - 2-Butanone (MEK)
- LCS (Lab ID: 398743)
  - 2-Butanone (MEK)
- MS (Lab ID: 401911)
  - 2-Butanone (MEK)

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 8260C
Description: 8260 MSV 5035A-H Med Level
Client: BE3 Environmental
Date: December 21, 2018

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 86646

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067073002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 401911)
  - Tetrachloroethene
  - cis-1,2-Dichloroethene

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 86646

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 401910)
  - Trichloroethene
  - cis-1,2-Dichloroethene

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 8260
Description: TIC MSV Soil
Client: BE3 Environmental
Date: December 21, 2018

General Information:
10 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: EPA 7196A
Description: 7196 Chromium, Hexavalent
Client: BE3 Environmental
Date: December 21, 2018

General Information:
11 samples were analyzed for EPA 7196A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3060A with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 89634

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 7067073001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 412557)
  - Chromium, Hexavalent

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
- MS (Lab ID: 412559)
  - Chromium, Hexavalent

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **Trivalent Chromium Calculation**
Description: Trivalent Chromium Calculation
Client: BE3 Environmental
Date: December 21, 2018

General Information:
11 samples were analyzed for Trivalent Chromium Calculation. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 9014 Total Cyanide**
Description: 9014 Cyanide, Total
Client: BE3 Environmental
Date: December 21, 2018

General Information:
11 samples were analyzed for EPA 9014 Total Cyanide. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.
- BH-14 (15-16) (Lab ID: 7067073002)
- BH-14 (18-20) (Lab ID: 7067073001)
- BH-15 (12-16) (Lab ID: 7067073007)
- BH-16 (10-11) (Lab ID: 7067073003)
- BH-18 (0-4) (Lab ID: 7067073004)
- BH-18 (14-15) (Lab ID: 7067073005)
- BH-19 (0-9) (Lab ID: 7067073006)
- BH-20 (0-4) (Lab ID: 7067073009)
- BH-20 (6-7') (Lab ID: 7067073010)
- BH-21 (0-4) (Lab ID: 7067073008)
- BMW-91 (24.2-25) (Lab ID: 7067073011)

H2: Extraction or preparation conducted outside EPA method holding time.
- BH-14 (15-16) (Lab ID: 7067073002)
- BH-14 (18-20) (Lab ID: 7067073001)
- BH-15 (12-16) (Lab ID: 7067073007)
- BH-16 (10-11) (Lab ID: 7067073003)
- BH-18 (0-4) (Lab ID: 7067073004)
- BH-18 (14-15) (Lab ID: 7067073005)
- BH-19 (0-9) (Lab ID: 7067073006)
- BH-20 (0-4) (Lab ID: 7067073009)
- BH-20 (6-7') (Lab ID: 7067073010)
- BH-21 (0-4) (Lab ID: 7067073008)
- BMW-91 (24.2-25) (Lab ID: 7067073011)

Sample Preparation:
The samples were prepared in accordance with EPA 9010C with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 9014 Total Cyanide**
Description: 9014 Cyanide, Total
Client: BE3 Environmental
Date: December 21, 2018

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BH-14 (18-20)

Lab Name: Pace Analytical - New York

Contract: 31 WATER ST

Date Received: 10/05/2018 10:45

Matrix: Solid SDG No.: 7067073

Date Extracted: 10/11/2018 08:40

Lab Sample ID: 7067073001

Date Analyzed: 10/11/2018 15:58

Lab File ID: 101118.B\J49628.D

Initial wt/vol: 5.53 g Final wt/vol: 5 mL Dilution: 0.98

Instrument: 70MSV6 Percent Moisture: 17.6%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone		<107 UJ	U
71-43-2	Benzene		<107	U
78-93-3	2-Butanone (MEK)		<107	U
104-51-8	n-Butylbenzene		<107	U
135-98-8	sec-Butylbenzene		<107	U
98-06-6	tert-Butylbenzene		<107	U
56-23-5	Carbon tetrachloride		<107	U
108-90-7	Chlorobenzene		<107	U
67-66-3	Chloroform		<107	U
95-50-1	1,2-Dichlorobenzene		<107	U
541-73-1	1,3-Dichlorobenzene		<107	U
106-46-7	1,4-Dichlorobenzene		<107	U
75-34-3	1,1-Dichloroethane		<107	U
107-06-2	1,2-Dichloroethane		<107	U
75-35-4	1,1-Dichloroethene		<107	U
156-59-2	cis-1,2-Dichloroethene		789	
156-60-5	trans-1,2-Dichloroethene		<107	U
123-91-1	1,4-Dioxane (p-Dioxane)		~~<2680~~ R	U
100-41-4	Ethylbenzene		<107	U
75-09-2	Methylene Chloride		<107	U
1634-04-4	Methyl-tert-butyl ether		<107	U
103-65-1	n-Propylbenzene		<107	U
127-18-4	Tetrachloroethene		<107	U
108-88-3	Toluene		<107	U
71-55-6	1,1,1-Trichloroethane		<107	U
79-01-6	Trichloroethene		325 J	
95-63-6	1,2,4-Trimethylbenzene		<107	U
108-67-8	1,3,5-Trimethylbenzene		<107	U
75-01-4	Vinyl chloride		<107	U
1330-20-7	Xylene (Total)		<215	U
179601-23-1	m&p-Xylene		<215	U
95-47-6	o-Xylene		<107	U

11/29/2018 9:00

MKP 1/8/19

SAMPLE NO.

BH-14 (15-16)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York | Contract: 31 WATER ST

Date Received: 10/05/2018 10:45 | Matrix: Solid | SDG No.: 7067073

Date Extracted: 10/11/2018 08:40 | Lab Sample ID: 7067073002

Date Analyzed: 10/11/2018 16:16 | Lab File ID: 101118.B\J49629.D

Initial wt/vol: 5.36 g | Final wt/vol: 5 mL | Dilution: 0.95 | Instrument: 70MSV6 | Percent Moisture: 25.6%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<119 UJ	U
71-43-2	Benzene	<119	U
78-93-3	2-Butanone (MEK)	<119	U
104-51-8	n-Butylbenzene	<119	U
135-98-8	sec-Butylbenzene	<119	U
98-06-6	tert-Butylbenzene	<119	U
56-23-5	Carbon tetrachloride	<119	U
108-90-7	Chlorobenzene	<119	U
67-66-3	Chloroform	<119	U
95-50-1	1,2-Dichlorobenzene	<119	U
541-73-1	1,3-Dichlorobenzene	<119	U
106-46-7	1,4-Dichlorobenzene	<119	U
75-34-3	1,1-Dichloroethane	<119	U
107-06-2	1,2-Dichloroethane	<119	U
75-35-4	1,1-Dichloroethene	<119	U
156-59-2	cis-1,2-Dichloroethene	3380	
156-60-5	trans-1,2-Dichloroethene	<119	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<2980~~ R	U
100-41-4	Ethylbenzene	<119	U
75-09-2	Methylene Chloride	<119	U
1634-04-4	Methyl-tert-butyl ether	<119	U
103-65-1	n-Propylbenzene	<119	U
127-18-4	Tetrachloroethene	<119	U
108-88-3	Toluene	138	
71-55-6	1,1,1-Trichloroethane	<119	U
79-01-6	Trichloroethene	<119	U
95-63-6	1,2,4-Trimethylbenzene	<119	U
108-67-8	1,3,5-Trimethylbenzene	<119	U
75-01-4	Vinyl chloride	122	
1330-20-7	Xylene (Total)	<238	U
179601-23-1	m&p-Xylene	<238	U
95-47-6	o-Xylene	<119	U

SAMPLE NO.

BH-16 (10-11)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073

Date Extracted: 10/11/2018 08:27
Lab Sample ID: 7067073003

Date Analyzed: 10/11/2018 15:51
Lab File ID: 101118.B\F91221.D

Initial wt/vol: 1.32 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV4 Percent Moisture: 22.3%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg		Q
67-64-1	Acetone		<9.8	UJ	U
71-43-2	Benzene		<9.8		U
78-93-3	2-Butanone (MEK)		<9.8	UJ	U
104-51-8	n-Butylbenzene		<9.8		U
135-98-8	sec-Butylbenzene		<9.8		U
98-06-6	tert-Butylbenzene		<9.8		U
56-23-5	Carbon tetrachloride		<9.8		U
108-90-7	Chlorobenzene		<9.8		U
67-66-3	Chloroform		<9.8		U
95-50-1	1,2-Dichlorobenzene		<9.8		U
541-73-1	1,3-Dichlorobenzene		<9.8		U
106-46-7	1,4-Dichlorobenzene		<9.8		U
75-34-3	1,1-Dichloroethane		<9.8		U
107-06-2	1,2-Dichloroethane		<9.8		U
75-35-4	1,1-Dichloroethene		<9.8		U
156-59-2	cis-1,2-Dichloroethene		60.2	J	
156-60-5	trans-1,2-Dichloroethene		<9.8		U
123-91-1	1,4-Dioxane (p-Dioxane)		~~<244~~	R	U
100-41-4	Ethylbenzene		<9.8		U
75-09-2	Methylene Chloride		<9.8		U
1634-04-4	Methyl-tert-butyl ether		<9.8		U
103-65-1	n-Propylbenzene		<9.8		U
127-18-4	Tetrachloroethene		<9.8	UJ	U
108-88-3	Toluene		<9.8		U
120-82-1	1,2,4-Trichlorobenzene		<9.8		U
71-55-6	1,1,1-Trichloroethane		<9.8	UJ	U
79-01-6	Trichloroethene		180	J	
95-63-6	1,2,4-Trimethylbenzene		<9.8		U
108-67-8	1,3,5-Trimethylbenzene		<9.8		U
75-01-4	Vinyl chloride		<9.8		U
1330-20-7	Xylene (Total)		<19.5		U

11/29/2018 9:01

MM 1/9/19

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BH-18 (0-4)

Lab Name: Pace Analytical - New York

Contract: 31 WATER ST

Date Received: 10/05/2018 10:45

Matrix: Solid SDG No.: 7067073

Date Extracted: 10/11/2018 08:27

Lab Sample ID: 7067073004

Date Analyzed: 10/11/2018 16:15

Lab File ID: 101118.B\F91222.D

Initial wt/vol: 3.13 g Final wt/vol: 5 mL Dilution: 1

Instrument: 70MSV4 Percent Moisture: 9.9%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<3.5 UJ	U
71-43-2	Benzene	<3.5	U
78-93-3	2-Butanone (MEK)	<3.5 UJ	U
104-51-8	n-Butylbenzene	<3.5	U
135-98-8	sec-Butylbenzene	<3.5	U
98-06-6	tert-Butylbenzene	<3.5	U
56-23-5	Carbon tetrachloride	<3.5 UJ	U
108-90-7	Chlorobenzene	<3.5	U
67-66-3	Chloroform	<3.5	U
95-50-1	1,2-Dichlorobenzene	<3.5	U
541-73-1	1,3-Dichlorobenzene	<3.5	U
106-46-7	1,4-Dichlorobenzene	<3.5	U
75-34-3	1,1-Dichloroethane	<3.5	U
107-06-2	1,2-Dichloroethane	<3.5	U
75-35-4	1,1-Dichloroethene	<3.5	U
156-59-2	cis-1,2-Dichloroethene	<3.5	U
156-60-5	trans-1,2-Dichloroethene	<3.5	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<88.7~~ R	U
100-41-4	Ethylbenzene	<3.5	U
75-09-2	Methylene Chloride	<3.5	U
1634-04-4	Methyl-tert-butyl ether	<3.5	U
103-65-1	n-Propylbenzene	<3.5	U
127-18-4	Tetrachloroethene	3.6 UJ	
108-88-3	Toluene	<3.5	U
120-82-1	1,2,4-Trichlorobenzene	<3.5	U
71-55-6	1,1,1-Trichloroethane	<3.5 UJ	U
79-01-6	Trichloroethene	21.0	
95-63-6	1,2,4-Trimethylbenzene	<3.5	U
108-67-8	1,3,5-Trimethylbenzene	<3.5	U
75-01-4	Vinyl chloride	<3.5	U
1330-20-7	Xylene (Total)	<7.1	U
179601-23-1	m&p-Xylene	<7.1	U
95-47-6	o-Xylene	<3.5	U

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BH-18 (14-15)

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/11/2018 08:40
Lab Sample ID: 7067073005
Date Analyzed: 10/11/2018 17:23
Lab File ID: 101118.B\J49630.D
Initial wt/vol: 5.02 g Final wt/vol: 5 mL Dilution: 0.97
Instrument: 70MSV6 Percent Moisture: 16.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<116 UJ	U
71-43-2	Benzene	<116	U
78-93-3	2-Butanone (MEK)	<116	U
104-51-8	n-Butylbenzene	<116	U
135-98-8	sec-Butylbenzene	<116	U
98-06-6	tert-Butylbenzene	<116	U
56-23-5	Carbon tetrachloride	<116	U
108-90-7	Chlorobenzene	<116	U
67-66-3	Chloroform	<116	U
95-50-1	1,2-Dichlorobenzene	<116	U
541-73-1	1,3-Dichlorobenzene	<116	U
106-46-7	1,4-Dichlorobenzene	<116	U
75-34-3	1,1-Dichloroethane	<116	U
107-06-2	1,2-Dichloroethane	<116	U
75-35-4	1,1-Dichloroethene	<116	U
156-59-2	cis-1,2-Dichloroethene	5020	
156-60-5	trans-1,2-Dichloroethene	<116	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<2900~~ R	U
100-41-4	Ethylbenzene	<116	U
75-09-2	Methylene Chloride	<116	U
1634-04-4	Methyl-tert-butyl ether	<116	U
103-65-1	n-Propylbenzene	<116	U
127-18-4	Tetrachloroethene	<116	U
108-88-3	Toluene	<116	U
71-55-6	1,1,1-Trichloroethane	<116	U
95-63-6	1,2,4-Trimethylbenzene	<116	U
108-67-8	1,3,5-Trimethylbenzene	<116	U
75-01-4	Vinyl chloride	<116	U
1330-20-7	Xylene (Total)	<232	U
179601-23-1	m&p-Xylene	<232	U
95-47-6	o-Xylene	<116	U

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BH-18 (14-15)

Lab Name: Pace Analytical - New York

Contract: 31 WATER ST

Date Received: 10/05/2018 10:45

Matrix: Solid SDG No.: 7067073

Date Extracted: 10/11/2018 08:40

Lab Sample ID: 7067073005

Date Analyzed: 10/11/2018 17:45

Lab File ID: 101118.B\J49631.D

Initial wt/vol: 5.02 g Final wt/vol: 5 mL Dilution: 9.7

Instrument: 70MSV6 Percent Moisture: 16.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
79-01-6	Trichloroethene	29200	

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BH-19 (0-9)

Lab Name: Pace Analytical - New York

Date Received: 10/05/2018 10:45

Date Extracted: 10/15/2018 14:13

Date Analyzed: 10/16/2018 03:00

Initial wt/vol: 1.4 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST

Matrix: Solid SDG No.: 7067073

Lab Sample ID: 7067073006

Lab File ID: 101518.B\F91271.D

Instrument: 70MSV4 Percent Moisture: 8.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<7.8 UJ	U
71-43-2	Benzene	<7.8	U
78-93-3	2-Butanone (MEK)	<7.8 UJ	U
104-51-8	n-Butylbenzene	<7.8	U
135-98-8	sec-Butylbenzene	<7.8	U
98-06-6	tert-Butylbenzene	<7.8	U
56-23-5	Carbon tetrachloride	<7.8	U
108-90-7	Chlorobenzene	<7.8	U
67-66-3	Chloroform	<7.8	U
95-50-1	1,2-Dichlorobenzene	<7.8	U
541-73-1	1,3-Dichlorobenzene	<7.8	U
106-46-7	1,4-Dichlorobenzene	<7.8	U
75-34-3	1,1-Dichloroethane	<7.8	U
107-06-2	1,2-Dichloroethane	<7.8	U
75-35-4	1,1-Dichloroethene	<7.8	U
156-59-2	cis-1,2-Dichloroethene	<7.8	U
156-60-5	trans-1,2-Dichloroethene	<7.8	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<195~~ R	U
100-41-4	Ethylbenzene	<7.8	U
75-09-2	Methylene Chloride	<7.8	U
1634-04-4	Methyl-tert-butyl ether	<7.8	U
103-65-1	n-Propylbenzene	<7.8	U
127-18-4	Tetrachloroethene	<7.8	U
108-88-3	Toluene	<7.8	U
120-82-1	1,2,4-Trichlorobenzene	<7.8	U
71-55-6	1,1,1-Trichloroethane	<7.8	U
79-01-6	Trichloroethene	<7.8	U
95-63-6	1,2,4-Trimethylbenzene	<7.8	U
108-67-8	1,3,5-Trimethylbenzene	<7.8	U
75-01-4	Vinyl chloride	<7.8	U
1330-20-7	Xylene (Total)	<15.6	U
179601-23-1	m&p-Xylene	<15.6	U
95-47-6	o-Xylene	<7.8	U

11/29/2018 9:00

MKP 1/8/19

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BH-15 (12-16)

Lab Name: Pace Analytical - New York

Contract: 31 WATER ST

Date Received: 10/05/2018 10:45

Matrix: Solid SDG No.: 7067073

Date Extracted: 10/15/2018 14:13

Lab Sample ID: 7067073007

Date Analyzed: 10/16/2018 01:19

Lab File ID: 101518.B\F91267.D

Initial wt/vol: 1.18 g Final wt/vol: 5 mL Dilution: 1

Instrument: 70MSV4 Percent Moisture: 30.8%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone		62.4 J	
71-43-2	Benzene		<12.3	U
78-93-3	2-Butanone (MEK)		<12.3 UJ	U
104-51-8	n-Butylbenzene		263	
135-98-8	sec-Butylbenzene		122	
98-06-6	tert-Butylbenzene		<12.3	U
56-23-5	Carbon tetrachloride		<12.3	U
108-90-7	Chlorobenzene		<12.3	U
67-66-3	Chloroform		<12.3	U
95-50-1	1,2-Dichlorobenzene		<12.3	U
541-73-1	1,3-Dichlorobenzene		<12.3	U
106-46-7	1,4-Dichlorobenzene		<12.3	U
75-34-3	1,1-Dichloroethane		<12.3	U
107-06-2	1,2-Dichloroethane		<12.3	U
75-35-4	1,1-Dichloroethene		6.3	J
156-59-2	cis-1,2-Dichloroethene		41.5	
156-60-5	trans-1,2-Dichloroethene		<12.3	U
123-91-1	1,4-Dioxane (p-Dioxane)		~~<306~~ R	U
100-41-4	Ethylbenzene		20.2	
75-09-2	Methylene Chloride		<12.3	U
1634-04-4	Methyl-tert-butyl ether		<12.3	U
103-65-1	n-Propylbenzene		73.4	
127-18-4	Tetrachloroethene		7.8	J
108-88-3	Toluene		6.3	J
120-82-1	1,2,4-Trichlorobenzene		<12.3	U
71-55-6	1,1,1-Trichloroethane		<12.3	U
79-01-6	Trichloroethene		164	
95-63-6	1,2,4-Trimethylbenzene		412	
108-67-8	1,3,5-Trimethylbenzene		250	
75-01-4	Vinyl chloride		41.1	
1330-20-7	Xylene (Total)		51.8	
179601-23-1	m&p-Xylene		27.8	
95-47-6	o-Xylene		24.0	

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BH-21 (0-4)

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073

Date Extracted: 10/15/2018 14:13
Lab Sample ID: 7067073008

Date Analyzed: 10/16/2018 01:44
Lab File ID: 101518.B\F91268.D

Initial wt/vol: 2.09 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV4 Percent Moisture: 14.3%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone		<5.6 UJ	U
71-43-2	Benzene		<5.6	U
78-93-3	2-Butanone (MEK)		<5.6 UJ	U
104-51-8	n-Butylbenzene		<5.6	U
135-98-8	sec-Butylbenzene		<5.6	U
98-06-6	tert-Butylbenzene		<5.6	U
56-23-5	Carbon tetrachloride		<5.6	U
108-90-7	Chlorobenzene		<5.6	U
67-66-3	Chloroform		<5.6	U
95-50-1	1,2-Dichlorobenzene		<5.6	U
541-73-1	1,3-Dichlorobenzene		<5.6	U
106-46-7	1,4-Dichlorobenzene		<5.6	U
75-34-3	1,1-Dichloroethane		<5.6	U
107-06-2	1,2-Dichloroethane		<5.6	U
75-35-4	1,1-Dichloroethene		<5.6	U
156-59-2	cis-1,2-Dichloroethene		9.3	
156-60-5	trans-1,2-Dichloroethene		<5.6	U
123-91-1	1,4-Dioxane (p-Dioxane)		<~~140~~ K	U
100-41-4	Ethylbenzene		<5.6	U
75-09-2	Methylene Chloride		12.3	
1634-04-4	Methyl-tert-butyl ether		<5.6	U
103-65-1	n-Propylbenzene		<5.6	U
127-18-4	Tetrachloroethene		<5.6	U
108-88-3	Toluene		<5.6	U
120-82-1	1,2,4-Trichlorobenzene		<5.6	U
71-55-6	1,1,1-Trichloroethane		<5.6	U
79-01-6	Trichloroethene		365	
95-63-6	1,2,4-Trimethylbenzene		4.1	J
108-67-8	1,3,5-Trimethylbenzene		<5.6	U
75-01-4	Vinyl chloride		<5.6	U
1330-20-7	Xylene (Total)		<11.2	U
179601-23-1	m&p-Xylene		<11.2	U
95-47-6	o-Xylene		<5.6	U

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BH-20 (0-4)

Lab Name: Pace Analytical - New York

Date Received: 10/05/2018 10:45

Date Extracted: 10/15/2018 14:13

Date Analyzed: 10/16/2018 02:09

Initial wt/vol: 1.25 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST

Matrix: Solid SDG No.: 7067073

Lab Sample ID: 7067073009

Lab File ID: 101518.B\F91269.D

Instrument: 70MSV4 Percent Moisture: 22.1%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone		116 J	
71-43-2	Benzene		<10.3	U
78-93-3	2-Butanone (MEK)		19.6 J	
104-51-8	n-Butylbenzene		<10.3	U
135-98-8	sec-Butylbenzene		<10.3	U
98-06-6	tert-Butylbenzene		<10.3	U
56-23-5	Carbon tetrachloride		<10.3	U
108-90-7	Chlorobenzene		<10.3	U
67-66-3	Chloroform		<10.3	U
95-50-1	1,2-Dichlorobenzene		<10.3	U
541-73-1	1,3-Dichlorobenzene		<10.3	U
106-46-7	1,4-Dichlorobenzene		<10.3	U
75-34-3	1,1-Dichloroethane		<10.3	U
107-06-2	1,2-Dichloroethane		<10.3	U
75-35-4	1,1-Dichloroethene		<10.3	U
156-59-2	cis-1,2-Dichloroethene		5.7	J
156-60-5	trans-1,2-Dichloroethene		<10.3	U
123-91-1	1,4-Dioxane (p-Dioxane)		~~<257~~ R	U
100-41-4	Ethylbenzene		<10.3	U
75-09-2	Methylene Chloride		13.1	
1634-04-4	Methyl-tert-butyl ether		<10.3	U
103-65-1	n-Propylbenzene		<10.3	U
127-18-4	Tetrachloroethene		<10.3	U
108-88-3	Toluene		<10.3	U
120-82-1	1,2,4-Trichlorobenzene		<10.3	U
71-55-6	1,1,1-Trichloroethane		<10.3	U
79-01-6	Trichloroethene		<10.3	U
95-63-6	1,2,4-Trimethylbenzene		<10.3	U
108-67-8	1,3,5-Trimethylbenzene		<10.3	U
75-01-4	Vinyl chloride		<10.3	U
1330-20-7	Xylene (Total)		<20.5	U
179601-23-1	m&p-Xylene		<20.5	U
95-47-6	o-Xylene		<10.3	U

SAMPLE NO.

BH-20 (6-7')

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073

Date Extracted: 10/15/2018 14:13
Lab Sample ID: 7067073010

Date Analyzed: 10/16/2018 02:35
Lab File ID: 101518.B\F91270.D

Initial wt/vol: .96 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV4 Percent Moisture: 29.8%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone		234 J	
71-43-2	Benzene		<14.8	U
78-93-3	2-Butanone (MEK)		84.5 J	
104-51-8	n-Butylbenzene		<14.8	U
135-98-8	sec-Butylbenzene		<14.8	U
98-06-6	tert-Butylbenzene		<14.8	U
56-23-5	Carbon tetrachloride		<14.8	U
108-90-7	Chlorobenzene		<14.8	U
67-66-3	Chloroform		<14.8	U
95-50-1	1,2-Dichlorobenzene		<14.8	U
541-73-1	1,3-Dichlorobenzene		<14.8	U
106-46-7	1,4-Dichlorobenzene		<14.8	U
75-34-3	1,1-Dichloroethane		<14.8	U
107-06-2	1,2-Dichloroethane		<14.8	U
75-35-4	1,1-Dichloroethene		<14.8	U
156-59-2	cis-1,2-Dichloroethene		<14.8	U
156-60-5	trans-1,2-Dichloroethene		<14.8	U
123-91-1	1,4-Dioxane (p-Dioxane)		~~<371~~ R	U
100-41-4	Ethylbenzene		<14.8	U
75-09-2	Methylene Chloride		7.5	J
1634-04-4	Methyl-tert-butyl ether		<14.8	U
103-65-1	n-Propylbenzene		<14.8	U
127-18-4	Tetrachloroethene		<14.8	U
108-88-3	Toluene		<14.8	U
120-82-1	1,2,4-Trichlorobenzene		<14.8	U
71-55-6	1,1,1-Trichloroethane		<14.8	U
79-01-6	Trichloroethene		<14.8	U
95-63-6	1,2,4-Trimethylbenzene		<14.8	U
108-67-8	1,3,5-Trimethylbenzene		<14.8	U
75-01-4	Vinyl chloride		<14.8	U
1330-20-7	Xylene (Total)		<29.7	U

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BMW-91 (24.2-25)

Lab Name: Pace Analytical - New York

Date Received: 10/05/2018 10:45

Date Extracted: 10/15/2018 14:13

Date Analyzed: 10/16/2018 00:53

Initial wt/vol: 1.05 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST

Matrix: Solid SDG No.: 7067073

Lab Sample ID: 7067073011

Lab File ID: 101518.B\F91266.D

Instrument: 70MSV4 Percent Moisture: 12.7%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone		<10.9 UJ	U
71-43-2	Benzene		<10.9	U
78-93-3	2-Butanone (MEK)		<10.9 UJ	U
104-51-8	n-Butylbenzene		<10.9	U
135-98-8	sec-Butylbenzene		<10.9	U
98-06-6	tert-Butylbenzene		<10.9	U
56-23-5	Carbon tetrachloride		<10.9	U
108-90-7	Chlorobenzene		<10.9	U
75-45-6	Chlorodifluoromethane		<10.9	U
67-66-3	Chloroform		<10.9	U
95-50-1	1,2-Dichlorobenzene		<10.9	U
541-73-1	1,3-Dichlorobenzene		<10.9	U
106-46-7	1,4-Dichlorobenzene		<10.9	U
75-34-3	1,1-Dichloroethane		<10.9	U
107-06-2	1,2-Dichloroethane		<10.9	U
75-35-4	1,1-Dichloroethene		<10.9	U
156-59-2	cis-1,2-Dichloroethene		55.1	
156-60-5	trans-1,2-Dichloroethene		<10.9	U
123-91-1	1,4-Dioxane (p-Dioxane)		~~<273~~ R	U
100-41-4	Ethylbenzene		<10.9	U
75-09-2	Methylene Chloride		<10.9	U
1634-04-4	Methyl-tert-butyl ether		<10.9	U
103-65-1	n-Propylbenzene		<10.9	U
127-18-4	Tetrachloroethene		<10.9	U
95-93-2	1,2,4,5-tetramethylbenzene		<10.9	U
108-88-3	Toluene		<10.9	U
120-82-1	1,2,4-Trichlorobenzene		<10.9	U
71-55-6	1,1,1-Trichloroethane		<10.9	U
79-01-6	Trichloroethene		59.7	
95-63-6	1,2,4-Trimethylbenzene		<10.9	U
108-67-8	1,3,5-Trimethylbenzene		<10.9	U
75-01-4	Vinyl chloride		<10.9	U
1330-20-7	Xylene (Total)		<21.8	U
179601-23-1	m&p-Xylene		<21.8	U
95-47-6	o-Xylene		<10.9	U

11/29/2018 9:01

MSSV FULL SCAN - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
BH-14 (18-20)

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 10:12
Date Analyzed: 10/10/2018 16:44
Initial wt/vol: 15.17 g Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073001
Lab File ID: 8270-101018.B\N92248.D
Instrument: 70MSS2 Percent Moisture: 17.6%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
83-32-9	Acenaphthene		<80.4	U
208-96-8	Acenaphthylene		<80.4	U
120-12-7	Anthracene		<80.4	U
56-55-3	Benzo(a)anthracene		<80.4	U
50-32-8	Benzo(a)pyrene		<80.4	U
205-99-2	Benzo(b)fluoranthene		<80.4	U
191-24-2	Benzo(g,h,i)perylene		<80.4	U
207-08-9	Benzo(k)fluoranthene		<80.4	U
218-01-9	Chrysene		<80.4	U
53-70-3	Dibenz(a,h)anthracene		<80.4	U
132-64-9	Dibenzofuran		<80.4	U
206-44-0	Fluoranthene		<80.4 UJ	U
86-73-7	Fluorene		<80.4	U
118-74-1	Hexachlorobenzene		<80.4	U
193-39-5	Indeno(1,2,3-cd)pyrene		<80.4	U
95-48-7	2-Methylphenol(o-Cresol)		<80.4	U
	3&4-Methylphenol(m&p Cresol)		<80.4	U
91-20-3	Naphthalene		<80.4	U
87-86-5	Pentachlorophenol		<804	U
85-01-8	Phenanthrene		90.8	
108-95-2	Phenol		<80.4	U
129-00-0	Pyrene		52.0	J

SAMPLE NO.

BH-14 (18-20)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 10:12
Date Analyzed: 10/10/2018 16:44
Initial wt/vol: 15.17 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073001
Lab File ID: 8270-101018.B\N92248.D
Instrument: 70MSS2 Percent Moisture: 17.6%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
119-61-9	Benzophenone	8.549	~~217~~ R	N J
	Unknown	2.441	~~164~~ R	J
	Unknown Alcohol	4.686	~~1960~~ R	J
	Unknown Aldol Condensate	4.383	~~1880~~ R	J
	Unknown Amide	13.486	~~252~~ R	J
	Unknown Ketone	2.937	~~176~~ R	J
	Unknown Ketone	3.553	~~181~~ R	J
	Unknown Ketone	3.736	~~51800~~ R	J
	Unknown Ketone	3.342	~~6130~~ R	J
	Unknown Organic Acid	9.876	~~645~~ R	J
	Unknown Petroleum Alkane	8.77	257	J
	Unknown Petroleum Alkane	9.229	276	J

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MKP 1/8/19

SAMPLE NO.

BH-14 (15-16)

MSSV FULL SCAN - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073002
Date Analyzed: 10/10/2018 17:12
Lab File ID: 8270-101018.B\N92249.D
Initial wt/vol: 15.17 g Final wt/vol: 1 mL Dilution: 1
Instrument: 70MSS2 Percent Moisture: 25.6%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
83-32-9	Acenaphthene		<89.1	U
208-96-8	Acenaphthylene		<89.1	U
120-12-7	Anthracene		<89.1	U
56-55-3	Benzo(a)anthracene		<89.1	U
50-32-8	Benzo(a)pyrene		<89.1	U
205-99-2	Benzo(b)fluoranthene		<89.1	U
191-24-2	Benzo(g,h,i)perylene		<89.1	U
207-08-9	Benzo(k)fluoranthene		<89.1	U
218-01-9	Chrysene		<89.1	U
53-70-3	Dibenz(a,h)anthracene		<89.1	U
132-64-9	Dibenzofuran		<89.1	U
206-44-0	Fluoranthene		<89.1 MJ	U
86-73-7	Fluorene		<89.1	U
118-74-1	Hexachlorobenzene		<89.1	U
193-39-5	Indeno(1,2,3-cd)pyrene		<89.1	U
95-48-7	2-Methylphenol(o-Cresol)		<89.1	U
	3&4-Methylphenol(m&p Cresol)		<89.1	U
91-20-3	Naphthalene		<89.1	U
87-86-5	Pentachlorophenol		<891	U
85-01-8	Phenanthrene		<89.1	U
108-95-2	Phenol		<89.1	U
129-00-0	Pyrene		<89.1	U

MKP 1/9/18

SAMPLE NO.

BH-14 (15-16)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 10:12
Date Analyzed: 10/10/2018 17:12
Initial wt/vol: 15.17 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073002
Lab File ID: 8270-101018.B\N92249.D
Instrument: 70MSS2 Percent Moisture: 25.6%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
100-52-7	Benzaldehyde	4.567	280	N J
	Unknown	10.572	270	J
	Unknown	17.392	696	J
	Unknown Aldol Condensate	4.389	~~1980~~ R	J
	Unknown Aldol Condensate	4.465	~~277~~ R	J
	Unknown Alkane	10.178	369	J
	Unknown Amide	13.497	~~462~~ R	J
	Unknown Ketone	3.742	~~56600~~ R	J
	Unknown Ketone	3.348	~~6780~~ R	J
	Unknown Organic Acid	10.642	253	J
	Unknown Organic Acid	11.997	425	J
	Unknown PAH	17.657	199	J
	Unknown PAH	8.117	273	J
	Unknown PAH	11.063	446	J
	Unknown Petroleum Alkane	4.691	1560	J
121-33-5	Vanillin	7.313	337	N J
57-10-3	n-Hexadecanoic acid	9.871	838	N J

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MKP 1/8/19

SAMPLE NO.

BH-16 (10-11)

MSSV FULL SCAN - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073003
Date Analyzed: 10/10/2018 17:41
Lab File ID: 8270-101018.B\N92250.D
Initial wt/vol: 15.13 g Final wt/vol: 1 mL Dilution: 1
Instrument: 70MSS2 Percent Moisture: 22.3%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
83-32-9	Acenaphthene		<85.5	U
208-96-8	Acenaphthylene		<85.5	U
120-12-7	Anthracene		<85.5	U
56-55-3	Benzo(a)anthracene		<85.5	U
50-32-8	Benzo(a)pyrene		<85.5	U
205-99-2	Benzo(b)fluoranthene		<85.5	U
191-24-2	Benzo(g,h,i)perylene		<85.5	U
207-08-9	Benzo(k)fluoranthene		<85.5	U
218-01-9	Chrysene		<85.5	U
53-70-3	Dibenz(a,h)anthracene		<85.5	U
132-64-9	Dibenzofuran		<85.5	U
206-44-0	Fluoranthene		<85.5 UJ	U
86-73-7	Fluorene		<85.5	U
118-74-1	Hexachlorobenzene		<85.5	U
193-39-5	Indeno(1,2,3-cd)pyrene		<85.5	U
95-48-7	2-Methylphenol(o-Cresol)		<85.5	U
	3&4-Methylphenol(m&p Cresol)		<85.5	U
91-20-3	Naphthalene		<85.5	U
87-86-5	Pentachlorophenol		<855	U
85-01-8	Phenanthrene		<85.5	U
108-95-2	Phenol		<85.5	U
129-00-0	Pyrene		<85.5	U

MKP 1/8/19

SAMPLE NO.

BH-16 (10-11)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073003
Date Analyzed: 10/10/2018 17:41
Lab File ID: 8270-101018.B\N92250.D
Initial wt/vol: 15.13 Final wt/vol: 1 mL Dilution: 1
Instrument: 70MSS2 Percent Moisture: 22.3%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
119-61-9	Benzophenone	8.549	~~284~~ R	N J
	Unknown Alcohol	2.468	~~208~~ R	J
	Unknown Alcohol	3.747	47700	J
	Unknown Amide	13.491	~~693~~ R	J
	Unknown Aromatic Hydrocarbon	2.77	832	J
	Unknown Ketone	2.975	~~177~~ R	J
	Unknown Ketone	3.617	187	J
	Unknown Ketone	11.84	473	J
	Unknown Ketone	3.358	~~6930~~ R	J
	Unknown Organic Acid	9.871	~~582~~ R	J

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MRP 1/8/19

SAMPLE NO.

BH-18 (0-4)

MSSV FULL SCAN - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073004
Date Analyzed: 10/10/2018 18:10
Lab File ID: 8270-101018.B\N92251.D
Initial wt/vol: 15.09 g Final wt/vol: 1 mL Dilution: 1
Instrument: 70MSS2 Percent Moisture: 9.9%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
83-32-9	Acenaphthene		<73.9	U
208-96-8	Acenaphthylene		<73.9	U
120-12-7	Anthracene		<73.9	U
56-55-3	Benzo(a)anthracene		<73.9	U
50-32-8	Benzo(a)pyrene		<73.9	U
205-99-2	Benzo(b)fluoranthene		<73.9	U
191-24-2	Benzo(g,h,i)perylene		<73.9	U
207-08-9	Benzo(k)fluoranthene		<73.9	U
218-01-9	Chrysene		<73.9	U
53-70-3	Dibenz(a,h)anthracene		<73.9	U
132-64-9	Dibenzofuran		<73.9	U
206-44-0	Fluoranthene		~~<73.9~~ UJ	U
86-73-7	Fluorene		<73.9	U
118-74-1	Hexachlorobenzene		<73.9	U
193-39-5	Indeno(1,2,3-cd)pyrene		<73.9	U
95-48-7	2-Methylphenol(o-Cresol)		<73.9	U
	3&4-Methylphenol(m&p Cresol)		<73.9	U
91-20-3	Naphthalene		<73.9	U
87-86-5	Pentachlorophenol		<739	U
85-01-8	Phenanthrene		59.9	J
108-95-2	Phenol		<73.9	U
129-00-0	Pyrene		<73.9	U

SAMPLE NO.

BH-18 (0-4)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 10:12
Date Analyzed: 10/10/2018 18:10
Initial wt/vol: 15.09 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073004
Lab File ID: 8270-101018.B\N92251.D
Instrument: 70MSS2 Percent Moisture: 9.9%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
119-61-9	Benzophenone	8.549	~~148~~ R	N J
	Unknown	2.452	~~254~~ R	J
	Unknown Alcohol	3.72	32000	J
	Unknown Aldol Condensate	4.4	~~1260~~ R	J
	Unknown Amide	13.491	~~271~~ R	J
	Unknown Ketone	2.959	~~181~~ R	J
	Unknown Ketone	3.601	~~286~~ R	J
	Unknown Ketone	3.353	~~4530~~ R	J
	Unknown Organic Acid	10.653	410	J
	Unknown Organic Acid	9.876	~~983~~ R	J
	Unknown Petroleum Alkane	11.997	291	J

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MKP 1/8/19

SAMPLE NO.

BH-18 (14-15)

MSSV FULL SCAN - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073005
Date Analyzed: 10/10/2018 18:39
Lab File ID: 8270-101018.B\N92252.D
Initial wt/vol: 15.12 g Final wt/vol: 1 mL Dilution: 1
Instrument: 70MSS2 Percent Moisture: 16.7%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
83-32-9	Acenaphthene		<79.8	U
208-96-8	Acenaphthylene		<79.8	U
120-12-7	Anthracene		<79.8	U
56-55-3	Benzo(a)anthracene		<79.8	U
50-32-8	Benzo(a)pyrene		<79.8	U
205-99-2	Benzo(b)fluoranthene		<79.8	U
191-24-2	Benzo(g,h,i)perylene		<79.8	U
207-08-9	Benzo(k)fluoranthene		<79.8	U
218-01-9	Chrysene		<79.8	U
53-70-3	Dibenz(a,h)anthracene		<79.8	U
132-64-9	Dibenzofuran		<79.8	U
206-44-0	Fluoranthene		<79.8 VJ	U
86-73-7	Fluorene		<79.8	U
118-74-1	Hexachlorobenzene		<79.8	U
193-39-5	Indeno(1,2,3-cd)pyrene		<79.8	U
95-48-7	2-Methylphenol(o-Cresol)		<79.8	U
	3&4-Methylphenol(m&p Cresol)		<79.8	U
91-20-3	Naphthalene		<79.8	U
87-86-5	Pentachlorophenol		<798	U
85-01-8	Phenanthrene		<79.8	U
108-95-2	Phenol		<79.8	U
129-00-0	Pyrene		<79.8	U

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MKP 1/8/19

SAMPLE NO.

BH-18 (14-15)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 10:12
Date Analyzed: 10/10/2018 18:39
Initial wt/vol: 15.12 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073005
Lab File ID: 8270-101018.B\N92252.D
Instrument: 70MSS2 Percent Moisture: 16.7%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
119-61-9	Benzophenone	8.549	~~186~~ R	N J
	Unknown	4.686	1000	J
	Unknown	2.463	~~208~~ R	J
	Unknown	4.394	268	J
	Unknown Amide	13.491	~~409~~ R	J
	Unknown Aromatic Hydrocarbon	2.76	469	J
	Unknown Ketone	2.975	~~161~~ R	J
	Unknown Ketone	3.358	~~3430~~ R	J
	Unknown Organic Acid	11.997	501	J
	Unknown Organic Acid	9.871	~~604~~ R	J
	Unknown Petroleum Alkane	3.731	23600	J

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MKP 1/8/19

SAMPLE NO.

BH-19 (0-9)

MSSV FULL SCAN - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073006
Date Analyzed: 10/10/2018 19:07
Lab File ID: 8270-101018.B\N92253.D
Initial wt/vol: 15.11 g Final wt/vol: 1 mL Dilution: 1
Instrument: 70MSS2 Percent Moisture: 8.3%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
83-32-9	Acenaphthene		<72.5	U
208-96-8	Acenaphthylene		<72.5	U
120-12-7	Anthracene		<72.5	U
56-55-3	Benzo(a)anthracene		<72.5	U
50-32-8	Benzo(a)pyrene		<72.5	U
205-99-2	Benzo(b)fluoranthene		<72.5	U
191-24-2	Benzo(g,h,i)perylene		<72.5	U
207-08-9	Benzo(k)fluoranthene		<72.5	U
218-01-9	Chrysene		<72.5	U
53-70-3	Dibenz(a,h)anthracene		<72.5	U
132-64-9	Dibenzofuran		<72.5	U
206-44-0	Fluoranthene		<72.5 VJ	U
86-73-7	Fluorene		<72.5	U
118-74-1	Hexachlorobenzene		<72.5	U
193-39-5	Indeno(1,2,3-cd)pyrene		<72.5	U
95-48-7	2-Methylphenol(o-Cresol)		<72.5	U
	3&4-Methylphenol(m&p Cresol)		<72.5	U
91-20-3	Naphthalene		<72.5	U
87-86-5	Pentachlorophenol		<725	U
85-01-8	Phenanthrene		<72.5	U
108-95-2	Phenol		<72.5	U
129-00-0	Pyrene		<72.5	U

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SAMPLE NO.

BH-19 (0-9)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 10:12
Date Analyzed: 10/10/2018 19:07
Initial wt/vol: 15.11 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073006
Lab File ID: 8270-101018.B\N92253.D
Instrument: 70MSS2 Percent Moisture: 8.3%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
119-61-9	Benzophenone	8.549	~~185~~ R	N J
	Unknown Aldol Condensate	4.4	~~163~~ R	J
	Unknown Aldol Condensate	4.691	~~566~~ R	J
	Unknown Amide	13.491	~~494~~ R	J
	Unknown Aromatic Hydrocarbon	2.776	355	J
	Unknown Ketone	3.715	~~12700~~ R	J
	Unknown Ketone	3.358	~~2780~~ R	J
	Unknown Organic Acid	11.997	275	J
	Unknown Organic Acid	9.871	~~563~~ R	J

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MF-P 1/8/19

SAMPLE NO.

BH-15 (12-16)

MSSV FULL SCAN - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073007
Date Analyzed: 10/10/2018 21:59
Lab File ID: 8270-101018.B\N92259.D
Initial wt/vol: 15.09 g Final wt/vol: 1 mL Dilution: 5
Instrument: 70MSS2 Percent Moisture: 30.8%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
83-32-9	Acenaphthene		<481	U
208-96-8	Acenaphthylene		<481	U
120-12-7	Anthracene		<481	U
56-55-3	Benzo(a)anthracene		<481	U
50-32-8	Benzo(a)pyrene		<481	U
205-99-2	Benzo(b)fluoranthene		<481	U
191-24-2	Benzo(g,h,i)perylene		<481	U
207-08-9	Benzo(k)fluoranthene		<481	U
218-01-9	Chrysene		<481	U
53-70-3	Dibenz(a,h)anthracene		<481	U
132-64-9	Dibenzofuran		<481	U
206-44-0	Fluoranthene		<481 UJ	U
86-73-7	Fluorene		<481	U
118-74-1	Hexachlorobenzene		<481	U
193-39-5	Indeno(1,2,3-cd)pyrene		<481	U
95-48-7	2-Methylphenol(o-Cresol)		<481	U
	3&4-Methylphenol(m&p Cresol)		<481	U
91-20-3	Naphthalene		<481	U
87-86-5	Pentachlorophenol		<4810	U
85-01-8	Phenanthrene		<481	U
108-95-2	Phenol		<481	U
129-00-0	Pyrene		<481	U

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SAMPLE NO.

BH-15 (12-16)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073007
Date Analyzed: 10/10/2018 21:59
Lab File ID: 8270-101018.B\N92259.D
Initial wt/vol: 15.09 Final wt/vol: 1 mL Dilution: 5
Instrument: 70MSS2 Percent Moisture: 30.8%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown	10.578	1130	J
	Unknown Alcohol	4.669	1820	J
	Unknown Aldol Condensate	4.367	~~2560~~ R	J
	Unknown Alkane	9.623	1180	J
	Unknown Alkane	10.416	1240	J
	Unknown Alkane	10.027	1280	J
	Unknown Alkane	5.463	1640	J
	Unknown Ketone	3.304	~~7480~~ R	J
	Unknown Ketone	3.66	~~99600~~ R	J
	Unknown PAH	11.063	1810	J

SAMPLE NO.

BH-21 (0-4)

MSSV FULL SCAN - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073008
Date Analyzed: 10/10/2018 22:28
Lab File ID: 8270-101018.B\N92260.D
Initial wt/vol: 15 g Final wt/vol: 1 mL Dilution: 5
Instrument: 70MSS2 Percent Moisture: 14.3%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
83-32-9	Acenaphthene		<391	U
208-96-8	Acenaphthylene		<391	U
120-12-7	Anthracene		368	J
56-55-3	Benzo(a)anthracene		1450	
50-32-8	Benzo(a)pyrene		1410	
205-99-2	Benzo(b)fluoranthene		1930	
191-24-2	Benzo(g,h,i)perylene		1100	
207-08-9	Benzo(k)fluoranthene		734	
218-01-9	Chrysene		1630	
53-70-3	Dibenz(a,h)anthracene		256	J
132-64-9	Dibenzofuran		213	J
206-44-0	Fluoranthene		2980 J	
86-73-7	Fluorene		<391	U
118-74-1	Hexachlorobenzene		<391	U
193-39-5	Indeno(1,2,3-cd)pyrene		1110	
95-48-7	2-Methylphenol(o-Cresol)		<391	U
	3&4-Methylphenol(m&p Cresol)		<391	U
91-20-3	Naphthalene		353	J
87-86-5	Pentachlorophenol		<3910	U
85-01-8	Phenanthrene		1640	
108-95-2	Phenol		<391	U
129-00-0	Pyrene		2450	

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SAMPLE NO.

BH-21 (0-4)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073008
Date Analyzed: 10/10/2018 22:28
Lab File ID: 8270-101018.B\N92260.D
Initial wt/vol: 15 g Final wt/vol: 1 mL Dilution: 5
Instrument: 70MSS2 Percent Moisture: 14.3%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown	4.669	2230	J
	Unknown	3.666	72500	J
	Unknown	9.941	952	J
	Unknown Aldol Condensate	4.367	~~1450~~ R	J
	Unknown Ketone	3.31	~~5750~~ R	J
	Unknown Petroleum Alkane	8.77	1270	J

SAMPLE NO.

BH-20 (0-4)

MSSV FULL SCAN - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073009
Date Analyzed: 10/10/2018 21:02
Lab File ID: 8270-101018.B\N92257.D
Initial wt/vol: 15.03 g Final wt/vol: 1 mL Dilution: 5
Instrument: 70MSS2 Percent Moisture: 22.1%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
83-32-9	Acenaphthene		404	J
208-96-8	Acenaphthylene		<429	U
120-12-7	Anthracene		660	
56-55-3	Benzo(a)anthracene		1180	
50-32-8	Benzo(a)pyrene		1480	
205-99-2	Benzo(b)fluoranthene		1500	
191-24-2	Benzo(g,h,i)perylene		1010	
207-08-9	Benzo(k)fluoranthene		719	
218-01-9	Chrysene		1410	
53-70-3	Dibenz(a,h)anthracene		228	J
132-64-9	Dibenzofuran		333	J
206-44-0	Fluoranthene		3540 J	
86-73-7	Fluorene		218	J
118-74-1	Hexachlorobenzene		<429	U
193-39-5	Indeno(1,2,3-cd)pyrene		1030	
95-48-7	2-Methylphenol(o-Cresol)		<429	U
	3&4-Methylphenol(m&p Cresol)		<429	U
91-20-3	Naphthalene		636	
87-86-5	Pentachlorophenol		<4290	U
85-01-8	Phenanthrene		2940	
108-95-2	Phenol		<429	U
129-00-0	Pyrene		2720	

MKP 1/8/19

SAMPLE NO.

BH-20 (0-4)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 10:12
Date Analyzed: 10/10/2018 21:02
Initial wt/vol: 15.03 Final wt/vol: 1 mL Dilution: 5

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073009
Lab File ID: 8270-101018.B\N92257.D
Instrument: 70MSS2 Percent Moisture: 22.1%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown	10.459	12900	J
	Unknown	12.757	7620	J
	Unknown	9.914	8270	J
	Unknown	3.666	84400	J
	Unknown	11.505	9410	J
	Unknown	13.513	9710	J
	Unknown	10.971	9800	J
	Unknown Biphenyl	11.166	1080	J
	Unknown Biphenyl	10.41	1140	J
	Unknown Biphenyl	9.671	1160	J
	Unknown Biphenyl	10.939	1420	J
	Unknown Biphenyl	10.221	1430	J
	Unknown Biphenyl	10.642	1430	J
	Unknown Biphenyl	10.599	1650	J
	Unknown Biphenyl	9.946	1750	J
	Unknown Biphenyl	10.119	1780	J
	Unknown Biphenyl	9.984	909	J
	Unknown Column Bleed	7.923	~~13100~~ R	J
	Unknown Column Bleed	15.32	~~6700~~ R	J
	Unknown Organic Acid	13.448	2690	J

MKP 1/8/19

SAMPLE NO.

BH-20 (6-7')

MSSV FULL SCAN - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073010
Date Analyzed: 10/10/2018 21:31
Lab File ID: 8270-101018.B\N92258.D
Initial wt/vol: 15.04 g Final wt/vol: 1 mL Dilution: 5
Instrument: 70MSS2 Percent Moisture: 29.8%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
83-32-9	Acenaphthene		<476	U
208-96-8	Acenaphthylene		<476	U
120-12-7	Anthracene		<476	U
56-55-3	Benzo(a)anthracene		671	
50-32-8	Benzo(a)pyrene		435	J
205-99-2	Benzo(b)fluoranthene		422	J
191-24-2	Benzo(g,h,i)perylene		<476	U
207-08-9	Benzo(k)fluoranthene		254	J
218-01-9	Chrysene		617	
53-70-3	Dibenz(a,h)anthracene		<476	U
132-64-9	Dibenzofuran		<476	U
206-44-0	Fluoranthene		915 J	
86-73-7	Fluorene		<476	U
118-74-1	Hexachlorobenzene		<476	U
193-39-5	Indeno(1,2,3-cd)pyrene		<476	U
95-48-7	2-Methylphenol(o-Cresol)		<476	U
	3&4-Methylphenol(m&p Cresol)		<476	U
91-20-3	Naphthalene		<476	U
87-86-5	Pentachlorophenol		<4760	U
85-01-8	Phenanthrene		340	J
108-95-2	Phenol		<476	U
129-00-0	Pyrene		845	

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SAMPLE NO.

BH-20 (6-7')

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073010
Date Analyzed: 10/10/2018 21:31
Lab File ID: 8270-101018.B\N92258.D
Initial wt/vol: 15.04 Final wt/vol: 1 mL Dilution: 5
Instrument: 70MSS2 Percent Moisture: 29.8%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown	3.666	88700	J
	Unknown Alcohol	4.669	2530	J
	Unknown Aldol Condensate	4.367	~~2530~~ R	J
	Unknown Alkane	12.984	1620	J
	Unknown Ketone	3.304	~~7240~~ R	J

MAP 1/8/19

SAMPLE NO.

BMW-91 (24.2-25)

MSSV FULL SCAN - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 10:12
Lab Sample ID: 7067073011
Date Analyzed: 10/10/2018 19:36
Lab File ID: 8270-101018.B\N92254.D
Initial wt/vol: 15.03 g Final wt/vol: 1 mL Dilution: 1
Instrument: 70MSS2 Percent Moisture: 12.7%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
83-32-9	Acenaphthene		<76.6	U
208-96-8	Acenaphthylene		<76.6	U
120-12-7	Anthracene		<76.6	U
56-55-3	Benzo(a)anthracene		<76.6	U
50-32-8	Benzo(a)pyrene		<76.6	U
205-99-2	Benzo(b)fluoranthene		<76.6	U
191-24-2	Benzo(g,h,i)perylene		<76.6	U
207-08-9	Benzo(k)fluoranthene		<76.6	U
218-01-9	Chrysene		<76.6	U
53-70-3	Dibenz(a,h)anthracene		<76.6	U
132-64-9	Dibenzofuran		<76.6	U
206-44-0	Fluoranthene		<76.6 UJ	U
86-73-7	Fluorene		<76.6	U
118-74-1	Hexachlorobenzene		<76.6	U
193-39-5	Indeno(1,2,3-cd)pyrene		<76.6	U
95-48-7	2-Methylphenol(o-Cresol)		<76.6	U
	3&4-Methylphenol(m&p Cresol)		<76.6	U
91-20-3	Naphthalene		<76.6	U
87-86-5	Pentachlorophenol		<766	U
85-01-8	Phenanthrene		<76.6	U
108-95-2	Phenol		<76.6	U
129-00-0	Pyrene		<76.6	U

SAMPLE NO.

BMW-91 (24.2-25)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 10:12
Date Analyzed: 10/10/2018 19:36
Initial wt/vol: 15.03 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073011
Lab File ID: 8270-101018.B\N92254.D
Instrument: 70MSS2 Percent Moisture: 12.7%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
119-61-9	Benzophenone	8.549	~~198~~ R	N J
	Unknown	3.714	13100	J
	Unknown Amide	13.491	~~553~~ R	J
	Unknown Aromatic Hydrocarbon	2.77	525	J
	Unknown Column Bleed	2.49	~~182~~ R	J
	Unknown Ketone	3.596	~~157~~ R	J
	Unknown Ketone	5.776	~~167~~ R	J
	Unknown Ketone	3.369	~~2790~~ R	J
	Unknown Organic Acid	9.871	~~470~~ R	J

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PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

SAMPLE NO.
BH-14 (18-20)

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/13/2018 05:54
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073001
Lab File ID: 101218-1.B\311558.D
Instrument: 70GCS3 Percent Moisture: 17.6%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.1	U
319-84-6	alpha-BHC	<2.1	U
319-85-7	beta-BHC	<2.1	U
319-86-8	delta-BHC	<2.1	U
58-89-9	gamma-BHC (Lindane)	<2.1	U
5103-71-9	alpha-Chlordane	<2.1	U
72-54-8	4,4'-DDD	<4.0 UJ	U
72-55-9	4,4'-DDE	<4.0	U
50-29-3	4,4'-DDT	<4.0 UJ	U
60-57-1	Dieldrin	<4.0	U
959-98-8	Endosulfan I	<2.1	U
33213-65-9	Endosulfan II	<4.0	U
1031-07-8	Endosulfan sulfate	<4.0	U
72-20-8	Endrin	<4.0	U
76-44-8	Heptachlor	<2.1	U

MKP 1/8/19

SAMPLE NO.

BH-14 (15-16)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073002
Date Analyzed: 10/13/2018 06:24
Lab File ID: 101218-1.B\311560.D
Initial wt/vol: 15.05 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 25.6%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin		<2.3	U
319-84-6	alpha-BHC		<2.3	U
319-85-7	beta-BHC		<2.3	U
319-86-8	delta-BHC		<2.3	U
58-89-9	gamma-BHC (Lindane)		<2.3	U
5103-71-9	alpha-Chlordane		<2.3	U
72-54-8	4,4'-DDD		<4.4 UJ	U
72-55-9	4,4'-DDE		<4.4	U
50-29-3	4,4'-DDT		<4.4 UJ	U
60-57-1	Dieldrin		<4.4	U
959-98-8	Endosulfan I		<2.3	U
33213-65-9	Endosulfan II		<4.4	U
1031-07-8	Endosulfan sulfate		<4.4	U
72-20-8	Endrin		<4.4	U
76-44-8	Heptachlor		<2.3	U

12/14/2018 5:56

MKP 1/8/19

SAMPLE NO.

BH-16 (10-11)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073003
Date Analyzed: 10/13/2018 05:39
Lab File ID: 101218-1.B\311557.D
Initial wt/vol: 15.14 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 22.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.2	U
319-84-6	alpha-BHC	<2.2	U
319-85-7	beta-BHC	<2.2	U
319-86-8	delta-BHC	<2.2	U
58-89-9	gamma-BHC (Lindane)	<2.2	U
5103-71-9	alpha-Chlordane	<2.2	U
72-54-8	4,4'-DDD	<4.2 UJ	U
72-55-9	4,4'-DDE	<4.2	U
50-29-3	4,4'-DDT	<4.2 UJ	U
60-57-1	Dieldrin	<4.2	U
959-98-8	Endosulfan I	<2.2	U
33213-65-9	Endosulfan II	<4.2	U
1031-07-8	Endosulfan sulfate	<4.2	U
72-20-8	Endrin	<4.2	U
76-44-8	Heptachlor	<2.2	U

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MKP 1/8/19

SAMPLE NO.

BH-18 (0-4)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073004
Date Analyzed: 10/13/2018 06:09
Lab File ID: 101218-1.B\311559.D
Initial wt/vol: 15.19 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 9.9%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<1.9	U
319-84-6	alpha-BHC	<1.9	U
319-85-7	beta-BHC	<1.9	U
319-86-8	delta-BHC	<1.9	U
58-89-9	gamma-BHC (Lindane)	<1.9	U
5103-71-9	alpha-Chlordane	<1.9	U
72-54-8	4,4'-DDD	<3.6 UJ	U
72-55-9	4,4'-DDE	<3.6	U
50-29-3	4,4'-DDT	<3.6 UJ	U
60-57-1	Dieldrin	<3.6	U
959-98-8	Endosulfan I	<1.9	U
33213-65-9	Endosulfan II	<3.6	U
1031-07-8	Endosulfan sulfate	<3.6	U
72-20-8	Endrin	<3.6	U
76-44-8	Heptachlor	<1.9	U

MRP 1/8/19

SAMPLE NO.

BH-18 (14-15)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073005
Date Analyzed: 10/13/2018 05:10
Lab File ID: 101218-1.B\311555.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 16.7%

CAS NO.	COMPOUND		CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin		<2.0	U
319-84-6	alpha-BHC		<2.0	U
319-85-7	beta-BHC		<2.0	U
319-86-8	delta-BHC		<2.0	U
58-89-9	gamma-BHC (Lindane)		<2.0	U
5103-71-9	alpha-Chlordane		<2.0	U
72-54-8	4,4'-DDD		<4.0 UJ	U
72-55-9	4,4'-DDE		<4.0	U
50-29-3	4,4'-DDT		<4.0 UJ	U
60-57-1	Dieldrin		<4.0	U
959-98-8	Endosulfan I		<2.0	U
33213-65-9	Endosulfan II		<4.0	U
1031-07-8	Endosulfan sulfate		<4.0	U
72-20-8	Endrin		<4.0	U
76-44-8	Heptachlor		<2.0	U

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

SAMPLE NO.
BH-19 (0-9)

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/13/2018 05:25
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073006
Lab File ID: 101218-1.B\311556.D
Instrument: 70GCS3 Percent Moisture: 8.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<1.9	U
319-84-6	alpha-BHC	<1.9	U
319-85-7	beta-BHC	<1.9	U
319-86-8	delta-BHC	<1.9	U
58-89-9	gamma-BHC (Lindane)	<1.9	U
5103-71-9	alpha-Chlordane	<1.9	U
72-54-8	4,4'-DDD	<3.6 UJ	U
72-55-9	4,4'-DDE	<3.6	U
50-29-3	4,4'-DDT	<3.6 UJ	U
60-57-1	Dieldrin	<3.6	U
959-98-8	Endosulfan I	<1.9	U
33213-65-9	Endosulfan II	<3.6	U
1031-07-8	Endosulfan sulfate	<3.6	U
72-20-8	Endrin	<3.6	U
76-44-8	Heptachlor	<1.9	U

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

SAMPLE NO.
BH-15 (12-16)

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/16/2018 16:13
Initial wt/vol: 15.04 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073007
Lab File ID: 101518-1.B\311616.D
Instrument: 70GCS3 Percent Moisture: 30.8%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.5	U
319-84-6	alpha-BHC	<2.5	U
319-85-7	beta-BHC	<2.5	U
319-86-8	delta-BHC	<2.5	U
58-89-9	gamma-BHC (Lindane)	<2.5	U
5103-71-9	alpha-Chlordane	<2.5	U
72-54-8	4,4'-DDD	<4.8 UJ	U
72-55-9	4,4'-DDE	7.8 JN	
60-57-1	Dieldrin	<4.8	U
959-98-8	Endosulfan I	<2.5	U
33213-65-9	Endosulfan II	<4.8	U
1031-07-8	Endosulfan sulfate	<4.8	U
72-20-8	Endrin	<4.8	U
76-44-8	Heptachlor	<2.5	U

MKP 1/8/19

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

SAMPLE NO.
BH-15 (12-16)

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/16/2018 16:13
Initial wt/vol: 15.04 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073007
Lab File ID: 101518-2.B\311616.D
Instrument: 70GCS3 Percent Moisture: 30.8%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
50-29-3	4,4'-DDT	15.0 J	

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PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

SAMPLE NO.
BH-21 (0-4)

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/19/2018 20:08
Initial wt/vol: 15.1 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073008
Lab File ID: 101918-1.B\311819.D
Instrument: 70GCS3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.0	U
319-84-6	alpha-BHC	<2.0	U
319-85-7	beta-BHC	<2.0	U
319-86-8	delta-BHC	<2.0	U
5103-71-9	alpha-Chlordane	2.3 JN	
72-54-8	4,4'-DDD	<3.8 UJ	U
72-55-9	4,4'-DDE	44.1 JN	
50-29-3	4,4'-DDT	8.2 JN	
60-57-1	Dieldrin	11.5 JN	
959-98-8	Endosulfan I	<2.0	U
33213-65-9	Endosulfan II	<3.8	U
1031-07-8	Endosulfan sulfate	<3.8	U
72-20-8	Endrin	<3.8	U
76-44-8	Heptachlor	18.1	

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MKP 1/8/19

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

SAMPLE NO.
BH-21 (0-4)

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/19/2018 20:08
Initial wt/vol: 15.1 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073008
Lab File ID: 101918-2.B\311819.D
Instrument: 70GCS3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
58-89-9	gamma-BHC (Lindane)	2.2 JN	

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PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

SAMPLE NO.
BH-20 (0-4)

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/16/2018 19:39
Initial wt/vol: 15.03 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073009
Lab File ID: 101518-1.B\311630.D
Instrument: 70GCS3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.2	U
319-84-6	alpha-BHC	<2.2	U
319-85-7	beta-BHC	4.0 JN	
319-86-8	delta-BHC	<2.2	U
72-54-8	4,4'-DDD	<4.2 UJ	U
1031-07-8	Endosulfan sulfate	7.4 JN	

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mrp 1/8/19

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

SAMPLE NO.
BH-20 (0-4)

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/16/2018 19:39
Initial wt/vol: 15.03 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073009
Lab File ID: 101518-2.B\311630.D
Instrument: 70GCS3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
959-98-8	Endosulfan I	<2.2	U
33213-65-9	Endosulfan II	45.6 JN	
72-20-8	Endrin	42.7 JN	

MM 1/9/19

SAMPLE NO.

BH-20 (0-4)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073009
Date Analyzed: 10/19/2018 19:38
Lab File ID: 101918-1.B\311817.D
Initial wt/vol: 15.03 g Final wt/vol: 5 mL Dilution: 100
Instrument: 70GCS3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
50-29-3	4,4'-DDT	<423 UJ	U
60-57-1	Dieldrin	1650 JN	
76-44-8	Heptachlor	574 J	

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MKP 1/8/19

SAMPLE NO.

BH-20 (0-4)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073009
Date Analyzed: 10/19/2018 19:38
Lab File ID: 101918-2.B\311817.D
Initial wt/vol: 15.03 g Final wt/vol: 5 mL Dilution: 100
Instrument: 70GCS3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
58-89-9	gamma-BHC (Lindane)	309 JN	
5103-71-9	alpha-Chlordane	354 J	
72-55-9	4,4'-DDE	4250 JN	

MVP 1/9/19

SAMPLE NO.

BH-20 (6-7')

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073010
Date Analyzed: 10/16/2018 17:56
Lab File ID: 101518-1.B\311623.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 29.8%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.4	U
319-84-6	alpha-BHC	<2.4	U
319-85-7	beta-BHC	<2.4	U
319-86-8	delta-BHC	<2.4	U
58-89-9	gamma-BHC (Lindane)	<2.4	U
5103-71-9	alpha-Chlordane	<2.4	U
72-54-8	4,4'-DDD	<4.7 UJ	U
72-55-9	4,4'-DDE	8.2 JP	
60-57-1	Dieldrin	<4.7	U
959-98-8	Endosulfan I	<2.4	U
33213-65-9	Endosulfan II	4.7	
1031-07-8	Endosulfan sulfate	<4.7	U
72-20-8	Endrin	<4.7	U

MKP 1/8/19

SAMPLE NO.

BH-20 (6-7')

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/16/2018 17:56
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 7067073010
Lab File ID: 101518-2.B\311623.D
Instrument: 70GCS3 Percent Moisture: 29.8%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
50-29-3	4,4'-DDT	2.9	J
76-44-8	Heptachlor	2.6	

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JMP 7/8/19

SAMPLE NO.

BMW-91 (24.2-25)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Date Received: 10/05/2018 10:45
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/13/2018 06:38
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid • SDG No.: 7067073
Lab Sample ID: 7067073011
Lab File ID: 101218-1.B\311561.D
Instrument: 70GCS3 Percent Moisture: 12.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<1.9	U
319-84-6	alpha-BHC	<1.9	U
319-85-7	beta-BHC	<1.9	U
319-86-8	delta-BHC	<1.9	U
58-89-9	gamma-BHC (Lindane)	<1.9	U
5103-71-9	alpha-Chlordane	<1.9	U
72-54-8	4,4'-DDD	<3.8 UJ	U
72-55-9	4,4'-DDE	<3.8	U
50-29-3	4,4'-DDT	<3.8 UJ	U
60-57-1	Dieldrin	<3.8	U
959-98-8	Endosulfan I	<1.9	U
33213-65-9	Endosulfan II	<3.8	U
1031-07-8	Endosulfan sulfate	<3.8	U
72-20-8	Endrin	<3.8	U
76-44-8	Heptachlor	<1.9	U

SAMPLE NO.

BH-16 (10-11)

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073003
Date Analyzed: 10/12/2018 02:43
Lab File ID: 101018-1.B\211967.D
Initial wt/vol: 15.14 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS2 Percent Moisture: 22.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<42.1	U
11104-28-2	PCB-1221 (Aroclor 1221)	<85.4	U
11141-16-5	PCB-1232 (Aroclor 1232)	<42.1	U
53469-21-9	PCB-1242 (Aroclor 1242)	<42.1	U
11097-69-1	PCB-1254 (Aroclor 1254)	<42.1	U
11096-82-5	PCB-1260 (Aroclor 1260)	<42.1	U

SAMPLE NO.

BH-16 (10-11)

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073003
Date Analyzed: 10/12/2018 02:43
Lab File ID: 101018-2.B\211967.D
Initial wt/vol: 15.14 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS2 Percent Moisture: 22.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	21.4	J

SAMPLE NO.

BH-21 (0-4)

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073

Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073008

Date Analyzed: 10/12/2018 15:27
Lab File ID: 101218-1.B\211999.D

Initial wt/vol: 15.1 g Final wt/vol: 5 mL Dilution: 20
Instrument: 70GCS2 Percent Moisture: 14.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<765	U
11104-28-2	PCB-1221 (Aroclor 1221)	<1550	U
11141-16-5	PCB-1232 (Aroclor 1232)	<765	U
53469-21-9	PCB-1242 (Aroclor 1242)	<765	U
11097-69-1	PCB-1254 (Aroclor 1254)	<765	U
11096-82-5	PCB-1260 (Aroclor 1260)	<765	U

SAMPLE NO.

BH-21 (0-4)

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073008
Date Analyzed: 10/12/2018 15:27
Lab File ID: 101218-2.B\211999.D
Initial wt/vol: 15.1 g Final wt/vol: 5 mL Dilution: 20
Instrument: 70GCS2 Percent Moisture: 14.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	4650	

SAMPLE NO.

BH-20 (0-4)

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073

Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073009

Date Analyzed: 10/12/2018 15:40
Lab File ID: 101218-1.B\212000.D

Initial wt/vol: 15.03 g Final wt/vol: 5 mL Dilution: 250
Instrument: 70GCS2 Percent Moisture: 22.1%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<10600	U
11104-28-2	PCB-1221 (Aroclor 1221)	<21500	U
11141-16-5	PCB-1232 (Aroclor 1232)	<10600	U
53469-21-9	PCB-1242 (Aroclor 1242)	<10600	U
11097-69-1	PCB-1254 (Aroclor 1254)	<10600	U
11096-82-5	PCB-1260 (Aroclor 1260)	<10600	U

SAMPLE NO.

BH-20 (0-4)

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York

Contract: 31 WATER ST

Date Received: 10/05/2018 10:45

Matrix: Solid SDG No.: 7067073

Date Extracted: 10/08/2018 17:25

Lab Sample ID: 7067073009

Date Analyzed: 10/12/2018 15:40

Lab File ID: 101218-2.B\212000.D

Initial wt/vol: 15.03 g Final wt/vol: 5 mL Dilution: 250

Instrument: 70GCS2 Percent Moisture: 22.1%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	104000 J	

SAMPLE NO.

BH-20 (6-7')

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073

Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073010

Date Analyzed: 10/12/2018 17:44
Lab File ID: 101218-1.B\212006.D

Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS2 Percent Moisture: 29.8%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<47.0	U
11104-28-2	PCB-1221 (Aroclor 1221)	<95.5	U
11141-16-5	PCB-1232 (Aroclor 1232)	<47.0	U
53469-21-9	PCB-1242 (Aroclor 1242)	<47.0	U
11097-69-1	PCB-1254 (Aroclor 1254)	<47.0	U
11096-82-5	PCB-1260 (Aroclor 1260)	<47.0	U

PCB - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
BH-20 (6-7')

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/05/2018 10:45
Matrix: Solid SDG No.: 7067073
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067073010
Date Analyzed: 10/12/2018 17:44
Lab File ID: 101218-2.B\212006.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS2 Percent Moisture: 29.8%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	131 J	

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.
BH-14 (18-20)

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST
Lab Sample ID: 7067073001 Percent Moisture: 17.6

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.2	U	mg/kg	1	11/02/2018 14:15
57-12-5	Cyanide	<0.61	U	mg/kg	1	11/05/2018 14:34

MKP 1/8/19

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.
BH-14 (15-16)

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST
Lab Sample ID: 7067073002 Percent Moisture: 25.6

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.3	U	mg/kg	1	11/02/2018 14:16
57-12-5	Cyanide	<0.66	U	mg/kg	1	11/05/2018 14:35

MKP 1/9/19

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.
BH-16 (10-11)

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST
Lab Sample ID: 7067073003 Percent Moisture: 22.3

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.3	U	mg/kg	1	11/02/2018 14:16
57-12-5	Cyanide	<0.64	U	mg/kg	1	11/05/2018 14:35

SAMPLE NO.

BH-18 (0-4)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST

Lab Sample ID: 7067073004 Percent Moisture: 9.9

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.1	U	mg/kg	1	11/02/2018 14:16
57-12-5	Cyanide	1.9	J	mg/kg	1	11/05/2018 14:35

mgp 1/9/19

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.
BH-18 (14-15)

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST
Lab Sample ID: 7067073005 Percent Moisture: 16.7

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.2	U	mg/kg	1	11/02/2018 14:16
57-12-5	Cyanide	<0.60	U	mg/kg	1	11/05/2018 14:35

SAMPLE NO.

BH-19 (0-9)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST

Lab Sample ID: 7067073006 Percent Moisture: 8.3

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.1	U	mg/kg	1	11/02/2018 14:16
57-12-5	Cyanide	<0.55 ~~ND~~ U	U	mg/kg	1	11/05/2018 14:35

mkp 1/9/19

SAMPLE NO.

BH-15 (12-16)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST

Lab Sample ID: 7067073007 Percent Moisture: 30.8

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.4	U	mg/kg	1	11/02/2018 14:16
57-12-5	Cyanide	<0.72	~~U~~	mg/kg	1	11/05/2018 14:36

SAMPLE NO.

BH-21 (0-4)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST

Lab Sample ID: 7067073008 Percent Moisture: 14.3

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.2	U	mg/kg	1	11/02/2018 14:17
57-12-5	Cyanide	<0.58	U	mg/kg	1	11/05/2018 14:36

1/9/19

SAMPLE NO.

BH-20 (0-4)

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST
Lab Sample ID: 7067073009 Percent Moisture: 22.1

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.3	U	mg/kg	1	11/02/2018 14:17
57-12-5	Cyanide	<0.64 ~~ND~~ U		mg/kg	1	11/05/2018 14:36

SAMPLE NO.

BH-20 (6-7')

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST

Lab Sample ID: 7067073010 Percent Moisture: 29.8

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<7.1	U	mg/kg	5	11/02/2018 14:17
57-12-5	Cyanide	<0.71	U	mg/kg	1	11/05/2018 14:36

SAMPLE NO.

BMW-91 (24.2-25)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST

Lab Sample ID: 7067073011 Percent Moisture: 12.7

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.1	U	mg/kg	1	11/02/2018 14:17
57-12-5	Cyanide	<0.57	U	mg/kg	1	11/05/2018 14:36

Appendix B

Laboratory QC Documentation

MSV - FORM II VOA-1
SOLID VOLATILE SURROGATE RECOVERY

Lab Name: Pace Analytical - New York SDG No.: 7067073 Contract: 31 WATER ST

Instrument ID: 70MSV4

LAB SAMPLE ID	SAMPLE NAME	12D4	BFB	TOL8
398788	398788BLANK	146	105	100
398789	398789LCS	132	106	102
401714	401714MS	145	109	101
7067073003	BH-16 (10-11)	158*	103	97
7067073004	BH-18 (0-4)	153*	107	102

	QC LIMITS
(12D4) = 1,2-Dichloroethane-d4 (S)	(33-150)
(BFB) = 4-Bromofluorobenzene (S)	(34-145)
(TOL8) = Toluene-d8 (S)	(43-157)

* Values outside of QC Limits

MSV - FORM III VOA-1

SOLID VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Pace Analytical - New York
Matrix Spike - Sample No: 401911MS

Date Extracted: 10/11/2018
Date Analyzed (1): 10/11/2018

Instrument: 70MSV6
Lab File ID: 101118.B\J49633.D

Parent Sample ID: BH-14 (15-16)
SDG No.: 7067073

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	MS CONCENTRATION (ug/kg)	MS %REC	QC LIMITS REC.
1,1,1-Trichloroethane	2920	<119	2550	87	59-134
1,1-Dichloroethane	2920	<119	2390	82	53-160
1,1-Dichloroethene	2920	<119	2520	86	47-152
1,2,4-Trimethylbenzene	2920	<119	2560	88	59-126
1,2-Dichlorobenzene	2920	<119	2560	88	67-125
1,2-Dichloroethane	2920	<119	2390	82	65-143
1,3,5-Trimethylbenzene	2920	<119	2540	87	49-134
1,3-Dichlorobenzene	2920	<119	2610	90	64-124
1,4-Dichlorobenzene	2920	<119	2540	87	61-127
1,4-Dioxane (p-Dioxane)	73000	<2980	65100	89	10-205
2-Butanone (MEK)	2920	<119	2480	85	52-164
Acetone	2920	<119	4670	160	23-196
Benzene	2920	<119	2510	86	65-129
Carbon tetrachloride	2920	<119	2460	84	57-135
Chlorobenzene	2920	<119	2800	96	62-136
Chloroform	2920	<119	2480	85	71-135
Ethylbenzene	2920	<119	2860	98	59-135
Methyl-tert-butyl ether	2920	<119	2260	78	25-171
Methylene Chloride	2920	<119	2160	74	50-164
Tetrachloroethene	2920	<119	5450	187	10-176
Toluene	2920	138	2810	92	66-131
Trichloroethene	2920	<119	2830	97	62-130
Vinyl chloride	2920	122	2530	83	45-137
Xylene (Total)	8750	<238	8600	98	62-135
cis-1,2-Dichloroethene	2920	3380	7840	153	75-130
m&p-Xylene	5830	<238	5790	99	69-133
n-Butylbenzene	2920	<119	2640	90	54-121
n-Propylbenzene	2920	<119	2480	85	56-125
o-Xylene	2920	<119	2800	96	71-135
sec-Butylbenzene	2920	<119	2550	87	50-126
tert-Butylbenzene	2920	<119	2610	89	56-127
trans-1,2-Dichloroethene	2920	<119	2460	84	53-157

Spike Recovery: 2 out of 32 outside limits.

11/29/2018 9:00

MSV - FORM III VOA-1

SOLID VOLATILE SAMPLE/DUPLICATE RECOVERY

Lab Name: Pace Analytical - New York
Date Extracted: 10/11/2018
Instrument 70MSV6
Lab Sample ID: BH-14 (18-20)

Duplicate Sample No: 7067073001DUP
Date Analyzed: 10/11/2018
Lab File ID: 101118.B\J49632.D
SDG No.: 7067073

COMPOUND	SAMPLE CONCENTRATION (ug/kg)	DUPLICATE CONCENTRATION (ug/kg)	RPD	RPD LIMITS
1,1,1-Trichloroethane	<107	<107		0-20
1,1-Dichloroethane	<107	<107		0-20
1,1-Dichloroethene	<107	<107		0-20
1,2,4-Trimethylbenzene	<107	<107		0-20
1,2-Dichlorobenzene	<107	<107		0-20
1,2-Dichloroethane	<107	<107		0-20
1,3,5-Trimethylbenzene	<107	<107		0-20
1,3-Dichlorobenzene	<107	<107		0-20
1,4-Dichlorobenzene	<107	<107		0-20
1,4-Dioxane (p-Dioxane)	<2690	<2690		0-20
2-Butanone (MEK)	<107	<107		0-20
Acetone	<107	<107		0-20
Benzene	<107	<107		0-20
Carbon tetrachloride	<107	<107		0-20
Chlorobenzene	<107	<107		0-20
Chloroform	<107	<107		0-20
Ethylbenzene	<107	<107		0-20
Methyl-tert-butyl ether	<107	<107		0-20
Methylene Chloride	<107	<107		0-20
Tetrachloroethene	<107	<107		0-20
Toluene	<107	<107		0-20
Trichloroethene	325	499	42	0-20
Vinyl chloride	<107	<107		0-20
Xylene (Total)	<215	<215		0-20
cis-1,2-Dichloroethene	789	1200	41	0-20
m&p-Xylene	<215	<215		0-20
n-Butylbenzene	<107	<107		0-20
n-Propylbenzene	<107	<107		0-20
o-Xylene	<107	<107		0-20
sec-Butylbenzene	<107	<107		0-20
tert-Butylbenzene	<107	<107		0-20
trans-1,2-Dichloroethene	<107	<107		0-20

RPD: 2 out of 2 outside limits.

MSV - FORM VI VOA-3

MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York Instrument ID: 70MSV4 GC Column: Col 1 SDG No.: 7067073

Calibration Date(s): 08/31/2018 08/31/2018 Calibration Time(s): 16:25 18:40

LAB FILE ID

CAL1 = 083118.B\F90826.D CAL2 = 083118.B\F90827.D CAL3 = 083118.B\F90828.D

CAL4 = 083118.B\F90829.D CAL5 = 083118.B\F90830.D CAL6 = 083118.B\F90831.D

CAL7 = 083118.B\F90832.D

COMPOUND	CURVE TYPE	CAL7	%RSD	R2	A1	A2	A3
Acetone	Linear	0.11911		0.99745	0.01395930	0.11784	
Benzene	Averaged	1.71525	4.58293			1.84742	
2-Butanone (MEK)	Averaged	0.15945	8.37438			0.17118	
n-Butylbenzene	Averaged	4.58180	7.70431			4.70312	
sec-Butylbenzene	Averaged	4.83103	7.49096			4.90367	
tert-Butylbenzene	Averaged	3.73376	3.88753			3.77619	
Carbon tetrachloride	Averaged	0.51810	2.20797			0.53405	
Chlorobenzene	Averaged	2.38903	3.32840			2.48338	
Chlorodifluoromethane	Averaged	0.90494	8.64661			1.04084	
Chloroform	Averaged	1.18280	3.75950			1.26526	
1,2-Dichlorobenzene	Averaged	1.88756	4.16560			1.87410	
1,3-Dichlorobenzene	Averaged	2.06091	5.46330			2.06407	
1,4-Dichlorobenzene	Averaged	1.96481	5.35241			2.09908	
1,1-Dichloroethane	Averaged	1.31119	5.38422			1.43978	
1,2-Dichloroethane	Averaged	0.70378	3.73915			0.75284	
1,1-Dichloroethene	Averaged	0.63361	6.61199			0.69833	
cis-1,2-Dichloroethene	Averaged	0.76787	5.72519			0.82969	
trans-1,2-Dichloroethene	Averaged	0.69521	5.28248			0.75214	
1,4-Dioxane (p-Dioxane)	Linear	0.00229		0.99882	0.00502089	0.00224	
Ethylbenzene	Averaged	1.25827	4.99581			1.35708	
Methylene Chloride	Averaged	0.68968	15.14539			0.80344	
Methyl-tert-butyl ether	Averaged	1.58823	4.53777			1.67992	
n-Propylbenzene	Averaged	5.23456	4.96784			5.72671	
Tetrachloroethene	Averaged	0.89163	6.45475			0.91431	
1,2,4,5-tetramethylbenzene	Averaged	3.57880	6.93439			3.47071	
Toluene	Averaged	1.77896	5.18791			1.96192	
1,2,4-Trichlorobenzene	Averaged	1.23438	7.85650			1.14597	
1,1,1-Trichloroethane	Averaged	0.59148	4.28432			0.63348	
Trichloroethene	Averaged	0.40930	4.26402			0.43664	
1,2,4-Trimethylbenzene	Averaged	3.55938	19.66654			4.26874	
1,3,5-Trimethylbenzene	Averaged	3.63790	6.03716			3.96593	
Vinyl chloride	Averaged	1.01175	5.70991			1.09760	
m&p-Xylene	Averaged	1.60290	12.37826			1.78382	
o-Xylene	Averaged	1.59967	5.78610			1.67306	
4-Bromofluorobenzene (S)	Averaged	0.83511	2.15600			0.82543	

RF 20.005

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10621090ICV

MSV - FORM VII VOA-1
MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York
Calibration Date: 08/31/2018 Time: 19:25

Instrument ID: 70MSV4 GC Column: Col 1
Init. Calib. Date(s): 08/31/2018 08/31/2018

Lab File ID: 083118.B\F90834.D
Init. Calib. Time(s): 16:25 18:40

SDG No.: 7067073

COMPOUND	CURVE	$\overline{RRF}$ or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Linear	50	55.33137	0.0100	10.6628	30.0000
Benzene	Averaged	1.84742	1.84985	0.0100	0.1315	30.0000
2-Butanone (MEK)	Averaged	0.17118	0.16949	0.0100	-0.9877	30.0000
n-Butylbenzene	Averaged	4.70312	4.71192	0.0100	0.1873	30.0000
sec-Butylbenzene	Averaged	4.90367	4.67718	0.0100	-4.6188	30.0000
tert-Butylbenzene	Averaged	3.77619	3.57882	0.0100	-5.2269	30.0000
Carbon tetrachloride	Averaged	0.53405	0.56726	0.0100	6.2180	30.0000
Chlorobenzene	Averaged	2.48338	2.45679	0.3000	-1.0706	30.0000
Chlorodifluoromethane	Averaged	1.04084	1.07692	0.0100	3.4665	30.0000
Chloroform	Averaged	1.26526	1.30045	0.0100	2.7811	30.0000
1,2-Dichlorobenzene	Averaged	1.87410	1.77123	0.0100	-5.4886	30.0000
1,3-Dichlorobenzene	Averaged	2.06407	1.98323	0.0100	-3.9163	30.0000
1,4-Dichlorobenzene	Averaged	2.09908	1.96479	0.0100	-6.3977	30.0000
1,1-Dichloroethane	Averaged	1.43978	1.47162	0.1000	2.2116	30.0000
1,2-Dichloroethane	Averaged	0.75284	0.79512	0.0100	5.6166	30.0000
1,1-Dichloroethene	Averaged	0.69833	0.73217	0.0100	4.8456	30.0000
cis-1,2-Dichloroethene	Averaged	0.82969	0.84248	0.0100	1.5423	30.0000
trans-1,2-Dichloroethene	Averaged	0.75214	0.76416	0.0100	1.5988	30.0000
1,4-Dioxane (p-Dioxane)	Linear	1250	1180.155	0.0100	-5.5875	30.0000
Ethylbenzene	Averaged	1.35708	1.34277	0.0100	-1.0540	30.0000
Methylene Chloride	Averaged	0.80344	0.73579	0.0100	-8.4199	30.0000
Methyl-tert-butyl ether	Averaged	1.67992	1.66956	0.0100	-0.6166	30.0000
n-Propylbenzene	Averaged	5.72671	5.44039	0.0100	-4.9999	30.0000
Tetrachloroethene	Averaged	0.91431	0.92765	0.0100	1.4590	30.0000
1,2,4,5-tetramethylbenzene	Averaged	3.47071	3.48341	0.0100	0.3657	30.0000
Toluene	Averaged	1.96192	1.92959	0.0100	-1.6479	30.0000
1,2,4-Trichlorobenzene	Averaged	1.14597	1.15097	0.0100	0.4361	30.0000
1,1,1-Trichloroethane	Averaged	0.63348	0.64651	0.0100	2.0556	30.0000
Trichloroethene	Averaged	0.43664	0.46093	0.0100	5.5640	30.0000
1,2,4-Trimethylbenzene	Averaged	4.26874	3.66602	0.0100	-14.1195	30.0000
1,3,5-Trimethylbenzene	Averaged	3.96593	3.71692	0.0100	-6.2787	30.0000
Vinyl chloride	Averaged	1.09760	0.96644	0.0100	-11.9497	30.0000
m&p-Xylene	Averaged	1.78382	1.67083	0.0100	-6.3342	30.0000
o-Xylene	Averaged	1.67306	1.60382	0.0100	-4.1382	30.0000
4-Bromofluorobenzene (S)	Averaged	0.82543	0.83778	0.0100	1.4970	30.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.25492	0.26322	0.0100	3.2564	30.0000

?

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

MSV - FORM VI VOA-3

MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York Instrument ID: 70MSV6 GC Column: Col 1 SDG No.: 7067073

Calibration Date(s): 07/31/2018 07/31/2018 Calibration Time(s): 15:32 17:38

LAB FILE ID

CAL1 = 073118.B\J47621.D CAL2 = 073118.B\J47622.D CAL3 = 073118.B\J47623.D

CAL4 = 073118.B\J47624.D CAL5 = 073118.B\J47625.D CAL6 = 073118.B\J47626.D

CAL7 = 073118.B\J47627.D CAL8 = 073118.B\J47628.D

COMPOUND	CURVE TYPE	%RSD	R2	A1	A2	A3
Acetone	Averaged	7.46012			0.15668	
Benzene	Averaged	1.80474			1.48372	
2-Butanone (MEK)	Averaged	9.70327			0.44165	
n-Butylbenzene	Averaged	8.50341			2.87453	
sec-Butylbenzene	Averaged	2.52090			3.57724	
tert-Butylbenzene	Averaged	2.32351			2.54480	
Carbon tetrachloride	Averaged	4.38968			0.43591	
Chlorobenzene	Averaged	2.19292			1.87841	
Chloroform	Averaged	2.37906			1.04244	
1,2-Dichlorobenzene	Averaged	3.66983			1.46988	
1,3-Dichlorobenzene	Averaged	3.85919			1.56915	
1,4-Dichlorobenzene	Averaged	2.98101			1.62311	
1,1-Dichloroethane	Averaged	2.72534			1.13449	
1,2-Dichloroethane	Averaged	2.58047			0.76043	
1,1-Dichloroethene	Averaged	7.64778			0.51546	
cis-1,2-Dichloroethene	Averaged	2.37939			0.69858	
trans-1,2-Dichloroethene	Averaged	3.18468			0.63141	
1,4-Dioxane (p-Dioxane)	Averaged	11.97842			0.00286	
Ethylbenzene	Averaged	3.31046			1.02223	
Methylene Chloride	Averaged	2.90233			0.64501	
Methyl-tert-butyl ether	Averaged	4.23720			1.72280	
n-Propylbenzene	Averaged	3.10414			4.75077	
Tetrachloroethene	Averaged	2.69313			0.66537	
Toluene	Averaged	1.46406			1.59527	
1,1,1-Trichloroethane	Averaged	3.93866			0.51435	
Trichloroethene	Averaged	1.91394			0.35917	
1,2,4-Trimethylbenzene	Averaged	2.99771			2.98435	
1,3,5-Trimethylbenzene	Averaged	1.75283			3.10629	
Vinyl chloride	Averaged	1.89761			0.68378	
m&p-Xylene	Averaged	4.62226			1.24043	
o-Xylene	Averaged	4.20291			1.21066	
4-Bromofluorobenzene (S)	Averaged	1.67665			0.87336	
1,2-Dichloroethane-d4 (S)	Averaged	3.13249			0.35662	
Toluene-d8 (S)	Averaged	0.53381			2.43612	

RF 20.005

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10488642ICV

MSV - FORM VII VOA-1
MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York

Calibration Date: 07/31/2018 Time: 19:21

Instrument ID: 70MSV6 GC Column: Col 1

Init. Calib. Date(s): 07/31/2018 07/31/2018

Lab File ID: 073118.B\J47630.D

Init. Calib. Time(s): 15:32 17:38

SDG No.: 7067073

COMPOUND	CURVE	$\overline{RRF}$ or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Averaged	0.15668	0.21682	0.0100	38.3818	30.0000
Benzene	Averaged	1.48372	1.32819	0.0100	-10.4824	30.0000
2-Butanone (MEK)	Averaged	0.44165	0.46335	0.0100	4.9117	30.0000
n-Butylbenzene	Averaged	2.87453	2.54999	0.0100	-11.2904	30.0000
sec-Butylbenzene	Averaged	3.57724	3.00713	0.0100	-15.9370	30.0000
tert-Butylbenzene	Averaged	2.54480	2.14646	0.0100	-15.6533	30.0000
Carbon tetrachloride	Averaged	0.43591	0.37892	0.0100	-13.0746	30.0000
Chlorobenzene	Averaged	1.87841	1.67519	0.0100	-10.8183	30.0000
Chloroform	Averaged	1.04244	0.97127	0.0100	-6.8270	30.0000
1,2-Dichlorobenzene	Averaged	1.46988	1.28107	0.0100	-12.8456	30.0000
1,3-Dichlorobenzene	Averaged	1.56915	1.37694	0.0100	-12.2496	30.0000
1,4-Dichlorobenzene	Averaged	1.62311	1.41216	0.0100	-12.9968	30.0000
1,1-Dichloroethane	Averaged	1.13449	1.02112	0.0100	-9.9928	30.0000
1,2-Dichloroethane	Averaged	0.76043	0.74939	0.0100	-1.4523	30.0000
1,1-Dichloroethene	Averaged	0.51546	0.46717	0.0100	-9.3670	30.0000
cis-1,2-Dichloroethene	Averaged	0.69858	0.63835	0.0100	-8.6218	30.0000
trans-1,2-Dichloroethene	Averaged	0.63141	0.54910	0.0100	-13.0362	30.0000
1,4-Dioxane (p-Dioxane)	Averaged	0.00286	0.00322	0.0100	12.5405	30.0000
Ethylbenzene	Averaged	1.02223	0.90964	0.0100	-11.0142	30.0000
Methylene Chloride	Averaged	0.64501	0.58032	0.0100	-10.0287	30.0000
Methyl-tert-butyl ether	Averaged	1.72280	1.69710	0.0100	-1.4921	30.0000
n-Propylbenzene	Averaged	4.75077	4.16205	0.0100	-12.3923	30.0000
Tetrachloroethene	Averaged	0.66537	0.56906	0.0100	-14.4740	30.0000
Toluene	Averaged	1.59527	1.44068	0.0100	-9.6906	30.0000
1,1,1-Trichloroethane	Averaged	0.51435	0.46228	0.0100	-10.1227	30.0000
Trichloroethene	Averaged	0.35917	0.33124	0.0100	-7.7756	30.0000
1,2,4-Trimethylbenzene	Averaged	2.98435	2.70297	0.0100	-9.4285	30.0000
1,3,5-Trimethylbenzene	Averaged	3.10629	2.77473	0.0100	-10.6740	30.0000
Vinyl chloride	Averaged	0.68378	0.62014	0.0100	-9.3070	30.0000
m&p-Xylene	Averaged	1.24043	1.12781	0.0100	-9.0792	30.0000
o-Xylene	Averaged	1.21066	1.06186	0.0100	-12.2908	30.0000
4-Bromofluorobenzene (S)	Averaged	0.87336	0.89443	0.0100	2.4122	30.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.35662	0.36020	0.0100	1.0058	30.0000
Toluene-d8 (S)	Averaged	2.43612	2.35781	0.0100	-3.2147	30.0000

RF < 0.005

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10780707CCV

MSV - FORM VII VOA-1
MSV CONTINUING CALIBRATION DATA

Lab Name: Pace Analytical - New York
Calibration Date: 10/11/2018 Time: 09:33

Instrument ID: 70MSV6 GC Column: Col 1
Init. Calib. Date(s): 07/31/2018 07/31/2018

Lab File ID: 101118.B\J49619.D
Init. Calib. Time(s): 15:32 17:38

SDG No.: 7067073

COMPOUND	CURVE	$\overline{\text{RRF}}$ or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Averaged	0.15668	0.12585	0.0100	-19.6788	20.0000
Benzene	Averaged	1.48372	1.37667	0.0100	-7.2152	20.0000
2-Butanone (MEK)	Averaged	0.44165	0.32684	0.0100	-25.9959	20.0000
n-Butylbenzene	Averaged	2.87453	2.73927	0.0100	-4.7054	20.0000
sec-Butylbenzene	Averaged	3.57724	3.31169	0.0100	-7.4233	20.0000
tert-Butylbenzene	Averaged	2.54480	2.40634	0.0100	-5.4407	20.0000
Carbon tetrachloride	Averaged	0.43591	0.44563	0.0100	2.2297	20.0000
Chlorobenzene	Averaged	1.87841	2.03110	0.0100	8.1292	20.0000
Chloroform	Averaged	1.04244	0.97184	0.0100	-6.7729	20.0000
1,2-Dichlorobenzene	Averaged	1.46988	1.47002	0.0100	0.0095	20.0000
1,3-Dichlorobenzene	Averaged	1.56915	1.57328	0.0100	0.2628	20.0000
1,4-Dichlorobenzene	Averaged	1.62311	1.60582	0.0100	-1.0655	20.0000
1,1-Dichloroethane	Averaged	1.13449	0.99520	0.0100	-12.2779	20.0000
1,2-Dichloroethane	Averaged	0.76043	0.70024	0.0100	-7.9154	20.0000
1,1-Dichloroethene	Averaged	0.51546	0.47697	0.0100	-7.4666	20.0000
cis-1,2-Dichloroethene	Averaged	0.69858	0.66039	0.0100	-5.4671	20.0000
trans-1,2-Dichloroethene	Averaged	0.63141	0.57578	0.0100	-8.8105	20.0000
1,4-Dioxane (p-Dioxane)	Averaged	0.00286	0.00354	0.0100	23.5908	20.0000
Ethylbenzene	Averaged	1.02223	1.06385	0.0100	4.0720	20.0000
Methylene Chloride	Averaged	0.64501	0.53041	0.0100	-17.7658	20.0000
Methyl-tert-butyl ether	Averaged	1.72280	1.53381	0.0100	-10.9701	20.0000
n-Propylbenzene	Averaged	4.75077	4.30871	0.0100	-9.3052	20.0000
Tetrachloroethene	Averaged	0.66537	0.74658	0.0100	12.2046	20.0000
Toluene	Averaged	1.59527	1.55115	0.0100	-2.7657	20.0000
1,1,1-Trichloroethane	Averaged	0.51435	0.51639	0.0100	0.3971	20.0000
Trichloroethene	Averaged	0.35917	0.35061	0.0100	-2.3834	20.0000
1,2,4-Trimethylbenzene	Averaged	2.98435	2.81572	0.0100	-5.6502	20.0000
1,3,5-Trimethylbenzene	Averaged	3.10629	2.85463	0.0100	-8.1016	20.0000
Vinyl chloride	Averaged	0.68378	0.58508	0.0100	-14.4340	20.0000
m&p-Xylene	Averaged	1.24043	1.32280	0.0100	6.6399	20.0000
o-Xylene	Averaged	1.21066	1.27829	0.0100	5.5862	20.0000
4-Bromofluorobenzene (S)	Averaged	0.87336	0.91924	0.0100	5.2534	20.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.35662	0.32419	0.0100	-9.0925	20.0000
Toluene-d8 (S)	Averaged	2.43612	2.42717	0.0100	-0.3674	20.0000

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10781473CCV

MSV - FORM VII VOA-1
MSV CONTINUING CALIBRATION DATA

Lab Name: Pace Analytical - New York
Calibration Date: 10/11/2018 Time: 06:52

Instrument ID: 70MSV4 GC Column: Col 1
Init. Calib. Date(s): 08/31/2018 08/31/2018

Lab File ID: 101118.B\F91206.D
Init. Calib. Time(s): 16:25 18:40

SDG No.: 7067073

COMPOUND	CURVE	$\overline{RRF}$ or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Linear	50	112.9609	0.0100	125.9218	20.0000
Benzene	Averaged	1.84742	1.92471	0.0100	4.1835	20.0000
2-Butanone (MEK)	Averaged	0.17118	0.26173	0.0100	52.9011	20.0000
n-Butylbenzene	Averaged	4.70312	5.19901	0.0100	10.5440	20.0000
sec-Butylbenzene	Averaged	4.90367	5.33629	0.0100	8.8224	20.0000
tert-Butylbenzene	Averaged	3.77619	3.95980	0.0100	4.8621	20.0000
Carbon tetrachloride	Averaged	0.53405	0.76372	0.0100	43.0054	20.0000
Chlorobenzene	Averaged	2.48338	2.54366	0.3000	2.4274	20.0000
Chlorodifluoromethane	Averaged	1.04084	1.08207	0.0100	3.9616	20.0000
Chloroform	Averaged	1.26526	1.27746	0.0100	0.9636	20.0000
1,2-Dichlorobenzene	Averaged	1.87410	1.91669	0.0100	2.2727	20.0000
1,3-Dichlorobenzene	Averaged	2.06407	2.20957	0.0100	7.0492	20.0000
1,4-Dichlorobenzene	Averaged	2.09908	2.20478	0.0100	5.0357	20.0000
1,1-Dichloroethane	Averaged	1.43978	1.33599	0.1000	-7.2090	20.0000
1,2-Dichloroethane	Averaged	0.75284	0.84614	0.0100	12.3934	20.0000
1,1-Dichloroethene	Averaged	0.69833	0.64101	0.0100	-8.2089	20.0000
cis-1,2-Dichloroethene	Averaged	0.82969	0.74431	0.0100	-10.2901	20.0000
trans-1,2-Dichloroethene	Averaged	0.75214	0.69403	0.0100	-7.7258	20.0000
1,4-Dioxane (p-Dioxane)	Linear	1250	1173.221	0.0100	-6.1423	20.0000
Ethylbenzene	Averaged	1.35708	1.36991	0.0100	0.9458	20.0000
Methylene Chloride	Averaged	0.80344	0.67050	0.0100	-16.5463	20.0000
Methyl-tert-butyl ether	Averaged	1.67992	1.62174	0.0100	-3.4632	20.0000
n-Propylbenzene	Averaged	5.72671	5.69092	0.0100	-0.6251	20.0000
Tetrachloroethene	Averaged	0.91431	1.17245	0.0100	28.2334	20.0000
1,2,4,5-tetramethylbenzene	Averaged	3.47071	3.84288	0.0100	10.7229	20.0000
Toluene	Averaged	1.96192	1.98237	0.0100	1.0425	20.0000
1,2,4-Trichlorobenzene	Averaged	1.14597	1.38979	0.0100	21.2765	20.0000
1,1,1-Trichloroethane	Averaged	0.63348	0.83715	0.0100	32.1494	20.0000
Trichloroethene	Averaged	0.43664	0.50288	0.0100	15.1701	20.0000
1,2,4-Trimethylbenzene	Averaged	4.26874	3.88776	0.0100	-8.9249	20.0000
1,3,5-Trimethylbenzene	Averaged	3.96593	3.98553	0.0100	0.4941	20.0000
Vinyl chloride	Averaged	1.09760	0.99226	0.0100	-9.5976	20.0000
m&p-Xylene	Averaged	1.78382	1.74763	0.0100	-2.0287	20.0000
o-Xylene	Averaged	1.67306	1.69142	0.0100	1.0974	20.0000
4-Bromofluorobenzene (S)	Averaged	0.82543	0.87590	0.0100	6.1150	20.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.25492	0.35310	0.0100	38.5141	20.0000

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10801628CCV

MSV - FORM VII VOA-1
MSV CONTINUING CALIBRATION DATA

Lab Name: Pace Analytical - New York
Calibration Date: 10/15/2018 Time: 16:06

Instrument ID: 70MSV4 GC Column: Col 1
Init. Calib. Date(s): 08/31/2018 08/31/2018

Lab File ID: 101518.B\F91251.D
Init. Calib. Time(s): 16:25 18:40

SDG No.: 7067073

COMPOUND	CURVE	RRF or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Linear	50	86.58484	0.0100	73.1697	20.0000
Benzene	Averaged	1.84742	1.65639	0.0100	-10.3403	20.0000
2-Butanone (MEK)	Averaged	0.17118	0.21070	0.0100	23.0908	20.0000
n-Butylbenzene	Averaged	4.70312	5.18144	0.0100	10.1704	20.0000
sec-Butylbenzene	Averaged	4.90367	5.39559	0.0100	10.0316	20.0000
tert-Butylbenzene	Averaged	3.77619	3.88699	0.0100	2.9339	20.0000
Carbon tetrachloride	Averaged	0.53405	0.50218	0.0100	-5.9676	20.0000
Chlorobenzene	Averaged	2.48338	2.23953	0.3000	-9.8190	20.0000
Chlorodifluoromethane	Averaged	1.04084	0.82200	0.0100	-21.0256	20.0000
Chloroform	Averaged	1.26526	1.21780	0.0100	-3.7510	20.0000
1,2-Dichlorobenzene	Averaged	1.87410	1.85821	0.0100	-0.8475	20.0000
1,3-Dichlorobenzene	Averaged	2.06407	2.05977	0.0100	-0.2085	20.0000
1,4-Dichlorobenzene	Averaged	2.09908	2.04479	0.0100	-2.5864	20.0000
1,1-Dichloroethane	Averaged	1.43978	1.30630	0.1000	-9.2710	20.0000
1,2-Dichloroethane	Averaged	0.75284	0.74762	0.0100	-0.6929	20.0000
1,1-Dichloroethene	Averaged	0.69833	0.65771	0.0100	-5.8174	20.0000
cis-1,2-Dichloroethene	Averaged	0.82969	0.78994	0.0100	-4.7902	20.0000
trans-1,2-Dichloroethene	Averaged	0.75214	0.73689	0.0100	-2.0278	20.0000
1,4-Dioxane (p-Dioxane)	Linear	1250	1319.256	0.0100	5.5405	20.0000
Ethylbenzene	Averaged	1.35708	1.22229	0.0100	-9.9322	20.0000
Methylene Chloride	Averaged	0.80344	0.67312	0.0100	-16.2204	20.0000
Methyl-tert-butyl ether	Averaged	1.67992	1.46823	0.0100	-12.6013	20.0000
n-Propylbenzene	Averaged	5.72671	5.89955	0.0100	3.0181	20.0000
Tetrachloroethene	Averaged	0.91431	0.81563	0.0100	-10.7929	20.0000
1,2,4,5-tetramethylbenzene	Averaged	3.47071	3.79741	0.0100	9.4130	20.0000
Toluene	Averaged	1.96192	1.76846	0.0100	-9.8608	20.0000
1,2,4-Trichlorobenzene	Averaged	1.14597	1.23331	0.0100	7.6219	20.0000
1,1,1-Trichloroethane	Averaged	0.63348	0.60378	0.0100	-4.6890	20.0000
Trichloroethene	Averaged	0.43664	0.40472	0.0100	-7.3113	20.0000
1,2,4-Trimethylbenzene	Averaged	4.26874	3.93062	0.0100	-7.9209	20.0000
1,3,5-Trimethylbenzene	Averaged	3.96593	3.93433	0.0100	-0.7968	20.0000
Vinyl chloride	Averaged	1.09760	0.91027	0.0100	-17.0679	20.0000
m&p-Xylene	Averaged	1.78382	1.54465	0.0100	-13.4075	20.0000
o-Xylene	Averaged	1.67306	1.53109	0.0100	-8.4856	20.0000
4-Bromofluorobenzene (S)	Averaged	0.82543	0.88722	0.0100	7.4860	20.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.25492	0.31310	0.0100	22.8198	20.0000

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

MSSV FULL SCAN - FORM II SVOA-1
SOLID SEMI-VOLATILE SURROGATE RECOVERY

Lab Name: Pace Analytical - New York SDG No.: 7067073 Contract: 31 WATER ST

Instrument ID: 70MSS2

LAB SAMPLE ID	SAMPLE NAME	1DB4	24B6	2CP4	2FBP	2FPH	NIT5
395824	395824BLANK	73	63	69	68	108	75
395825	395825LCS	71	96	64	80	104	72
7067073001	BH-14 (18-20)	36	45	49	56	74	50
7067073002	BH-14 (15-16)	54	84	59	60	93	65
7067073003	BH-16 (10-11)	47	82	63	64	62	59
7067073004	BH-18 (0-4)	59	87	65	71	59	63
7067073005	BH-18 (14-15)	52	72	43	61	49	91
7067073006	BH-19 (0-9)	50	53	42	63	24*	91
7067073007	BH-15 (12-16)	45	59	45	62	78	42
7067073008	BH-21 (0-4)	55	64	44	100	37	63
7067073009	BH-20 (0-4)	61	57	62	82	62	71
7067073010	BH-20 (6-7')	53	72	61	70	66	41
7067073011	BMW-91 (24.2-25)	50	75	57	62	40	77

LAB SAMPLE ID	SAMPLE NAME	PHD5	TD14
395824	395824BLANK	63	92
395825	395825LCS	61	90
7067073001	BH-14 (18-20)	67	83
7067073002	BH-14 (15-16)	58	76
7067073003	BH-16 (10-11)	63	81
7067073004	BH-18 (0-4)	87	89
7067073005	BH-18 (14-15)	47	72
7067073006	BH-19 (0-9)	48	81
7067073007	BH-15 (12-16)	44	73
7067073008	BH-21 (0-4)	42	84
7067073009	BH-20 (0-4)	53	92
7067073010	BH-20 (6-7')	49	85
7067073011	BMW-91 (24.2-25)	59	82

	QC LIMITS
(1DB4) = 1,2-Dichlorobenzene-d4 (S)	(20-130)
(24B6) = 2,4,6-Tribromophenol (S)	(19-122)
(2CP4) = 2-Chlorophenol-d4 (S)	(20-130)
(2FBP) = 2-Fluorobiphenyl (S)	(30-115)
(2FPH) = 2-Fluorophenol (S)	(25-121)
(NIT5) = Nitrobenzene-d5 (S)	(23-120)
(PHD5) = Phenol-d5 (S)	(24-113)
(TD14) = p-Terphenyl-d14 (S)	(18-137)

* Values outside of QC Limits

SAMPLE NO.

10782133CCV

MSSV FULL SCAN - FORM VII SVOA-1
MSSV FULL SCAN CONTINUING CALIBRATION DATA

Lab Name: Pace Analytical - New York
Calibration Date: 10/10/2018 Time: 11:47

Instrument ID: 70MSS2 GC Column: Col 1
Init. Calib. Date(s): 10/01/2018 10/01/2018

Lab File ID: 8270-101018.B\N92238.D
Init. Calib. Time(s): 10:37 17:18

SDG No.: 7067073

COMPOUND	CURVE	$\overline{\text{RRF}}$ or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acenaphthene	Averaged	1.22673	1.23993	0.9000	1.0767	20.0000
Acenaphthylene	Averaged	1.80799	1.87315	0.9000	3.6039	20.0000
Anthracene	Averaged	1.08920	1.14618	0.7000	5.2319	20.0000
Benzo(a)anthracene	Averaged	1.25363	1.19449	0.8000	-4.7175	20.0000
Benzo(a)pyrene	Averaged	1.08743	1.13268	0.7000	4.1617	20.0000
Benzo(b)fluoranthene	Averaged	1.28307	1.26169	0.7000	-1.6666	20.0000
Benzo(g,h,i)perylene	Averaged	0.90025	0.93728	0.5000	4.1126	20.0000
Benzo(k)fluoranthene	Averaged	1.09496	1.18601	0.7000	8.3157	20.0000
Chrysene	Averaged	1.14881	1.12566	0.7000	-2.0152	20.0000
Dibenz(a,h)anthracene	Averaged	0.96671	1.03664	0.4000	7.2335	20.0000
Dibenzofuran	Averaged	1.66826	1.71365	0.8000	2.7211	20.0000
Fluoranthene	Averaged	1.15425	1.56331	0.6000	35.4393	20.0000
Fluorene	Averaged	1.44631	1.44125	0.9000	-0.3495	20.0000
Hexachlorobenzene	Averaged	0.26542	0.28849	0.1000	8.6918	20.0000
Indeno(1,2,3-cd)pyrene	Averaged	1.00002	1.06701	0.5000	6.6986	20.0000
2-Methylphenol(o-Cresol)	Averaged	1.16703	1.20572	0.7000	3.3156	20.0000
3&4-Methylphenol(m&p Cresol)	Averaged	1.23848	1.32973	0.6000	7.3686	20.0000
Naphthalene	Averaged	0.92094	0.96067	0.7000	4.3140	20.0000
Pentachlorophenol	Averaged	0.14414	0.15565	0.0500	7.9808	20.0000
Phenanthrene	Averaged	1.08974	1.12481	0.7000	3.2187	20.0000
Phenol	Averaged	1.68863	1.57534	0.8000	-6.7088	20.0000
Pyrene	Averaged	1.15025	1.09864	0.6000	-4.4866	20.0000
2-Chlorophenol-d4 (S)	Averaged	1.34010	1.34955	0.0100	0.7048	20.0000
1,2-Dichlorobenzene-d4 (S)	Averaged	0.89778	0.92502	0.0100	3.0335	20.0000
2-Fluorobiphenyl (S)	Averaged	1.41905	1.44657	0.0100	1.9390	20.0000
2-Fluorophenol (S)	Averaged	1.16249	1.70589	0.0100	46.7442	20.0000
Nitrobenzene-d5 (S)	Averaged	0.34707	0.34277	0.0100	-1.2394	20.0000
Phenol-d5 (S)	Averaged	1.50892	1.48206	0.0100	-1.7800	20.0000
p-Terphenyl-d14 (S)	Averaged	0.91937	0.83298	0.0100	-9.3965	20.0000
2,4,6-Tribromophenol (S)	Averaged	0.24428	0.28965	0.0100	18.5742	20.0000

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

BLANK

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/08/2018 10:01
Date Extracted: 10/08/2018 10:12
Date Analyzed: 10/10/2018 12:25
Initial wt/vol: 15 g Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067073
Lab Sample ID: 395824
Lab File ID: 8270-101018.B\N92239.D
Instrument: 70MSS2 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
119-61-9	Benzophenone	8.544	227	N J
	Unknown	4.2	141	J
	Unknown Alcohol	2.436	282	J
	Unknown Aldol Condensate	4.378	140	J
	Unknown Amide	13.481	178	J
	Unknown Amine	4.686	140	J
	Unknown Aromatic Hydrocarbon	2.749	1190	J
	Unknown Ketone	3.553	1200	J
	Unknown Ketone	3.019	156	J
	Unknown Ketone	2.943	293	J
	Unknown Ketone	3.752	53100	J
	Unknown Ketone	3.342	6600	J
	Unknown Organic Acid	9.86	226	J
	Unknown Petroleum Alkane	2.479	296	J

Subtract from samples

PESTICIDES - FORM II SVOA-1
SOLID SEMI-VOLATILE SURROGATE RECOVERY

Lab Name: Pace Analytical - New York SDG No.: 7067073 Contract: 31 WATER ST

Instrument ID: 70GCS3

LAB SAMPLE ID	SAMPLE NAME	DCBP	TCMX
396089	396089BLANK	117	87
396090	396090LCS	108	67
396091	396091LCS	119	90
7067073001	BH-14 (18-20)	139	97
7067073002	BH-14 (15-16)	67	56
7067073003	BH-16 (10-11)	127	92
7067073004	BH-18 (0-4)	135	101
7067073005	BH-18 (14-15)	54	51
7067073006	BH-19 (0-9)	108	78
7067073007	BH-15 (12-16)	204*	58
7067073008	BH-21 (0-4)	79	40
7067073009	BH-20 (0-4)	311*	104
7067073010	BH-20 (6-7')	282*	112
7067073011	BMW-91 (24.2-25)	125	88

	QC LIMITS
(DCBP) = Decachlorobiphenyl (S)	(30-150)
(TCMX) = Tetrachloro-m-xylene (S)	(30-150)

* Values outside of QC Limits

SAMPLE NO.

396089BLANK

PESTICIDES - FORM IV SVOA-1
SEMI-VOLATILE METHOD BLANK SUMMARY

Lab Name: Pace Analytical - New York SDG No.: 7067073 Contract: 31 WATER ST

Instrument ID: 70GCS3 Matrix: Solid Lab Sample ID: 396089

Lab File ID (1): 101218-1.B\311549.D Date Analyzed (1): 10/13/2018 Time (1):03:42

Lab File ID (2): 101218-2.B\311549.D Date Analyzed (2): 10/13/2018 Time (2):03:42

SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	ANALYZED	
396090LCS	396090	101218-1.B\311550.D	10/13/2018 03:57	
396090LCS	396090	101218-2.B\311550.D	10/13/2018 03:57	
396091LCS	396091	101218-1.B\311551.D	10/13/2018 04:11	
396091LCS	396091	101218-2.B\311551.D	10/13/2018 04:11	
BH-18 (14-15)	7067073005	101218-1.B\311555.D	10/13/2018 05:10	
BH-18 (14-15)	7067073005	101218-2.B\311555.D	10/13/2018 05:10	
BH-19 (0-9)	7067073006	101218-1.B\311556.D	10/13/2018 05:25	
BH-19 (0-9)	7067073006	101218-2.B\311556.D	10/13/2018 05:25	
BH-16 (10-11)	7067073003	101218-1.B\311557.D	10/13/2018 05:39	
BH-16 (10-11)	7067073003	101218-2.B\311557.D	10/13/2018 05:39	
BH-14 (18-20)	7067073001	101218-1.B\311558.D	10/13/2018 05:54	
BH-14 (18-20)	7067073001	101218-2.B\311558.D	10/13/2018 05:54	
BH-18 (0-4)	7067073004	101218-1.B\311559.D	10/13/2018 06:09	
BH-18 (0-4)	7067073004	101218-2.B\311559.D	10/13/2018 06:09	
BH-14 (15-16)	7067073002	101218-1.B\311560.D	10/13/2018 06:24	
BH-14 (15-16)	7067073002	101218-2.B\311560.D	10/13/2018 06:24	
BMW-91 (24.2-25)	7067073011	101218-1.B\311561.D	10/13/2018 06:38	
BMW-91 (24.2-25)	7067073011	101218-2.B\311561.D	10/13/2018 06:38	→ PFMout1
BH-15 (12-16)	7067073007	101518-1.B\311616.D	10/16/2018 16:13	
BH-15 (12-16)	7067073007	101518-2.B\311616.D	10/16/2018 16:13	
BH-20 (6-7')	7067073010	101518-1.B\311623.D	10/16/2018 17:56	
BH-20 (6-7')	7067073010	101518-2.B\311623.D	10/16/2018 17:56	
BH-20 (0-4)	7067073009	101518-1.B\311630.D	10/16/2018 19:39	
BH-20 (0-4)	7067073009	101518-2.B\311630.D	10/16/2018 19:39	→ PFM out
BH-20 (0-4)	7067073009	101918-1.B\311817.D	10/19/2018 19:38	
BH-20 (0-4)	7067073009	101918-2.B\311817.D	10/19/2018 19:38	
BH-21 (0-4)	7067073008	101918-1.B\311819.D	10/19/2018 20:08	
BH-21 (0-4)	7067073008	101918-2.B\311819.D	10/19/2018 20:08	

PFM - 10/12 @ 17:09 - in
10/12 @ 20:46 - in
10/13 @ 2:28 - in
10/13 @ 4:41 - in
10/13 @ 9:20 - out
10/16 @ 11:49 - out

} Flag all data

SAMPLE NO.

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

10795234PEM

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Instrument ID: 70GCS3 GC Column: Col 1
Lab File ID: 101218-1.B\311572.D

Analysis Date: 10/13/2018 Time: 09:20
SDG: 7067073
Init. Calib. Date(s): 10/12/2018 10/12/2018
Init. Calib. Time(s): 17:24 18:52

4,4'-DDT % 43.16*

Endrin %Breakdown: 1.21

QC LIMITS:
4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

10795232PEM

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York

Contract: 31 WATER ST

Instrument ID: 70GCS3 GC Column: Col 2

Lab File ID: 101218-2.B\311572.D

Analysis Date: 10/13/2018 Time: 09:20

SDG: 7067073

Init. Calib. Date(s): 10/12/2018 10/12/2018

Init. Calib. Time(s): 17:09 20:06

4,4'-DDT % 42.96*

Endrin %Breakdown: 1.33

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15%

Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

10806621PEM

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Instrument ID: 70GCS3 GC Column: Col 1
Lab File ID: 101518-1.B\311632.D

Analysis Date: 10/16/2018 Time: 20:08
SDG: 7067073
Init. Calib. Date(s): 10/16/2018 10/16/2018
Init. Calib. Time(s): 12:03 13:31

4,4'-DDT % 89.98*

Endrin %Breakdown: 5.87

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

10806624PEM

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York
Analysis Date: 10/16/2018 Time: 20:08
Contract: 31 WATER ST
SDG: 7067073
Instrument ID: 70GCS3 GC Column: Col 2
Init. Calib. Date(s): 10/16/2018 10/16/2018
Lab File ID: 101518-2.B\311632.D
Init. Calib. Time(s): 11:34 19:54

4,4'-DDT % 73.12*

Endrin %Breakdown: 8.76

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

10795235CCV

PESTICIDES - FORM VII PEST-1
PESTICIDES CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York

Calibration Date: 10/13/2018 Time: 09:35

Instrument ID: 70GCS3 GC Column: Col 1

Init. Calib. Date(s): 10/12/2018 10/12/2018

Lab File ID: 101218-1.B\311573.D

Init. Calib. Time(s): 17:24 18:52

SDG No.: 7067073

COMPOUND	PEAK	CURVE TYPE	RT	RT WINDOW		$\overline{RRF}$ or Amount	RRF or Amount	%D
				FROM	TO			
Aldrin		Averaged	4.259	4.231	4.291	149582452.	135937350.	-9.1221
alpha-BHC		Averaged	3.073	3.045	3.105	134506525.	133679550.	-0.6148
beta-BHC		Averaged	3.467	3.439	3.499	65624857.5	67296350.0	2.5470
delta-BHC		Averaged	3.661	3.633	3.693	130051320.	126420150.	-2.7921
gamma-BHC (Lindane)		Averaged	3.383	3.355	3.415	129909130.	124066550.	-4.4974
alpha-Chlordane		Averaged	5.44	5.412	5.472	141617237.	132880000.	-6.1696
4,4'-DDD		Averaged	6.427	6.399	6.459	88562862.5	123018700.	38.9055
4,4'-DDE		Averaged	5.57	5.543	5.603	109149993.	106467150.	-2.4579
4,4'-DDT		Averaged	6.755	6.727	6.787	101837370.	42006850.0	-58.7510
Dieldrin		Averaged	6.008	5.979	6.039	117392508.	117434025.	0.0354
Endosulfan I		Averaged	5.645	5.617	5.677	114703442.	116623100.	1.6736
Endosulfan II		Averaged	6.595	6.567	6.627	112201832.	111892175.	-0.2760
Endosulfan sulfate		Averaged	7.49	7.462	7.522	84957772.5	83035775.0	-2.2623
Endrin		Averaged	6.32	6.291	6.351	110175726.	110838175.	0.6013
Heptachlor		Averaged	3.897	3.87	3.93	140896367.	131122200.	-6.9371
Decachlorobiphenyl		Averaged	8.595	8.567	8.627	78202300.0	92444200.0	18.2116
Tetrachloro-m-xylene		Averaged	2.59	2.589	2.649	98708437.5	95142000.0	-3.6131

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10795228CCV

PESTICIDES - FORM VII PEST-1
PESTICIDES CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York
Calibration Date: 10/13/2018 Time: 09:35

Instrument ID: 70GCS3 GC Column: Col 2
Init. Calib. Date(s): 10/12/2018 10/12/2018

Lab File ID: 101218-2.B\311573.D
Init. Calib. Time(s): 17:09 20:06

SDG No.: 7067073

COMPOUND	PEAK	CURVE TYPE	RT	RT WINDOW		$\overline{RRF}$ or Amount	RRF or Amount	%D
				FROM	TO			
Aldrin		Averaged	4.181	4.15	4.21	126876350.	131910150.	3.9675
alpha-BHC		Averaged	2.98	2.95	3.01	135897497.	136569750.	0.4947
beta-BHC		Averaged	3.403	3.374	3.434	69485250.0	72152950.0	3.8392
delta-BHC		Averaged	3.724	3.693	3.753	128513935.	131252350.	2.1308
gamma-BHC (Lindane)		Averaged	3.322	3.292	3.352	131590600.	130476600.	-0.8466
alpha-Chlordane		Averaged	5.44	5.41	5.47	128798510.	130085000.	0.9988
4,4'-DDD		Averaged	6.535	6.505	6.565	94265977.5	127092075.	34.8228
4,4'-DDE		Averaged	5.734	5.704	5.764	116542427.	114313675.	-1.9124
4,4'-DDT		Averaged	6.883	6.853	6.913	105151325.	45533825.0	-56.6969
Dieldrin		Averaged	5.945	5.915	5.975	129331768.	125806200.	-2.7260
Endosulfan I		Averaged	5.519	5.489	5.549	121112790.	123572350.	2.0308
Endosulfan II		Averaged	6.615	6.586	6.646	110824800.	114779750.	3.5687
Endosulfan sulfate		Averaged	7.268	7.238	7.298	103163847.	99829675.0	-3.2319
Endrin		Averaged	6.353	6.324	6.384	111658821.	112678475.	0.9132
Heptachlor		Averaged	3.797	3.767	3.827	144997600.	137068800.	-5.4682
Decachlorobiphenyl		Averaged	8.788	8.757	8.817	74084302.5	84952600.0	14.6702
Tetrachloro-m-xylene		Averaged	2.473	2.443	2.503	98765545.0	95862800.0	-2.9390

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10806629CCV

PESTICIDES - FORM VII PEST-1
PESTICIDES CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York

Calibration Date: 10/16/2018 Time: 20:23

Instrument ID: 70GCS3 GC Column: Col 1

Init. Calib. Date(s): 10/16/2018 10/16/2018

Lab File ID: 101518-1.B\311633.D

Init. Calib. Time(s): 12:03 13:31

SDG No.: 7067073

COMPOUND	PEAK	CURVE TYPE	RT	RT WINDOW		$\overline{RRF}$ or Amount	RRF or Amount	%D
				FROM	TO			
Aldrin		Averaged	4.221	4.188	4.248	414910367.	396885450.	-4.3443
alpha-BHC		Averaged	3.044	3.013	3.073	423818117.	496040800.	17.0410
beta-BHC		Averaged	3.438	3.403	3.463	191844110.	205678850.	7.2114
delta-BHC		Averaged	3.632	3.596	3.656	397408932.	653585800.	64.4618
gamma-BHC (Lindane)		Averaged	3.351	3.319	3.379	402137055.	482405850.	19.9606
alpha-Chlordane		Averaged	5.396	5.361	5.421	435157200.	615023850.	41.3337
4,4'-DDD		Averaged	6.392	6.358	6.418	319451237.	561560025.	75.7890
4,4'-DDE		Averaged	5.526	5.493	5.553	378673271.	612290350.	61.6936
4,4'-DDT		Averaged	6.682	6.652	6.712	339674611.	143332525.	-57.8030
Dieldrin		Averaged	5.963	5.931	5.991	412435761.	497261075.	20.5669
Endosulfan I		Averaged	5.598	5.566	5.626	397901202.	520247900.	30.7480
Endosulfan II		Averaged	6.56	6.528	6.588	371927445.	397512700.	6.8791
Endosulfan sulfate		Averaged	7.46	7.428	7.488	291681820.	312676275.	7.1977
Endrin		Averaged	6.281	6.248	6.308	385119308.	402270800.	4.4536
Heptachlor		Averaged	3.861	3.829	3.889	455055832.	318874500.	-29.9263
Decachlorobiphenyl		Averaged	8.562	8.532	8.592	337371090.	391924450.	16.1701
Tetrachloro-m-xylene		Averaged	2.564	2.533	2.593	290087797.	297383900.	2.5151

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10806609CCV

PESTICIDES - FORM VII PEST-1
PESTICIDES CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York

Calibration Date: 10/16/2018 Time: 20:23

Instrument ID: 70GCS3 GC Column: Col 2

Init. Calib. Date(s): 10/16/2018 10/16/2018

Lab File ID: 101518-2.B\311633.D

Init. Calib. Time(s): 11:34 19:54

SDG No.: 7067073

COMPOUND	PEAK	CURVE TYPE	RT	RT WINDOW		$\overline{RRF}$ or Amount	RRF or Amount	%D
				FROM	TO			
Aldrin		Averaged	4.146	4.112	4.172	416673990.	472511150.	13.4007
alpha-BHC		Averaged	2.953	2.921	2.981	419626457.	469160800.	11.8044
beta-BHC		Averaged	3.379	3.341	3.401	195819357.	253077900.	29.2405
delta-BHC		Averaged	3.695	3.658	3.718	398453252.	479427800.	20.3222
gamma-BHC (Lindane)		Averaged	3.293	3.26	3.32	403149505.	449864100.	11.5874
alpha-Chlordane		Averaged	5.398	5.362	5.422	413836152.	415233350.	0.3376
4,4'-DDD		Averaged	6.505	6.469	6.529	322032946.	541530300.	68.1599
4,4'-DDE		Averaged	5.692	5.656	5.716	386999788.	526752450.	36.1118
4,4'-DDT		Averaged	6.85	6.821	6.881	353866278.	145198425.	-58.9680
Dieldrin		Averaged	5.9	5.869	5.929	414450101.	691521225.	66.8527
Endosulfan I		Averaged	5.477	5.441	5.501	398337277.	398134200.	-0.0510
Endosulfan II		Averaged	6.584	6.548	6.608	371717310.	416503025.	12.0483
Endosulfan sulfate		Averaged	7.241	7.206	7.266	339990008.	347241125.	2.1327
Endrin		Averaged	6.319	6.284	6.344	376173801.	366438900.	-2.5879
Heptachlor		Averaged	3.764	3.731	3.791	455690897.	373905900.	-17.9475
Decachlorobiphenyl		Averaged	8.757	8.723	8.783	285728082.	292068200.	2.2189
Tetrachloro-m-xylene		Averaged	2.451	2.418	2.478	291410732.	277589900.	-4.7427

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

10826819CCV

PESTICIDES - FORM VII PEST-1
PESTICIDES CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York
Calibration Date: 10/19/2018 Time: 23:33

Instrument ID: 70GCS3 GC Column: Col 2
Init. Calib. Date(s): 10/19/2018 10/19/2018

Lab File ID: 101918-2.B\311833.D
Init. Calib. Time(s): 16:42 23:04

SDG No.: 7067073

COMPOUND	PEAK	CURVE TYPE	RT	RT WINDOW		$\overline{RRF}$ or Amount	RRF or Amount	%D
				FROM	TO			
Aldrin		Averaged	4.201	4.192	4.252	345465927.	333354250.	-3.5059
alpha-BHC		Averaged	2.994	2.98	3.04	354588232.	341015750.	-3.8277
beta-BHC		Averaged	3.421	3.409	3.469	167925950.	149003050.	-11.2686
delta-BHC		Averaged	3.743	3.731	3.791	335109565.	345446000.	3.0845
gamma-BHC (Lindane)		Averaged	3.339	3.325	3.385	340367307.	327026750.	-3.9195
alpha-Chlordane		Averaged	5.461	5.455	5.515	331815620.	310597650.	-6.3945
4,4'-DDD		Averaged	6.547	6.536	6.596	250401741.	268481175.	7.2202
4,4'-DDE		Averaged	5.754	5.749	5.809	301589401.	300840800.	-0.2482
4,4'-DDT		Averaged	6.892	6.88	6.94	271022272.	187262075.	-30.9053
Dieldrin		Averaged	5.963	5.957	6.017	326992110.	316249000.	-3.2854
Endosulfan I		Averaged	5.54	5.536	5.596	319004972.	297617300.	-6.7045
Endosulfan II		Averaged	6.629	6.616	6.676	294086796.	298991900.	1.6679
Endosulfan sulfate		Averaged	7.276	7.261	7.321	268710272.	216571525.	-19.4033
Endrin		Averaged	6.369	6.36	6.42	297433427.	326571800.	9.7966
Heptachlor		Averaged	3.815	3.805	3.865	383244120.	340010250.	-11.2810
Decachlorobiphenyl		Averaged	8.784	8.773	8.833	249931960.	364858400.	45.9831
Tetrachloro-m-xylene		Averaged	2.485	2.469	2.529	236101662.	187435750.	-20.6123

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

BH-21 (0-4)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067073008 SDG No.: 7067073 Date(s) Analyzed: 10/19/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD	
gamma-BHC (Lindane)	1	3.41583	5.0	88.7	JN
	2	3.35583	2.2		
alpha-Chlordane	1	5.46	2.3	79.3	JN
	2	5.47333	4.5		
4,4'-DDE	1	5.60167	44.1	16.4	
	2	5.79917	44.5		
4,4'-DDT	1	6.78083	8.2	143	JN
	2	6.9075	42.1		
Dieldrin	1	6.05833	11.5	148	JN
	2	5.97667	66.6		
Heptachlor	1	3.93083	18.1	1.1	
	2	3.86167	15.6		

SAMPLE NO.

BH-20 (0-4)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067073009 SDG No.: 7067073 Date(s) Analyzed: 10/16/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
beta-BHC	1	3.4202	4.0	199 JN
	2	3.39437	2070	
Endosulfan II	1	6.56687	182	135 JN
	2	6.5602	45.6	
Endosulfan sulfate	1	7.45353	7.4	193 JN
	2	7.24103	337	
Endrin	1	6.27687	249	153 JN
	2	6.3202	42.7	

SAMPLE NO.

BH-20 (0-4)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067073009 SDG No.: 7067073 Date(s) Analyzed: 10/19/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 100

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD	
gamma-BHC (Lindane)	1	3.41485	1330	139	JN
	2	3.35652	309		
alpha-Chlordane	1	5.46152	465	50.9	J
	2	5.47068	354		
4,4'-DDE	1	5.60235	3700	10.9	
	2	5.79818	4250		
Dieldrin	1	6.05652	1650	119	JN
	2	5.97568	5100		
Heptachlor	1	3.92985	574	38.6	J
	2	3.85152	661		

SAMPLE NO.

BH-20 (6-7')

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067073010 SDG No.: 7067073 Date(s) Analyzed: 10/16/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD	
4,4'-DDE	1	5.5111	8.2	141	JN
	2	5.7161	47.1		
4,4'-DDT	1	6.72693	19.3	148	JN
	2	6.84527	2.9J		
Endosulfan II	1	6.57527	4.7	11.2	
	2	6.56027	5.3		
Heptachlor	1	3.8561	2.7	4.3	
	2	3.77693	2.6		

SAMPLE NO.

BH-16 (10-11)

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067073003 SDG No.: 7067073 Date(s) Analyzed: 10/12/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.37325	41.0J	62.7
	2	3.94325	21.4J	

J

SAMPLE NO.

BH-21 (0-4)

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067073008 SDG No.: 7067073 Date(s) Analyzed: 10/12/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 20

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.3797	6110	27.1
	2	3.93137	4650	

J

SAMPLE NO.

BH-20 (0-4)

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067073009 SDG No.: 7067073 Date(s) Analyzed: 10/12/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 250

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.35678	158000	41.1
	2	3.94178	104000	

J

SAMPLE NO.

BH-20 (6-7')

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067073010 SDG No.: 7067073 Date(s) Analyzed: 10/12/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.3711	191	36.9
	2	3.93943	131	

J

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract : 31 WATER ST

Method Blank Matrix: Solid Instrument ID: 70ICP3

Method Blank Concentration Units: mg/kg

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method Blank	
	10/08/2018 12:53	C	10/08/2018 12:59	C	10/08/2018 13:13	C	10/08/2018 13:26	C	395655	C
Arsenic	6.3	U	6.3	U	-6.8	J	6.3	U	0.31	J
Barium	-0.75	J	-0.70	J	-0.76	J	-0.77	J	<9.9	U
Beryllium	0.020	U	0.025	J	0.020	U	0.020	U	<0.25	U
Cadmium	0.23	U	0.23	U	0.23	U	0.23	U	<0.12	U
Chromium	0.60	U	0.60	U	0.60	U	0.60	U	<0.50	U
Copper	3.1	U	3.1	U	3.1	U	3.1	U	<1.2	U
Lead	2.7	U	2.7	U	-3.9	J	2.7	U	<0.25	U
Manganese	0.10	U	0.10	U	0.10	U	0.10	U	0.056	J
Nickel	1.2	U	1.2	U	1.2	U	1.2	U	<2.0	U
Selenium	6.7	U	6.7	U	6.7	U	6.7	U	<0.50	U
Silver	1.0	U	1.0	U	1.0	U	1.0	U	<0.50	U
Zinc	2.8	U	2.8	U	2.8	U	2.8	U	0.26	J

SAMPLE NO.

412557MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST

Matrix: Solid Basis: Dry Parent Sample ID: BH-14 (18-20)

Percent Moisture: 17.6

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Chromium, Hexavalent	mg/kg	85-115	2.9	<1.2	4.9	59*

* Spike Recovery outside QC Limits

11/21/2018 12:27

SAMPLE NO.

412559MS

FORM V INORGANIC-2
MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST

Matrix: Solid Basis: Dry Parent Sample ID: BH-14 (18-20)

Percent Moisture: 17.6

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Chromium, Hexavalent	mg/kg	85-115	732	<1.2	1160	63*

* Spike Recovery outside QC Limits

11/21/2018 12:27

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - New York SDG No. : 7067073 Contract: 31 WATER ST

Preparation Method: EPA 9010C Batch: WETA 14359

Lab Sample ID	Sample Name	Preparation Date	Initial Weight (g)	Final Volume (mL)
413814	413814BLANK	11/05/2018	1	50
413815	413815SRM	11/05/2018	1	50
413816	413816MS	11/05/2018	1	50
413817	413817DUP	11/05/2018	1	50
7067073001	BH-14 (18-20)	11/05/2018	1	50
7067073002	BH-14 (15-16)	11/05/2018	1.02	50
7067073003	BH-16 (10-11)	11/05/2018	1	50
7067073004	BH-18 (0-4)	11/05/2018	1	50
7067073005	BH-18 (14-15)	11/05/2018	1	50
7067073006	BH-19 (0-9)	11/05/2018	1	50
7067073007	BH-15 (12-16)	11/05/2018	1	50
7067073008	BH-21 (0-4)	11/05/2018	1	50
7067073009	BH-20 (0-4)	11/05/2018	1	50
7067073010	BH-20 (6-7')	11/05/2018	1	50
7067073011	BMW-91 (24.2-25)	11/05/2018	1	50



Samples analyzed outside holding time of 14 Days

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067073

Method: **EPA 9014 Total Cyanide**
Description: 9014 Cyanide, Total
Client: BE3 Environmental
Date: December 21, 2018

General Information:
11 samples were analyzed for EPA 9014 Total Cyanide. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.
- BH-14 (15-16) (Lab ID: 7067073002)
- BH-14 (18-20) (Lab ID: 7067073001)
- BH-15 (12-16) (Lab ID: 7067073007)
- BH-16 (10-11) (Lab ID: 7067073003)
- BH-18 (0-4) (Lab ID: 7067073004)
- BH-18 (14-15) (Lab ID: 7067073005)
- BH-19 (0-9) (Lab ID: 7067073006)
- BH-20 (0-4) (Lab ID: 7067073009)
- BH-20 (6-7') (Lab ID: 7067073010)
- BH-21 (0-4) (Lab ID: 7067073008)
- BMW-91 (24.2-25) (Lab ID: 7067073011)

H2: Extraction or preparation conducted outside EPA method holding time.
- BH-14 (15-16) (Lab ID: 7067073002)
- BH-14 (18-20) (Lab ID: 7067073001)
- BH-15 (12-16) (Lab ID: 7067073007)
- BH-16 (10-11) (Lab ID: 7067073003)
- BH-18 (0-4) (Lab ID: 7067073004)
- BH-18 (14-15) (Lab ID: 7067073005)
- BH-19 (0-9) (Lab ID: 7067073006)
- BH-20 (0-4) (Lab ID: 7067073009)
- BH-20 (6-7') (Lab ID: 7067073010)
- BH-21 (0-4) (Lab ID: 7067073008)
- BMW-91 (24.2-25) (Lab ID: 7067073011)

Sample Preparation:
The samples were prepared in accordance with EPA 9010C with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

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Appendix C

Validator Qualifications

KENNETH R. APPLIN
Geochemist/Data Validator

Ph.D., Geochemistry and Mineralogy, The Pennsylvania State University

M.S., Geochemistry and Mineralogy, The Pennsylvania State University

B.A., Geological Sciences, SUNY at Geneseo, NY

Dr. Applin has over 35 years of experience working with the geochemistry of natural waters. His prior experience includes working as an Assistant Professor of Geology at the University of Missouri-Columbia and as Chief Hydrogeologist and Geochemist with a leading engineering firm in Rochester, NY. In 1993, he established KR Applin and Associates, a small consulting business that focuses on the geochemistry of natural waters, especially as applied to problems involving the contamination of groundwater and surface water.

Dr. Applin is also an experienced analytical data validator and has provided data validation services since 1994 to a variety of clients performing brownfield cleanup projects, hazardous waste remediation, groundwater monitoring at solid waste facilities, and other projects requiring third-party data validation. Dr. Applin has several years of hands-on experience with the laboratory analysis of natural waters and has successfully completed the USEPA Region II certification courses for performing inorganic and organic analytical data validation.

MICHAEL K. PERRY
Chemist/Data Validator

B.S. Chemistry, Georgia State University, Atlanta, GA

A.A.S., Chemical Technology, Alfred State College, Alfred, NY

Mr. Perry has over 30 years of experience in the analytical laboratory business. During his early career, he spent several years as a laboratory analyst performing the analysis of soil, water, and air samples for inorganic and organic chemical parameters. During his last 20 years in the environmental laboratory business, he managed and directed two major analytical laboratories in Rochester, NY. His management responsibilities included oversight of the daily operations of the lab, staff training and supervision, the selection, purchase, and maintenance of analytical instruments, the introduction of new laboratory methods, analytical quality assurance and quality control, data acquisition and management, and other business-related activities.

Mr. Perry has an extensive working knowledge of the methods and procedures used for sampling and analyzing both inorganic and organic analytes in soil, water, and air. He is an accomplished laboratory chemist and is familiar with the analytical methods and procedures established under the USEPA Contract Laboratory Protocols (CLP), the NYSDEC Analytical Services Protocols (ASP), and the NYSDOH Environmental Laboratory Approval Program (ELAP).

DATA USABILITY SUMMARY REPORT (DUSR)

31 Water Street
Jamestown, NY
NYSDEC BCP # C907046

SDG: 7067135

9 soil samples

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

January 2019

EDU Environmental Data Usability 10028 Deer Park Dr. Dansville, NY 14437 585.991.9156

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REVIEWER'S NARRATIVE
SDG 7067135

The data associated with this Sample Delivery Group (SDG) 7067135, analyzed by Pace Analytical Services, LLC, Melville, NY have been reviewed in accordance with assessment criteria provided by the New York State Department of Environmental Conservation following the review procedures provided in the USEPA Functional Guidelines for evaluating organic and inorganic data.

All analytical results reported by the laboratory are considered valid and acceptable except results that have been qualified as rejected, "R". Results qualified as estimated "J", or as non-detects, "U", are considered usable for the purpose of evaluating water and/or soil quality. However, these qualifiers indicate that the accuracy and/or precision of the analytical result is questionable. A summary of all data that have been qualified and the reasons for qualification are provided in the following data usability summary report (DUSR).

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

Reviewer's Signature: Michael K. Perry Date: 1/10/19

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	31 Water St. Jamestown, NY
SAMPLING DATE:	October 05, 2018
SAMPLE TYPE:	9 soil samples
LABORATORY:	Pace Analytical Services, LLC Melville, NY
SDG No.:	7067135

2.0 INTRODUCTION

This data usability summary report (DUSR) was prepared in accordance with guidance provided by the New York State Department of Environmental Conservation (NYSDEC). The DUSR is based on a review and evaluation of the laboratory analytical data package. Specifically, the NYSDEC guidance recommends review and evaluation of the following elements of the data package:

- Completeness of the data package as defined under the requirements of the NYSDEC Analytical Services Protocols (ASP) Category B or the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) deliverables,
- Compliance with established analyte holding times,
- Adherence to quality control (QC) limits and specifications for blanks, instrument tuning and calibration, surrogate recoveries, spike recoveries, laboratory duplicate analyses, and other QC criteria,
- Adherence to established analytical protocols,
- Conformance of data summary sheets with raw analytical data, and
- Use of correct data qualifiers.

Data deficiencies, analytical protocol deviations, and quality control problems identified using the review criteria above and their effect on the analytical results are discussed in this report.

3.0 SAMPLE AND ANALYSIS SUMMARY

The data package consists of analytical results for nine soil samples collected on October 05, 2018. These samples were analyzed for the Part 375 list of Volatile Organic Compounds, Semi-volatile Organic Compounds, PCBs, Pesticides, TCN, Herbicides, Hexavalent Chromium, and Metals.

All analyses were performed by Pace Analytical Services, LLC, Melville, NY and analyzed as SDG 7067135. The analytical results were provided in NYSDEC ASP Category B format, which includes all raw analytical data and laboratory QC data.

4.0 GUIDANCE DOCUMENTS AND DATA REVIEW CRITERIA

The guidance documents used for reviewing laboratory quality control (QC) data and assigning data qualifiers (flags) to analytical results are listed in Table 4-1. The QC limits established in the documents applicable to this data review were used to assess the quality of the analytical results. In some cases, however, QC limits established internally by the laboratory were taken into account to determine data quality.

The QC criteria considered for assessing the usability of the reported analytical results provided for each analyte type (i.e. VOCs, SVOCs, metals, etc.) are listed in Table 4-2. These criteria may vary with the analytical method utilized by the laboratory. These criteria comply with the guidance recommended in Section 2.0 above.

5.0 DATA VALIDATION QUALIFIERS

The letter qualifiers (flags) used to define data usability are described briefly below. These letters are assigned by the data validator to analytical results having questionable accuracy and/or precision as determined by reviewing the laboratory QC data associated with the analytical results.

TABLE 4-1

DATA VALIDATION GUIDANCE DOCUMENTS

Analyte Type	Validation Guidance
VOCs	USEPA, 2008, Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry; SW-846 Method 8260B; SOP # HW-24, Rev. 2. USEPA, 2008, Statement of Work for Organic Analysis of Low/Medium Concentration of Volatile Organic Compounds SOM01.2; SOP HW-33, Rev. 2.
SVOCs	USEPA, 2007, Statement of Work for Organic Analysis of Low/Medium Concentration of Semivolatile Organic Compounds SOM01.2; SOP HW-35, Rev. 1.
Pesticides/PCBs	USEPA, 2006, CLP Organics Data Review and Preliminary Review (CLP/SOW OLMO 4.3); SOP # HW-6, Rev. 14, Part C.
Metals	USEPA, 2006, Validation of Metals for the Contract Laboratory Program (CLP) based on SOW ILMO 5.3 (SOP Revision 13), SOP # HW-2, Rev. 13.
Gen Chemistry	NYSDEC, 2005, Analytical Services Protocols (ASP)
VOCs (Ambient air)	USEPA, 2006, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canister by Method TO-15; SOP # HW-31, Rev. 4.

TABLE 4-2

QUALITY CONTROL CRITERIA USED FOR VALIDATING
LABORATORY ANALYTICAL DATA

VOCs	SVOCs	Pesticides/PCBs	Metals	Gen Chemistry	Method TO-15
Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg
Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition
Holding Time	Holding Time	Holding Time	Holding Time	Holding Times	Holding Time
System Monitoring Compounds	Surrogate Recoveries	Surrogate Recoveries	Initial/Continuing Calibration	Calibration	Canister Certification
Lab Control Sample	Lab Control Sample	Matrix Spikes	CRDL Standards	Lab Control Samples	Lab Control Sample
Matrix Spikes	Matrix Spikes	Blanks	Blanks	Blanks	Instrument Tuning
Blanks	Blanks	Instrument Calibration & Verification	Interference Check Sample	Spike Recoveries	Blanks
Instrument Tuning	Instrument Tuning	Analyte ID	Spike Recoveries	Lab Duplicates	Initial Calibration & System Performance
Internal Standards	Internal Standards	Lab Qualifiers	Lab Duplicate		Daily Calibration
Initial Calibration	Initial Calibration	Field Duplicate	Lab Control Sample		Field Duplicate
Continuing Calibration	Continuing Calibration		ICP Serial Dilutions		
Lab Qualifiers	Lab Qualifiers		Lab Qualifiers		
Field Duplicate	Field Duplicate		Field Duplicate		

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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

JN The analyte is considered to be "presumptively present." The associated numerical value represents its *approximate* concentration.

The validated analytical results are attached to this report. Validation qualifiers (flags) are indicated using red ink. Data sheets having qualified data are signed and dated by the data reviewer.

6.0 RESULTS OF THE DATA REVIEW

The results of the data review are summarized in Tables 6-1 through 6-8. The tables list the samples where QC criteria were found to exceed acceptable limits and the actions taken to qualify the associated analytical results.

7.0 TOTAL USABLE DATA

For SDG 7067135, nine samples were analyzed and results were reported for 579 analytes. One result was rejected. Even though some results were flagged with a "J" as estimated, all other results (99.8 %) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

Table 6-1 VOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
BH-22 (0-1)	Acetone Methylene Chloride Trichloroethene Xylene	J -detects	Lab Duplicate > 20 % RPD	Data is estimated
All samples	1,4-Dioxane	R	Initial calibration RRF < 0.005	Based on the new low responders rule from SOM2.1, the RRF <0.005 is used
BH-22 (0-1)	Acetone MEK Carbon Tetrachloride Tetrachloroethene 1,1,1-Trichloroethane	J -detects/UJ non-detects	CCV % D > QC limit	Data is estimated

Table 6-2 SVOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	TICs detected in Method blank	TIC < 5X blank value, R TIC	Tentatively Identified Compounds were detected in the method blank	TICs were rejected

Table 6-3 Pesticides

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
S-03 (0.5-1)	All analytes	J -detects	Surrogate recs > QC limit	Data is estimated
S-01 (0-0.5)	All analytes	J -detects/UJ non-detects	MS/MSD/RPDs > QC limit	All data is estimated
All samples	4,4'-DDT 4,4'-DDD 4,4'-DDE	4,4'-DDT: J detects/UJ non-detects 4,4'-DDD and 4,4'-DDE: JN detects	PEM for 4,4'DDT > 20 %	Data is estimated
All samples	4,4'-DDT 4,4'-DDD 4,4'DDE	J -detects/UJ non-detects	CCV % D > 25 %QC limit	Data is estimated
BH-22 (0-1)	4,4'-DDE 4,4'-DDT Dieldrin Endosulfan II Endosulfan Sulfate	J JN JN JN JN	>25 % D between dual column analysis	Matrix interference suspected
S-01 (0-0.5)	Endosulfan II Endosulfan Sulfate Endrin	JN JN JN	>25 % D between dual column analysis	Matrix interference suspected
S-01 (0-0.5)	g-BHC a-Chlordane Dieldrin 4,4'-DDE	JN J JN J	>25 % D between dual column analysis	Matrix interference suspected

S-07 (0.2-0.5)	4,4'-DDE 4,4'-DDT Endosulfan I	JN J JN	>25 % D between dual column analysis	Matrix interference suspected
S-05 (0-0.5)	4,4'-DDT Endosulfan I Endosulfan II Endosulfan Sulfate	J JN J JN	>25 % D between dual column analysis	Matrix interference suspected
	a-Chlordane d-BHC 4,4'DDD	J JN JN		
S-04 (0.5-1)	4,4'-DDE 4,4'-DDT Endosulfan I Endosulfan II Endosulfan Sulfate	JN J JN JN JN	>25 % D between dual column analysis	Matrix interference suspected
S-06 (0.2-0.5)	Dieldrin Heptachlor	JN JN	>25 % D between dual column analysis	Matrix interference suspected

Table 6-4 PCBs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
BH-22 (0-1)	PCB 1248	J	>25 % D between dual column analysis	Matrix interference suspected
S-01 (0-0.5)	PCB 1248	J	>25 % D between dual column analysis	Matrix interference suspected
S-02 (0-0.05)	PCB 1248	J	>25 % D between dual column analysis	Matrix interference suspected

S-07 (0.2-0.5)	PCB 1254	J	>25 % D between dual column analysis	Matrix interference suspected
S-05 (0-0.5)	PCB 1248	J	>25 % D between dual column analysis	Matrix interference suspected

Table 6-5 Herbicides

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-6 Metals

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	Copper Manganese Zinc	none	Metals were detected in the method blank (MB) <PQL but >MDL	No data was affected
BH-22 (0-1)	Cadmium Manganese Zinc	J-Detects	Serial Dilution > 10 %	Detected data is estimated

Table 6-7 TCN

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	TCN	J-Detects/UJ non-detects	Analyzed outside 14 day HT	Data should be considered estimated

Table 6-8 Hexavalent Chromium

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

ACRONYMS

BSP	Blank Spike
CCAL	Continuing Calibration
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
%D	Percent Difference
ICAL	Initial Calibration
ICB	Initial Calibration Blank
IS	Internal Standard
LCS	Laboratory Control Sample
MS/MSD	Matrix Spike/Matrix Spike Duplicate
QA	Quality Assurance
QC	Quality Control
%R	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
%RSD	Percent Relative Standard Deviation
TAL	Target Analyte List (metals)
TCL	Target Compound List (organics)

Appendix A

Validated Analytical Results

Pace Analytical®

Analytical Data Package

Prepared by:

Pace Analytical Services

Pace Project No.: 7067135

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

December 14, 2018

Jason Brydges
BE3 Environmental
1270 Niagara St
Buffalo, NY 14213

RE: Project: 31 WATER ST
Pace Project No.: 7067135

Dear Jason Brydges:
Enclosed are the analytical results for sample(s) received by the laboratory on October 06, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Report revised 11/6 to include missing analytes

Report revised 12/13/18 with updated qualifiers

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Murphy
james.murphy@pacelabs.com
(518)860-9724
Project Manager

Enclosures

cc: Alex Brennen, BE3 Corp

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE SUMMARY

Project: 31 WATER ST
Pace Project No.: 7067135

Lab ID	Sample ID	Matrix	Date Collected	Date Received
7067135001	BH-22 (0-1)	Solid	10/05/18 09:15	10/06/18 10:00
7067135002	BH-22 (6-7.2)	Solid	10/05/18 09:45	10/06/18 10:00
7067135003	S-01 (0-0.5)	Solid	10/05/18 10:25	10/06/18 10:00
7067135004	S-02 (0-0.5)	Solid	10/05/18 10:45	10/06/18 10:00
7067135005	S-03 (0.5-1)	Solid	10/05/18 10:55	10/06/18 10:00
7067135006	S-07 (0.2-0.5)	Solid	10/05/18 11:15	10/06/18 10:00
7067135007	S-05 (0-0.5)	Solid	10/05/18 11:30	10/06/18 10:00
7067135008	S-04 (0.5-1)	Solid	10/05/18 11:40	10/06/18 10:00
7067135009	S-06 (0.2-0.5)	Solid	10/05/18 12:00	10/06/18 10:00

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY

WO#: 7067135

Container Preservative Type**

Company: BE3 Corp	Billing Information: ← Same
Address: 1270 Niagara St Buffalo, NY 14213	
Report To: Jason Brydges	Email To: Jbrydges@be3corp.com
Copy To: abrenner@be3corp.com	Site Collection Info/Address: 31 Water St
Customer Project Name/Number: 31 WATER ST RI	State: NY County/City: Jamestown Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 716-249-6880 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brenner	Purchase Order # : Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 375 VOC + TICs	375 SVOC + TICs, Met, Pest, PCB	375 Herb	Lab Profile/Line:
BH-22 (0-1')	SO	G	10/5	0915				2	X	X	X	001
BH-22 (6-7.2)				0945				1		X		002
S-01 (0-0.5)				1025				1		X		003
S-02 (0-0.5)				1045						X	X	004
S-03 (0-0.5)				1055						X		005
S-07 (0.2-0.5)				1115						X	X	006
S-05 (0-0.5)				1130						X	X	007
S-04 (0.5-1)				1140						X	X	008
S-06 (0.2-0.5)				1200						X	X	009

Lab Profile/Line:

Lab Sample Receipt Checklist:	
Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA – Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	
LAB USE ONLY: Lab Sample # / Comments:	

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: 2 Ice Bubble wrap

Radchem sample(s) screened (<500 cpm): Y N (NA)

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #: 8119 2943 7840

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info: Temp Blank Received: Y (N) NA; Therm ID#: THOM; Cooler 1 Temp Upon Receipt: 1.9 oC; Cooler 1 Therm Corr. Factor: 0.0 oC; Cooler 1 Corrected Temp: 1.9 oC; Comments:

Relinquished by/Company: (Signature) BE3	Date/Time: 10/5/18 1400	Received by/Company: (Signature)	Date/Time: 10/6/18 1000
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY: Table #: Acctnum: Template: Prelogin: PM: PB:

Trip Blank Received: Y N NA HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

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Pace Analytical
www.pacelabs.com

Sample Receiving Non-Confor

WO#:7067135

Date: 10/16/18 | Evaluated by: JR

Client: 1357

AI PM: JM2 | Due Date: 10/15/18 | ace
CLIENT: BE3 | er

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect		Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
X	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:
Sample ID indicated on chain of custody sheet Sample SS-03 (0-0.5). Bottle says SS-03 0.5-1. Sample is logged as per chain of custody

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)		Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Date: December 14, 2018

MS (Lab ID: 396127)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

MSD (Lab ID: 396128)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

BH-22 (6-7.2) (Lab ID: 7067135002)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

S-01 (0-0.5) (Lab ID: 7067135003)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

S-02 (0-0.5) (Lab ID: 7067135004)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

S-03 (0.5-1) (Lab ID: 7067135005)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

S-07 (0.2-0.5) (Lab ID: 7067135006)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

S-04 (0.5-1) (Lab ID: 7067135008)

- Method (8081B): The breakdown for DDT exceeded acceptance limits due to sample matrix.

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SAMPLE NO.

BH-22 (0-1)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Date Received: 10/06/2018 10:00 Matrix: Solid SDG No.: 7067135

Date Extracted: 10/11/2018 08:27 Lab Sample ID: 7067135001

Date Analyzed: 10/11/2018 13:17 Lab File ID: 101118.B\F91215.D

Initial wt/vol: 1.14 g Final wt/vol: 5 mL Dilution: 1 Instrument: 70MSV4 Percent Moisture: 9.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg			Q
67-64-1	Acetone	44.4		J	
71-43-2	Benzene	<9.7			U
78-93-3	2-Butanone (MEK)	<9.7		UJ	U
104-51-8	n-Butylbenzene	<9.7			U
135-98-8	sec-Butylbenzene	<9.7			U
98-06-6	tert-Butylbenzene	<9.7			U
56-23-5	Carbon tetrachloride	<9.7		UJ	U
108-90-7	Chlorobenzene	<9.7			U
67-66-3	Chloroform	<9.7			U
95-50-1	1,2-Dichlorobenzene	<9.7			U
541-73-1	1,3-Dichlorobenzene	<9.7			U
106-46-7	1,4-Dichlorobenzene	<9.7			U
75-34-3	1,1-Dichloroethane	<9.7			U
107-06-2	1,2-Dichloroethane	<9.7			U
75-35-4	1,1-Dichloroethene	<9.7			U
156-59-2	cis-1,2-Dichloroethene	7.3			J
156-60-5	trans-1,2-Dichloroethene	<9.7			U
123-91-1	1,4-Dioxane (p-Dioxane)	<242	R		U
100-41-4	Ethylbenzene	6.1			J
75-09-2	Methylene Chloride	35.5		J	
1634-04-4	Methyl-tert-butyl ether	<9.7			U
103-65-1	n-Propylbenzene	<9.7			U
127-18-4	Tetrachloroethene	<9.7	UJ		U
108-88-3	Toluene	<9.7			U
120-82-1	1,2,4-Trichlorobenzene	<9.7			U
71-55-6	1,1,1-Trichloroethane	<9.7			U
79-01-6	Trichloroethene	233		J	
95-63-6	1,2,4-Trimethylbenzene	<9.7			U
108-67-8	1,3,5-Trimethylbenzene	<9.7			U
75-01-4	Vinyl chloride	<9.7			U
1330-20-7	Xylene (Total)	43.3		J	

11/14/2018 1:57

MKP 1/9/19

SAMPLE NO.

BH-22 (0-1)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid
SDG No.: 7067135
Date Extracted: 10/10/2018 10:01
Lab Sample ID: 7067135001
Date Analyzed: 10/12/2018 14:04
Lab File ID: 8270-101218.B\R46859.D
Initial wt/vol: 15.04 Final wt/vol: 1 mL Dilution: 10
Instrument: 70MSS3
Percent Moisture: 9.3%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
198-55-0	Perylene	13.929	2770	N J
	Unknown Ketone	3.202	~~4390~~ R	J
	Unknown Ketone	3.533	~~70200~~ R	J
	Unknown PAH	9.703	1730	J

11/14/2018 1:58

MKP 1/9/19

SAMPLE NO.

BH-22 (6-7.2)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid
SDG No.: 7067135
Date Extracted: 10/10/2018 10:01
Lab Sample ID: 7067135002
Date Analyzed: 10/12/2018 13:36
Lab File ID: 8270-101218.B\R46858.D
Initial wt/vol: 15.04 Final wt/vol: 1 mL Dilution: 10
Instrument: 70MSS3
Percent Moisture: 32.1%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown Alcohol	18.85	2400	J
	Unknown Aldol Condensate	4.25	~~2200~~ R	J
	Unknown Ketone	3.197	~~5640~~ R	J
	Unknown Ketone	3.534	~~90700~~ R	J
	Unknown Ketone	18.219	9530	J

11/14/2018 1:58

MMD 1/9/19

SAMPLE NO.

S-01 (0-0.5)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid
SDG No.: 7067135
Date Extracted: 10/10/2018 10:01
Lab Sample ID: 7067135003
Date Analyzed: 10/12/2018 13:08
Lab File ID: 8270-101218.B\R46857.D
Initial wt/vol: 15.05 Final wt/vol: 1 mL Dilution: 10
Instrument: 70MSS3
Percent Moisture: 20.4%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown Aromatic Hydrocarbon	15.12	4900	J
	Unknown Aromatic Hydrocarbon	13.795	8110	J
	Unknown Biphenyl	10.211	12900	J
	Unknown Biphenyl	10.238	14700	J
	Unknown Biphenyl	9.912	3290	J
	Unknown Biphenyl	9.778	3340	J
	Unknown Biphenyl	10.9	4120	J
	Unknown Biphenyl	9.751	4380	J
	Unknown Biphenyl	10.686	4760	J
	Unknown Biphenyl	9.447	4860	J
	Unknown Biphenyl	10.179	5480	J
	Unknown Biphenyl	9.987	6300	J
	Unknown Biphenyl	10.403	6370	J
	Unknown Biphenyl	10.36	7600	J
	Unknown Biphenyl	9.885	8150	J
	Unknown Biphenyl	9.719	8900	J
	Unknown Ketone	3.202	5630	J
	Unknown Ketone	~~3.589~~	~~89800~~ R	J
	Unknown Organic Acid	13.048	4500	J
	Unknown PAH	14.939	4290	J

11/14/2018 1:58

MVP 1/9/19

SAMPLE NO.

S-02 (0-0.5)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid
SDG No.: 7067135
Date Extracted: 10/10/2018 10:01
Lab Sample ID: 7067135004
Date Analyzed: 10/12/2018 14:31
Lab File ID: 8270-101218.B\R46860.D
Initial wt/vol: 15.08 Final wt/vol: 1 mL Dilution: 10
Instrument: 70MSS3
Percent Moisture: 40.7%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown Aldol Condensate	4.249	2950 K	J
	Unknown Alkane	15.12	2590	J
	Unknown Alkane	13.758	7740	J
	Unknown Hydrocarbon	14.714	7270	J
	Unknown Ketone	3.539	117000 R	J
	Unknown Ketone	3.197	7260 R	J
	Unknown Organic Acid	9.65	2270	J

11/14/2018 1:58

MRP 1/9/19

SAMPLE NO.

S-03 (0.5-1)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid
SDG No.: 7067135
Date Extracted: 10/10/2018 10:01
Lab Sample ID: 7067135005
Date Analyzed: 10/12/2018 12:41
Lab File ID: 8270-101218.B\R46856.D
Initial wt/vol: 15.13 Final wt/vol: 1 mL Dilution: 10
Instrument: 70MSS3
Percent Moisture: 14.0%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
	Unknown	4.247	1630	J
	Unknown Ketone	4.546	1730	J
	Unknown Ketone	3.2	4630 K	J
	Unknown Ketone	3.536	72900 K	J

11/14/2018 1:58

MKP 2/9/19

SAMPLE NO.

S-07 (0.2-0.5)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/06/2018 10:00
Date Extracted: 10/10/2018 10:01
Date Analyzed: 10/11/2018 21:44
Initial wt/vol: 15 g Final wt/vol: 1 mL Dilution: 10

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067135
Lab Sample ID: 7067135006
Lab File ID: 8270-101118.B\R46840.D
Instrument: 70MSS3 Percent Moisture: 18.5%

CAS NO.	COMPOUND	RT	EST. CONC.	UNITS: ug/kg	Q
	Unknown Ketone	3.205	5240	K	J
	Unknown Ketone	3.541	86200	K	J

11/14/2018 1:58

MKP 1/9/19

SAMPLE NO.

S-05 (0-0.5)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/06/2018 10:00
Date Extracted: 10/10/2018 10:01
Date Analyzed: 10/12/2018 15:26
Initial wt/vol: 15 g Final wt/vol: 1 mL Dilution: 50

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067135
Lab Sample ID: 7067135007
Lab File ID: 8270-101218.B\R46862.D
Instrument: 70MSS3 Percent Moisture: 21.2%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
203-12-3	Benzo[ghi]fluoranthene	11.609	9110	N J
612-94-2	Naphthalene, 2-phenyl-	9.889	12700	N J
198-55-0	Perylene	13.938	79000	N J
2531-84-2	Phenanthrene, 2-methyl-	9.627	25300	N J
	Unknown Amine	9.333	25900	J
	Unknown Ketone	3.51	117000 R	J
	Unknown PAH	10.85	11800	J
	Unknown PAH	10.444	13900	J
	Unknown PAH	9.595	18700	J
	Unknown PAH	9.707	42800	J

SAMPLE NO.

S-04 (0.5-1)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/06/2018 10:00
Date Extracted: 10/10/2018 10:01
Date Analyzed: 10/11/2018 21:16
Initial wt/vol: 15.12 Final wt/vol: 1 mL Dilution: 10

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067135
Lab Sample ID: 7067135008
Lab File ID: 8270-101118.B\R46839.D
Instrument: 70MSS3 Percent Moisture: 20.5%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
244-99-5	5H-Indeno[1,2-b]pyridine	9.344	10200	N J
612-94-2	Naphthalene, 2-phenyl-	9.899	4880	N J
2531-84-2	Phenanthrene, 2-methyl-	9.611	7500	N J
	Unknown Aldol Condensate	9.926	~~5710~~ R	J
	Unknown Ketone	10.241	4620	J
	Unknown Ketone	3.542	88500	J
	Unknown Organic Acid	10.439	9260	J
	Unknown PAH	9.723	14500	J
	Unknown PAH	9.637	9340	J

11/14/2018 1:58

MKD 1/9/19

SAMPLE NO.

S-04 (0.5-1)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/06/2018 10:00
Date Extracted: 10/10/2018 10:01
Date Analyzed: 10/12/2018 14:59
Initial wt/vol: 15.12 Final wt/vol: 1 mL Dilution: 20

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067135
Lab Sample ID: 7067135008
Lab File ID: 8270-101218.B\R46861.D
Instrument: 70MSS3 Percent Moisture: 20.5%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
612-94-2	Naphthalene, 2-phenyl-	9.887	4340	N J
2531-84-2	Phenanthrene, 2-methyl-	9.626	7930	N J
	Unknown Aldol Condensate	9.909	4620 R	J
	Unknown Amine	9.332	8850	J
	Unknown Ketone	10.224	3760	J
	Unknown Ketone	8.91	3770	J
	Unknown Ketone	3.52	92100	J
	Unknown PAH	9.706	12800	J
	Unknown PAH	9.594	6350	J

11/14/2018 1:58

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
BH-22 (0-1)

Lab Name: Pace Analytical - New York
Date Received: 10/06/2018 10:00
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/19/2018 21:36
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067135
Lab Sample ID: 7067135001
Lab File ID: 101918-1.B\311825.D
Instrument: 70GCS3 Percent Moisture: 9.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<1.9	U
319-84-6	alpha-BHC	<1.9	U
319-85-7	beta-BHC	<1.9	U
319-86-8	delta-BHC	<1.9	U
58-89-9	gamma-BHC (Lindane)	<1.9	U
5103-71-9	alpha-Chlordane	<1.9	U
72-54-8	4,4'-DDD	<3.6	U
72-55-9	4,4'-DDE	32.4 J	
50-29-3	4,4'-DDT	3.8 JN	
60-57-1	Dieldrin	7.0 JN	
959-98-8	Endosulfan I	<1.9	U
33213-65-9	Endosulfan II	2.9 JN	J
1031-07-8	Endosulfan sulfate	6.2 JN	
72-20-8	Endrin	<3.6	U
76-44-8	Heptachlor	6.5	

12/04/2018 4:57

MKB 1/9/19

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
BH-22 (6-7.2)

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid SDG No.: 7067135
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135002
Date Analyzed: 10/16/2018 16:28
Lab File ID: 101518-1.B\311617.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 32.1%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.5	U
319-84-6	alpha-BHC	<2.5	U
319-85-7	beta-BHC	9.4	
319-86-8	delta-BHC	<2.5	U
58-89-9	gamma-BHC (Lindane)	<2.5	U
5103-71-9	alpha-Chlordane	<2.5	U
72-54-8	4,4'-DDD	<4.9	U
72-55-9	4,4'-DDE	16.3 JN	
50-29-3	4,4'-DDT	<4.9 UJ	U
60-57-1	Dieldrin	<4.9	U
959-98-8	Endosulfan I	<2.5	U
33213-65-9	Endosulfan II	<4.9	U
1031-07-8	Endosulfan sulfate	<4.9	U
72-20-8	Endrin	<4.9	U
76-44-8	Heptachlor	<2.5	U

12/04/2018 5:26

MRP 1/9/19

SAMPLE NO.

S-01 (0-0.5)

PESTICIDES - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York | Contract: 31 WATER ST

Date Received: 10/06/2018 10:00 | Matrix: Solid | SDG No.: 7067135

Date Extracted: 10/08/2018 17:25 | Lab Sample ID: 7067135003

Date Analyzed: 10/16/2018 18:55 | Lab File ID: 101518-1.B\311627.D

Initial wt/vol: 15.01 g | Final wt/vol: 5 mL | Dilution: 1 | Instrument: 70GCS3 | Percent Moisture: 20.4%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg		Q
309-00-2	Aldrin	<2.1	UJ	U
319-84-6	alpha-BHC	<2.1	UJ	U
319-85-7	beta-BHC	<2.1	UJ	U
319-86-8	delta-BHC	<2.1	UJ	U
959-98-8	Endosulfan I	<2.1	UJ	U
1031-07-8	Endosulfan sulfate	15.8	JN	

12/04/2018 5:23

MKP 1/6/19

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
S-01 (0-0.5)

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid SDG No.: 7067135
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135003
Date Analyzed: 10/16/2018 18:55
Lab File ID: 101518-2.B\311627.D
Initial wt/vol: 15.01 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 20.4%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
72-54-8	4,4'-DDD	<4.1 JD	U
33213-65-9	Endosulfan II	30.3 JN	
72-20-8	Endrin	35.9 JN	

12/04/2018 5:22

MKS 1/9/19

SAMPLE NO.

S-01 (0-0.5)

PESTICIDES - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid SDG No.: 7067135
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135003
Date Analyzed: 10/19/2018 19:53
Lab File ID: 101918-1.B\311818.D
Initial wt/vol: 15.01 g Final wt/vol: 5 mL Dilution: 100
Instrument: 70GCS3 Percent Moisture: 20.4%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg		Q
50-29-3	4,4'-DDT	<414	UJ	U
60-57-1	Dieldrin	1310	DN	
76-44-8	Heptachlor	496	J	

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MKP 1/9/19

SAMPLE NO.

S-01 (0-0.5)

PESTICIDES - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid
SDG No.: 7067135
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135003
Date Analyzed: 10/19/2018 19:53
Lab File ID: 101918-2.B\311818.D
Initial wt/vol: 15.01 g
Final wt/vol: 5 mL
Dilution: 100
Instrument: 70GCS3
Percent Moisture: 20.4%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg		Q
58-89-9	gamma-BHC (Lindane)	172	JN	J
5103-71-9	alpha-Chlordane	329	J	
72-55-9	4,4'-DDE	3530	JN	

SAMPLE NO.

S-02 (0-0.5)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid SDG No.: 7067135
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135004
Date Analyzed: 10/16/2018 16:43
Lab File ID: 101518-1.B\311618.D
Initial wt/vol: 15.19 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 40.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.8	U
319-84-6	alpha-BHC	<2.8	U
319-85-7	beta-BHC	<2.8	U
319-86-8	delta-BHC	<2.8	U
58-89-9	gamma-BHC (Lindane)	<2.8	U
5103-71-9	alpha-Chlordane	<2.8	U
72-54-8	4,4'-DDD	<5.5	U
72-55-9	4,4'-DDE	5.9 JN	
50-29-3	4,4'-DDT	<5.5 UJ	U
60-57-1	Dieldrin	<5.5	U
959-98-8	Endosulfan I	<2.8	U
33213-65-9	Endosulfan II	<5.5	U
1031-07-8	Endosulfan sulfate	<5.5	U
72-20-8	Endrin	<5.5	U
76-44-8	Heptachlor	<2.8	U

12/04/2018 5:18

MKP 1/9/19

SAMPLE NO.

S-03 (0.5-1)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid
SDG No.: 7067135
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135005
Date Analyzed: 10/16/2018 18:26
Lab File ID: 101518-1.B\311625.D
Initial wt/vol: 15.12 g
Final wt/vol: 5 mL
Dilution: 1
Instrument: 70GCS3
Percent Moisture: 14.0%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg		Q
309-00-2	Aldrin	<2.0		U
319-84-6	alpha-BHC	<2.0		U
319-85-7	beta-BHC	<2.0		U
319-86-8	delta-BHC	<2.0		U
58-89-9	gamma-BHC (Lindane)	<2.0		U
5103-71-9	alpha-Chlordane	<2.0		U
72-54-8	4,4'-DDD	<3.8		U
72-55-9	4,4'-DDE	<3.8		U
50-29-3	4,4'-DDT	<3.8	UJ	U
60-57-1	Dieldrin	<3.8		U
959-98-8	Endosulfan I	<2.0		U
33213-65-9	Endosulfan II	<3.8		U
1031-07-8	Endosulfan sulfate	<3.8		U
72-20-8	Endrin	<3.8		U
76-44-8	Heptachlor	<2.0		U

12/04/2018 5:16

MEP 4/9/19

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
S-07 (0.2-0.5)

Lab Name: Pace Analytical - New York
Date Received: 10/06/2018 10:00
Date Extracted: 10/08/2018 17:25
Date Analyzed: 10/16/2018 17:27
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067135
Lab Sample ID: 7067135006
Lab File ID: 101518-1.B\311621.D
Instrument: 70GCS3 Percent Moisture: 18.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.1	U
319-84-6	alpha-BHC	<2.1	U
319-85-7	beta-BHC	<2.1	U
319-86-8	delta-BHC	<2.1	U
58-89-9	gamma-BHC (Lindane)	<2.1	U
5103-71-9	alpha-Chlordane	<2.1	U
72-54-8	4,4'-DDD	<4.1	U
72-55-9	4,4'-DDE	4.6 JN	
60-57-1	Dieldrin	<4.1	U
33213-65-9	Endosulfan II	<4.1	U
1031-07-8	Endosulfan sulfate	<4.1	U
72-20-8	Endrin	<4.1	U
76-44-8	Heptachlor	<2.1	U

12/04/2018 5:14
MHD 1/9/19

SAMPLE NO.

S-07 (0.2-0.5)

PESTICIDES - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York | Contract: 31 WATER ST

Date Received: 10/06/2018 10:00 | Matrix: Solid | SDG No.: 7067135

Date Extracted: 10/08/2018 17:25 | Lab Sample ID: 7067135006

Date Analyzed: 10/16/2018 17:27 | Lab File ID: 101518-2.B\311621.D

Initial wt/vol: 15 g | Final wt/vol: 5 mL | Dilution: 1 | Instrument: 70GCS3 | Percent Moisture: 18.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg		Q
50-29-3	4,4'-DDT	5.8	J	
959-98-8	Endosulfan I	4.7	JN	

12/04/2018 5:12

MKP 1/10/19

SAMPLE NO.

S-05 (0-0.5)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid SDG No.: 7067135
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135007
Date Analyzed: 10/19/2018 20:37
Lab File ID: 101918-1.B\311821.D
Initial wt/vol: 15.08 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 21.2%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg		Q
309-00-2	Aldrin	<2.1		U
319-84-6	alpha-BHC	<2.1		U
319-85-7	beta-BHC	<2.1		U
319-86-8	delta-BHC	<2.1		U
58-89-9	gamma-BHC (Lindane)	<2.1		U
5103-71-9	alpha-Chlordane	<2.1		U
72-54-8	4,4'-DDD	<4.2		U
72-55-9	4,4'-DDE	<4.2		U
50-29-3	4,4'-DDT	9.9	JT	
60-57-1	Dieldrin	<4.2		U
33213-65-9	Endosulfan II	2.2	J	J
1031-07-8	Endosulfan sulfate	20.3	JN	
72-20-8	Endrin	<4.2		U
76-44-8	Heptachlor	<2.1		U

12/04/2018 5:11

MVP 1/9/19

SAMPLE NO.

S-05 (0-0.5)

PESTICIDES - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York | Contract: 31 WATER ST

Date Received: 10/06/2018 10:00 | Matrix: Solid | SDG No.: 7067135

Date Extracted: 10/08/2018 17:25 | Lab Sample ID: 7067135007

Date Analyzed: 10/19/2018 20:37 | Lab File ID: 101918-2.B\311821.D

Initial wt/vol: 15.08 g | Final wt/vol: 5 mL | Dilution: 1 | Instrument: 70GCS3 | Percent Moisture: 21.2%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg		Q
959-98-8	Endosulfan I	2.8	JN	

SAMPLE NO.

S-04 (0.5-1)

PESTICIDES - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/06/2018 10:00
Matrix: Solid SDG No.: 7067135

Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135008

Date Analyzed: 10/16/2018 15:58
Lab File ID: 101518-1.B\311615.D

Initial wt/vol: 15.09 g Final wt/vol: 5 mL Dilution: 3
Instrument: 70GCS3 Percent Moisture: 20.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
5103-71-9	alpha-Chlordane	71.8	U

12/04/2018 5:01

MFD 1/9/19

SAMPLE NO.

S-04 (0.5-1)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid SDG No.: 7067135
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135008
Date Analyzed: 10/19/2018 22:35
Lab File ID: 101918-1.B\311829.D
Initial wt/vol: 15.09 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 20.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg			Q
309-00-2	Aldrin	<2.1			U
319-84-6	alpha-BHC	<2.1			U
319-85-7	beta-BHC	<2.1			U
58-89-9	gamma-BHC (Lindane)	<2.1			U
72-55-9	4,4'-DDE	27.7	JN		
50-29-3	4,4'-DDT	34.3	J		
60-57-1	Dieldrin	<4.1			U
33213-65-9	Endosulfan II	5.8	JN		
1031-07-8	Endosulfan sulfate	6.7	JN		
72-20-8	Endrin	<4.1			U
76-44-8	Heptachlor	<2.1			U

12/04/2018 5:00

MKP 1/9/19

SAMPLE NO.

S-04 (0.5-1)

PESTICIDES - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York | Contract: 31 WATER ST

Date Received: 10/06/2018 10:00 | Matrix: Solid | SDG No.: 7067135

Date Extracted: 10/08/2018 17:25 | Lab Sample ID: 7067135008

Date Analyzed: 10/19/2018 22:35 | Lab File ID: 101918-2.B\311829.D

Initial wt/vol: 15.09 g | Final wt/vol: 5 mL | Dilution: 1 | Instrument: 70GCS3 | Percent Moisture: 20.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg		Q
319-86-8	delta-BHC	2.5	JN	
72-54-8	4,4'-DDD	2.2	JN	J
959-98-8	Endosulfan I	2.2	JN	

12/04/2018 5:00

MH 1/9/19

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
S-06 (0.2-0.5)

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid SDG No.: 7067135
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135009
Date Analyzed: 10/19/2018 22:05
Lab File ID: 101918-1.B\311827.D
Initial wt/vol: 15.04 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 12.6%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg		Q
309-00-2	Aldrin	<1.9		U
319-84-6	alpha-BHC	<1.9		U
319-85-7	beta-BHC	<1.9		U
319-86-8	delta-BHC	<1.9		U
58-89-9	gamma-BHC (Lindane)	<1.9		U
5103-71-9	alpha-Chlordane	<1.9		U
72-54-8	4,4'-DDD	<3.8	MJ	U
72-55-9	4,4'-DDE	24.5	JN	
50-29-3	4,4'-DDT	<3.8		U
959-98-8	Endosulfan I	<1.9		U
33213-65-9	Endosulfan II	<3.8		U
1031-07-8	Endosulfan sulfate	<3.8		U
72-20-8	Endrin	<3.8		U

12/04/2018 5:00

MKP 1/9/19

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
S-06 (0.2-0.5)

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid SDG No.: 7067135
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135009
Date Analyzed: 10/19/2018 22:05
Lab File ID: 101918-2.B\311827.D
Initial wt/vol: 15.04 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 12.6%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
60-57-1	Dieldrin	3.7 JN	J
76-44-8	Heptachlor	3.0 JN	

12/04/2018 5:00
MKP 9/10/19

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BH-22 (0-1)

Lab Name: Pace Analytical - New York | Contract: 31 WATER ST

Date Received: 10/06/2018 10:00 | Matrix: Solid | SDG No.: 7067135

Date Extracted: 10/08/2018 17:25 | Lab Sample ID: 7067135001

Date Analyzed: 10/12/2018 16:40 | Lab File ID: 101218-1.B\212001.D

Initial wt/vol: 15 g | Final wt/vol: 5 mL | Dilution: 5 | Instrument: 70GCS2 | Percent Moisture: 9.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<182	U
11104-28-2	PCB-1221 (Aroclor 1221)	<370	U
11141-16-5	PCB-1232 (Aroclor 1232)	<182	U
53469-21-9	PCB-1242 (Aroclor 1242)	<182	U
11097-69-1	PCB-1254 (Aroclor 1254)	<182	U
11096-82-5	PCB-1260 (Aroclor 1260)	<182	U

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BH-22 (0-1)

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/06/2018 10:00
Matrix: Solid
SDG No.: 7067135
Date Extracted: 10/08/2018 17:25
Lab Sample ID: 7067135001
Date Analyzed: 10/12/2018 16:40
Lab File ID: 101218-2.B\212001.D
Initial wt/vol: 15 g
Final wt/vol: 5 mL
Dilution: 5
Instrument: 70GCS2
Percent Moisture: 9.3%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	1730 J	

12/04/2018 5:12

MAR 1/9/18

SAMPLE NO.

S-01 (0-0.5)

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York | Contract: 31 WATER ST

Date Received: 10/06/2018 10:00 | Matrix: Solid | SDG No.: 7067135

Date Extracted: 10/08/2018 17:25 | Lab Sample ID: 7067135003

Date Analyzed: 10/12/2018 16:53 | Lab File ID: 101218-1.B\212002.D

Initial wt/vol: 15.01 g | Final wt/vol: 5 mL | Dilution: 250 | Instrument: 70GCS2 | Percent Moisture: 20.4%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<10400	U
11104-28-2	PCB-1221 (Aroclor 1221)	<21000	U
11141-16-5	PCB-1232 (Aroclor 1232)	<10400	U
53469-21-9	PCB-1242 (Aroclor 1242)	<10400	U
11097-69-1	PCB-1254 (Aroclor 1254)	<10400	U
11096-82-5	PCB-1260 (Aroclor 1260)	<10400	U

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-01 (0-0.5)

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Date Received: 10/06/2018 10:00 Matrix: Solid SDG No.: 7067135

Date Extracted: 10/08/2018 17:25 Lab Sample ID: 7067135003

Date Analyzed: 10/12/2018 16:53 Lab File ID: 101218-2.B\212002.D

Initial wt/vol: 15.01 g Final wt/vol: 5 mL Dilution: 250 Instrument: 70GCS2 Percent Moisture: 20.4%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	78600 J	

12/04/2018 5:16

MKP 1/9/19

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-02 (0-0.5)

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Date Received: 10/06/2018 10:00 Matrix: Solid SDG No.: 7067135

Date Extracted: 10/08/2018 17:25 Lab Sample ID: 7067135004

Date Analyzed: 10/12/2018 17:57 Lab File ID: 101218-1.B\212007.D

Initial wt/vol: 15.19 g Final wt/vol: 5 mL Dilution: 1 Instrument: 70GCS2 Percent Moisture: 40.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<55.0	U
11104-28-2	PCB-1221 (Aroclor 1221)	<112	U
11141-16-5	PCB-1232 (Aroclor 1232)	<55.0	U
53469-21-9	PCB-1242 (Aroclor 1242)	<55.0	U
11097-69-1	PCB-1254 (Aroclor 1254)	<55.0	U
11096-82-5	PCB-1260 (Aroclor 1260)	<55.0	U

SAMPLE NO.

S-02 (0-0.5)

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Date Received: 10/06/2018 10:00 Matrix: Solid SDG No.: 7067135

Date Extracted: 10/08/2018 17:25 Lab Sample ID: 7067135004

Date Analyzed: 10/12/2018 17:57 Lab File ID: 101218-2.B\212007.D

Initial wt/vol: 15.19 g Final wt/vol: 5 mL Dilution: 1 Instrument: 70GCS2 Percent Moisture: 40.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	157 J	

12/04/2018 5:17

MKP 1/9/19

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-07 (0.2-0.5)

Lab Name: Pace Analytical - New York | Contract: 31 WATER ST

Date Received: 10/06/2018 10:00 | Matrix: Solid | SDG No.: 7067135

Date Extracted: 10/08/2018 17:25 | Lab Sample ID: 7067135006

Date Analyzed: 10/12/2018 18:36 | Lab File ID: 101218-1.B\212010.D

Initial wt/vol: 15 g | Final wt/vol: 5 mL | Dilution: 1 | Instrument: 70GCS2 | Percent Moisture: 18.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<40.5	U
11104-28-2	PCB-1221 (Aroclor 1221)	<82.2	U
11141-16-5	PCB-1232 (Aroclor 1232)	<40.5	U
53469-21-9	PCB-1242 (Aroclor 1242)	<40.5	U
11097-69-1	PCB-1254 (Aroclor 1254)	61.7 J	
11096-82-5	PCB-1260 (Aroclor 1260)	<40.5	U

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-07 (0.2-0.5)

Lab Name: Pace Analytical - New York

Contract: 31 WATER ST

Date Received: 10/06/2018 10:00

Matrix: Solid SDG No.: 7067135

Date Extracted: 10/08/2018 17:25

Lab Sample ID: 7067135006

Date Analyzed: 10/12/2018 18:36

Lab File ID: 101218-2.B\212010.D

Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1

Instrument: 70GCS2 Percent Moisture: 18.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	67.7	

PCB - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
S-05 (0-0.5)

Lab Name: Pace Analytical - New York
Date Received: 10/06/2018 10:00
Date Extracted: 10/16/2018 11:18
Date Analyzed: 10/16/2018 23:24
Initial wt/vol: 15.04 g Final wt/vol: 5 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067135
Lab Sample ID: 7067135007
Lab File ID: 101618-1.B\212113.D
Instrument: 70GCS2 Percent Moisture: 21.2%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<41.7	U
11104-28-2	PCB-1221 (Aroclor 1221)	<84.8	U
11141-16-5	PCB-1232 (Aroclor 1232)	<41.7	U
53469-21-9	PCB-1242 (Aroclor 1242)	<41.7	U
11097-69-1	PCB-1254 (Aroclor 1254)	<41.7	U
11096-82-5	PCB-1260 (Aroclor 1260)	<41.7	U

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-05 (0-0.5)

Lab Name: Pace Analytical - New York

Contract: 31 WATER ST

Date Received: 10/06/2018 10:00

Matrix: Solid SDG No.: 7067135

Date Extracted: 10/16/2018 11:18

Lab Sample ID: 7067135007

Date Analyzed: 10/16/2018 23:24

Lab File ID: 101618-2.B\212113.D

Initial wt/vol: 15.04 g Final wt/vol: 5 mL Dilution: 1

Instrument: 70GCS2 Percent Moisture: 21.2%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	74.4	J

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

BH-22 (0-1)

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST

Lab Sample ID: 7067135001 Percent Moisture: 9.3

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	40.5		mg/kg	1	10/09/2018 14:55
7440-39-3	Barium	186		mg/kg	1	10/09/2018 14:55
7440-41-7	Beryllium	0.83		mg/kg	1	10/09/2018 14:55
7440-43-9	Cadmium	2.5	J	mg/kg	1	10/09/2018 14:55
7440-47-3	Chromium	58.4		mg/kg	1	10/09/2018 14:55
7440-50-8	Copper	1800		mg/kg	1	10/09/2018 14:55
7439-92-1	Lead	181		mg/kg	1	10/09/2018 14:55
7439-96-5	Manganese	512	J	mg/kg	1	10/09/2018 14:55
7440-02-0	Nickel	50.8	J	mg/kg	1	10/09/2018 14:55
7782-49-2	Selenium	2.0		mg/kg	1	10/09/2018 14:55
7440-22-4	Silver	0.67		mg/kg	1	10/09/2018 14:55
7440-66-6	Zinc	3810		mg/kg	10	10/10/2018 15:42

MVP 1/9/19

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.
BH-22 (0-1)

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST
Lab Sample ID: 7067135001 Percent Moisture: 9.3

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.1	U	mg/kg	1	11/02/2018 14:18
57-12-5	Cyanide	<0.55	UJ U	mg/kg	1	11/05/2018 14:38

MPD 1/10/19

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

BH-22 (6-7.2)

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST

Lab Sample ID: 7067135002 Percent Moisture: 32.1

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<7.3	U	mg/kg	5	11/02/2018 14:19
57-12-5	Cyanide	1.2	J	mg/kg	1	11/05/2018 14:38

MAP 1/10/19

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

S-01 (0-0.5)

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST

Lab Sample ID: 7067135003 Percent Moisture: 20.4

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<6.3	U	mg/kg	5	11/02/2018 14:19
57-12-5	Cyanide	<0.63 UJ	U	mg/kg	1	11/05/2018 14:38

MAP 1/10/19

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

S-02 (0-0.5)

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST

Lab Sample ID: 7067135004 Percent Moisture: 40.7

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<8.4	U	mg/kg	5	11/02/2018 14:19
57-12-5	Cyanide	<0.86	U	mg/kg	1	11/05/2018 14:38

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.
S-03 (0.5-1)

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST
Lab Sample ID: 7067135005 Percent Moisture: 14.0

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<5.8	U	mg/kg	5	11/02/2018 14:19
57-12-5	Cyanide	<0.58 ND	U	mg/kg	1	11/05/2018 14:38

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.
S-07 (0.2-0.5)

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST
Lab Sample ID: 7067135006 Percent Moisture: 18.5

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.2	U	mg/kg	1	11/02/2018 14:20
57-12-5	Cyanide	6.8	J	mg/kg	1	11/05/2018 14:38

MMP 1/10/19

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

S-05 (0-0.5)

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST

Lab Sample ID: 7067135007 Percent Moisture: 21.2

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.3	U	mg/kg	1	11/02/2018 14:20
57-12-5	Cyanide	1.3	J	mg/kg	1	11/05/2018 14:39

MWP 1/10/19

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

S-04 (0.5-1)

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST

Lab Sample ID: 7067135008 Percent Moisture: 20.5

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<6.3	U	mg/kg	5	11/02/2018 14:20
57-12-5	Cyanide	<0.63	U	mg/kg	1	11/05/2018 14:39

MMP 1/10/19

FORM I INORGANIC-1
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.
S-06 (0.2-0.5)

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST
Lab Sample ID: 7067135009 Percent Moisture: 12.6

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<1.1	U	mg/kg	1	11/02/2018 14:20
57-12-5	Cyanide	<0.57	U	mg/kg	1	11/05/2018 14:39

Appendix B

Laboratory QC Documentation

MSV - FORM III VOA-1

SOLID VOLATILE SAMPLE/DUPLICATE RECOVERY

Lab Name: Pace Analytical - New York
Date Extracted: 10/11/2018
Instrument 70MSV4
Lab Sample ID: BH-22 (0-1)

Duplicate Sample No: 7067135001DUP
Date Analyzed: 10/11/2018
Lab File ID: 101118.B\F91213.D
SDG No.: 7067135

COMPOUND	SAMPLE CONCENTRATION (ug/kg)	DUPLICATE CONCENTRATION (ug/kg)	RPD	RPD LIMITS
1,1,1-Trichloroethane	<9.7	<8.2		0-20
1,1-Dichloroethane	<9.7	<8.2		0-20
1,1-Dichloroethene	<9.7	<8.2		0-20
1,2,4-Trichlorobenzene	<9.7	<8.2		0-20
1,2,4-Trimethylbenzene	<9.7	<8.2		0-20
1,2-Dichlorobenzene	<9.7	<8.2		0-20
1,2-Dichloroethane	<9.7	<8.2		0-20
1,3,5-Trimethylbenzene	<9.7	<8.2		0-20
1,3-Dichlorobenzene	<9.7	<8.2		0-20
1,4-Dichlorobenzene	<9.7	<8.2		0-20
1,4-Dioxane (p-Dioxane)	<242	<204		0-20
2-Butanone (MEK)	<9.7	<8.2		0-20
Acetone	44.4	80.0	57	0-20
Benzene	<9.7	<8.2		0-20
Carbon tetrachloride	<9.7	<8.2		0-20
Chlorobenzene	<9.7	<8.2		0-20
Chloroform	<9.7	<8.2		0-20
Ethylbenzene	6.1J	7.2J		0-20
Methyl-tert-butyl ether	<9.7	<8.2		0-20
Methylene Chloride	35.5	74.0	70	0-20
Tetrachloroethene	<9.7	<8.2		0-20
Toluene	<9.7	<8.2		0-20
Trichloroethene	233	347	39	0-20
Vinyl chloride	<9.7	<8.2		0-20
Xylene (Total)	43.3	56.6	26	0-20
cis-1,2-Dichloroethene	7.3J	11.4		0-20
n-Butylbenzene	<9.7	<8.2		0-20
n-Propylbenzene	<9.7	<8.2		0-20
sec-Butylbenzene	<9.7	<8.2		0-20
tert-Butylbenzene	<9.7	<8.2		0-20
trans-1,2-Dichloroethene	<9.7	<8.2		0-20

RPD: 4 out of 4 outside limits.

MSV - FORM VI VOA-2
MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York Instrument ID: 70MSV4 GC Column: Col 1 SDG No.: 7067135

Calibration Date(s): 08/31/2018 08/31/2018 Calibration Time(s): 16:25 18:40

LAB FILE ID

CAL1 = 083118.B\F90826.D CAL2 = 083118.B\F90827.D CAL3 = 083118.B\F90828.D

CAL4 = 083118.B\F90829.D CAL5 = 083118.B\F90830.D CAL6 = 083118.B\F90831.D

CAL7 = 083118.B\F90832.D

COMPOUND	CURVE TYPE	CAL7	%RSD	R2	A1	A2	A3
Acetone	Linear	0.11911		0.99745	0.01395930	0.11784	
Benzene	Averaged	1.71525	4.58293			1.84742	
2-Butanone (MEK)	Averaged	0.15945	8.37438			0.17118	
n-Butylbenzene	Averaged	4.58180	7.70431			4.70312	
sec-Butylbenzene	Averaged	4.83103	7.49096			4.90367	
tert-Butylbenzene	Averaged	3.73376	3.88753			3.77619	
Carbon tetrachloride	Averaged	0.51810	2.20797			0.53405	
Chlorobenzene	Averaged	2.38903	3.32840			2.48338	
Chloroform	Averaged	1.18280	3.75950			1.26526	
1,2-Dichlorobenzene	Averaged	1.88756	4.16560			1.87410	
1,3-Dichlorobenzene	Averaged	2.06091	5.46330			2.06407	
1,4-Dichlorobenzene	Averaged	1.96481	5.35241			2.09908	
1,1-Dichloroethane	Averaged	1.31119	5.38422			1.43978	
1,2-Dichloroethane	Averaged	0.70378	3.73915			0.75284	
1,1-Dichloroethene	Averaged	0.63361	6.61199			0.69833	
cis-1,2-Dichloroethene	Averaged	0.76787	5.72519			0.82969	
trans-1,2-Dichloroethene	Averaged	0.69521	5.28248			0.75214	
1,4-Dioxane (p-Dioxane)	Linear	0.00229		0.99882	0.00502089	0.00224	
Ethylbenzene	Averaged	1.25827	4.99581			1.35708	
Methylene Chloride	Averaged	0.68968	15.14539			0.80344	
Methyl-tert-butyl ether	Averaged	1.58823	4.53777			1.67992	
n-Propylbenzene	Averaged	5.23456	4.96784			5.72671	
Tetrachloroethene	Averaged	0.89163	6.45475			0.91431	
Toluene	Averaged	1.77896	5.18791			1.96192	
1,2,4-Trichlorobenzene	Averaged	1.23438	7.85650			1.14597	
1,1,1-Trichloroethane	Averaged	0.59148	4.28432			0.63348	
Trichloroethene	Averaged	0.40930	4.26402			0.43664	
1,2,4-Trimethylbenzene	Averaged	3.55938	19.66654			4.26874	
1,3,5-Trimethylbenzene	Averaged	3.63790	6.03716			3.96593	
Vinyl chloride	Averaged	1.01175	5.70991			1.09760	
4-Bromofluorobenzene (S)	Averaged	0.83511	2.15600			0.82543	
1,2-Dichloroethane-d4 (S)	Averaged	0.24663	3.76039			0.25492	
Toluene-d8 (S)	Averaged	2.42306	1.59130			2.38195	

RF<0.005

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

11/14/2018 1:57

SAMPLE NO.

10781473CCV

MSV - FORM VII VOA-1
MSV CONTINUING CALIBRATION DATA

Lab Name: Pace Analytical - New York
Calibration Date: 10/11/2018 Time: 06:52

Instrument ID: 70MSV4 GC Column: Col 1
Init. Calib. Date(s): 08/31/2018 08/31/2018

Lab File ID: 101118.B\F91206.D
Init. Calib. Time(s): 16:25 18:40

SDG No.: 7067135

COMPOUND	CURVE	$\overline{RRF}$ or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Linear	50	112.9609	0.0100	125.9218	20.0000
Benzene	Averaged	1.84742	1.92471	0.0100	4.1835	20.0000
2-Butanone (MEK)	Averaged	0.17118	0.26173	0.0100	52.9011	20.0000
n-Butylbenzene	Averaged	4.70312	5.19901	0.0100	10.5440	20.0000
sec-Butylbenzene	Averaged	4.90367	5.33629	0.0100	8.8224	20.0000
tert-Butylbenzene	Averaged	3.77619	3.95980	0.0100	4.8621	20.0000
Carbon tetrachloride	Averaged	0.53405	0.76372	0.0100	43.0054	20.0000
Chlorobenzene	Averaged	2.48338	2.54366	0.3000	2.4274	20.0000
Chloroform	Averaged	1.26526	1.27746	0.0100	0.9636	20.0000
1,2-Dichlorobenzene	Averaged	1.87410	1.91669	0.0100	2.2727	20.0000
1,3-Dichlorobenzene	Averaged	2.06407	2.20957	0.0100	7.0492	20.0000
1,4-Dichlorobenzene	Averaged	2.09908	2.20478	0.0100	5.0357	20.0000
1,1-Dichloroethane	Averaged	1.43978	1.33599	0.1000	-7.2090	20.0000
1,2-Dichloroethane	Averaged	0.75284	0.84614	0.0100	12.3934	20.0000
1,1-Dichloroethene	Averaged	0.69833	0.64101	0.0100	-8.2089	20.0000
cis-1,2-Dichloroethene	Averaged	0.82969	0.74431	0.0100	-10.2901	20.0000
trans-1,2-Dichloroethene	Averaged	0.75214	0.69403	0.0100	-7.7258	20.0000
1,4-Dioxane (p-Dioxane)	Linear	1250	1173.221	0.0100	-6.1423	20.0000
Ethylbenzene	Averaged	1.35708	1.36991	0.0100	0.9458	20.0000
Methylene Chloride	Averaged	0.80344	0.67050	0.0100	-16.5463	20.0000
Methyl-tert-butyl ether	Averaged	1.67992	1.62174	0.0100	-3.4632	20.0000
n-Propylbenzene	Averaged	5.72671	5.69092	0.0100	-0.6251	20.0000
Tetrachloroethene	Averaged	0.91431	1.17245	0.0100	28.2334	20.0000
Toluene	Averaged	1.96192	1.98237	0.0100	1.0425	20.0000
1,2,4-Trichlorobenzene	Averaged	1.14597	1.38979	0.0100	21.2765	20.0000
1,1,1-Trichloroethane	Averaged	0.63348	0.83715	0.0100	32.1494	20.0000
Trichloroethene	Averaged	0.43664	0.50288	0.0100	15.1701	20.0000
1,2,4-Trimethylbenzene	Averaged	4.26874	3.88776	0.0100	-8.9249	20.0000
1,3,5-Trimethylbenzene	Averaged	3.96593	3.98553	0.0100	0.4941	20.0000
Vinyl chloride	Averaged	1.09760	0.99226	0.0100	-9.5976	20.0000
4-Bromofluorobenzene (S)	Averaged	0.82543	0.87590	0.0100	6.1150	20.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.25492	0.35310	0.0100	38.5141	20.0000
Toluene-d8 (S)	Averaged	2.38195	2.38593	0.0100	0.1671	20.0000

%D > 20%

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

SAMPLE NO.

BLANK

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/10/2018 09:42
Date Extracted: 10/10/2018 10:01
Date Analyzed: 10/11/2018 12:22
Initial wt/vol: 15 g Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Solid SDG No.: 7067135
Lab Sample ID: 397368
Lab File ID: 8270-101118.B\R46823.D
Instrument: 70MSS3 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
119-61-9	Benzophenone	8.353	287	N J
13048-33-4	Hexamethylene diacrylate	8.001	178	N J
	Unknown Aldol Condensate	4.266	196	J
	Unknown Aldol Condensate	4.347	318	J
	Unknown Aromatic Hydrocarbon	2.658	710	J
	Unknown Ketone	2.861	175	J
	Unknown Ketone	2.931	250	J
	Unknown Ketone	3.641	38000	J
	Unknown Ketone	3.246	3820	J
	Unknown Ketone	3.449	636	J

Flag Samples accordingly

PESTICIDES - FORM II SVOA-1
SOLID SEMI-VOLATILE SURROGATE RECOVERY

Lab Name: Pace Analytical - New York SDG No.: 7067135 Contract: 31 WATER ST

Instrument ID: 70GCS3

LAB SAMPLE ID	SAMPLE NAME	DCBP	TCMX
396089	396089BLANK	117	87
396090	396090LCS	108	67
396091	396091LCS	119	90
396127	396127MS	225*	87
396128	396128MSD	503*	128
7067135001	BH-22 (0-1)	123	63
7067135002	BH-22 (6-7.2)	124	97
7067135003	S-01 (0-0.5)	144	103
7067135004	S-02 (0-0.5)	85	32
7067135005	S-03 (0.5-1)	235*	395*
7067135006	S-07 (0.2-0.5)	205*	67
7067135007	S-05 (0-0.5)	30	69
7067135008	S-04 (0.5-1)	478*	61
7067135009	S-06 (0.2-0.5)	86	87

- Flag Detects

QC LIMITS
(30-150)
(30-150)

(DCBP) = Decachlorobiphenyl (S)
(TCMX) = Tetrachloro-m-xylene (S)
* Values outside of QC Limits

PESTICIDES - FORM III SVOA-1

SOLID SEMI-VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Pace Analytical - New York

Date Extracted: 10/08/2018

Instrument: 70GCS3

Parent Sample ID: S-01 (0-0.5) (-603)

Matrix Spike - Sample No: 396127MS

Date Analyzed (1): 10/16/2018

Lab File ID: 101518-2.B\311628.D

SDG No.: 7067135

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	MS CONCENTRATION (ug/kg)	MS %REC	QC LIMITS REC.
4,4'-DDD	16.6	<4.1	59.0	356	57-156
4,4'-DDE	16.6 *	3530	3390	-862	52-135
4,4'-DDT	16.6 *	<414	3100	18700	64-127
Aldrin	16.6	<2.1	1850	11200	35-147
Dieldrin	16.6 *	1310	990	-1940	47-134
Endosulfan I	16.6	<2.1	42.6	257	54-145
Endosulfan II	16.6	30.3	21.6	-53	61-137
Endosulfan sulfate	16.6	15.8	18.4	16	51-154
Endrin	16.6	35.9	50.7	90	37-146
Heptachlor	16.6 *	496	434	-373	57-148
alpha-BHC	16.6	<2.1	19.0	115	41-135
alpha-Chlordane	16.6 *	329	193	-822	43-128
beta-BHC	16.6	<2.1	9.1	55	42-158
delta-BHC	16.6	<2.1	27.7	167	48-142
gamma-BHC (Lindane)	16.6	172J	150	-133	44-139

* spiked too low

Spike Recovery: 12 out of 15 outside limits.

PESTICIDES - FORM III SVOA-2

SOLID SEMI-VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Instrument (2): 70GCS3 Matrix Spike Duplicate - Sample No: 396128MSD

Lab File ID (2): 101518-2.B\311629.D Date Analyzed (2): 10/16/2018

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENTRATION (ug/kg)	MSD %REC	%RPD	QC LIMITS	
					RPD	REC.
4,4'-DDD	16.7	168	1010	96	0-30	57-156
4,4'-DDE	16.7	5730	13200	51	0-30	52-135
4,4'-DDT	16.7	5510	33000	56	0-27	64-127
Aldrin	16.7	2990	17900	47	0-43	35-147
Dieldrin	16.7	1580	1610	46	0-38	47-134
Endosulfan I	16.7	104	622	84	0-30	54-145
Endosulfan II	16.7	92.6	373	124	0-30	61-137
Endosulfan sulfate	16.7	31.9	97	54	0-30	51-154
Endrin	16.7	125	536	85	0-45	37-146
Heptachlor	16.7	673	1060	43	0-20	57-148
alpha-BHC	16.7	26.2	157	32	0-30	41-135
alpha-Chlordane	16.7	368	230	62	0-30	43-128
beta-BHC	16.7	8990	53900	200	0-30	42-158
delta-BHC	16.7	41.1	246	39	0-30	48-142
gamma-BHC (Lindane)	16.7	225	312	40	0-31	44-139

RPD: 15 out of 15 outside limits.

Spike Recovery: 14 out of 15 outside limits.

12/04/2018 4:57

SAMPLE NO.

396089BLANK

PESTICIDES - FORM IV SVOA-1
SEMI-VOLATILE METHOD BLANK SUMMARY

Lab Name: Pace Analytical - New York SDG No.: 7067135 Contract: 31 WATER ST

Instrument ID: 70GCS3 Matrix: Solid Lab Sample ID: 396089

Lab File ID (1): 101218-1.B\311549.D Date Analyzed (1): 10/13/2018 Time (1):03:42

Lab File ID (2): 101218-2.B\311549.D Date Analyzed (2): 10/13/2018 Time (2):03:42

SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	ANALYZED
396090LCS	396090	101218-1.B\311550.D	10/13/2018 03:57
396090LCS	396090	101218-2.B\311550.D	10/13/2018 03:57
396091LCS	396091	101218-1.B\311551.D	10/13/2018 04:11
396091LCS	396091	101218-2.B\311551.D	10/13/2018 04:11
S-04 (0.5-1)	7067135008	101518-1.B\311615.D	10/16/2018 15:58
S-04 (0.5-1)	7067135008	101518-2.B\311615.D	10/16/2018 15:58
BH-22 (6-7.2)	7067135002	101518-1.B\311617.D	10/16/2018 16:28
BH-22 (6-7.2)	7067135002	101518-2.B\311617.D	10/16/2018 16:28
S-02 (0-0.5)	7067135004	101518-1.B\311618.D	10/16/2018 16:43
S-02 (0-0.5)	7067135004	101518-2.B\311618.D	10/16/2018 16:43
S-07 (0.2-0.5)	7067135006	101518-1.B\311621.D	10/16/2018 17:27
S-07 (0.2-0.5)	7067135006	101518-2.B\311621.D	10/16/2018 17:27
S-03 (0.5-1)	7067135005	101518-1.B\311625.D	10/16/2018 18:26
S-03 (0.5-1)	7067135005	101518-2.B\311625.D	10/16/2018 18:26
S-01 (0-0.5)	7067135003	101518-1.B\311627.D	10/16/2018 18:55
S-01 (0-0.5)	7067135003	101518-2.B\311627.D	10/16/2018 18:55
396127MS	396127	101518-1.B\311628.D	10/16/2018 19:09
396127MS	396127	101518-2.B\311628.D	10/16/2018 19:09
396128MSD	396128	101518-1.B\311629.D	10/16/2018 19:24
396128MSD	396128	101518-2.B\311629.D	10/16/2018 19:24
S-01 (0-0.5)	7067135003	101918-1.B\311818.D	10/19/2018 19:53
S-01 (0-0.5)	7067135003	101918-2.B\311818.D	10/19/2018 19:53
S-05 (0-0.5)	7067135007	101918-1.B\311821.D	10/19/2018 20:37
S-05 (0-0.5)	7067135007	101918-2.B\311821.D	10/19/2018 20:37
BH-22 (0-1)	7067135001	101918-1.B\311825.D	10/19/2018 21:36
BH-22 (0-1)	7067135001	101918-2.B\311825.D	10/19/2018 21:36
S-06 (0.2-0.5)	7067135009	101918-1.B\311827.D	10/19/2018 22:05
S-06 (0.2-0.5)	7067135009	101918-2.B\311827.D	10/19/2018 22:05
S-04 (0.5-1)	7067135008	101918-1.B\311829.D	10/19/2018 22:35
S-04 (0.5-1)	7067135008	101918-2.B\311829.D	10/19/2018 22:35

last in

Flag Only

pem out

pem out

pem in

pem 10/16 @ 20:08 - >20% both columns out

10/12 @ 17:09 in
10/12 @ 20:06 in
10/13 @ 02:28 in
10/13 @ 04:41 in
10/16 @ 11:49 in
10/16 @ 14:45 in
10/19 @ 16:22 in
10/19 @ 16:24 in
10/19 @ 23:14 in

SAMPLE NO.

10806629CCV

PESTICIDES - FORM VII PEST-1
PESTICIDES CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York

Calibration Date: 10/16/2018 Time: 20:23

Instrument ID: 70GCS3 GC Column: Col 1

Init. Calib. Date(s): 10/16/2018 10/16/2018

Lab File ID: 101518-1.B\311633.D

Init. Calib. Time(s): 12:03 13:31

SDG No.: 7067135

COMPOUND	PEAK	CURVE TYPE	RT	RT WINDOW		$\overline{RRF}$ or Amount	RRF or Amount	%D
				FROM	TO			
Aldrin		Averaged	4.221	4.188	4.248	414910367.	396885450.	-4.3443
alpha-BHC		Averaged	3.044	3.013	3.073	423818117.	496040800.	17.0410
beta-BHC		Averaged	3.438	3.403	3.463	191844110.	205678850.	7.2114
delta-BHC		Averaged	3.632	3.596	3.656	397408932.	653585800.	-64.4618
gamma-BHC (Lindane)		Averaged	3.351	3.319	3.379	402137055.	482405850.	19.9606
alpha-Chlordane		Averaged	5.396	5.361	5.421	435157200.	615023850.	41.3337
4,4'-DDD		Averaged	6.392	6.358	6.418	319451237.	561560025.	75.7890
4,4'-DDE		Averaged	5.526	5.493	5.553	378673271.	612290350.	61.6936
4,4'-DDT		Averaged	6.682	6.652	6.712	339674611.	143332525.	-57.8030
Dieldrin		Averaged	5.963	5.931	5.991	412435761.	497261075.	20.5669
Endosulfan I		Averaged	5.598	5.566	5.626	397901202.	520247900.	30.7480
Endosulfan II		Averaged	6.56	6.528	6.588	371927445.	397512700.	6.8791
Endosulfan sulfate		Averaged	7.46	7.428	7.488	291681820.	312676275.	7.1977
Endrin		Averaged	6.281	6.248	6.308	385119308.	402270800.	4.4536
Heptachlor		Averaged	3.861	3.829	3.889	455055832.	318874500.	-29.9263
Decachlorobiphenyl		Averaged	8.562	8.532	8.592	337371090.	391924450.	16.1701
Tetrachloro-m-xylene		Averaged	2.564	2.533	2.593	290087797.	297383900.	2.5151

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

12/12/2018 4:28

SAMPLE NO.

10806609CCV

PESTICIDES - FORM VII PEST-1
PESTICIDES CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York

Calibration Date: 10/16/2018 Time: 20:23

Instrument ID: 70GCS3 GC Column: Col 2

Init. Calib. Date(s): 10/16/2018 10/16/2018

Lab File ID: 101518-2.B\311633.D

Init. Calib. Time(s): 11:34 19:54

SDG No.: 7067135

COMPOUND	PEAK	CURVE TYPE	RT	RT WINDOW		$\overline{RRF}$ or Amount	RRF or Amount	%D
				FROM	TO			
Aldrin		Averaged	4.146	4.112	4.172	416673990.	472511150.	13.4007
alpha-BHC		Averaged	2.953	2.921	2.981	419626457.	469160800.	11.8044
beta-BHC		Averaged	3.379	3.341	3.401	195819357.	253077900.	29.2405
delta-BHC		Averaged	3.695	3.658	3.718	398453252.	479427800.	20.3222
gamma-BHC (Lindane)		Averaged	3.293	3.26	3.32	403149505.	449864100.	11.5874
alpha-Chlordane		Averaged	5.398	5.362	5.422	413836152.	415233350.	0.3376
4,4'-DDD		Averaged	6.505	6.469	6.529	322032946.	541530300.	68.1599
4,4'-DDE		Averaged	5.692	5.656	5.716	386999788.	526752450.	36.1118
4,4'-DDT		Averaged	6.85	6.821	6.881	353866278.	145198425.	-58.9680
Dieldrin		Averaged	5.9	5.869	5.929	414450101.	691521225.	66.8527
Endosulfan I		Averaged	5.477	5.441	5.501	398337277.	398134200.	-0.0510
Endosulfan II		Averaged	6.584	6.548	6.608	371717310.	416503025.	12.0483
Endosulfan sulfate		Averaged	7.241	7.206	7.266	339990008.	347241125.	2.1327
Endrin		Averaged	6.319	6.284	6.344	376173801.	366438900.	-2.5879
Heptachlor		Averaged	3.764	3.731	3.791	455690897.	373905900.	-17.9475
Decachlorobiphenyl		Averaged	8.757	8.723	8.783	285728082.	292068200.	2.2189
Tetrachloro-m-xylene		Averaged	2.451	2.418	2.478	291410732.	277589900.	-4.7427

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

12/12/2018 4:29

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

SAMPLE NO.
10806621PEM

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Instrument ID: 70GCS3 GC Column: Col 1
Lab File ID: 101518-1.B\311632.D

Analysis Date: 10/16/2018 Time: 20:08
SDG: 7067135
Init. Calib. Date(s): 10/16/2018 10/16/2018
Init. Calib. Time(s): 12:03 13:31

4,4'-DDT % 89.98*

Endrin %Breakdown: 5.87

QC LIMITS:
4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

SAMPLE NO.
10806624PEM

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Instrument ID: 70GCS3 GC Column: Col 2
Lab File ID: 101518-2.B\311632.D

Analysis Date: 10/16/2018 Time: 20:08
SDG: 7067135
Init. Calib. Date(s): 10/16/2018 10/16/2018
Init. Calib. Time(s): 11:34 19:54

4,4'-DDT % 73.12*

Endrin %Breakdown: 8.76

QC LIMITS:
4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

BH-22 (0-1)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135001 SDG No.: 7067135 Date(s) Analyzed: 10/19/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD	
4,4'-DDE	1	5.59738	32.4	39.8	J
	2	5.79238	48.4		
4,4'-DDT	1	6.77822	3.8	161	J N
	2	6.90322	35.2		
Dieldrin	1	6.05072	7.0	157	J N
	2	5.96988	58.2		
Endosulfan II	1	6.62988	2.9J	78.7	J N
	2	6.66405	6.7		
Endosulfan sulfate	1	7.50072	6.2	70.7	J N
	2	7.28322	13.0		
Heptachlor	1	3.92572	6.5	2.6	
	2	3.85572	6.7		

SAMPLE NO.

S-01 (0-0.5)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135003 SDG No.: 7067135 Date(s) Analyzed: 10/16/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD	
Endosulfan II	1	6.56665	222	152	JN
	2	6.56332	30.3		
Endosulfan sulfate	1	7.45248	15.8	186	JN
	2	7.24082	426		
Endrin	1	6.27665	327	160	JN
	2	6.32332	35.9		

SAMPLE NO.

S-01 (0-0.5)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135003 SDG No.: 7067135 Date(s) Analyzed: 10/19/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 100

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD	
gamma-BHC (Lindane)	1	3.41487	700	121	JN
	2	3.35737	172J		
alpha-Chlordane	1	5.4632	501	41.4	J
	2	5.46987	329		
4,4'-DDE	1	5.60403	3850	8.7	
	2	5.79903	3530		
Dieldrin	1	6.0582	1310	121	JN
	2	5.97653	5340		
Heptachlor	1	3.9307	496	10.3	
	2	3.85403	549		

SAMPLE NO.

S-02 (0-0.5)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135004 SDG No.: 7067135 Date(s) Analyzed: 10/16/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
4,4'-DDE	1	5.50522	5.9	44.8 J
	2	5.70772	9.3	

SAMPLE NO.

S-07 (0.2-0.5)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135006 SDG No.: 7067135 Date(s) Analyzed: 10/16/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD	
4,4'-DDE	1	5.50462	4.6	172	J N
	2	5.71545	61.5		
4,4'-DDT	1	6.72462	8.3	35.1	J
	2	6.86128	5.8		
Endosulfan I	1	5.60628	1.2J	118	J N
	2	5.48295	4.7		

SAMPLE NO.

S-05 (0-0.5)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135007 SDG No.: 7067135 Date(s) Analyzed: 10/19/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD	
4,4'-DDT	1	6.79277	9.9	59.6	J
	2	6.90443	5.3		
Endosulfan I	1	5.7086	10.1	112	JN
	2	5.57527	2.8		
Endosulfan II	1	6.64443	2.2J	51.4	J
	2	6.62527	3.8J		
Endosulfan sulfate	1	7.5111	20.3	84.8	JN
	2	7.2936	50.2		

SAMPLE NO.

S-04 (0.5-1)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135008 SDG No.: 7067135 Date(s) Analyzed: 10/16/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 3

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
alpha-Chlordane	1	5.38938	71.8	36.5 J
	2	5.39355	104	

SAMPLE NO.

S-04 (0.5-1)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135008 SDG No.: 7067135 Date(s) Analyzed: 10/19/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD	
delta-BHC	1	3.70392	8.1	107	JN
	2	3.75475	2.5		
4,4'-DDD	1	6.47808	26.1	169	JN
	2	6.55308	2.2J		
4,4'-DDE	1	5.59558	27.7	148	JN
	2	5.78808	184		
4,4'-DDT	1	6.77642	34.3	54.2	J
	2	6.89975	59.7		
Endosulfan I	1	5.68642	4.9	77.2	JN
	2	5.55142	2.2		
Endosulfan II	1	6.62642	5.8	102	JN
	2	6.65892	17.6		
Endosulfan sulfate	1	7.49975	6.7	169	JN
	2	7.28142	78.8		

SAMPLE NO.

S-06 (0.2-0.5)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135009 SDG No.: 7067135 Date(s) Analyzed: 10/19/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD	
4,4'-DDE	1	5.5898	24.5	13.7	
	2	5.7873	28.1		
Dieldrin	1	6.04563	10.9	98.0	J N
	2	6.0098	3.7J		
Heptachlor	1	3.92063	7.3	83.1	J N
	2	3.8598	3.0		

SAMPLE NO.

BH-22 (0-1)

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135001 SDG No.: 7067135 Date(s) Analyzed: 10/12/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 5

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.37408	2300	28.4
	2	3.94825	1730	

J

SAMPLE NO.

S-01 (0-0.5)

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135003 SDG No.: 7067135 Date(s) Analyzed: 10/12/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 250

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.36052	113000	36.1
	2	3.94802	78600	

J

SAMPLE NO.

S-02 (0-0.5)

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135004 SDG No.: 7067135 Date(s) Analyzed: 10/12/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.37235	260	49.6
	2	3.93985	157	

J

SAMPLE NO.

S-07 (0.2-0.5)

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135006 SDG No.: 7067135 Date(s) Analyzed: 10/12/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.3746	82.0	19.0
	2	3.94293	67.7	
PCB-1254 (Aroclor 1254)	1	6.4596	61.7	40.8 J
	2	5.11127	93.3	

SAMPLE NO.

S-05 (0-0.5)

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: 31 WATER ST

Lab Sample ID: 7067135007 SDG No.: 7067135 Date(s) Analyzed: 10/16/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.39432	129	53.5 J
	2	3.94182	74.4	

FORM VIII INORGANIC-1
SERIAL DILUTIONS

SAMPLE NO.
396097SD

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST

Matrix: Solid Parent Sample ID: BH-22 (0-1)

Analyte	Units	Initial Sample Result	Serial Dilution Result	% Difference	Control Limit %D
Arsenic	ug/L	677	656	3.0	10
Barium	ug/L	3120	2970	4.7	10
Beryllium	ug/L	13.8	13.4J	3.0	10
Cadmium	ug/L	41.5	33.3	19.7*	10
Chromium	ug/L	976	939	3.8	10
Copper	ug/L	30100	28500	5.2	10
Lead	ug/L	3020	2890	4.4	10
Manganese	ug/L	8550	9460	10.6*	10
Nickel	ug/L	849	742	12.7*	10
Selenium	ug/L	33.8	26.3U		10
Silver	ug/L	11.3	6.3U		10

* Indicates that the % Difference exceeds the control limit.
No difference is calculated if either result is a non-detect.

11/14/2018 14:33

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract : 31 WATER ST

Method Blank Matrix: Solid Instrument ID: 70ICP2

Method Blank Concentration Units: mg/kg

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method Blank	
	10/09/2018 14:12	C	10/09/2018 14:39	C	10/09/2018 15:46	C	10/09/2018 16:54	C	395946	C
Arsenic	-2.9	J	2.5	U	2.5	U	2.5	U	<0.50	U
Barium	-0.16	J	0.10	U	0.10	U	0.10	U	<10.0	U
Beryllium	0.10	U	0.10	U	0.10	U	0.12	J	<0.25	U
Cadmium	0.10	U	0.10	U	0.10	U	0.10	U	<0.13	U
Chromium	6.2	J	6.3	J	6.2	J	8.2	J	<0.50	U
Copper	0.90	U	0.90	U	0.90	U	0.90	U	0.099	J
Lead	2.3	J	1.4	U	1.4	J	1.4	U	<0.25	U
Manganese	0.75	J	0.90	J	0.71	J	2.2	J	0.043	J
Nickel	4.1	J	4.5	J	3.7	J	4.3	J	<2.0	U
Selenium	2.8	U	2.8	U	2.8	U	2.8	U	<0.50	U
Silver	1.5	U	1.5	U	1.5	U	1.5	U	<0.50	U
Zinc	0.75	J	0.98	J	2.2	J	3.7	J	0.52	J

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - New York SDG No. : 7067135 Contract: 31 WATER ST

Preparation Method: EPA 9010C Batch: WETA 14360

Lab Sample ID	Sample Name	Preparation Date	Initial Weight (g)	Final Volume (mL)
413818	413818BLANK	11/05/2018	1	50
413819	413819SRM	11/05/2018	1	50
413820	413820MS	11/05/2018	1	50
413821	413821DUP	11/05/2018	1	50
7067135001	BH-22 (0-1)	11/05/2018	1	50
7067135002	BH-22 (6-7.2)	11/05/2018	1	50
7067135003	S-01 (0-0.5)	11/05/2018	1	50
7067135004	S-02 (0-0.5)	11/05/2018	0.98	50
7067135005	S-03 (0.5-1)	11/05/2018	1	50
7067135006	S-07 (0.2-0.5)	11/05/2018	1.05	50
7067135007	S-05 (0-0.5)	11/05/2018	1	50
7067135008	S-04 (0.5-1)	11/05/2018	1	50
7067135009	S-06 (0.2-0.5)	11/05/2018	1	50

Outside 14 day HT

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www.pacelabs.com

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7067135

Method: **EPA 9014 Total Cyanide**
Description: 9014 Cyanide, Total
Client: BE3 Environmental
Date: December 14, 2018

General Information:
9 samples were analyzed for EPA 9014 Total Cyanide. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.
- BH-22 (0-1) (Lab ID: 7067135001)
- BH-22 (6-7.2) (Lab ID: 7067135002)
- S-01 (0-0.5) (Lab ID: 7067135003)
- S-02 (0-0.5) (Lab ID: 7067135004)
- S-03 (0.5-1) (Lab ID: 7067135005)
- S-04 (0.5-1) (Lab ID: 7067135008)
- S-05 (0-0.5) (Lab ID: 7067135007)
- S-06 (0.2-0.5) (Lab ID: 7067135009)
- S-07 (0.2-0.5) (Lab ID: 7067135006)

H2: Extraction or preparation conducted outside EPA method holding time.
- BH-22 (0-1) (Lab ID: 7067135001)
- BH-22 (6-7.2) (Lab ID: 7067135002)
- S-01 (0-0.5) (Lab ID: 7067135003)
- S-02 (0-0.5) (Lab ID: 7067135004)
- S-03 (0.5-1) (Lab ID: 7067135005)
- S-04 (0.5-1) (Lab ID: 7067135008)
- S-05 (0-0.5) (Lab ID: 7067135007)
- S-06 (0.2-0.5) (Lab ID: 7067135009)
- S-07 (0.2-0.5) (Lab ID: 7067135006)

Sample Preparation:
The samples were prepared in accordance with EPA 9010C with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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Appendix C

Validator Qualifications

KENNETH R. APPLIN
Geochemist/Data Validator

Ph.D., Geochemistry and Mineralogy, The Pennsylvania State University

M.S., Geochemistry and Mineralogy, The Pennsylvania State University

B.A., Geological Sciences, SUNY at Geneseo, NY

Dr. Applin has over 35 years of experience working with the geochemistry of natural waters. His prior experience includes working as an Assistant Professor of Geology at the University of Missouri-Columbia and as Chief Hydrogeologist and Geochemist with a leading engineering firm in Rochester, NY. In 1993, he established KR Applin and Associates, a small consulting business that focuses on the geochemistry of natural waters, especially as applied to problems involving the contamination of groundwater and surface water.

Dr. Applin is also an experienced analytical data validator and has provided data validation services since 1994 to a variety of clients performing brownfield cleanup projects, hazardous waste remediation, groundwater monitoring at solid waste facilities, and other projects requiring third-party data validation. Dr. Applin has several years of hands-on experience with the laboratory analysis of natural waters and has successfully completed the USEPA Region II certification courses for performing inorganic and organic analytical data validation.

MICHAEL K. PERRY
Chemist/Data Validator

B.S. Chemistry, Georgia State University, Atlanta, GA

A.A.S., Chemical Technology, Alfred State College, Alfred, NY

Mr. Perry has over 30 years of experience in the analytical laboratory business. During his early career, he spent several years as a laboratory analyst performing the analysis of soil, water, and air samples for inorganic and organic chemical parameters. During his last 20 years in the environmental laboratory business, he managed and directed two major analytical laboratories in Rochester, NY. His management responsibilities included oversight of the daily operations of the lab, staff training and supervision, the selection, purchase, and maintenance of analytical instruments, the introduction of new laboratory methods, analytical quality assurance and quality control, data acquisition and management, and other business-related activities.

Mr. Perry has an extensive working knowledge of the methods and procedures used for sampling and analyzing both inorganic and organic analytes in soil, water, and air. He is an accomplished laboratory chemist and is familiar with the analytical methods and procedures established under the USEPA Contract Laboratory Protocols (CLP), the NYSDEC Analytical Services Protocols (ASP), and the NYSDOH Environmental Laboratory Approval Program (ELAP).

DATA USABILITY SUMMARY REPORT (DUSR)

31 Water Street
Jamestown, NY
NYSDEC BCP # C907046

SDG: 7068532

4 water samples

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

January 2019

EDU Environmental Data Usability 10028 Deer Park Dr. Dansville, NY 14437 585.991.9156

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REVIEWER'S NARRATIVE
SDG 7068532

The data associated with this Sample Delivery Group (SDG) 7068532, analyzed by Pace Analytical Services, LLC, Melville, NY have been reviewed in accordance with assessment criteria provided by the New York State Department of Environmental Conservation following the review procedures provided in the USEPA Functional Guidelines for evaluating organic and inorganic data.

All analytical results reported by the laboratory are considered valid and acceptable except results that have been qualified as rejected, "R". Results qualified as estimated "J", or as non-detects, "U", are considered usable for the purpose of evaluating water and/or soil quality. However, these qualifiers indicate that the accuracy and/or precision of the analytical result is questionable. A summary of all data that have been qualified and the reasons for qualification are provided in the following data usability summary report (DUSR).

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

Reviewer's Signature: Michael K. Perry Date: 1/15/19

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	31 Water St. Jamestown, NY
SAMPLING DATE:	October 18, 2018
SAMPLE TYPE:	4 water samples
LABORATORY:	Pace Analytical Services, LLC Melville, NY
SDG No.:	7068532

2.0 INTRODUCTION

This data usability summary report (DUSR) was prepared in accordance with guidance provided by the New York State Department of Environmental Conservation (NYSDEC). The DUSR is based on a review and evaluation of the laboratory analytical data package. Specifically, the NYSDEC guidance recommends review and evaluation of the following elements of the data package:

- Completeness of the data package as defined under the requirements of the NYSDEC Analytical Services Protocols (ASP) Category B or the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) deliverables,
- Compliance with established analyte holding times,
- Adherence to quality control (QC) limits and specifications for blanks, instrument tuning and calibration, surrogate recoveries, spike recoveries, laboratory duplicate analyses, and other QC criteria,
- Adherence to established analytical protocols,
- Conformance of data summary sheets with raw analytical data, and
- Use of correct data qualifiers.

Data deficiencies, analytical protocol deviations, and quality control problems identified using the review criteria above and their effect on the analytical results are discussed in this report.

3.0 SAMPLE AND ANALYSIS SUMMARY

The data package consists of analytical results for four water samples collected on October 18, 2018. These samples were analyzed for the Part 375 list of Volatile Organic Compounds, Semi-volatile Organic Compounds, PCBs, Pesticides, TCN, Hexavalent Chromium, Metals, PFAAs, and 1,4-Dioxane.

All analyses were performed by Pace Analytical Services, LLC, Melville, NY and analyzed as SDG 7068532 except PFAAs by Method 537 were analyzed by Test America-Sacramento as SDG 320-44474-1 and 1,4-Dioxane by 8270-SIM was analyzed by Test America-Buffalo as SDG 480-144153-1. The analytical results were provided in NYSDEC ASP Category B format, which includes all raw analytical data and laboratory QC data.

4.0 GUIDANCE DOCUMENTS AND DATA REVIEW CRITERIA

The guidance documents used for reviewing laboratory quality control (QC) data and assigning data qualifiers (flags) to analytical results are listed in Table 4-1. The QC limits established in the documents applicable to this data review were used to assess the quality of the analytical results. In some cases, however, QC limits established internally by the laboratory were taken into account to determine data quality.

The QC criteria considered for assessing the usability of the reported analytical results provided for each analyte type (i.e. VOCs, SVOCs, metals, etc.) are listed in Table 4-2. These criteria may vary with the analytical method utilized by the laboratory. These criteria comply with the guidance recommended in Section 2.0 above.

5.0 DATA VALIDATION QUALIFIERS

The letter qualifiers (flags) used to define data usability are described briefly below. These letters are assigned by the data validator to analytical

TABLE 4-1

DATA VALIDATION GUIDANCE DOCUMENTS

Analyte Type	Validation Guidance
VOCs	USEPA, 2008, Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry; SW-846 Method 8260B; SOP # HW-24, Rev. 2. USEPA, 2008, Statement of Work for Organic Analysis of Low/Medium Concentration of Volatile Organic Compounds SOM01.2; SOP HW-33, Rev. 2.
SVOCs	USEPA, 2007, Statement of Work for Organic Analysis of Low/Medium Concentration of Semivolatile Organic Compounds SOM01.2; SOP HW-35, Rev. 1.
Pesticides/PCBs	USEPA, 2006, CLP Organics Data Review and Preliminary Review (CLP/SOW OLMO 4.3); SOP # HW-6, Rev. 14, Part C.
Metals	USEPA, 2006, Validation of Metals for the Contract Laboratory Program (CLP) based on SOW ILMO 5.3 (SOP Revision 13), SOP # HW-2, Rev. 13.
Gen Chemistry	NYSDEC, 2005, Analytical Services Protocols (ASP)
VOCs (Ambient air)	USEPA, 2006, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canister by Method TO-15; SOP # HW-31, Rev. 4.

TABLE 4-2

QUALITY CONTROL CRITERIA USED FOR VALIDATING
LABORATORY ANALYTICAL DATA

VOCs	SVOCs	Pesticides/PCBs	Metals	Gen Chemistry	Method TO-15
Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg
Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition
Holding Time	Holding Time	Holding Time	Holding Time	Holding Times	Holding Time
System Monitoring Compounds	Surrogate Recoveries	Surrogate Recoveries	Initial/Continuing Calibration	Calibration	Canister Certification
Lab Control Sample	Lab Control Sample	Matrix Spikes	CRDL Standards	Lab Control Samples	Lab Control Sample
Matrix Spikes	Matrix Spikes	Blanks	Blanks	Blanks	Instrument Tuning
Blanks	Blanks	Instrument Calibration & Verification	Interference Check Sample	Spike Recoveries	Blanks
Instrument Tuning	Instrument Tuning	Analyte ID	Spike Recoveries	Lab Duplicates	Initial Calibration & System Performance
Internal Standards	Internal Standards	Lab Qualifiers	Lab Duplicate		Daily Calibration
Initial Calibration	Initial Calibration	Field Duplicate	Lab Control Sample		Field Duplicate
Continuing Calibration	Continuing Calibration		ICP Serial Dilutions		
Lab Qualifiers	Lab Qualifiers		Lab Qualifiers		
Field Duplicate	Field Duplicate		Field Duplicate		

results having questionable accuracy and/or precision as determined by reviewing the laboratory QC data associated with the analytical results.

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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

JN The analyte is considered to be "presumptively present." The associated numerical value represents its *approximate* concentration.

The validated analytical results are attached to this report. Validation qualifiers (flags) are indicated using red ink. Data sheets having qualified data are signed and dated by the data reviewer.

6.0 RESULTS OF THE DATA REVIEW

The results of the data review are summarized in Tables 6-1 through 6-9. The tables list the samples where QC criteria were found to exceed acceptable limits and the actions taken to qualify the associated analytical results.

7.0 TOTAL USABLE DATA

For SDG 7068532 four samples were analyzed and results were reported for 460 analytes. Four results were rejected. Even though some results were flagged with a "J" as estimated, all other results (99 %) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

Table 6-1 VOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
MW-03	Acetone	J -detects	Lab Duplicate > 20 % RPD	Data is estimated
All samples	1,4-Dioxane	R	Initial calibration RRF < 0.005	Based on the new low responders rule from SOM2.1, the RRF <0.005 is used

Table 6-2 SVOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	TICs detected in Method blank	TIC < 5X blank value, R TIC	Tentatively Identified Compounds were detected in the method blank	TICs were rejected

Table 6-3 Pesticides

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-4 PCBs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-5 Metals

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	Zinc	CRQL-U	Metals were detected in the method blank (MB) <PQL but >MDL	Data changed to non-detect

Table 6-6 TCN

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-7 Hexavalent Chromium

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-8 PFAAs – EPA 537 (modified)

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
MW-05	PFHxS (0.373)	CRQL-U	Compounds detected in method blank	Compound detected in the sample < CRQL, changed to 2.0 U.

Table 6-9 1,4-Dioxane 8270-SIM

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	1,4-Dioxane	J-Detects/UJ-Non-Detects	Samples Extracted outside 7 day holding time	All data is estimated

ACRONYMS

BSP	Blank Spike
CCAL	Continuing Calibration
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
%D	Percent Difference
ICAL	Initial Calibration
ICB	Initial Calibration Blank
IS	Internal Standard
LCS	Laboratory Control Sample
MS/MSD	Matrix Spike/Matrix Spike Duplicate
QA	Quality Assurance
QC	Quality Control
%R	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
%RSD	Percent Relative Standard Deviation
TAL	Target Analyte List (metals)
TCL	Target Compound List (organics)

Appendix A

Validated Analytical Results



Analytical Data Package

Prepared by:

Pace Analytical Services

Pace Project No.: 7068532

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

December 04, 2018

Jason Brydges
BE3 Environmental
1270 Niagara St
Buffalo, NY 14213

RE: Project: 31 WATER ST
Pace Project No.: 7068532

Dear Jason Brydges:
Enclosed are the analytical results for sample(s) received by the laboratory on October 19, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

1,4 Dioxane samples were sub contrated to TA-Buffalo 10 Hazelwood Dr Amherst, NY

PFAs samples were sub contracted to TA-Sacramento 880 Riverside Pkwy West Sacramento, Ca

Final report released 12/4 to include all sub contract data

Report revised 12/4 to include Mn & Mg results

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE SUMMARY

Project: 31 WATER ST
Pace Project No.: 7068532

Lab ID	Sample ID	Matrix	Date Collected	Date Received
7068532001	MW-03	Water	10/18/18 10:50	10/19/18 10:35
7068532002	MW-02	Water	10/18/18 13:50	10/19/18 10:35
7068532003	20181018-FD-1	Water	10/18/18 00:00	10/19/18 10:35
7068532004	MW-05	Water	10/18/18 16:10	10/19/18 10:35

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www.pacelabs.com

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7068532

Method: EPA 8081B
Description: 8081 GCS Pesticides
Client: BE3 Environmental
Date: December 04, 2018

General Information:
4 samples were analyzed for EPA 8081B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

WO# : 7068532

7068532

Workorder Number or

E ONLY

Company: BE3 Corp	Billing Information: ← SAME
Address: 1270 Niagara St Buffalo, NY 14213	
Report To: Jason Brydges	Email To: jbrydges@be3corp.com
Copy To: abrennen@be3corp.com	Site Collection Info/Address: 31 Water St
Customer Project Name/Number: 31 WATER ST RI	State: NY County/City: Jamestown Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 716-946-9133 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order #: Quote #: 31 Water St RI DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day (Expedite Charges Apply)
	Field Filtered (if applicable): [ ] Yes [X] No Analysis:

Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	375 VOC +TICs, SVOA + TICs		375 Pest / PCB, 1-4 Dioxane		CN & Tot CN, PFAS, 537 Metals		PFAS 375 Metals		375 Diss. Metals		Lab Sample # / Comments:
MW-03	GW	G	10/18	1050					X		X		X		X				
10-18-MSD				1100					X		X		X		X				
10-18-MS				1115					X		X		X		X				
MW-02				1350					X		X		X		X				
20181018-FD-1				—					X		X		X		X				
MW-05				1610					X		X		X		X				

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:

Customer Remarks / Special Conditions / Possible Hazards:
MS + MSD taken @ MW-03
Turbidity below 50 NTU only analyze preserve Metals

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: Bobble Bag

Radchem sample(s) screened (<500 cpm): Y N (NA)

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 8119 2993 7531

Samples received via: (FEDEX) UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: IR091
Cooler 1 Temp Upon Receipt: 0.0 °C
Cooler 1 Therm Corr. Factor: 0.0 °C
Cooler 1 Corrected Temp: 0.0 °C
Comments:

Relinquished by/Company: (Signature)	Date/Time: 10/19/1730	Received by/Company: (Signature)	Date/Time: 10/19/18 10:45
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

SAMPLE NO.

MW-03

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/19/2018 10:35
Matrix: Water SDG No.: 7068532
Date Extracted: 10/26/2018 14:51
Lab Sample ID: 7068532001
Date Analyzed: 10/26/2018 14:51
Lab File ID: 102618.B\A05286.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV1 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	71.2 J	
71-43-2	Benzene	<1.0	U
78-93-3	2-Butanone (MEK)	<5.0	U
104-51-8	n-Butylbenzene	<1.0	U
135-98-8	sec-Butylbenzene	<1.0	U
98-06-6	tert-Butylbenzene	<1.0	U
56-23-5	Carbon tetrachloride	<1.0	U
108-90-7	Chlorobenzene	<1.0	U
67-66-3	Chloroform	<1.0	U
95-50-1	1,2-Dichlorobenzene	<1.0	U
541-73-1	1,3-Dichlorobenzene	<1.0	U
106-46-7	1,4-Dichlorobenzene	<1.0	U
75-34-3	1,1-Dichloroethane	<1.0	U
75-35-4	1,1-Dichloroethene	<1.0	U
156-59-2	cis-1,2-Dichloroethene	<1.0	U
156-60-5	trans-1,2-Dichloroethene	<1.0	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<100~~ R	U
100-41-4	Ethylbenzene	<1.0	U
75-09-2	Methylene Chloride	<1.0	U
1634-04-4	Methyl-tert-butyl ether	<1.0	U
103-65-1	n-Propylbenzene	<1.0	U
127-18-4	Tetrachloroethene	<1.0	U
108-88-3	Toluene	<1.0	U
71-55-6	1,1,1-Trichloroethane	<1.0	U
79-01-6	Trichloroethene	<1.0	U
95-63-6	1,2,4-Trimethylbenzene	<1.0	U
108-67-8	1,3,5-Trimethylbenzene	<1.0	U
75-01-4	Vinyl chloride	<1.0	U
1330-20-7	Xylene (Total)	<3.0	U
179601-23-1	m&p-Xylene	<2.0	U
95-47-6	o-Xylene	<1.0	U

SAMPLE NO.

MW-02

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/19/2018 10:35
Matrix: Water SDG No.: 7068532
Date Extracted: 10/26/2018 14:30
Lab Sample ID: 7068532002
Date Analyzed: 10/26/2018 14:30
Lab File ID: 102618.B\A05285.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV1 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	81.9	
71-43-2	Benzene	<1.0	U
78-93-3	2-Butanone (MEK)	<5.0	U
104-51-8	n-Butylbenzene	<1.0	U
135-98-8	sec-Butylbenzene	<1.0	U
98-06-6	tert-Butylbenzene	<1.0	U
56-23-5	Carbon tetrachloride	<1.0	U
108-90-7	Chlorobenzene	<1.0	U
67-66-3	Chloroform	<1.0	U
95-50-1	1,2-Dichlorobenzene	<1.0	U
541-73-1	1,3-Dichlorobenzene	<1.0	U
106-46-7	1,4-Dichlorobenzene	<1.0	U
75-34-3	1,1-Dichloroethane	<1.0	U
75-35-4	1,1-Dichloroethene	<1.0	U
156-59-2	cis-1,2-Dichloroethene	<1.0	U
156-60-5	trans-1,2-Dichloroethene	<1.0	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<100~~ K	U
100-41-4	Ethylbenzene	<1.0	U
75-09-2	Methylene Chloride	<1.0	U
1634-04-4	Methyl-tert-butyl ether	<1.0	U
103-65-1	n-Propylbenzene	<1.0	U
127-18-4	Tetrachloroethene	<1.0	U
108-88-3	Toluene	<1.0	U
71-55-6	1,1,1-Trichloroethane	<1.0	U
79-01-6	Trichloroethene	<1.0	U
95-63-6	1,2,4-Trimethylbenzene	<1.0	U
108-67-8	1,3,5-Trimethylbenzene	<1.0	U
75-01-4	Vinyl chloride	<1.0	U
1330-20-7	Xylene (Total)	<3.0	U
179601-23-1	m&p-Xylene	<2.0	U
95-47-6	o-Xylene	<1.0	U

SAMPLE NO.

20181018-FD-1

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/19/2018 10:35
Matrix: Water SDG No.: 7068532

Date Extracted: 10/26/2018 14:10
Lab Sample ID: 7068532003

Date Analyzed: 10/26/2018 14:10
Lab File ID: 102618.B\A05284.D

Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV1 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	87.1	
71-43-2	Benzene	<1.0	U
78-93-3	2-Butanone (MEK)	<5.0	U
104-51-8	n-Butylbenzene	<1.0	U
135-98-8	sec-Butylbenzene	<1.0	U
98-06-6	tert-Butylbenzene	<1.0	U
56-23-5	Carbon tetrachloride	<1.0	U
108-90-7	Chlorobenzene	<1.0	U
67-66-3	Chloroform	<1.0	U
95-50-1	1,2-Dichlorobenzene	<1.0	U
541-73-1	1,3-Dichlorobenzene	<1.0	U
106-46-7	1,4-Dichlorobenzene	<1.0	U
75-34-3	1,1-Dichloroethane	<1.0	U
75-35-4	1,1-Dichloroethene	<1.0	U
156-59-2	cis-1,2-Dichloroethene	<1.0	U
156-60-5	trans-1,2-Dichloroethene	<1.0	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<100~~ R	U
100-41-4	Ethylbenzene	<1.0	U
75-09-2	Methylene Chloride	<1.0	U
1634-04-4	Methyl-tert-butyl ether	<1.0	U
103-65-1	n-Propylbenzene	<1.0	U
127-18-4	Tetrachloroethene	<1.0	U
108-88-3	Toluene	<1.0	U
71-55-6	1,1,1-Trichloroethane	<1.0	U
79-01-6	Trichloroethene	<1.0	U
95-63-6	1,2,4-Trimethylbenzene	<1.0	U
108-67-8	1,3,5-Trimethylbenzene	<1.0	U
75-01-4	Vinyl chloride	<1.0	U
1330-20-7	Xylene (Total)	<3.0	U
179601-23-1	m&p-Xylene	<2.0	U
95-47-6	o-Xylene	<1.0	U

SAMPLE NO.

MW-05

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/19/2018 10:35
Matrix: Water SDG No.: 7068532
Date Extracted: 10/26/2018 13:49
Lab Sample ID: 7068532004
Date Analyzed: 10/26/2018 13:49
Lab File ID: 102618.B\A05283.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV1 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	78.4	
71-43-2	Benzene	<1.0	U
78-93-3	2-Butanone (MEK)	<5.0	U
104-51-8	n-Butylbenzene	<1.0	U
135-98-8	sec-Butylbenzene	<1.0	U
98-06-6	tert-Butylbenzene	<1.0	U
56-23-5	Carbon tetrachloride	<1.0	U
108-90-7	Chlorobenzene	<1.0	U
67-66-3	Chloroform	<1.0	U
95-50-1	1,2-Dichlorobenzene	<1.0	U
541-73-1	1,3-Dichlorobenzene	<1.0	U
106-46-7	1,4-Dichlorobenzene	<1.0	U
75-34-3	1,1-Dichloroethane	<1.0	U
75-35-4	1,1-Dichloroethene	<1.0	U
156-59-2	cis-1,2-Dichloroethene	<1.0	U
156-60-5	trans-1,2-Dichloroethene	<1.0	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<100~~ R	U
100-41-4	Ethylbenzene	<1.0	U
75-09-2	Methylene Chloride	<1.0	U
1634-04-4	Methyl-tert-butyl ether	<1.0	U
103-65-1	n-Propylbenzene	<1.0	U
127-18-4	Tetrachloroethene	<1.0	U
108-88-3	Toluene	<1.0	U
71-55-6	1,1,1-Trichloroethane	<1.0	U
79-01-6	Trichloroethene	2.9	
95-63-6	1,2,4-Trimethylbenzene	<1.0	U
108-67-8	1,3,5-Trimethylbenzene	<1.0	U
75-01-4	Vinyl chloride	<1.0	U
1330-20-7	Xylene (Total)	<3.0	U
179601-23-1	m&p-Xylene	<2.0	U
95-47-6	o-Xylene	<1.0	U

12/03/2018 12:27

MKD 1/10/19

SAMPLE NO.

MW-03

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/19/2018 10:35
Date Extracted: 10/22/2018 11:36
Date Analyzed: 10/23/2018 17:50
Initial wt/vol: 1000 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Water SDG No.: 7068532
Lab Sample ID: 7068532001
Lab File ID: 8270-102318.B\N92451.D
Instrument: 70MSS2 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/L	Q
98-54-4	Phenol, p-tert-butyl-	6.66	2.1	N J
	Unknown	2.187	~~18.2~~ R	J
	Unknown	6.051	~~4.0~~ R	J
	Unknown Amide	13.437	~~11.3~~ R	J
	Unknown Ketone	5.846	~~8.8~~ R	J
	Unknown Organic Acid	10.626	18.4	J
	Unknown Organic Acid	7.907	~~2.1~~ R	J

MKP 1/10/19

SAMPLE NO.

MW-02

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/19/2018 10:35
Date Extracted: 10/22/2018 11:36
Date Analyzed: 10/23/2018 19:16
Initial wt/vol: 1000 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Water SDG No.: 7068532
Lab Sample ID: 7068532002
Lab File ID: 8270-102318.B\N92454.D
Instrument: 70MSS2 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/L	Q
	Unknown	2.182	~~18.3~~ R	J
	Unknown	2.258	2.5	J
	Unknown	6.04	5.7	J
	Unknown Amide	13.437	~~15.3~~ R	J
	Unknown Ketone	5.851	~~11.5~~ R	J
	Unknown Organic Acid	9.849	2.1	J
	Unknown Organic Acid	7.907	~~2.7~~ R	J
	Unknown Organic Acid	6.736	5.1	J
	Unknown Organic Acid	8.042	5.7	J

MKP 1/10/19

SAMPLE NO.

20181018-FD-1

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/19/2018 10:35
Date Extracted: 10/22/2018 11:36
Date Analyzed: 10/23/2018 19:44
Initial wt/vol: 1000 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Water SDG No.: 7068532
Lab Sample ID: 7068532003
Lab File ID: 8270-102318.B\N92455.D
Instrument: 70MSS2 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/L	Q
	Unknown	2.193	~~18.9~~ R	J
	Unknown	2.268	2.7	J
	Unknown	6.04	3.8	J
	Unknown Alcohol	8.042	3.7	J
	Unknown Amide	13.437	~~14.7~~ R	J
	Unknown Ketone	5.862	~~11.5~~ R	J
	Unknown Organic Acid	9.833	2.2	J
	Unknown Organic Acid	9.849	2.3	J
	Unknown Organic Acid	7.907	~~2.8~~ R	J
	Unknown Organic Acid	6.757	6.8	J

12/03/2018 12:29

MMP 1/10/19

SAMPLE NO.

MW-05

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/19/2018 10:35
Date Extracted: 10/22/2018 11:36
Date Analyzed: 10/23/2018 20:13
Initial wt/vol: 1000 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Water SDG No.: 7068532
Lab Sample ID: 7068532004
Lab File ID: 8270-102318.B\N92456.D
Instrument: 70MSS2 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/L	Q
	Unknown	2.187	~~14.3~~ R	J
	Unknown	6.051	4.1	J
	Unknown	6.704	4.4	J
	Unknown Amide	13.432	~~12.6~~ R	J
	Unknown Amide	9.186	2.8	J
	Unknown Ketone	5.846	~~9.4~~ R	J
	Unknown Organic Acid	9.833	2.1	J
	Unknown Organic Acid	7.907	~~3.0~~ R	J
	Unknown Organic Acid	8.009	3.7	J
	Unknown Petroleum Alkane	2.263	2.3	J

12/03/2018 12:37

MKP 1/10/19

SAMPLE NO.

MW-02

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7068532 Contract: 31 WATER ST

Lab Sample ID: 7068532002 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	<10.0	U	ug/L	1	10/23/2018 09:55
7440-39-3	Barium	713		ug/L	1	10/23/2018 09:55
7440-41-7	Beryllium	<5.0	U	ug/L	1	10/23/2018 09:55
7440-43-9	Cadmium	<2.5	U	ug/L	1	10/23/2018 09:55
7440-47-3	Chromium	<10.0	U	ug/L	1	10/23/2018 09:55
7440-50-8	Copper	<25.0	U	ug/L	1	10/23/2018 09:55
7439-92-1	Lead	<5.0	U	ug/L	1	10/23/2018 09:55
7439-95-4	Magnesium	12900		ug/L	1	10/23/2018 09:55
7439-96-5	Manganese	2130		ug/L	1	10/23/2018 09:55
7440-02-0	Nickel	2.6	J	ug/L	1	10/23/2018 09:55
7782-49-2	Selenium	<10.0	U	ug/L	1	10/23/2018 09:55
7440-22-4	Silver	<10.0	U	ug/L	1	10/23/2018 09:55
7440-66-6	Zinc 20.4	~~4.9~~	J B	ug/L	1	10/23/2018 09:55

MEPi 10/19

SAMPLE NO.

20181018-FD-1

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7068532 Contract: 31 WATER ST

Lab Sample ID: 7068532003 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	<10.0	U	ug/L	1	10/23/2018 10:01
7440-39-3	Barium	728		ug/L	1	10/23/2018 10:01
7440-41-7	Beryllium	<5.0	U	ug/L	1	10/23/2018 10:01
7440-43-9	Cadmium	<2.5	U	ug/L	1	10/23/2018 10:01
7440-47-3	Chromium	<10.0	U	ug/L	1	10/23/2018 10:01
7440-50-8	Copper	<25.0	U	ug/L	1	10/23/2018 10:01
7439-92-1	Lead	<5.0	U	ug/L	1	10/23/2018 10:01
7439-95-4	Magnesium	13200		ug/L	1	10/23/2018 10:01
7439-96-5	Manganese	2170		ug/L	1	10/23/2018 10:01
7440-02-0	Nickel	2.1	J	ug/L	1	10/23/2018 10:01
7782-49-2	Selenium	<10.0	U	ug/L	1	10/23/2018 10:01
7440-22-4	Silver	<10.0	U	ug/L	1	10/23/2018 10:01
7440-66-6	Zinc 20 U	~~4.6~~	J B	ug/L	1	10/23/2018 10:01

MAP 1/10/19

SAMPLE NO.

MW-05

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7068532 Contract: 31 WATER ST

Lab Sample ID: 7068532004 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	<10.0	U	ug/L	1	10/23/2018 10:17
7440-39-3	Barium	2140		ug/L	1	10/23/2018 10:17
7440-41-7	Beryllium	<5.0	U	ug/L	1	10/23/2018 10:17
7440-43-9	Cadmium	<2.5	U	ug/L	1	10/23/2018 10:17
7440-47-3	Chromium	<10.0	U	ug/L	1	10/23/2018 10:17
7440-50-8	Copper	<25.0	U	ug/L	1	10/23/2018 10:17
7439-92-1	Lead	<5.0	U	ug/L	1	10/23/2018 10:17
7439-95-4	Magnesium	34200		ug/L	1	10/23/2018 10:17
7439-96-5	Manganese	407		ug/L	1	10/23/2018 10:17
7440-02-0	Nickel	<40.0	U	ug/L	1	10/23/2018 10:17
7782-49-2	Selenium	<10.0	U	ug/L	1	10/23/2018 10:17
7440-22-4	Silver	<10.0	U	ug/L	1	10/23/2018 10:17
7440-66-6	Zinc	~~5.1~~ 20 U	J B	ug/L	1	10/23/2018 10:17

MWP 1/10/19

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 320-44474-1

Job Description: Pace PFAS Testing

For:
Pace Analytical Services, LLC
10 Adler Drive
Suite 104
East Syracuse, NY 13057

Attention: Mr. James Murphy

Approved for release.
Jill Kellmann
Manager of Project Management
11/14/2018 5:26 PM

Jill Kellmann, Manager of Project Management
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4402
jill.kellmann@testamericainc.com
11/14/2018

Receipt
The samples were received on 10/24/2018 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2° C.

LCMS
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method(s) 3535: The following samples: MW-03 (320-44474-1), MW-03 (320-44474-1[MS]), MW-03 (320-44474-1[MSD]), MW-02 (320-44474-2) and 20181018-FD-1 (320-44474-3) in preparation batch 320-256029 were observed to be an orange color prior to extraction.

Method(s) 3535: The following samples: MW-03 (320-44474-1), MW-03 (320-44474-1[MS]), MW-03 (320-44474-1[MSD]), MW-02 (320-44474-2), 20181018-FD-1 (320-44474-3) and MW-05 (320-44474-4) in preparation batch 320-256029 were observed to contain sediment prior to extraction.

Method(s) 3535: The following sample had non-settleable particulate matter which plugged the SPE extraction disk. The amount of sample remaining plus the weight of the bottle are recorded in the "notes" field of the prep batch. The "tare weight" recorded is the weight of the emptied bottle: MW-03 (320-44474-1), MW-03 (320-44474-1[MS]) and MW-03 (320-44474-1[MSD]). The reporting limits (RLs) have been adjusted proportionately.

Method(s) 3535: The following samples: MW-02 (320-44474-2), 20181018-FD-1 (320-44474-3) and MW-05 (320-44474-4) in preparation batch 320-256029 were extracted completely without clogging the solid phase extraction disk.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: Pace PFAS Testing

TestAmerica Job ID: 320-44474-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-44474-1	MW-03	Water	10/18/18 10:50	10/24/18 09:10
320-44474-2	MW-02	Water	10/18/18 13:50	10/24/18 09:10
320-44474-3	20181018-FD-1	Water	10/18/18 00:00	10/24/18 09:10
320-44474-4	MW-05	Water	10/18/18 16:10	10/24/18 09:10

Client Sample Results

Client: Pace Analytical Services, LLC
Project/Site: Pace PFAS Testing

TestAmerica Job ID: 320-44474-1

Client Sample ID: MW-03

Date Collected: 10/18/18 10:50
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44474-1
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.5**		2.1	0.36	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluoropentanoic acid (PFPeA)	**0.84**	**J**	2.1	0.51	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorohexanoic acid (PFHxA)	**1.6**	**J**	2.1	0.60	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluoroheptanoic acid (PFHpA)	**0.92**	**J**	2.1	0.26	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorooctanoic acid (PFOA)	**4.8**		2.1	0.88	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorononanoic acid (PFNA)	ND		2.1	0.28	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorodecanoic acid (PFDA)	ND		2.1	0.32	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluoroundecanoic acid (PFUnA)	ND		2.1	1.1	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorododecanoic acid (PFDoA)	ND		2.1	0.57	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorotridecanoic acid (PFTriA)	ND		2.1	1.4	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.1	0.30	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorobutanesulfonic acid (PFBS)	**1.4**	**J**	2.1	0.21	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorohexanesulfonic acid (PFHxS)	**3.3**	**B**	2.1	0.18	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.63**	**J**	2.1	0.20	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorooctanesulfonic acid (PFOS)	**15**		2.1	0.56	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.1	0.33	ng/L		10/31/18 07:36	11/01/18 03:57	1
Perfluorooctanesulfonamide (FOSA)	ND		2.1	0.36	ng/L		10/31/18 07:36	11/01/18 03:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		21	3.2	ng/L		10/31/18 07:36	11/01/18 03:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		21	2.0	ng/L		10/31/18 07:36	11/01/18 03:57	1
6:2 FTS	ND		21	2.1	ng/L		10/31/18 07:36	11/01/18 03:57	1
8:2 FTS	ND		21	2.1	ng/L		10/31/18 07:36	11/01/18 03:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*44*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C5-PFPeA DNU	*51*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C2 PFHxA	*56*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C4 PFHpA	*56*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C4 PFOA	*56*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C5 PFNA	*59*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C2 PFDA	*52*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C2 PFUnA	*51*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C2 PFDoA	*52*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C2 PFTeDA	*50*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C3 PFBS	*54*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
18O2 PFHxS	*56*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C4 PFOS	*55*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
13C8 FOSA	*48*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
d3-NMeFOSAA	*54*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
d5-NEtFOSAA	*55*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
M2-6:2 FTS	*79*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*
M2-8:2 FTS	*59*		*25 - 150*	*10/31/18 07:36*	*11/01/18 03:57*	*1*

Client Sample ID: MW-02
Date Collected: 10/18/18 13:50
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44474-2
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.8**		2.0	0.34	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluoropentanoic acid (PFPeA)	**3.4**		2.0	0.48	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorohexanoic acid (PFHxA)	**4.3**		2.0	0.57	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluoroheptanoic acid (PFHpA)	**2.4**		2.0	0.24	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorooctanoic acid (PFOA)	**7.2**		2.0	0.83	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorononanoic acid (PFNA)	**0.37**	J	2.0	0.26	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.30	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.28	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorobutanesulfonic acid (PFBS)	**12**		2.0	0.20	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorohexanesulfonic acid (PFHxS)	**2.3**	B	2.0	0.17	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorooctanesulfonic acid (PFOS)	**9.4**		2.0	0.53	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.31	ng/L		10/31/18 07:36	11/01/18 04:19	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.34	ng/L		10/31/18 07:36	11/01/18 04:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.0	ng/L		10/31/18 07:36	11/01/18 04:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		10/31/18 07:36	11/01/18 04:19	1
6:2 FTS	ND		20	2.0	ng/L		10/31/18 07:36	11/01/18 04:19	1
8:2 FTS	ND		20	2.0	ng/L		10/31/18 07:36	11/01/18 04:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*72*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C5-PFPeA DNU	*90*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C2 PFHxA	*87*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C4 PFHpA	*96*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C4 PFOA	*95*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C5 PFNA	*96*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C2 PFDA	*95*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C2 PFUnA	*93*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C2 PFDoA	*88*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C2 PFTeDA	*83*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C3 PFBS	*81*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
18O2 PFHxS	*88*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C4 PFOS	*88*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
13C8 FOSA	*83*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
d3-NMeFOSAA	*97*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
d5-NEtFOSAA	*93*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
M2-6:2 FTS	*138*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*
M2-8:2 FTS	*109*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:19*	*1*

Client Sample ID: 20181018-FD-1
Date Collected: 10/18/18 00:00
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44474-3
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.6**		2.0	0.35	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluoropentanoic acid (PFPeA)	**3.2**		2.0	0.49	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorohexanoic acid (PFHxA)	**4.4**		2.0	0.58	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluoroheptanoic acid (PFHpA)	**2.8**		2.0	0.25	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorooctanoic acid (PFOA)	**7.4**		2.0	0.86	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorononanoic acid (PFNA)	**0.39**	J	2.0	0.27	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorobutanesulfonic acid (PFBS)	**11**		2.0	0.20	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorohexanesulfonic acid (PFHxS)	**2.1**	J	2.0	0.17	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorooctanesulfonic acid (PFOS)	**10**		2.0	0.54	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		10/31/18 07:36	11/01/18 04:27	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35	ng/L		10/31/18 07:36	11/01/18 04:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		10/31/18 07:36	11/01/18 04:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		10/31/18 07:36	11/01/18 04:27	1
6:2 FTS	ND		20	2.0	ng/L		10/31/18 07:36	11/01/18 04:27	1
8:2 FTS	ND		20	2.0	ng/L		10/31/18 07:36	11/01/18 04:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*71*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C5-PFPeA DNU	*84*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C2 PFHxA	*89*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C4 PFHpA	*88*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C4 PFOA	*95*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C5 PFNA	*98*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C2 PFDA	*94*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C2 PFUnA	*92*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C2 PFDoA	*93*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C2 PFTeDA	*94*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C3 PFBS	*83*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
18O2 PFHxS	*91*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C4 PFOS	*86*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
13C8 FOSA	*85*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
d3-NMeFOSAA	*95*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
d5-NEtFOSAA	*91*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
M2-6:2 FTS	*139*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*
M2-8:2 FTS	*112*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:27*	*1*

Client Sample Results

Client: Pace Analytical Services, LLC
Project/Site: Pace PFAS Testing

TestAmerica Job ID: 320-44474-1

Client Sample ID: MW-05
Date Collected: 10/18/18 16:10
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44474-4
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.0**		2.0	0.35	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluoropentanoic acid (PFPeA)	**2.0**		2.0	0.49	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorohexanoic acid (PFHxA)	**1.9**	**J**	2.0	0.58	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluoroheptanoic acid (PFHpA)	**0.42**	**J**	2.0	0.25	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorooctanoic acid (PFOA)	**1.2**	**J**	2.0	0.85	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorononanoic acid (PFNA)	**0.31**	**J**	2.0	0.27	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorobutanesulfonic acid (PFBS)	**0.64**	**J**	2.0	0.20	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorohexanesulfonic acid (PFHxS)	~~0.28~~ ~~J B~~ 2.0 U		2.0	0.17	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorooctanesulfonic acid (PFOS)	**5.6**		2.0	0.54	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		10/31/18 07:36	11/01/18 04:34	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35	ng/L		10/31/18 07:36	11/01/18 04:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		10/31/18 07:36	11/01/18 04:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		10/31/18 07:36	11/01/18 04:34	1
6:2 FTS	ND		20	2.0	ng/L		10/31/18 07:36	11/01/18 04:34	1
8:2 FTS	ND		20	2.0	ng/L		10/31/18 07:36	11/01/18 04:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*90*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C5-PFPeA DNU	*97*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C2 PFHxA	*95*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C4 PFHpA	*95*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C4 PFOA	*97*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C5 PFNA	*102*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C2 PFDA	*96*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C2 PFUnA	*94*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C2 PFDoA	*91*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C2 PFTeDA	*91*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C3 PFBS	*82*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
18O2 PFHxS	*92*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C4 PFOS	*94*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
13C8 FOSA	*87*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
d3-NMeFOSAA	*100*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
d5-NEtFOSAA	*93*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
M2-6:2 FTS	*117*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*
M2-8:2 FTS	*100*		*25 - 150*	*10/31/18 07:36*	*11/01/18 04:34*	*1*

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 480-144153-1

Job Description: 31 WATER ST

For:
Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747

Attention: James Murphy

Mary Schwartzmyer

Approved for release.
Mary A Schwartzmyer
Project Manager I
11/13/2018 2:00 PM

Designee for
John R Schove, Project Manager II
10 Hazelwood Drive, Amherst, NY, 14228-2298
(716)504-9838
john.schove@testamericainc.com
11/13/2018

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who has signed this report.

TestAmerica Buffalo NELAC Certifications: CADPH 01169CA, FLDOH E87672, ILEPA 200003, KSDOH E-10187, LADEQ 30708, MDH 036-999-337, NHELAP 2973, NJDEP NY455, NYDOH 10026, ORELAP NY200003, PADEP 68-00281, TXCEQ T-104704412-10-1

Case Narrative

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Job ID: 480-144153-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-144153-1

Comments
No additional comments.

Receipt
The samples were received on 10/24/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.2° C and 3.4° C.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method(s) 3510C: The following samples were received outside of holding time: MW-03 (480-144153-1), MW-03 (480-144153-1[MS]), MW-03 (480-144153-1[MSD]), MW-02 (480-144153-2), 20181018-FD-1 (480-144153-3) and MW-05 (480-144153-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-144153-1	MW-03	Water	10/18/18 10:50	10/24/18 09:50
480-144153-2	MW-02	Water	10/18/18 13:50	10/24/18 09:50
480-144153-3	20181018-FD-1	Water	10/18/18 00:00	10/24/18 09:50
480-144153-4	MW-05	Water	10/18/18 16:10	10/24/18 09:50

Chain of Custody

480-144153 COC

Workorder: 7068532 **Workorder Name:** 31 WATER ST **Results Requested By:** 10/26/2018

Report/Invoice To

James Murphy
Pace Analytical New York
2190 Technology Drive
Schenectady, NY 12308
Phone (518)860-9724
Email: james.murphy@pacelabs.com

Subcontract To

TA- Buffalo
10 Haxelwood Dr
Amherst, NY

P.O. 102218JM2001

State of Sample Origin: NY

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	1,4 Dioxane voa 8270 SIM	LAB USE ONLY
1	MW-03	10/18/2018 10:50	7068532001	Water	2	X	MS/MSD
2	MW-02	10/18/2018 13:50	7068532002	Water	1	X	
3	20181018-FD-1	10/18/2018 00:00	7068532003	Water	1	X	
4	MW-05	10/18/2018 16:10	7068532004	Water	1	X	
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	10/23/18 1850	[signature]	10/24/18 0930
2				
3				

Comments

NYS CAT B DATA PKG
NYS EqUIS EDD

Cooler Temperature on Receipt 3.2 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact Y or N

#1

Client Sample Results

Client: Pace Analytical Services, LLC
Project/Site: 31 WATER ST

TestAmerica Job ID: 480-144153-1

Client Sample ID: MW-03

Lab Sample ID: 480-144153-1
Matrix: Water

Date Collected: 10/18/18 10:50
Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.16	J H J	0.20	0.10	ug/L		10/31/18 07:26	11/08/18 17:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*29*		*15 - 110*	*10/31/18 07:26*	*11/08/18 17:31*	*1*

Client Sample ID: MW-02

Lab Sample ID: 480-144153-2
Matrix: Water

Date Collected: 10/18/18 13:50
Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H 0.194 U	0.19	0.095	ug/L		10/31/18 07:26	11/08/18 18:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*28*		*15 - 110*	*10/31/18 07:26*	*11/08/18 18:20*	*1*

Client Sample ID: 20181018-FD-1

Lab Sample ID: 480-144153-3
Matrix: Water

Date Collected: 10/18/18 00:00
Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H 0.194 U	0.19	0.095	ug/L		10/31/18 07:26	11/08/18 18:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*25*		*15 - 110*	*10/31/18 07:26*	*11/08/18 18:44*	*1*

Client Sample ID: MW-05

Lab Sample ID: 480-144153-4
Matrix: Water

Date Collected: 10/18/18 16:10
Date Received: 10/24/18 09:50

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H 0.194 U	0.19	0.095	ug/L		10/31/18 07:26	11/08/18 19:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*26*		*15 - 110*	*10/31/18 07:26*	*11/08/18 19:09*	*1*

MMD 11/10/19

Appendix B

Laboratory QC Documentation

MSV - FORM III VOA-2

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Instrument (2): 70MSV1 Matrix Spike Duplicate - Sample No: 409049MSD

Lab File ID (2): 102618.B\A05288.D Date Analyzed (2): 10/26/2018

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	%RPD	QC LIMITS	
					RPD	REC.
1,1,1-Trichloroethane	50.0	48.9	98	11	0-20	65-118
1,1-Dichloroethane	50.0	43.5	87	3	0-20	83-151
1,1-Dichloroethene	50.0	46.1	92	8	0-20	45-146
1,2,4-Trimethylbenzene	50.0	44.5	89	8	0-20	68-116
1,2-Dichlorobenzene	50.0	45.8	92	9	0-20	74-113
1,3,5-Trimethylbenzene	50.0	45.0	90	10	0-20	67-116
1,3-Dichlorobenzene	50.0	44.6	89	7	0-20	71-112
1,4-Dichlorobenzene	50.0	43.8	88	10	0-20	71-113
1,4-Dioxane (p-Dioxane)	1250	1080	86	4	0-20	60-140
2-Butanone (MEK)	50.0	41.2	82	9	0-20	44-162
Acetone	50.0	126	109	39	0-20	23-188
Benzene	50.0	49.5	99	14	0-20	73-119
Carbon tetrachloride	50.0	49.5	99	11	0-20	59-120
Chlorobenzene	50.0	45.0	90	11	0-20	75-113
Chloroform	50.0	45.5	91	9	0-20	72-122
Ethylbenzene	50.0	46.5	93	11	0-20	70-113
Methyl-tert-butyl ether	50.0	43.8	88	11	0-20	72-131
Methylene Chloride	50.0	42.7	85	6	0-20	61-142
Tetrachloroethene	50.0	35.4	71	10	0-20	60-128
Toluene	50.0	48.9	98	12	0-20	72-119
Trichloroethene	50.0	47.2	94	10	0-20	69-117
Vinyl chloride	50.0	42.9	86	7	0-20	43-143
Xylene (Total)	150	136	91	10	0-20	71-109
cis-1,2-Dichloroethene	50.0	44.4	89	4	0-20	72-121
m&p-Xylene	100	92.1	92	10	0-20	72-115
n-Butylbenzene	50.0	47.2	94	8	0-20	73-107
n-Propylbenzene	50.0	47.7	95	9	0-20	68-116
o-Xylene	50.0	44.1	88	9	0-20	73-117
sec-Butylbenzene	50.0	45.8	92	5	0-20	72-103
tert-Butylbenzene	50.0	46.2	92	6	0-20	68-100
trans-1,2-Dichloroethene	50.0	46.4	93	7	0-20	56-142

RPD: 1 out of 31 outside limits.

Spike Recovery: 0 out of 31 outside limits.

12/03/2018 12:38

MSV - FORM VI VOA-2

MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York Instrument ID: 70MSV1 GC Column: Col 1 SDG No.: 7068532

Calibration Date(s): 10/23/2018 10/23/2018 Calibration Time(s): 16:56 19:19

LAB FILE ID

CAL1 = 102318.B\A05210.D CAL2 = 102318.B\A05211.D CAL3 = 102318.B\A05212.D

CAL4 = 102318.B\A05213.D CAL5 = 102318.B\A05214.D CAL6 = 102318.B\A05215.D

CAL7 = 102318.B\A05216.D CAL8 = 102318.B\A05217.D

COMPOUND	CURVE TYPE	CAL7	CAL8
Acetone	Averaged	0.22642	0.29621
Benzene	Averaged	2.21081	2.38681
2-Butanone (MEK)	Averaged	0.72783	0.92738
n-Butylbenzene	Averaged	2.59545	3.15436
sec-Butylbenzene	Averaged	3.06375	3.64758
tert-Butylbenzene	Averaged	1.96729	2.38335
Carbon tetrachloride	Averaged	0.48970	0.56306
Chlorobenzene	Averaged	2.25328	2.67294
Chloroform	Averaged	1.45903	1.79899
1,2-Dichlorobenzene	Averaged	1.68935	1.99002
1,3-Dichlorobenzene	Averaged	1.73868	2.14378
1,4-Dichlorobenzene	Averaged	1.91066	2.23032
1,1-Dichloroethane	Averaged	1.61879	1.89855
1,1-Dichloroethene	Averaged	0.86051	1.01673
cis-1,2-Dichloroethene	Averaged	1.05472	1.34782
trans-1,2-Dichloroethene	Averaged	0.93758	~~1.16375~~
1,4-Dioxane (p-Dioxane)	Averaged	0.00149	0.00175
Ethylbenzene	Averaged	1.18074	1.46858
Methylene Chloride	Averaged	0.96292	1.24054
Methyl-tert-butyl ether	Averaged	2.18913	2.63403
n-Propylbenzene	Averaged	4.42344	4.87224
Tetrachloroethene	Averaged	1.39604	1.80119
Toluene	Averaged	2.02612	2.30119
1,1,1-Trichloroethane	Averaged	0.57493	0.69853
Trichloroethene	Averaged	0.46940	0.57131
1,2,4-Trimethylbenzene	Averaged	2.60605	3.02911
1,3,5-Trimethylbenzene	Averaged	2.67462	3.15279
Vinyl chloride	Averaged	1.20977	1.50269
m&p-Xylene	Averaged	1.49213	1.67550
o-Xylene	Averaged	1.46199	1.76546
4-Bromofluorobenzene (S)	Averaged	0.61324	0.61296
1,2-Dichloroethane-d4 (S)	Averaged	0.22734	0.23125
Toluene-d8 (S)	Averaged	1.75898	1.73419

RF < 0.005

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

MSSV FULL SCAN - FORM III SVOA-2

WATER SEMI-VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Instrument (2): 70MSS2 Matrix Spike Duplicate - Sample No: 405410MSD

Lab File ID (2): 8270-102318.B\N92453.D Date Analyzed (2): 10/23/2018

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	%RPD	QC LIMITS	
					RPD	REC.
2-Methylphenol(o-Cresol)	50.0	22.5	45	23	0-30	41-131
3&4-Methylphenol(m&p Cresol)	50.0	19.6	39	33	0-30	15-141
Acenaphthene	50.0	38.9	78	12	0-30	50-116
Acenaphthylene	50.0	39.5	79	14	0-30	50-109
Anthracene	50.0	46.6	93	6	0-30	54-117
Benzo(a)anthracene	50.0	45.5	91	4	0-30	31-128
Benzo(a)pyrene	50.0	45.9	92	5	0-30	30-146
Benzo(b)fluoranthene	50.0	49.1	98	1	0-30	43-147
Benzo(g,h,i)perylene	50.0	47.8	96	2	0-30	25-153
Benzo(k)fluoranthene	50.0	45.4	91	5	0-30	28-148
Chrysene	50.0	48.1	96	2	0-30	42-140
Dibenz(a,h)anthracene	50.0	48.5	97	3	0-30	22-147
Dibenzofuran	50.0	41.7	83	7	0-30	53-117
Fluoranthene	50.0	45.2	90	8	0-30	50-123
Fluorene	50.0	42.8	86	7	0-30	51-118
Hexachlorobenzene	50.0	39.0	78	9	0-30	52-128
Indeno(1,2,3-cd)pyrene	50.0	50.8	102	0	0-30	26-156
Naphthalene	50.0	31.5	63	11	0-30	39-107
Pentachlorophenol	50.0	47.4	95	6	0-30	12-124
Phenanthrene	50.0	45.7	91	4	0-30	52-126
Phenol	50.0	10.7	21	32	0-30	10-99
Pyrene	50.0	48.4	97	6	0-30	41-137

RPD: 2 out of 22 outside limits.

Spike Recovery: 0 out of 22 outside limits.

12/03/2018 12:27

SAMPLE NO.

BLANK

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/22/2018 09:56
Date Extracted: 10/22/2018 11:36
Date Analyzed: 10/24/2018 11:45
Initial wt/vol: 1000 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Water SDG No.: 7068532
Lab Sample ID: 405407
Lab File ID: 8270-102418.B\N92472.D
Instrument: 70MSS2 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/L	Q
	Unknown	2.177	41.2	J
	Unknown Amide	13.426	28.2	J
	Unknown Column Bleed	4.551	2.3	J
	Unknown Halogen	2.258	4.6	J
	Unknown Ketone	6.029	2.9	J
	Unknown Ketone	5.819	5.6	J
	Unknown Organic Acid	7.896	2.6	J

Flag samples accordingly

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - New York SDG No. : 7068532 Contract : 31 WATER ST

Method Blank Matrix: Water Instrument ID: 70ICP2

Method Blank Concentration Units: ug/L

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method Blank	
	10/23/2018 08:39	C	10/23/2018 09:07	C	10/23/2018 10:12	C	10/23/2018 10:56	C	405483	C
Arsenic	2.5	U	3.9	J	2.5	U	2.5	U	<10.0	U
Barium	0.10	U	0.10	U	0.20	J	0.12	J	<200	U
Beryllium	-0.10	J	0.10	U	-0.22	J	-0.15	J	<5.0	U
Cadmium	0.10	U	0.10	U	-0.13	J	0.10	U	<2.5	U
Chromium	-1.1	J	-1.1	J	0.40	U	-0.75	J	<10.0	U
Copper	0.90	U	0.90	U	0.90	U	0.90	U	<25.0	U
Lead	1.4	U	1.4	U	1.4	U	2.2	J	<5.0	U
Magnesium	-40	J	31.8	U	31.8	U	-47	J	<1000	U
Manganese	0.30	U	0.30	U	0.30	U	0.30	U	<10.0	U
Nickel	0.50	U	0.50	U	0.50	U	0.50	U	<40.0	U
Selenium	2.8	U	4.2	J	2.8	U	3.6	J	<10.0	U
Silver	1.5	U	1.5	U	1.5	U	1.5	U	<10.0	U
Zinc	-0.72	J	0.30	U	0.32	J	1.2	J	3.2	J

SAMPLE NO.

405582PDS

FORM V INORGANIC-1

POST-DIGESTION SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - New York SDG No. : 7068532 Contract: 31 WATER ST

Matrix: Water Parent Sample ID: MW-03

Analyte	Units	Control Limit %R	DF	Spiked Sample Result (SSR)	DF	Sample Result (SR)	Spike Added (SA)	%R
Arsenic	ug/L	85-115	1	494	1	26.0	500	93.6
Barium	ug/L	85-115	1	1160	1	738	500	85.2
Beryllium	ug/L	85-115	1	48.0	1	0.57U	50	95.9
Cadmium	ug/L	85-115	1	45.4	1	0.063U	50	90.8
Chromium	ug/L	85-115	1	238	1	1.6U	250	95.3
Copper	ug/L	85-115	1	218	1	2.5U	250	87.2
Lead	ug/L	85-115	1	476	1	2.6J	500	94.7
Magnesium	ug/L	85-115	1	37900	1	14900	25000	91.9
Manganese	ug/L	85-115	1	5320	1	5130	250	77.2*
Nickel	ug/L	85-115	1	242	1	12.1J	250	91.9
Selenium	ug/L	85-115	1	704	1	6.3U	750	93.9
Silver	ug/L	85-115	1	52.7	1	3.6U	250	21.1*
Zinc	ug/L	85-115	1	1450	1	514	1000	94.0

Silver - wrong Amt. Added ?

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-256029/1-A
Matrix: Water
Analysis Batch: 256277

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256029

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorohexanesulfonic acid (PFHxS)	0.373	J	2.0	0.17	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		10/31/18 07:36	11/01/18 02:28	1
Perfluorooctanesulfonamide (FOSA)	1.18	J	2.0	0.35	ng/L		10/31/18 07:36	11/01/18 02:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		10/31/18 07:36	11/01/18 02:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		10/31/18 07:36	11/01/18 02:28	1
6:2 FTS	ND		20	2.0	ng/L		10/31/18 07:36	11/01/18 02:28	1
8:2 FTS	ND		20	2.0	ng/L		10/31/18 07:36	11/01/18 02:28	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*96*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C5-PFPeA DNU	*95*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C2 PFHxA	*91*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C4 PFHpA	*96*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C4 PFOA	*99*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C5 PFNA	*103*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C2 PFDA	*100*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C2 PFUnA	*100*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C2 PFDoA	*109*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C2 PFTeDA	*106*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C3 PFBS	*85*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
18O2 PFHxS	*93*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C4 PFOS	*96*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
13C8 FOSA	*89*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
d3-NMeFOSAA	*102*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
d5-NEtFOSAA	*102*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
M2-6:2 FTS	*116*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*
M2-8:2 FTS	*109*		*25 - 150*	*10/31/18 07:36*	*11/01/18 02:28*	*1*

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-144153-1

SDG No.:

Batch Number: 442693 Batch Start Date: 10/31/18 07:26 Batch Analyst: Pollock, Jacob M

Batch Method: 3510C Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	SecondAdjustpH	OP_SIM_LCS 00005
MB 480-442693/1		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	>11 SU	
LCS 480-442693/2		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	>11 SU	1 mL
480-144153-A-1 MS	MW-03	3510C, 8270D SIM ID	T	960 mL	1 mL	7 SU	<2 SU	>11 SU	1 mL
480-144153-A-1 MSD	MW-03	3510C, 8270D SIM ID	T	1050 mL	1 mL	7 SU	<2 SU	>11 SU	1 mL
480-144153-A-1	MW-03	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-2	MW-02	3510C, 8270D SIM ID	T	1050 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-3	20181018-FD-1	3510C, 8270D SIM ID	T	1050 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-4	MW-05	3510C, 8270D SIM ID	T	1050 mL	1 mL	7 SU	<2 SU	>11 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	OP_SimSurr 00011	AnalysisComment				
MB 480-442693/1		3510C, 8270D SIM ID		1 mL					
LCS 480-442693/2		3510C, 8270D SIM ID		1 mL					
480-144153-A-1 MS	MW-03	3510C, 8270D SIM ID	T	1 mL	Contains some sediment				
480-144153-A-1 MSD	MW-03	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-1	MW-03	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-2	MW-02	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-3	20181018-FD-1	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-4	MW-05	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				

Extracted outside 7 days

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D SIM ID

Appendix C

Validator Qualifications

KENNETH R. APPLIN
Geochemist/Data Validator

Ph.D., Geochemistry and Mineralogy, The Pennsylvania State University

M.S., Geochemistry and Mineralogy, The Pennsylvania State University

B.A., Geological Sciences, SUNY at Geneseo, NY

Dr. Applin has over 35 years of experience working with the geochemistry of natural waters. His prior experience includes working as an Assistant Professor of Geology at the University of Missouri-Columbia and as Chief Hydrogeologist and Geochemist with a leading engineering firm in Rochester, NY. In 1993, he established KR Applin and Associates, a small consulting business that focuses on the geochemistry of natural waters, especially as applied to problems involving the contamination of groundwater and surface water.

Dr. Applin is also an experienced analytical data validator and has provided data validation services since 1994 to a variety of clients performing brownfield cleanup projects, hazardous waste remediation, groundwater monitoring at solid waste facilities, and other projects requiring third-party data validation. Dr. Applin has several years of hands-on experience with the laboratory analysis of natural waters and has successfully completed the USEPA Region II certification courses for performing inorganic and organic analytical data validation.

MICHAEL K. PERRY
Chemist/Data Validator

B.S. Chemistry, Georgia State University, Atlanta, GA

A.A.S., Chemical Technology, Alfred State College, Alfred, NY

Mr. Perry has over 30 years of experience in the analytical laboratory business. During his early career, he spent several years as a laboratory analyst performing the analysis of soil, water, and air samples for inorganic and organic chemical parameters. During his last 20 years in the environmental laboratory business, he managed and directed two major analytical laboratories in Rochester, NY. His management responsibilities included oversight of the daily operations of the lab, staff training and supervision, the selection, purchase, and maintenance of analytical instruments, the introduction of new laboratory methods, analytical quality assurance and quality control, data acquisition and management, and other business-related activities.

Mr. Perry has an extensive working knowledge of the methods and procedures used for sampling and analyzing both inorganic and organic analytes in soil, water, and air. He is an accomplished laboratory chemist and is familiar with the analytical methods and procedures established under the USEPA Contract Laboratory Protocols (CLP), the NYSDEC Analytical Services Protocols (ASP), and the NYSDOH Environmental Laboratory Approval Program (ELAP).

DATA USABILITY SUMMARY REPORT (DUSR)

31 Water Street
Jamestown, NY
NYSDEC BCP # C907046

SDG: 7068593

4 water samples

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

January 2019

EDU Environmental Data Usability 10028 Deer Park Dr. Dansville, NY 14437 585.991.9156

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REVIEWER'S NARRATIVE
SDG 7068593

The data associated with this Sample Delivery Group (SDG) 7068593, analyzed by Pace Analytical Services, LLC, Melville, NY have been reviewed in accordance with assessment criteria provided by the New York State Department of Environmental Conservation following the review procedures provided in the USEPA Functional Guidelines for evaluating organic and inorganic data.

All analytical results reported by the laboratory are considered valid and acceptable except results that have been qualified as rejected, "R". Results qualified as estimated "J", or as non-detects, "U", are considered usable for the purpose of evaluating water and/or soil quality. However, these qualifiers indicate that the accuracy and/or precision of the analytical result is questionable. A summary of all data that have been qualified and the reasons for qualification are provided in the following data usability summary report (DUSR).

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

Reviewer's Signature: Michael K. Perry Date: 1/15/19

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	31 Water St. Jamestown, NY
SAMPLING DATE:	October 19, 2018
SAMPLE TYPE:	4 water samples and Trip blank
LABORATORY:	Pace Analytical Services, LLC Melville, NY
SDG No.:	7068593

2.0 INTRODUCTION

This data usability summary report (DUSR) was prepared in accordance with guidance provided by the New York State Department of Environmental Conservation (NYSDEC). The DUSR is based on a review and evaluation of the laboratory analytical data package. Specifically, the NYSDEC guidance recommends review and evaluation of the following elements of the data package:

- Completeness of the data package as defined under the requirements of the NYSDEC Analytical Services Protocols (ASP) Category B or the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) deliverables,
- Compliance with established analyte holding times,
- Adherence to quality control (QC) limits and specifications for blanks, instrument tuning and calibration, surrogate recoveries, spike recoveries, laboratory duplicate analyses, and other QC criteria,
- Adherence to established analytical protocols,
- Conformance of data summary sheets with raw analytical data, and
- Use of correct data qualifiers.

Data deficiencies, analytical protocol deviations, and quality control problems identified using the review criteria above and their effect on the analytical results are discussed in this report.

3.0 SAMPLE AND ANALYSIS SUMMARY

The data package consists of analytical results for four water samples collected on October 19, 2018. These samples were analyzed for the Part 375 list of Volatile Organic Compounds, Semi-volatile Organic Compounds, PCBs, Pesticides, TCN, Hexavalent Chromium, Metals, PFAAs, and 1,4-Dioxane.

All analyses were performed by Pace Analytical Services, LLC, Melville, NY and analyzed as SDG 7068593 except PFAAs by Method 537 were analyzed by Test America-Sacramento as SDG 320-44481-1 and 1,4-Dioxane by 8270-SIM was analyzed by Test America-Buffalo as SDG 480-144153-2. The analytical results were provided in NYSDEC ASP Category B format, which includes all raw analytical data and laboratory QC data.

4.0 GUIDANCE DOCUMENTS AND DATA REVIEW CRITERIA

The guidance documents used for reviewing laboratory quality control (QC) data and assigning data qualifiers (flags) to analytical results are listed in Table 4-1. The QC limits established in the documents applicable to this data review were used to assess the quality of the analytical results. In some cases, however, QC limits established internally by the laboratory were taken into account to determine data quality.

The QC criteria considered for assessing the usability of the reported analytical results provided for each analyte type (i.e. VOCs, SVOCs, metals, etc.) are listed in Table 4-2. These criteria may vary with the analytical method utilized by the laboratory. These criteria comply with the guidance recommended in Section 2.0 above.

5.0 DATA VALIDATION QUALIFIERS

The letter qualifiers (flags) used to define data usability are described briefly below. These letters are assigned by the data validator to analytical

TABLE 4-1

DATA VALIDATION GUIDANCE DOCUMENTS

Analyte Type	Validation Guidance
VOCs	USEPA, 2008, Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry; SW-846 Method 8260B; SOP # HW-24, Rev. 2. USEPA, 2008, Statement of Work for Organic Analysis of Low/Medium Concentration of Volatile Organic Compounds SOM01.2; SOP HW-33, Rev. 2.
SVOCs	USEPA, 2007, Statement of Work for Organic Analysis of Low/Medium Concentration of Semivolatile Organic Compounds SOM01.2; SOP HW-35, Rev. 1.
Pesticides/PCBs	USEPA, 2006, CLP Organics Data Review and Preliminary Review (CLP/SOW OLMO 4.3); SOP # HW-6, Rev. 14, Part C.
Metals	USEPA, 2006, Validation of Metals for the Contract Laboratory Program (CLP) based on SOW ILMO 5.3 (SOP Revision 13), SOP # HW-2, Rev. 13.
Gen Chemistry	NYSDEC, 2005, Analytical Services Protocols (ASP)
VOCs (Ambient air)	USEPA, 2006, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canister by Method TO-15; SOP # HW-31, Rev. 4.

TABLE 4-2

QUALITY CONTROL CRITERIA USED FOR VALIDATING
LABORATORY ANALYTICAL DATA

VOCs	SVOCs	Pesticides/PCBs	Metals	Gen Chemistry	Method TO-15
Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg
Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition
Holding Time	Holding Time	Holding Time	Holding Time	Holding Times	Holding Time
System Monitoring Compounds	Surrogate Recoveries	Surrogate Recoveries	Initial/Continuing Calibration	Calibration	Canister Certification
Lab Control Sample	Lab Control Sample	Matrix Spikes	CRDL Standards	Lab Control Samples	Lab Control Sample
Matrix Spikes	Matrix Spikes	Blanks	Blanks	Blanks	Instrument Tuning
Blanks	Blanks	Instrument Calibration & Verification	Interference Check Sample	Spike Recoveries	Blanks
Instrument Tuning	Instrument Tuning	Analyte ID	Spike Recoveries	Lab Duplicates	Initial Calibration & System Performance
Internal Standards	Internal Standards	Lab Qualifiers	Lab Duplicate		Daily Calibration
Initial Calibration	Initial Calibration	Field Duplicate	Lab Control Sample		Field Duplicate
Continuing Calibration	Continuing Calibration		ICP Serial Dilutions		
Lab Qualifiers	Lab Qualifiers		Lab Qualifiers		
Field Duplicate	Field Duplicate		Field Duplicate		

results having questionable accuracy and/or precision as determined by reviewing the laboratory QC data associated with the analytical results.

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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

JN The analyte is considered to be "presumptively present." The associated numerical value represents its *approximate* concentration.

The validated analytical results are attached to this report. Validation qualifiers (flags) are indicated using red ink. Data sheets having qualified data are signed and dated by the data reviewer.

6.0 RESULTS OF THE DATA REVIEW

The results of the data review are summarized in Tables 6-1 through 6-9. The tables list the samples where QC criteria were found to exceed acceptable limits and the actions taken to qualify the associated analytical results.

7.0 TOTAL USABLE DATA

For SDG 7068593 four samples and a Trip Blank were analyzed and results were reported for 532 analytes. Five results were rejected. Even though some results were flagged with a "J" as estimated, all other results (99 %) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

Table 6-1 VOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
BMW-01	Acetone	J detects	Lab Duplicate > 20 % RPD	Data is estimated
All samples	1,4-Dioxane	R	Initial calibration RRF < 0.005	Based on the new low responders rule from SOM2.1, the RRF <0.005 is used
All samples	Acetone	J detects	Detected in Trip Blank	Data is estimated

Table 6-2 SVOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	TICs detected in Method blank	TIC < 5X blank value, R TIC	Tentatively Identified Compounds were detected in the method blank	TICs were rejected

Table 6-3 Pesticides

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-4 PCBs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
MW-01	All analytes	UJ non-detects	Both surrogate recoveries < QC limit	Data maybe biased low

Table 6-5 Metals

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	Zinc	CRQL-U	Metals were detected in the method blank (MB) <PQL but >MDL	Data changed to non-detect
BMW-01 MW-01	Dissolved Silver	J detects/UJ non-detects	Matrix Spike < QC limit	Data maybe biased low
MW-01	Dissolved Barium	J detects	Serial dilution > 10% limit	Data is estimated

Table 6-6 TCN

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-7 Hexavalent Chromium

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
Tank WS-01	CR+6	UJ non-detects	Sample received outside holding time	Data is estimated

Table 6-8 PFAAs – EPA 537 (modified)

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
BMW-01	All analytes	R data	Isotopic Dilutions all < 10 %	Data is rejected, sample re-analyzed
BMW-01RE	All analytes	J detects/UJ non-detects	Sample re-analyzed outside holding time	Data estimated
All samples	PFHxS (0.321)	CRQL-U	Compounds detected in method blank	Compound detected in the sample < CRQL, changed to CRQL-U.

Table 6-9 1,4-Dioxane 8270-SIM

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	1,4-Dioxane	J detects/UJ non-detects	Samples Extracted outside 7 day holding time	All data is estimated

ACRONYMS

BSP	Blank Spike
CCAL	Continuing Calibration
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
%D	Percent Difference
ICAL	Initial Calibration
ICB	Initial Calibration Blank
IS	Internal Standard
LCS	Laboratory Control Sample
MS/MSD	Matrix Spike/Matrix Spike Duplicate
QA	Quality Assurance
QC	Quality Control
%R	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
%RSD	Percent Relative Standard Deviation
TAL	Target Analyte List (metals)
TCL	Target Compound List (organics)

Appendix A

Validated Analytical Results

Pace Analytical®

Analytical Data Package

Prepared by:

Pace Analytical Services

Pace Project No.: 7068593

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

December 14, 2018

Jason Brydges
BE3 Environmental
1270 Niagara St
Buffalo, NY 14213

RE: Project: 31 WATER ST
Pace Project No.: 7068593

Dear Jason Brydges:
Enclosed are the analytical results for sample(s) received by the laboratory on October 20, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

PFAs samples were sub contracted to TA-Sacramento 880 Riverside Pkwy West Sacramento, Ca

Trip Blank was not listEd on the Chain of Custody

Report revised 12/14/18 with updated qualifiers

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Murphy
james.murphy@pacelabs.com
(518)860-9724
Project Manager

NELAP ACCREDITED TNI LABORATORY

REPORT OF LABORATORY ANALYSIS

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Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE SUMMARY

Project: 31 WATER ST
Pace Project No.: 7068593

Lab ID	Sample ID	Matrix	Date Collected	Date Received
7068593001	BMW-01	Water	10/19/18 12:50	10/20/18 10:10
7068593002	MW-04	Water	10/19/18 14:20	10/20/18 10:10
7068593003	MW-01	Water	10/19/18 15:30	10/20/18 10:10
7068593004	TANK WS-01	Water	10/19/18 09:30	10/20/18 10:10
7068593005	TRIP BLANK	Water	10/19/18 00:00	10/20/18 10:10

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 31 WATER ST
Pace Project No.: 7068593

Date: December 14, 2018

BMW-01 (Lab ID: 7068593001) - 004 - Tank WS-01

- Cr+6 sample was received out of hold

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or

WO#: 7068593

ALL SHA

7068593

Container Preservati

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Company: BE3 Corp	Billing Information: ← SAME
Address: 1270 Niagara St Buffalo, NY 14213	
Report To:	Email To: Jbridges@be3corp.com
Copy To: abrennan@be3corp.com	Site Collection Info/Address:
Customer Project Name/Number: 31 WATER STRI	State: NY County/City: Time Zone Collected: [ ]PT [ ]MT [ ]CT [ ]ET
Phone: Email: 716-946-9133	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order # : Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips:
Sample pH Acceptable Y N NA
pH Strips: HC 5146
Sulfide Present Y N NA
Lead Acetate Strips: _____

LAB USE ONLY:
Lab Sample # / Comments:

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	375 VOC+TICs, SVOC+TICs, HHB	375 Pest/PCB, CN, CRC	PFAs, 1-4 Dioxane	375 Metals	375 Diss. Metals
BMW-01	GW	G	10/19	1250				13	X	X	X	X	X
MW-04				1420				13	X	X	X	X	
MW-01				1530				13	X	X	X	X	X
Tank WS-01				0930				13	X	X	X	X	X

Customer Remarks / Special Conditions / Possible Hazards:
Only able to get 1L of Diox + SVOC @ MW-01 before well ran dry

Type of Ice Used: Wet Blue Dry None

Packing Material Used: bubble wrap/bag

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 8119 2993 730

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: TH097
Cooler 1 Temp Upon Receipt: 3.9 oC
Cooler 1 Therm Corr. Factor: 0.0 oC
Cooler 1 Corrected Temp: 3.9 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
A Brennen	10/19/1630	[illegible]	10/20/18 1040
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 2 of: 2

SAMPLE NO.

TANK WS-01

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Pace Analytical - New York SDG No. : 7068593 Contract: 31 WATER ST

Lab Sample ID: 7068593004 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	<0.020	U	mg/L	1	10/20/2018 12:05
57-12-5	Cyanide	<10.0	U	ug/L	1	10/25/2018 14:43

MKP 1/10/19

SAMPLE NO.

BMW-01

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/20/2018 10:10
Matrix: Water SDG No.: 7068593

Date Extracted: 10/26/2018 19:48
Lab Sample ID: 7068593001

Date Analyzed: 10/26/2018 19:48
Lab File ID: 102618.B\A05300.D

Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV1 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	85.1 J	
71-43-2	Benzene	<1.0	U
78-93-3	2-Butanone (MEK)	<5.0	U
104-51-8	n-Butylbenzene	<1.0	U
135-98-8	sec-Butylbenzene	<1.0	U
98-06-6	tert-Butylbenzene	<1.0	U
56-23-5	Carbon tetrachloride	<1.0	U
108-90-7	Chlorobenzene	<1.0	U
67-66-3	Chloroform	<1.0	U
95-50-1	1,2-Dichlorobenzene	<1.0	U
541-73-1	1,3-Dichlorobenzene	<1.0	U
106-46-7	1,4-Dichlorobenzene	<1.0	U
75-34-3	1,1-Dichloroethane	<1.0	U
75-35-4	1,1-Dichloroethene	<1.0	U
156-59-2	cis-1,2-Dichloroethene	4.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<100~~ R	U
100-41-4	Ethylbenzene	<1.0	U
75-09-2	Methylene Chloride	<1.0	U
1634-04-4	Methyl-tert-butyl ether	<1.0	U
103-65-1	n-Propylbenzene	<1.0	U
127-18-4	Tetrachloroethene	<1.0	U
108-88-3	Toluene	<1.0	U
71-55-6	1,1,1-Trichloroethane	<1.0	U
79-01-6	Trichloroethene	0.93	J
95-63-6	1,2,4-Trimethylbenzene	<1.0	U
108-67-8	1,3,5-Trimethylbenzene	<1.0	U
75-01-4	Vinyl chloride	<1.0	U
1330-20-7	Xylene (Total)	<3.0	U
179601-23-1	m&p-Xylene	<2.0	U
95-47-6	o-Xylene	<1.0	U

SAMPLE NO.

MW-04

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/20/2018 10:10
Matrix: Water SDG No.: 7068593
Date Extracted: 10/26/2018 20:08
Lab Sample ID: 7068593002
Date Analyzed: 10/26/2018 20:08
Lab File ID: 102618.B\A05301.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV1 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	121 J	
71-43-2	Benzene	<1.0	U
78-93-3	2-Butanone (MEK)	<5.0	U
104-51-8	n-Butylbenzene	<1.0	U
135-98-8	sec-Butylbenzene	<1.0	U
98-06-6	tert-Butylbenzene	<1.0	U
56-23-5	Carbon tetrachloride	<1.0	U
108-90-7	Chlorobenzene	<1.0	U
67-66-3	Chloroform	<1.0	U
95-50-1	1,2-Dichlorobenzene	<1.0	U
541-73-1	1,3-Dichlorobenzene	<1.0	U
106-46-7	1,4-Dichlorobenzene	<1.0	U
75-34-3	1,1-Dichloroethane	<1.0	U
75-35-4	1,1-Dichloroethene	<1.0	U
156-59-2	cis-1,2-Dichloroethene	74.3	
156-60-5	trans-1,2-Dichloroethene	<1.0	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<100~~ R	U
100-41-4	Ethylbenzene	<1.0	U
75-09-2	Methylene Chloride	<1.0	U
1634-04-4	Methyl-tert-butyl ether	<1.0	U
103-65-1	n-Propylbenzene	<1.0	U
127-18-4	Tetrachloroethene	<1.0	U
108-88-3	Toluene	<1.0	U
71-55-6	1,1,1-Trichloroethane	<1.0	U
79-01-6	Trichloroethene	<1.0	U
95-63-6	1,2,4-Trimethylbenzene	<1.0	U
108-67-8	1,3,5-Trimethylbenzene	<1.0	U
75-01-4	Vinyl chloride	81.0	
1330-20-7	Xylene (Total)	<3.0	U
179601-23-1	m&p-Xylene	<2.0	U
95-47-6	o-Xylene	<1.0	U

SAMPLE NO.

MW-01

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/20/2018 10:10
Matrix: Water SDG No.: 7068593
Date Extracted: 10/26/2018 20:29
Lab Sample ID: 7068593003
Date Analyzed: 10/26/2018 20:29
Lab File ID: 102618.B\A05302.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV1 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	~~67.8~~ J	
71-43-2	Benzene	<1.0	U
78-93-3	2-Butanone (MEK)	<5.0	U
104-51-8	n-Butylbenzene	<1.0	U
135-98-8	sec-Butylbenzene	<1.0	U
98-06-6	tert-Butylbenzene	<1.0	U
56-23-5	Carbon tetrachloride	<1.0	U
108-90-7	Chlorobenzene	<1.0	U
67-66-3	Chloroform	<1.0	U
95-50-1	1,2-Dichlorobenzene	<1.0	U
541-73-1	1,3-Dichlorobenzene	<1.0	U
106-46-7	1,4-Dichlorobenzene	<1.0	U
75-34-3	1,1-Dichloroethane	<1.0	U
75-35-4	1,1-Dichloroethene	<1.0	U
156-59-2	cis-1,2-Dichloroethene	4.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<100~~ R	U
100-41-4	Ethylbenzene	<1.0	U
75-09-2	Methylene Chloride	<1.0	U
1634-04-4	Methyl-tert-butyl ether	<1.0	U
103-65-1	n-Propylbenzene	<1.0	U
127-18-4	Tetrachloroethene	<1.0	U
108-88-3	Toluene	<1.0	U
71-55-6	1,1,1-Trichloroethane	<1.0	U
79-01-6	Trichloroethene	<1.0	U
95-63-6	1,2,4-Trimethylbenzene	<1.0	U
108-67-8	1,3,5-Trimethylbenzene	<1.0	U
75-01-4	Vinyl chloride	<1.0	U
1330-20-7	Xylene (Total)	<3.0	U
179601-23-1	m&p-Xylene	<2.0	U
95-47-6	o-Xylene	<1.0	U

MSP 1/10/19

SAMPLE NO.

TANK WS-01

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/20/2018 10:10
Matrix: Water SDG No.: 7068593

Date Extracted: 10/26/2018 20:49
Lab Sample ID: 7068593004

Date Analyzed: 10/26/2018 20:49
Lab File ID: 102618.B\A05303.D

Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV1 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	64.2 J	
71-43-2	Benzene	<1.0	U
78-93-3	2-Butanone (MEK)	<5.0	U
104-51-8	n-Butylbenzene	<1.0	U
135-98-8	sec-Butylbenzene	<1.0	U
98-06-6	tert-Butylbenzene	<1.0	U
56-23-5	Carbon tetrachloride	<1.0	U
108-90-7	Chlorobenzene	<1.0	U
67-66-3	Chloroform	<1.0	U
95-50-1	1,2-Dichlorobenzene	<1.0	U
541-73-1	1,3-Dichlorobenzene	<1.0	U
106-46-7	1,4-Dichlorobenzene	<1.0	U
75-34-3	1,1-Dichloroethane	<1.0	U
75-35-4	1,1-Dichloroethene	<1.0	U
156-59-2	cis-1,2-Dichloroethene	<1.0	U
156-60-5	trans-1,2-Dichloroethene	<1.0	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<100~~ R	U
100-41-4	Ethylbenzene	<1.0	U
75-09-2	Methylene Chloride	<1.0	U
1634-04-4	Methyl-tert-butyl ether	<1.0	U
103-65-1	n-Propylbenzene	<1.0	U
127-18-4	Tetrachloroethene	<1.0	U
108-88-3	Toluene	<1.0	U
71-55-6	1,1,1-Trichloroethane	<1.0	U
79-01-6	Trichloroethene	<1.0	U
95-63-6	1,2,4-Trimethylbenzene	<1.0	U
108-67-8	1,3,5-Trimethylbenzene	<1.0	U
75-01-4	Vinyl chloride	<1.0	U
1330-20-7	Xylene (Total)	<3.0	U
179601-23-1	m&p-Xylene	<2.0	U
95-47-6	o-Xylene	<1.0	U

SAMPLE NO.

TRIP BLANK

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/20/2018 10:10
Matrix: Water SDG No.: 7068593

Date Extracted: 10/26/2018 21:10
Lab Sample ID: 7068593005

Date Analyzed: 10/26/2018 21:10
Lab File ID: 102618.B\A05304.D

Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV1 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	95.2	
71-43-2	Benzene	<1.0	U
78-93-3	2-Butanone (MEK)	<5.0	U
104-51-8	n-Butylbenzene	<1.0	U
135-98-8	sec-Butylbenzene	<1.0	U
98-06-6	tert-Butylbenzene	<1.0	U
56-23-5	Carbon tetrachloride	<1.0	U
108-90-7	Chlorobenzene	<1.0	U
67-66-3	Chloroform	<1.0	U
95-50-1	1,2-Dichlorobenzene	<1.0	U
541-73-1	1,3-Dichlorobenzene	<1.0	U
106-46-7	1,4-Dichlorobenzene	<1.0	U
75-34-3	1,1-Dichloroethane	<1.0	U
75-35-4	1,1-Dichloroethene	<1.0	U
156-59-2	cis-1,2-Dichloroethene	<1.0	U
156-60-5	trans-1,2-Dichloroethene	<1.0	U
123-91-1	1,4-Dioxane (p-Dioxane)	<100	U
100-41-4	Ethylbenzene	<1.0	U
75-09-2	Methylene Chloride	<1.0	U
1634-04-4	Methyl-tert-butyl ether	<1.0	U
103-65-1	n-Propylbenzene	<1.0	U
127-18-4	Tetrachloroethene	<1.0	U
108-88-3	Toluene	<1.0	U
71-55-6	1,1,1-Trichloroethane	<1.0	U
79-01-6	Trichloroethene	<1.0	U
95-63-6	1,2,4-Trimethylbenzene	<1.0	U
108-67-8	1,3,5-Trimethylbenzene	<1.0	U
75-01-4	Vinyl chloride	<1.0	U
1330-20-7	Xylene (Total)	<3.0	U
179601-23-1	m&p-Xylene	<2.0	U
95-47-6	o-Xylene	<1.0	U

SAMPLE NO.

BMW-01

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/20/2018 10:10
Date Extracted: 10/25/2018 11:22
Date Analyzed: 10/25/2018 17:50
Initial wt/vol: 1000 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Water SDG No.: 7068593
Lab Sample ID: 7068593001
Lab File ID: 8270-102518.B\R47126.D
Instrument: 70MSS3 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/L	Q
112-84-5	13-Docosenamide, (Z)-	13.015	~~28.1~~ R	N J
1000194-17-	5-Hydroxymethyldihydrofuran-2-one	5.845	~~3.3~~ R	N J
57-11-4	Octadecanoic acid	10.36	2.2	N J
	Unknown Ketone	5.637	~~6.5~~ R	J
	Unknown Organic Acid	9.222	2.2	J
	Unknown Organic Acid	6.54	9.4	J
57-10-3	n-Hexadecanoic acid	9.596	~~9.5~~ R	N J

SAMPLE NO.

MW-04

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/20/2018 10:10
Date Extracted: 10/25/2018 11:22
Date Analyzed: 10/25/2018 19:12
Initial wt/vol: 1000 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Water SDG No.: 7068593
Lab Sample ID: 7068593002
Lab File ID: 8270-102518.B\R47129.D
Instrument: 70MSS3 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/L	Q
112-84-5	13-Docosenamide, (Z)-	13.024	~~39.4~~ R	N J
1000194-17-	5-Hydroxymethyldihydrofuran-2-one	5.86	~~4.7~~ R	N J
	Unknown Aldehyde	6.565	5.1	J
	Unknown Ketone	5.651	~~8.8~~ R	J
	Unknown Organic Acid	6.688	2.2	J
	Unknown Organic Acid	7.697	2.3	J
	Unknown Organic Acid	9.22	~~3.3~~ R	J
57-10-3	n-Hexadecanoic acid	9.599	11.4	N J

SAMPLE NO.

MW-01

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/20/2018 10:10
Date Extracted: 10/25/2018 11:22
Date Analyzed: 10/25/2018 19:40
Initial wt/vol: 1000 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Water SDG No.: 7068593
Lab Sample ID: 7068593003
Lab File ID: 8270-102518.B\R47130.D
Instrument: 70MSS3 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/L	Q
32780-06-6	(S)-(+)-2',3'-Dideoxyribonolactone	5.861	~~4.8~~ R	N J
	Unknown Alcohol	6.512	2.0	J

MKP 1/10/19

SAMPLE NO.

TANK WS-01

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/20/2018 10:10
Date Extracted: 10/25/2018 11:22
Date Analyzed: 10/26/2018 13:02
Initial wt/vol: 1000 Final wt/vol: 1 mL Dilution: 1

Contract: 31 WATER ST
Matrix: Water SDG No.: 7068593
Lab Sample ID: 7068593004
Lab File ID: 8270-102618.B\R47134.D
Instrument: 70MSS3 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/L	Q
112-84-5	13-Docosenamide, (Z)-	13.016	~~36.0~~ R	N J
1000194-17-	5-Hydroxymethyldihydrofuran-2-one	5.846	~~4.2~~ R	N J
	Unknown Ketone	5.643	~~8.5~~ R	J
	Unknown Organic Acid	7.695	2.3	J
	Unknown Organic Acid	~~9.217~~	2.9 R	J
57-10-3	n-Hexadecanoic acid	9.597	6.5	N J

SAMPLE NO.

MW-01

PCB - FORM I SVOA-1

SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST

Date Received: 10/20/2018 10:10
Matrix: Water SDG No.: 7068593

Date Extracted: 10/23/2018 11:40
Lab Sample ID: 7068593003

Date Analyzed: 10/25/2018 12:46
Lab File ID: 102418-1.B\212441.D

Initial wt/vol: 1000 mL Final wt/vol: 10 mL Dilution: 1
Instrument: 70GCS2 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<1.0 UJ	U
11104-28-2	PCB-1221 (Aroclor 1221)	<2.0	U
11141-16-5	PCB-1232 (Aroclor 1232)	<1.0	U
53469-21-9	PCB-1242 (Aroclor 1242)	<1.0	U
12672-29-6	PCB-1248 (Aroclor 1248)	<1.0	U
11097-69-1	PCB-1254 (Aroclor 1254)	<1.0	U
11096-82-5	PCB-1260 (Aroclor 1260)	<1.0	U

MMP 1/10/19

SAMPLE NO.

BMW-01

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Pace Analytical - New York SDG No. : 7068593 Contract: 31 WATER ST

Lab Sample ID: 7068593001 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	<10.0	U	ug/L	1	10/23/2018 10:23
7440-38-2	Arsenic, Dissolved	<10.0	U	ug/L	1	10/29/2018 14:30
7440-39-3	Barium	1740		ug/L	1	10/23/2018 10:23
7440-39-3	Barium, Dissolved	1700		ug/L	1	10/29/2018 14:30
7440-41-7	Beryllium	<5.0	U	ug/L	1	10/23/2018 10:23
7440-41-7	Beryllium, Dissolved	<5.0	U	ug/L	1	10/29/2018 14:30
7440-43-9	Cadmium	<2.5	U	ug/L	1	10/23/2018 10:23
7440-43-9	Cadmium, Dissolved	<2.5	U	ug/L	1	10/29/2018 14:30
7440-47-3	Chromium	<10.0	U	ug/L	1	10/23/2018 10:23
7440-47-3	Chromium, Dissolved	<10.0	U	ug/L	1	10/29/2018 14:30
7440-50-8	Copper	<25.0	U	ug/L	1	10/23/2018 10:23
7440-50-8	Copper, Dissolved	<25.0	U	ug/L	1	10/29/2018 14:30
7439-92-1	Lead	<5.0	U	ug/L	1	10/23/2018 10:23
7439-92-1	Lead, Dissolved	<5.0	U	ug/L	1	10/29/2018 14:30
7439-95-4	Magnesium	19300		ug/L	1	10/23/2018 10:23
7439-96-5	Manganese	505		ug/L	1	10/23/2018 10:23
7439-96-5	Manganese, Dissolved	402		ug/L	1	10/29/2018 14:30
7440-02-0	Nickel	1.4	J	ug/L	1	10/23/2018 10:23
7440-02-0	Nickel, Dissolved	4.2	J	ug/L	1	10/29/2018 14:30
7782-49-2	Selenium	<10.0	U	ug/L	1	10/23/2018 10:23
7782-49-2	Selenium, Dissolved	<10.0	U	ug/L	1	10/29/2018 14:30
7440-22-4	Silver	<10.0	U	ug/L	1	10/23/2018 10:23
7440-22-4	Silver, Dissolved	~~<10.0~~ UJ	U	ug/L	1	10/29/2018 14:30
7440-66-6	Zinc	~~6.7~~ 20 U	J B	ug/L	1	10/23/2018 10:23
7440-66-6	Zinc, Dissolved	3.3	J	ug/L	1	10/29/2018 14:30

MRP 1/15/19

SAMPLE NO.

MW-04

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Pace Analytical - New York SDG No. : 7068593 Contract: 31 WATER ST

Lab Sample ID: 7068593002 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	9.1	J	ug/L	1	10/23/2018 10:29
7440-39-3	Barium	1700		ug/L	1	10/23/2018 10:29
7440-41-7	Beryllium	<5.0	U	ug/L	1	10/23/2018 10:29
7440-43-9	Cadmium	<2.5	U	ug/L	1	10/23/2018 10:29
7440-47-3	Chromium	<10.0	U	ug/L	1	10/23/2018 10:29
7440-50-8	Copper	<25.0	U	ug/L	1	10/23/2018 10:29
7439-92-1	Lead	<5.0	U	ug/L	1	10/23/2018 10:29
7439-95-4	Magnesium	16500		ug/L	1	10/23/2018 10:29
7439-96-5	Manganese	173		ug/L	1	10/23/2018 10:29
7440-02-0	Nickel	<40.0	U	ug/L	1	10/23/2018 10:29
7782-49-2	Selenium	<10.0	U	ug/L	1	10/23/2018 10:29
7440-22-4	Silver	<10.0	U	ug/L	1	10/23/2018 10:29
7440-66-6	Zinc 20 U	~~6.5~~	J B	ug/L	1	10/23/2018 10:29

MAP 1/10/19

SAMPLE NO.

MW-01

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Pace Analytical - New York SDG No. : 7068593 Contract: 31 WATER ST

Lab Sample ID: 7068593003 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	27.6		ug/L	1	10/23/2018 10:34
7440-38-2	Arsenic, Dissolved	<10.0	U	ug/L	1	10/29/2018 14:33
7440-39-3	Barium	1090	J	ug/L	1	10/23/2018 10:34
7440-39-3	Barium, Dissolved	787		ug/L	1	10/29/2018 14:33
7440-41-7	Beryllium	1.4	J	ug/L	1	10/23/2018 10:34
7440-41-7	Beryllium, Dissolved	<5.0	U	ug/L	1	10/29/2018 14:33
7440-43-9	Cadmium	<2.5	U	ug/L	1	10/23/2018 10:34
7440-43-9	Cadmium, Dissolved	<2.5	U	ug/L	1	10/29/2018 14:33
7440-47-3	Chromium	39.6		ug/L	1	10/23/2018 10:34
7440-47-3	Chromium, Dissolved	2.4	J	ug/L	1	10/29/2018 14:33
7440-50-8	Copper	33.3		ug/L	1	10/23/2018 10:34
7440-50-8	Copper, Dissolved	4.4	J	ug/L	1	10/29/2018 14:33
7439-92-1	Lead	34.4		ug/L	1	10/23/2018 10:34
7439-92-1	Lead, Dissolved	5.7		ug/L	1	10/29/2018 14:33
7439-95-4	Magnesium	35600		ug/L	1	10/23/2018 10:34
7439-96-5	Manganese	3140		ug/L	1	10/23/2018 10:34
7439-96-5	Manganese, Dissolved	1880		ug/L	1	10/29/2018 14:33
7440-02-0	Nickel	68.6		ug/L	1	10/23/2018 10:34
7440-02-0	Nickel, Dissolved	12.8	J	ug/L	1	10/29/2018 14:33
7782-49-2	Selenium	<10.0	U	ug/L	1	10/23/2018 10:34
7782-49-2	Selenium, Dissolved	<10.0	U	ug/L	1	10/29/2018 14:33
7440-22-4	Silver	<10.0	U	ug/L	1	10/23/2018 10:34
7440-22-4	Silver, Dissolved	<10.0	U	ug/L	1	10/29/2018 14:33
7440-66-6	Zinc	172		ug/L	1	10/23/2018 10:34
7440-66-6	Zinc, Dissolved	19.0	J	ug/L	1	10/29/2018 14:33

MPP 1/10/19

SAMPLE NO.

TANK WS-01

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Pace Analytical - New York SDG No. : 7068593 Contract: 31 WATER ST

Lab Sample ID: 7068593004 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-38-2	Arsenic	<10.0	U	ug/L	1	10/23/2018 10:40
7440-38-2	Arsenic, Dissolved	<10.0	U	ug/L	1	10/29/2018 14:38
7440-39-3	Barium	76.9	J	ug/L	1	10/23/2018 10:40
7440-39-3	Barium, Dissolved	71.9	J	ug/L	1	10/29/2018 14:38
7440-41-7	Beryllium	<5.0	U	ug/L	1	10/23/2018 10:40
7440-41-7	Beryllium, Dissolved	<5.0	U	ug/L	1	10/29/2018 14:38
7440-43-9	Cadmium	<2.5	U	ug/L	1	10/23/2018 10:40
7440-43-9	Cadmium, Dissolved	<2.5	U	ug/L	1	10/29/2018 14:38
7440-47-3	Chromium	<10.0	U	ug/L	1	10/23/2018 10:40
7440-47-3	Chromium, Dissolved	<10.0	U	ug/L	1	10/29/2018 14:38
7440-50-8	Copper	125		ug/L	1	10/23/2018 10:40
7440-50-8	Copper, Dissolved	21.2	J	ug/L	1	10/29/2018 14:38
7439-92-1	Lead	16.8		ug/L	1	10/23/2018 10:40
7439-92-1	Lead, Dissolved	<5.0	U	ug/L	1	10/29/2018 14:38
7439-95-4	Magnesium	2930		ug/L	1	10/23/2018 10:40
7439-96-5	Manganese	86.9		ug/L	1	10/23/2018 10:40
7439-96-5	Manganese, Dissolved	31.8		ug/L	1	10/29/2018 14:38
7440-02-0	Nickel	1.4	J	ug/L	1	10/23/2018 10:40
7440-02-0	Nickel, Dissolved	4.5	J	ug/L	1	10/29/2018 14:38
7782-49-2	Selenium	<10.0	U	ug/L	1	10/23/2018 10:40
7782-49-2	Selenium, Dissolved	<10.0	U	ug/L	1	10/29/2018 14:38
7440-22-4	Silver	<10.0	U	ug/L	1	10/23/2018 10:40
7440-22-4	Silver, Dissolved	<10.0	U	ug/L	1	10/29/2018 14:38
7440-66-6	Zinc	112		ug/L	1	10/23/2018 10:40
7440-66-6	Zinc, Dissolved	39.2		ug/L	1	10/29/2018 14:38

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 320-44481-1

Job Description: Pace PFAS Testing

For:
Pace Analytical Services, LLC
10 Adler Drive
Suite 104
East Syracuse, NY 13057

Attention: Mr. James Murphy

Approved for release.
Jill Kellmann
Manager of Project Management
12/14/2018 1:20 PM

Jill Kellmann, Manager of Project Management
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4402
jill.kellmann@testamericainc.com
12/14/2018

Job Narrative
320-44481-1

Receipt
The samples were received on 10/24/2018 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2° C.

LCMS
Method(s) 537 (modified): Several Isotope Dilution Analyte (IDA) recoveries associated with the following sample are significantly below the method recommended limit: BMW-01 (320-44481-1). The sample was re-extracted outside of the holding time with improved IDA recoveries. Both sets of data were reported.

Method(s) 537 (modified): As a result of the diminished IDA recoveries in the analysis of the following sample, the IDA recovery for M2-8:2 FTS did not meet signal to noise requirement of 10:1 needed for quantitation: BMW-01 (320-44481-1). Consequently, the corresponding native analyte, 8:2 FTS, could not be reported from the original extraction. This analyte was reported from the analysis of the re-extraction outside of the holding time with all IDA recoveries within control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-256546.

Method(s) 3535: The following sample had non-settleable particulate matter which plugged the SPE extraction disk. The amount of sample remaining plus the weight of the bottle are recorded in the "notes" field of the prep batch. The "tare weight" recorded is the weight of the emptied bottle: BMW-01 (320-44481-1) and MW-01 (320-44481-3). The reporting limits (RLs) have been adjusted proportionately.

Method(s) 3535: The following sample: BMW-01 (320-44481-1) in preparation batch 320-256546 was observed to be a yellow color after it was brought to final volume.

Method(s) 3535: The following sample was re-prepared outside of preparation holding time due to low IDA recoveries: BMW-01 (320-44481-1).

Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-261639.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: Pace PFAS Testing

TestAmerica Job ID: 320-44481-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-44481-1	BMW-01	Water	10/19/18 12:50	10/24/18 09:10
320-44481-2	MW-04	Water	10/19/18 14:20	10/24/18 09:10
320-44481-3	MW-01	Water	10/19/18 15:30	10/24/18 09:10
320-44481-4	TANK WS-01	Water	10/19/18 09:30	10/24/18 09:10

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 7068593 Workorder Name: 31 Water St Results Requested By: 10/29/2018

Report / Invoice To	Subcontract To	Requested Analysis
James Murphy Pace Analytical New York 2190 Technology Drive Schenectady, NY 12308 Phone (518)860-9724 Email: james.murphy@pacelabs.com	TA-Sacramento 880 Riverside Pkwy East Sacramento, Ca	P.O. 102218JM2004 320-44481 Chain of Custody

State of Sample Origin: NY

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved						PFAs												LAB USE ONLY
1	BMW-01	10/19/2018 12:50	7068593001	Water	2						X												
2	MW-04	10/19/2018 14:20	7068593002	Water	2						X												
3	MW-01	10/19/2018 15:30	7068593003	Water	2						X												
4	TANK WS-01	10/19/2018 09:30	7068593004	Water	2						X												
5																							

Transfers	Released By	Date/Time	Received By	Date/Time
1	Jaclyn Rios/Pace	10/23/18 1800	[illegible] 1A Sec	10/24/18 910
2				
3				

Comments:
NYS CAT B DATA PKG
NYS EqUIS EDD

Cooler Temperature on Receipt 2-2°C | Custody Seal Y or (N) | Received on Ice (Y) or N | Samples Intact (Y) or N

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12/14/2018

Client Sample ID: BMW-01

Date Collected: 10/19/18 12:50
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44481-1
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	R	1.8	0.31	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.44	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.99	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.15	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.49	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		11/02/18 08:33	11/03/18 16:38	1
Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.31	ng/L		11/02/18 08:33	11/03/18 16:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8	ng/L		11/02/18 08:33	11/03/18 16:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.7	ng/L		11/02/18 08:33	11/03/18 16:38	1
6:2 FTS	ND		18	1.8	ng/L		11/02/18 08:33	11/03/18 16:38	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	3	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C5 PFPeA	3	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C2 PFHxA	3	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C4 PFHpA	3	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C4 PFOA	2	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C5 PFNA	2	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C2 PFDA	2	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C2 PFUnA	2	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C2 PFDoA	2	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C2 PFTeDA	2	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C3 PFBS	2	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
18O2 PFHxS	3	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C4 PFOS	3	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
13C8 FOSA	1	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
d3-NMeFOSAA	2	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
d5-NEtFOSAA	2	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1
M2-6:2 FTS	2	*	25 - 150	11/02/18 08:33	11/03/18 16:38	1

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	H J	2.0	0.36	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluoropentanoic acid (PFPeA)	ND	H	2.0	0.50	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluorohexanoic acid (PFHxA)	ND	H	2.0	0.59	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluoroheptanoic acid (PFHpA)	ND	H	2.0	0.26	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluorooctanoic acid (PFOA)	ND	H	2.0	0.87	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluorononanoic acid (PFNA)	ND	H	2.0	0.28	ng/L		11/28/18 09:35	12/01/18 02:03	1

Client Sample ID: BMW-01

Date Collected: 10/19/18 12:50
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44481-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances - RE (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	ND	H	2.0	0.32	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluoroundecanoic acid (PFUnA)	ND	H	2.0	1.1	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluorododecanoic acid (PFDoA)	ND	H	2.0	0.56	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluorotridecanoic acid (PFTriA)	ND	H	2.0	1.3	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluorotetradecanoic acid (PFTeA)	ND	H	2.0	0.30	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluorobutanesulfonic acid (PFBS)	ND	H	2.0	0.20	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.39	J H B	2.0	0.17	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND	H	2.0	0.19	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluorooctanesulfonic acid (PFOS)	ND	H	2.0	0.55	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluorodecanesulfonic acid (PFDS)	ND	H	2.0	0.33	ng/L		11/28/18 09:35	12/01/18 02:03	1
Perfluorooctanesulfonamide (FOSA)	ND	H	2.0	0.36	ng/L		11/28/18 09:35	12/01/18 02:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND	H	20	3.2	ng/L		11/28/18 09:35	12/01/18 02:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND	H	20	1.9	ng/L		11/28/18 09:35	12/01/18 02:03	1
6:2 FTS	ND	H	20	2.0	ng/L		11/28/18 09:35	12/01/18 02:03	1
8:2 FTS	ND	H	20	2.0	ng/L		11/28/18 09:35	12/01/18 02:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*76*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C5 PFPeA	*88*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C2 PFHxA	*85*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C4 PFHpA	*83*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C4 PFOA	*82*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C5 PFNA	*86*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C2 PFDA	*88*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C2 PFUnA	*89*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C2 PFDoA	*80*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C2 PFTeDA	*97*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C3 PFBS	*87*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
18O2 PFHxS	*77*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C4 PFOS	*81*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
13C8 FOSA	*92*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
d3-NMeFOSAA	*103*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
d5-NEtFOSAA	*106*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
M2-6:2 FTS	*92*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*
M2-8:2 FTS	*113*		*25 - 150*	*11/28/18 09:35*	*12/01/18 02:03*	*1*

Client Sample ID: MW-04

Date Collected: 10/19/18 14:20
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44481-2

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9	0.33	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.46	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.54	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.23	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.79	ng/L		11/02/18 08:33	11/03/18 16:46	1

MEP 1/15/19

Client Sample ID: MW-04

Date Collected: 10/19/18 14:20
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44481-2
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	ND		1.9	0.25	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.51	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.27	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluorohexanesulfonic acid (PFHxS)	~~0.35 JB~~ 1.4 uJ		1.9	0.16	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.50	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		11/02/18 08:33	11/03/18 16:46	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9	0.33	ng/L		11/02/18 08:33	11/03/18 16:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	2.9	ng/L		11/02/18 08:33	11/03/18 16:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19	1.8	ng/L		11/02/18 08:33	11/03/18 16:46	1
6:2 FTS	ND		19	1.9	ng/L		11/02/18 08:33	11/03/18 16:46	1
8:2 FTS	ND		19	1.9	ng/L		11/02/18 08:33	11/03/18 16:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*92*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C5 PFPeA	*96*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C2 PFHxA	*99*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C4 PFHpA	*97*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C4 PFOA	*105*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C5 PFNA	*96*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C2 PFDA	*97*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C2 PFUnA	*100*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C2 PFDoA	*97*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C2 PFTeDA	*93*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C3 PFBS	*96*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
18O2 PFHxS	*105*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C4 PFOS	*103*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
13C8 FOSA	*106*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
d3-NMeFOSAA	*87*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
d5-NEtFOSAA	*92*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
M2-6:2 FTS	*96*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*
M2-8:2 FTS	*79*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:46*	*1*

Client Sample ID: MW-01

Date Collected: 10/19/18 15:30
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44481-3
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.6**	**J**	2.0	0.35	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluoropentanoic acid (PFPeA)	**1.6**	**J**	2.0	0.49	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluorohexanoic acid (PFHxA)	**1.8**	**J**	2.0	0.58	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluoroheptanoic acid (PFHpA)	**0.90**	**J**	2.0	0.25	ng/L		11/02/18 08:33	11/03/18 16:53	1

Client Sample ID: MW-01

Date Collected: 10/19/18 15:30
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44481-3
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	**2.3**		2.0	0.86	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluorononanoic acid (PFNA)	**0.62**	**J**	2.0	0.27	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluorobutanesulfonic acid (PFBS)	**0.25**	**J**	2.0	0.20	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluorohexanesulfonic acid (PFHxS)	~~0.40~~ **JB** 2.0 UJ		2.0	0.17	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluorooctanesulfonic acid (PFOS)	**1.1**	**J**	2.0	0.54	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		11/02/18 08:33	11/03/18 16:53	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35	ng/L		11/02/18 08:33	11/03/18 16:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		11/02/18 08:33	11/03/18 16:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		11/02/18 08:33	11/03/18 16:53	1
6:2 FTS	ND		20	2.0	ng/L		11/02/18 08:33	11/03/18 16:53	1
8:2 FTS	ND		20	2.0	ng/L		11/02/18 08:33	11/03/18 16:53	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*71*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C5 PFPeA	*75*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C2 PFHxA	*80*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C4 PFHpA	*82*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C4 PFOA	*84*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C5 PFNA	*86*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C2 PFDA	*73*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C2 PFUnA	*67*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C2 PFDoA	*49*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C2 PFTeDA	*34*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C3 PFBS	*80*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
18O2 PFHxS	*84*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C4 PFOS	*85*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
13C8 FOSA	*77*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
d3-NMeFOSAA	*59*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
d5-NEtFOSAA	*62*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
M2-6:2 FTS	*97*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*
M2-8:2 FTS	*63*		*25 - 150*	*11/02/18 08:33*	*11/03/18 16:53*	*1*

Client Sample ID: TANK WS-01

Date Collected: 10/19/18 09:30
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44481-4
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.5**		1.8	0.31	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluoropentanoic acid (PFPeA)	**1.9**		1.8	0.44	ng/L		11/02/18 08:33	11/03/18 17:01	1

Client Sample ID: TANK WS-01

Date Collected: 10/19/18 09:30
Date Received: 10/24/18 09:10

Lab Sample ID: 320-44481-4

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	**2.0**		1.8	0.52	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluoroheptanoic acid (PFHpA)	**1.9**		1.8	0.22	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluorooctanoic acid (PFOA)	**6.4**		1.8	0.76	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluorononanoic acid (PFNA)	**1.1**	**J**	1.8	0.24	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluorodecanoic acid (PFDA)	**0.58**	**J**	1.8	0.28	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.99	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluorobutanesulfonic acid (PFBS)	**1.1**	**J**	1.8	0.18	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluorohexanesulfonic acid (PFHxS)	~~41~~ LB 1.8uJ		1.8	0.15	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.28**	**J**	1.8	0.17	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluorooctanesulfonic acid (PFOS)	**41**		1.8	0.48	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		11/02/18 08:33	11/03/18 17:01	1
Perfluorooctanesulfonamide (FOSA)	**0.33**	**J**	1.8	0.31	ng/L		11/02/18 08:33	11/03/18 17:01	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8	ng/L		11/02/18 08:33	11/03/18 17:01	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.7	ng/L		11/02/18 08:33	11/03/18 17:01	1
6:2 FTS	ND		18	1.8	ng/L		11/02/18 08:33	11/03/18 17:01	1
8:2 FTS	ND		18	1.8	ng/L		11/02/18 08:33	11/03/18 17:01	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*83*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C5 PFPeA	*88*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C2 PFHxA	*94*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C4 PFHpA	*97*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C4 PFOA	*100*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C5 PFNA	*101*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C2 PFDA	*99*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C2 PFUnA	*109*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C2 PFDoA	*96*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C2 PFTeDA	*85*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C3 PFBS	*91*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
18O2 PFHxS	*98*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C4 PFOS	*109*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
13C8 FOSA	*105*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
d3-NMeFOSAA	*101*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
d5-NEtFOSAA	*98*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
M2-6:2 FTS	*130*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*
M2-8:2 FTS	*103*		*25 - 150*	*11/02/18 08:33*	*11/03/18 17:01*	*1*

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 480-144153-2

Job Description: 31 Water St

For:
Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747

Attention: James Murphy

Mary Schwartzmyer

Approved for release.
Mary A Schwartzmyer
Project Manager I
11/15/2018 4:00 PM

Designee for
John R Schove, Project Manager II
10 Hazelwood Drive, Amherst, NY, 14228-2298
(716)504-9838
john.schove@testamericainc.com
11/15/2018

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who has signed this report.

TestAmerica Buffalo NELAC Certifications: CADPH 01169CA, FLDOH E87672, ILEPA 200003, KSDOH E-10187, LADEQ 30708, MDH 036-999-337, NHELAP 2973, NJDEP NY455, NYDOH 10026, ORELAP NY200003, PADEP 68-00281, TXCEQ T-104704412-10-1

Job Narrative
480-144153-2

Comments
No additional comments.

Receipt
The samples were received on 10/24/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.2° C and 3.4° C.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method(s) 3510C: The following samples were received outside of holding time: BMW-01 (480-144153-5), MW-04 (480-144153-6), MW-01 (480-144153-7) and TANK WS-01 (480-144153-8).

Method(s) 3510C: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: TANK WS-01 (480-144153-8).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 7068593 **Workorder Name:** 31 Water St **Results Requested By:** 10/29/2018

Report / Invoice To	Subcontract To	
James Murphy Pace Analytical New York 2190 Technology Drive Schenectady, NY 12308 Phone (518)860-9724 Email: james.murphy@pacelabs.com	TA- Buffalo 10 Hazelwood Dr Amherst, NY	P.O. 102218JM2003

State of Sample Origin: NY

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	1,4 DIOXANE via 8270 SIM	LAB USE ONLY
1	MW-01	10/19/2018 12:50	7068593001	Water	1	X	
2	MW-04	10/19/2018 14:20	7068593002	Water	1	X	
3	MW-01	10/19/2018 15:30	7068593003	Water	1	X	
4	TANK WS-01	10/19/2018 09:30	7068593004	Water	1	X	
5							

Transfers	Relinquished By	Date/Time	Received By	Date/Time
1	[signature]	10/23/18 1800	[signature]	10/24/18 0450
2				
3				

Comments:
NYS CAT B DATA PKG
NYS EqUIS EDD

Cooler Temperature on Receipt 3.4 °C | Custody Seal N or N | Received on Ice Y or N | Samples Intact Y or N

#1

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3014 of 3015

Client Sample Results

Client: Pace Analytical Services, LLC
Project/Site: 31 Water St

TestAmerica Job ID: 480-144153-2

Client Sample ID: BMW-01

Date Collected: 10/19/18 12:50
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-5
Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	~~ND~~ H	0.20 uJ	0.20	0.10	ug/L		10/31/18 07:26	11/08/18 19:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*29*		*15 - 110*	*10/31/18 07:26*	*11/08/18 19:33*	*1*

Client Sample ID: MW-04

Date Collected: 10/19/18 14:20
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-6
Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	~~ND~~ H	0.20 uJ	0.20	0.10	ug/L		10/31/18 07:26	11/08/18 19:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*27*		*15 - 110*	*10/31/18 07:26*	*11/08/18 19:58*	*1*

Client Sample ID: MW-01

Date Collected: 10/19/18 15:30
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-7
Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	~~ND~~ H	0.21 uJ	0.21	0.11	ug/L		10/31/18 07:26	11/13/18 18:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*31*		*15 - 110*	*10/31/18 07:26*	*11/13/18 18:16*	*1*

Client Sample ID: TANK WS-01

Date Collected: 10/19/18 09:30
Date Received: 10/24/18 09:50

Lab Sample ID: 480-144153-8
Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	~~ND~~ H	0.23 uJ	0.23	0.12	ug/L		10/31/18 07:26	11/13/18 18:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*30*		*15 - 110*	*10/31/18 07:26*	*11/13/18 18:40*	*1*

1/15/19

Appendix B

Laboratory QC Documentation

MSV - FORM III VOA-2

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Instrument (2): 70MSV1 Matrix Spike Duplicate - Sample No: 409049MSD

Lab File ID 102618.B\A05288.D Date Analyzed (2): 10/26/2018

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	%RPD	QC LIMITS	
					RPD	REC.
1,1,1-Trichloroethane	50.0	48.9	98	11	0-20	65-118
1,1-Dichloroethane	50.0	43.5	87	3	0-20	83-151
1,1-Dichloroethene	50.0	46.1	92	8	0-20	45-146
1,2,4-Trimethylbenzene	50.0	44.5	89	8	0-20	68-116
1,2-Dichlorobenzene	50.0	45.8	92	9	0-20	74-113
1,3,5-Trimethylbenzene	50.0	45.0	90	10	0-20	67-116
1,3-Dichlorobenzene	50.0	44.6	89	7	0-20	71-112
1,4-Dichlorobenzene	50.0	43.8	88	10	0-20	71-113
1,4-Dioxane (p-Dioxane)	1250	1080	86	4	0-20	60-140
2-Butanone (MEK)	50.0	41.2	82	9	0-20	44-162
Acetone	50.0	126	109	39	0-20	23-188
Benzene	50.0	49.5	99	14	0-20	73-119
Carbon tetrachloride	50.0	49.5	99	11	0-20	59-120
Chlorobenzene	50.0	45.0	90	11	0-20	75-113
Chloroform	50.0	45.5	91	9	0-20	72-122
Ethylbenzene	50.0	46.5	93	11	0-20	70-113
Methyl-tert-butyl ether	50.0	43.8	88	11	0-20	72-131
Methylene Chloride	50.0	42.7	85	6	0-20	61-142
Tetrachloroethene	50.0	35.4	71	10	0-20	60-128
Toluene	50.0	48.9	98	12	0-20	72-119
Trichloroethene	50.0	47.2	94	10	0-20	69-117
Vinyl chloride	50.0	42.9	86	7	0-20	43-143
Xylene (Total)	150	136	91	10	0-20	71-109
cis-1,2-Dichloroethene	50.0	44.4	89	4	0-20	72-121
m&p-Xylene	100	92.1	92	10	0-20	72-115
n-Butylbenzene	50.0	47.2	94	8	0-20	73-107
n-Propylbenzene	50.0	47.7	95	9	0-20	68-116
o-Xylene	50.0	44.1	88	9	0-20	73-117
sec-Butylbenzene	50.0	45.8	92	5	0-20	72-103
tert-Butylbenzene	50.0	46.2	92	6	0-20	68-100
trans-1,2-Dichloroethene	50.0	46.4	93	7	0-20	56-142

RPD: 1 out of 31 outside limits.

Spike 0 out of 31 outside limits.

12/11/2018 1:49

MSV - FORM VI VOA-3

MSV INITIAL CALIBRATION DATA

Lab Pace Analytical - New York Instrument 70MSV1 GC Column: Col 1 SDG No.: 7068593

Calibration Date(s): 10/23/2018 10/23/2018 Calibration Time(s): 16:56 19:19

LAB FILE ID

CAL1 = 102318.B\A05210.D CAL2 = 102318.B\A05211.D CAL3 = 102318.B\A05212.D

CAL4 = 102318.B\A05213.D CAL5 = 102318.B\A05214.D CAL6 = 102318.B\A05215.D

CAL7 = 102318.B\A05216.D CAL8 = 102318.B\A05217.D

COMPOUND	CURVE TYPE	%RSD	R2	A1	A2	A3
Acetone	Averaged	18.39906			0.32831	
Benzene	Averaged	12.34803			2.48471	
2-Butanone (MEK)	Averaged	13.45302			1.00195	
n-Butylbenzene	Averaged	10.17102			2.97050	
sec-Butylbenzene	Averaged	7.77169			3.59328	
tert-Butylbenzene	Averaged	8.62368			2.26846	
Carbon tetrachloride	Averaged	5.89454			0.54221	
Chlorobenzene	Averaged	8.62333			2.64145	
Chloroform	Averaged	8.88845			1.76738	
1,2-Dichlorobenzene	Averaged	8.07981			1.97198	
1,3-Dichlorobenzene	Averaged	10.20508			2.06133	
1,4-Dichlorobenzene	Averaged	8.33718			2.30379	
1,1-Dichloroethane	Averaged	9.27742			1.96378	
1,1-Dichloroethene	Averaged	5.58822			0.95784	
cis-1,2-Dichloroethene	Averaged	9.24193			1.22418	
trans-1,2-Dichloroethene	Averaged	9.84153			1.10494	
1,4-Dioxane (p-Dioxane)	Averaged	16.26231			0.00201	
Ethylbenzene	Averaged	12.01236			1.30609	
Methylene Chloride	Averaged	11.04133			1.25351	
Methyl-tert-butyl ether	Averaged	10.62791			2.79365	
n-Propylbenzene	Averaged	7.61637			5.10074	
Tetrachloroethene	Averaged	14.59566			1.45876	
Toluene	Averaged	9.43408			2.33112	
1,1,1-Trichloroethane	Averaged	10.22452			0.67992	
Trichloroethene	Averaged	9.31501			0.52680	
1,2,4-Trimethylbenzene	Averaged	7.94700			3.09423	
1,3,5-Trimethylbenzene	Averaged	8.15141			3.22027	
Vinyl chloride	Averaged	12.22032			1.40003	
m&p-Xylene	Averaged	10.89334			1.65065	
o-Xylene	Averaged	8.90237			1.68093	
4-Bromofluorobenzene (S)	Averaged	2.93518			0.62638	
1,2-Dichloroethane-d4 (S)	Averaged	7.10818			0.24585	
Toluene-d8 (S)	Averaged	1.22495			1.76668	

RF 10.005

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

12/11/2018 1:49

SAMPLE NO.

BLANK

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: 31 WATER ST
Date Received: 10/25/2018 10:02
Matrix: Water SDG No.: 7068593
Date Extracted: 10/25/2018 11:22
Lab Sample ID: 407836
Date Analyzed: 10/25/2018 16:01
Lab File ID: 8270-102518.B\R47122.D
Initial wt/vol: 1000 Final wt/vol: 1 mL Dilution: 1
Instrument: 70MSS3 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/L	Q
32780-06-6	(S)-(+)-2',3'-Dideoxyribonolactone	5.85	3.2	N J
17851-53-5	1,2-Benzenedicarboxylic acid, butyl 2-me	9.611	3.2	N J
112-84-5	13-Docosenamide, (Z)-	13.019	24.8	N J
	Unknown Ketone	5.636	6.1	J
	Unknown Organic Acid	9.221	2.0	J

PESTICIDES - FORM II SVOA-1
WATER SEMI-VOLATILE SURROGATE RECOVERY

Lab Name: Pace Analytical - New York SDG No.: 7068593 Contract: 31 WATER ST

Instrument ID: 70GCS3

LAB SAMPLE ID	SAMPLE NAME	DCBP	TCMX
406102	406102BLANK	99	67
406103	406103LCS	107	85
406104	406104LCS	111	79
7068593001	BMW-01	68	79
7068593002	MW-04	35	59
7068593003	MW-01	9*	37
7068593004	TANK WS-01	48	75

	QC LIMITS
(DCBP) = Decachlorobiphenyl (S)	(30-150)
(TCMX) = Tetrachloro-m-xylene (S)	(30-150)

* Values outside of QC Limits

PCB - FORM II SVOA-1
WATER SEMI-VOLATILE SURROGATE RECOVERY

Lab Name: Pace Analytical - New York SDG No.: 7068593 Contract: 31 WATER ST

Instrument ID: 70GCS2

LAB SAMPLE ID	SAMPLE NAME	DCBP	TCMX
406111	406111BLANK	83	53
406112	406112LCS	81	48
7068593001	BMW-01	63	66
7068593002	MW-04	34	55
7068593003	MW-01	6*	29*
7068593004	TANK WS-01	44	65

	QC LIMITS
(DCBP) = Decachlorobiphenyl (S)	(30-150)
(TCMX) = Tetrachloro-m-xylene (S)	(30-150)

* Values outside of QC Limits

FORM III INORGANIC-1

BLANKS

Lab Pace Analytical - New York SDG No. : 7068593 Contract : 31 WATER ST

Method Blank Matrix: Water Instrument 70ICP2

Method Blank Concentration Units: ug/L

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method Blank	
	10/23/2018 08:39	C	10/23/2018 09:07	C	10/23/2018 10:12	C	10/23/2018 10:56	C	405483	C
Arsenic	2.5	U	3.9	J	2.5	U	2.5	U	<10.0	U
Barium	0.10	U	0.10	U	0.20	J	0.12	J	<200	U
Beryllium	-0.10	J	0.10	U	-0.22	J	-0.15	J	<5.0	U
Cadmium	0.10	U	0.10	U	-0.13	J	0.10	U	<2.5	U
Chromium	-1.1	J	-1.1	J	0.40	U	-0.75	J	<10.0	U
Copper	0.90	U	0.90	U	0.90	U	0.90	U	<25.0	U
Lead	1.4	U	1.4	U	1.4	U	2.2	J	<5.0	U
Magnesium	-40	J	31.8	U	31.8	U	-47	J	<1000	U
Manganese	0.30	U	0.30	U	0.30	U	0.30	U	<10.0	U
Nickel	0.50	U	0.50	U	0.50	U	0.50	U	<40.0	U
Selenium	2.8	U	4.2	J	2.8	U	3.6	J	<10.0	U
Silver	1.5	U	1.5	U	1.5	U	1.5	U	<10.0	U
Zinc	-0.72	J	0.30	U	0.32	J	1.2	J	3.2	J

SAMPLE NO.

409121MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab: Pace Analytical - New York SDG No. : 7068593 Contract: 31 WATER ST

Matrix: Water Basis: Wet Parent Sample ID: BMW-01

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Arsenic, Dissolved	ug/L	70-130	502	<10.0	500	99
Barium, Dissolved	ug/L	70-130	2250	1700	500	110
Beryllium, Dissolved	ug/L	70-130	49.3	<5.0	50.0	99
Cadmium, Dissolved	ug/L	70-130	49.8	<2.5	50.0	100
Chromium, Dissolved	ug/L	70-130	254	<10.0	250	102
Copper, Dissolved	ug/L	70-130	235	<25.0	250	94
Lead, Dissolved	ug/L	70-130	500	<5.0	500	100
Manganese, Dissolved	ug/L	70-130	674	402	250	109
Nickel, Dissolved	ug/L	70-130	260	4.2J	250	102
Selenium, Dissolved	ug/L	70-130	761	<10.0	750	101
Silver, Dissolved	ug/L	70-130	45.5	<10.0	250 ?	18*
Zinc, Dissolved	ug/L	70-130	1000	3.3J	1000	100

* Spike Recovery outside QC Limits

12/11/2018 10:54

SAMPLE NO.

409123MS

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab: Pace Analytical - New York SDG No. : 7068593 Contract: 31 WATER ST

Matrix: Water Basis: Wet Parent Sample ID: MW-01

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Arsenic, Dissolved	ug/L	70-130	497	<10.0	500	98
Barium, Dissolved	ug/L	70-130	1310	787	500	105
Beryllium, Dissolved	ug/L	70-130	49.1	<5.0	50.0	98
Cadmium, Dissolved	ug/L	70-130	49.1	<2.5	50.0	98
Chromium, Dissolved	ug/L	70-130	260	2.4J	250	103
Copper, Dissolved	ug/L	70-130	242	4.4J	250	95
Lead, Dissolved	ug/L	70-130	510	5.7	500	101
Manganese, Dissolved	ug/L	70-130	2140	1880	250	104
Nickel, Dissolved	ug/L	70-130	291	12.8J	250	111
Selenium, Dissolved	ug/L	70-130	745	<10.0	750	99
Silver, Dissolved	ug/L	70-130	43.0	<10.0	250 ?	17*
Zinc, Dissolved	ug/L	70-130	1020	19.0J	1000	100

* Spike Recovery outside QC Limits

SAMPLE NO.

405582PDS

FORM V INORGANIC-1

POST-DIGESTION SPIKE SAMPLE RECOVERY

Lab Pace Analytical - New York SDG No. : 7068593 Contract: 31 WATER ST

Matrix: Water Parent Sample 7068532001

Analyte	Units	Control Limit %R	DF	Spiked Sample Result (SSR)	DF	Sample Result (SR)	Spike Added (SA)	%R
Arsenic	ug/L	85-115	1	494	1	26.0	500	93.6
Barium	ug/L	85-115	1	1160	1	738	500	85.2
Beryllium	ug/L	85-115	1	48.0	1	0.57U	50	95.9
Cadmium	ug/L	85-115	1	45.4	1	0.063U	50	90.8
Chromium	ug/L	85-115	1	238	1	1.6U	250	95.3
Copper	ug/L	85-115	1	218	1	2.5U	250	87.2
Lead	ug/L	85-115	1	476	1	2.6J	500	94.7
Magnesium	ug/L	85-115	1	37900	1	14900	25000	91.9
Manganese	ug/L	85-115	1	5320	1	5130	250	77.2*
Nickel	ug/L	85-115	1	242	1	12.1J	250	91.9
Selenium	ug/L	85-115	1	704	1	6.3U	750	93.9
Silver	ug/L	85-115	1	52.7	1	3.6U	250 ?	21.1*
Zinc	ug/L	85-115	1	1450	1	514	1000	94.0

SAMPLE NO.

409124SD

FORM VIII INORGANIC-1
SERIAL DILUTIONS

Lab Pace Analytical - New York SDG No. : 7068593 Contract: 31 WATER ST

Matrix: Water Parent Sample MW-01

Analyte	Units	Initial Sample Result	Serial Dilution Result	% Difference	Control Limit %D	
Arsenic, Dissolved	ug/L	6.8U	33.9U		10	
Barium, Dissolved	ug/L	787	885J	12.5*	10	
Beryllium, Dissolved	ug/L	0.57U	2.9U		10	
Cadmium, Dissolved	ug/L	0.063U	0.32U		10	
Chromium, Dissolved	ug/L	2.4J	9.0J	279.7*	10	ok
Copper, Dissolved	ug/L	4.4J	12.4U		10	
Lead, Dissolved	ug/L	5.7	6.8J	20.2*	10	ok
Manganese, Dissolved	ug/L	1880	1940	2.9	10	
Nickel, Dissolved	ug/L	12.8J	69.0J	439.1*	10	ok
Selenium, Dissolved	ug/L	6.3U	31.3U		10	
Silver, Dissolved	ug/L	3.6U	17.8U		10	
Zinc, Dissolved	ug/L	19.0J	29.8J	56.6*	10	ok

MDL

OK if < 50X MDL

* Indicates that the % Difference exceeds the control limit.
No difference is calculated if either result is a non-detect.

12/11/2018 10:38

Isotope Dilution Summary

Client: Pace Analytical Services, LLC
Project/Site: Pace PFAS Testing

TestAmerica Job ID: 320-44481-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-44481-1	BMW-01	3 *	3 *	3 *	3 *	2 *	2 *	2 *	2 *
320-44481-1 - RE	BMW-01	76	88	85	83	82	86	88	89
320-44481-2	MW-04	92	96	99	97	105	96	97	100
320-44481-3	MW-01	71	75	80	82	84	86	73	67
320-44481-4	TANK WS-01	83	88	94	97	100	101	99	109
LCS 320-256546/2-A	Lab Control Sample	102	94	96	96	102	93	92	98
LCS 320-261639/2-A	Lab Control Sample	89	89	92	91	89	94	90	88
LCSD 320-256546/3-A	Lab Control Sample Dup	103	98	94	97	106	101	95	104
LCSD 320-261639/3-A	Lab Control Sample Dup	87	86	83	85	85	91	89	80
MB 320-256546/1-A	Method Blank	106	98	98	101	105	102	103	103
MB 320-261639/1-A	Method Blank	88	89	91	88	87	96	92	96

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PEHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	NMeFOSA (25-150)	NEtFOSA (25-150)
320-44481-1	BMW-01	2 *	2 *	2 *	3 *	3 *	1 *	2 *	2 *
320-44481-1 - RE	BMW-01	80	97	87	77	81	92	103	106
320-44481-2	MW-04	97	93	96	105	103	106	87	92
320-44481-3	MW-01	49	34	80	84	85	77	59	62
320-44481-4	TANK WS-01	96	85	91	98	109	105	101	98
LCS 320-256546/2-A	Lab Control Sample	91	107	90	93	106	92	94	98
LCS 320-261639/2-A	Lab Control Sample	86	84	81	82	90	93	108	95
LCSD 320-256546/3-A	Lab Control Sample Dup	91	96	96	93	100	96	89	94
LCSD 320-261639/3-A	Lab Control Sample Dup	77	72	83	79	84	86	100	103
MB 320-256546/1-A	Method Blank	92	112	90	97	97	101	96	98
MB 320-261639/1-A	Method Blank	84	85	81	80	90	84	113	99

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
320-44481-1	BMW-01	2 *	
320-44481-1 - RE	BMW-01	92	113
320-44481-2	MW-04	96	79
320-44481-3	MW-01	97	63
320-44481-4	TANK WS-01	130	103
LCS 320-256546/2-A	Lab Control Sample	84	76
LCS 320-261639/2-A	Lab Control Sample	98	96
LCSD 320-256546/3-A	Lab Control Sample Dup	95	76
LCSD 320-261639/3-A	Lab Control Sample Dup	95	91
MB 320-256546/1-A	Method Blank	85	82
MB 320-261639/1-A	Method Blank	97	108

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-256546/1-A
Matrix: Water
Analysis Batch: 256822

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256546

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorotetradecanoic acid (PFTeA)	0.329	J	2.0	0.29	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorohexanesulfonic acid (PFHxS)	0.321	J	2.0	0.17	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		11/02/18 08:33	11/03/18 14:46	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35	ng/L		11/02/18 08:33	11/03/18 14:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		11/02/18 08:33	11/03/18 14:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		11/02/18 08:33	11/03/18 14:46	1
6:2 FTS	ND		20	2.0	ng/L		11/02/18 08:33	11/03/18 14:46	1
8:2 FTS	ND		20	2.0	ng/L		11/02/18 08:33	11/03/18 14:46	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*106*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C5 PFPeA	*98*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C2 PFHxA	*98*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C4 PFHpA	*101*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C4 PFOA	*105*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C5 PFNA	*102*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C2 PFDA	*103*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C2 PFUnA	*103*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C2 PFDoA	*92*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C2 PFTeDA	*112*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C3 PFBS	*90*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
18O2 PFHxS	*97*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C4 PFOS	*97*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
13C8 FOSA	*101*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
d3-NMeFOSAA	*96*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
d5-NEtFOSAA	*98*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
M2-6:2 FTS	*85*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*
M2-8:2 FTS	*82*		*25 - 150*	*11/02/18 08:33*	*11/03/18 14:46*	*1*

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-144153-2

SDG No.:

Batch Number: 442693 Batch Start Date: 10/31/18 07:26 Batch Analyst: Pollock, Jacob M

Batch Method: 3510C Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	SecondAdjustpH	OP_SIM_LCS 00005
MB 480-442693/1		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	>11 SU	
LCS 480-442693/2		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	>11 SU	1 mL
480-144153-A-5	BMW-01	3510C, 8270D SIM ID	T	980 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-6	MW-04	3510C, 8270D SIM ID	T	990 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-7	MW-01	3510C, 8270D SIM ID	T	940 mL	1 mL	7 SU	<2 SU	>11 SU	
480-144153-A-8	TANK WS-01	3510C, 8270D SIM ID	T	860 mL	1 mL	7 SU	<2 SU	>11 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	OP_SimSurr 00011	AnalysisComment				
MB 480-442693/1		3510C, 8270D SIM ID		1 mL					
LCS 480-442693/2		3510C, 8270D SIM ID		1 mL					
480-144153-A-5	BMW-01	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-6	MW-04	3510C, 8270D SIM ID	T	1 mL	Contains a little sediment				
480-144153-A-7	MW-01	3510C, 8270D SIM ID	T	1 mL	Contains some sediment				
480-144153-A-8	TANK WS-01	3510C, 8270D SIM ID	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D SIM ID

Appendix C

Validator Qualifications

KENNETH R. APPLIN
Geochemist/Data Validator

Ph.D., Geochemistry and Mineralogy, The Pennsylvania State University

M.S., Geochemistry and Mineralogy, The Pennsylvania State University

B.A., Geological Sciences, SUNY at Geneseo, NY

Dr. Applin has over 35 years of experience working with the geochemistry of natural waters. His prior experience includes working as an Assistant Professor of Geology at the University of Missouri-Columbia and as Chief Hydrogeologist and Geochemist with a leading engineering firm in Rochester, NY. In 1993, he established KR Applin and Associates, a small consulting business that focuses on the geochemistry of natural waters, especially as applied to problems involving the contamination of groundwater and surface water.

Dr. Applin is also an experienced analytical data validator and has provided data validation services since 1994 to a variety of clients performing brownfield cleanup projects, hazardous waste remediation, groundwater monitoring at solid waste facilities, and other projects requiring third-party data validation. Dr. Applin has several years of hands-on experience with the laboratory analysis of natural waters and has successfully completed the USEPA Region II certification courses for performing inorganic and organic analytical data validation.

MICHAEL K. PERRY
Chemist/Data Validator

B.S. Chemistry, Georgia State University, Atlanta, GA

A.A.S., Chemical Technology, Alfred State College, Alfred, NY

Mr. Perry has over 30 years of experience in the analytical laboratory business. During his early career, he spent several years as a laboratory analyst performing the analysis of soil, water, and air samples for inorganic and organic chemical parameters. During his last 20 years in the environmental laboratory business, he managed and directed two major analytical laboratories in Rochester, NY. His management responsibilities included oversight of the daily operations of the lab, staff training and supervision, the selection, purchase, and maintenance of analytical instruments, the introduction of new laboratory methods, analytical quality assurance and quality control, data acquisition and management, and other business-related activities.

Mr. Perry has an extensive working knowledge of the methods and procedures used for sampling and analyzing both inorganic and organic analytes in soil, water, and air. He is an accomplished laboratory chemist and is familiar with the analytical methods and procedures established under the USEPA Contract Laboratory Protocols (CLP), the NYSDEC Analytical Services Protocols (ASP), and the NYSDOH Environmental Laboratory Approval Program (ELAP).

DATA USABILITY SUMMARY REPORT (DUSR)

31 Water Street
Jamestown, NY
NYSDEC BCP # C907046

SDG: 7068600 and 7070589

2 sediment samples

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

January 2019

EDU Environmental Data Usability 10028 Deer Park Dr. Dansville, NY 14437 585.991.9156

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REVIEWER'S NARRATIVE
SDG 7068600

The data associated with this Sample Delivery Group (SDG) 7068600, analyzed by Pace Analytical Services, LLC, Melville, NY have been reviewed in accordance with assessment criteria provided by the New York State Department of Environmental Conservation following the review procedures provided in the USEPA Functional Guidelines for evaluating organic and inorganic data.

All analytical results reported by the laboratory are considered valid and acceptable except results that have been qualified as rejected, "R". Results qualified as estimated "J", or as non-detects, "U", are considered usable for the purpose of evaluating water and/or soil quality. However, these qualifiers indicate that the accuracy and/or precision of the analytical result is questionable. A summary of all data that have been qualified and the reasons for qualification are provided in the following data usability summary report (DUSR).

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

Reviewer's Signature: Michael K. Perry Date: 1/23/19

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	31 Water St. Jamestown, NY
SAMPLING DATE:	October 19, 2018
SAMPLE TYPE:	2 sediment samples
LABORATORY:	Pace Analytical Services, LLC Melville, NY
SDG No.:	7068600 and 7070589

2.0 INTRODUCTION

This data usability summary report (DUSR) was prepared in accordance with guidance provided by the New York State Department of Environmental Conservation (NYSDEC). The DUSR is based on a review and evaluation of the laboratory analytical data package. Specifically, the NYSDEC guidance recommends review and evaluation of the following elements of the data package:

- Completeness of the data package as defined under the requirements of the NYSDEC Analytical Services Protocols (ASP) Category B or the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) deliverables,
- Compliance with established analyte holding times,
- Adherence to quality control (QC) limits and specifications for blanks, instrument tuning and calibration, surrogate recoveries, spike recoveries, laboratory duplicate analyses, and other QC criteria,
- Adherence to established analytical protocols,
- Conformance of data summary sheets with raw analytical data, and
- Use of correct data qualifiers.

Data deficiencies, analytical protocol deviations, and quality control problems identified using the review criteria above and their effect on the analytical results are discussed in this report.

3.0 SAMPLE AND ANALYSIS SUMMARY

The data package consists of analytical results for two sediment samples collected on October 19, 2018. These samples were analyzed for the Part 375 list of Volatile Organic Compounds, Semi-volatile Organic Compounds, PCBs, Pesticides, Metals, TCN, and Hexavalent Chromium.

All analyses were performed by Pace Analytical Services, LLC, Melville, NY and analyzed as SDG 7068600 and 7070589 for the Pesticides and PCBs. The analytical results were provided in NYSDEC ASP Category B format, which includes all raw analytical data and laboratory QC data.

4.0 GUIDANCE DOCUMENTS AND DATA REVIEW CRITERIA

The guidance documents used for reviewing laboratory quality control (QC) data and assigning data qualifiers (flags) to analytical results are listed in Table 4-1. The QC limits established in the documents applicable to this data review were used to assess the quality of the analytical results. In some cases, however, QC limits established internally by the laboratory were taken into account to determine data quality.

The QC criteria considered for assessing the usability of the reported analytical results provided for each analyte type (i.e. VOCs, SVOCs, metals, etc.) are listed in Table 4-2. These criteria may vary with the analytical method utilized by the laboratory. These criteria comply with the guidance recommended in Section 2.0 above.

5.0 DATA VALIDATION QUALIFIERS

The letter qualifiers (flags) used to define data usability are described briefly below. These letters are assigned by the data validator to analytical results having questionable accuracy and/or precision as determined by reviewing the laboratory QC data associated with the analytical results.

TABLE 4-1

DATA VALIDATION GUIDANCE DOCUMENTS

Analyte Type	Validation Guidance
VOCs	USEPA, 2008, Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry; SW-846 Method 8260B; SOP # HW-24, Rev. 2. USEPA, 2008, Statement of Work for Organic Analysis of Low/Medium Concentration of Volatile Organic Compounds SOM01.2; SOP HW-33, Rev. 2.
SVOCs	USEPA, 2007, Statement of Work for Organic Analysis of Low/Medium Concentration of Semivolatile Organic Compounds SOM01.2; SOP HW-35, Rev. 1.
Pesticides/PCBs	USEPA, 2006, CLP Organics Data Review and Preliminary Review (CLP/SOW OLMO 4.3); SOP # HW-6, Rev. 14, Part C.
Metals	USEPA, 2006, Validation of Metals for the Contract Laboratory Program (CLP) based on SOW ILMO 5.3 (SOP Revision 13), SOP # HW-2, Rev. 13.
Gen Chemistry	NYSDEC, 2005, Analytical Services Protocols (ASP)
VOCs (Ambient air)	USEPA, 2006, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canister by Method TO-15; SOP # HW-31, Rev. 4.

TABLE 4-2

QUALITY CONTROL CRITERIA USED FOR VALIDATING
LABORATORY ANALYTICAL DATA

VOCs	SVOCs	Pesticides/PCBs	Metals	Gen Chemistry	Method TO-15
Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg
Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition
Holding Time	Holding Time	Holding Time	Holding Time	Holding Times	Holding Time
System Monitoring Compounds	Surrogate Recoveries	Surrogate Recoveries	Initial/Continuing Calibration	Calibration	Canister Certification
Lab Control Sample	Lab Control Sample	Matrix Spikes	CRDL Standards	Lab Control Samples	Lab Control Sample
Matrix Spikes	Matrix Spikes	Blanks	Blanks	Blanks	Instrument Tuning
Blanks	Blanks	Instrument Calibration & Verification	Interference Check Sample	Spike Recoveries	Blanks
Instrument Tuning	Instrument Tuning	Analyte ID	Spike Recoveries	Lab Duplicates	Initial Calibration & System Performance
Internal Standards	Internal Standards	Lab Qualifiers	Lab Duplicate		Daily Calibration
Initial Calibration	Initial Calibration	Field Duplicate	Lab Control Sample		Field Duplicate
Continuing Calibration	Continuing Calibration		ICP Serial Dilutions		
Lab Qualifiers	Lab Qualifiers		Lab Qualifiers		
Field Duplicate	Field Duplicate		Field Duplicate		

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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

JN The analyte is considered to be "presumptively present." The associated numerical value represents its *approximate* concentration.

The validated analytical results are attached to this report. Validation qualifiers (flags) are indicated using red ink. Data sheets having qualified data are signed and dated by the data reviewer.

6.0 RESULTS OF THE DATA REVIEW

The results of the data review are summarized in Tables 6-1 through 6-7. The tables list the samples where QC criteria were found to exceed acceptable limits and the actions taken to qualify the associated analytical results.

7.0 TOTAL USABLE DATA

For SDG 7068600 two samples were analyzed and results were reported for 186 analytes. Two results were rejected. Even though some results were flagged with a "J" as estimated, all other results (99 %) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

Table 6-1 VOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
SED-01 SED-02	Acetone	J detects	Matrix Spike > QC limit	Data is estimated
SED-01 SED-02	1,4-Dioxane	R	Initial calibration RRF < 0.005	Based on the new low responders rule from SOM2.1, the RRF <0.005 is used
SED-01 SED-02	1,4-Dichlorobenzene 1,2-Dichlorobenzene n-Butylbenzene 1,2,4-Trichlorobenzene	J detects/UJ non-detects	IS area for DCBd4 < QC limit	Data maybe biased low

Table 6-2 SVOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
SED-01 SED-02	TICs detected in Method blank	TIC < 5X blank value, R TIC	Tentatively Identified Compounds were detected in the method blank	TICs were rejected

Table 6-3 Pesticides

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
SED-01 SED-02	4,4'-DDT Endrin	none	PEM for 4,4'DDT and Endrin > 20 %	Since all affected is non-detect, no data was affected
SED-01	Aldrin	JN	>25 % D between dual column analysis	Matrix suspected interference

Table 6-4 PCBs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
SED-01	PCB 1248	J	>25 % D between dual column analysis	Matrix suspected interference
SED-02	PCB 1248	J	>25 % D between dual column analysis	Matrix suspected interference

Table 6-5 Metals

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
SED-01 SED-02	Chromium Copper Manganese Zinc	CRQL-U	Metals were detected in the method blank (MB) <PQL but >MDL	No data was affected

Table 6-6 TCN

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-7 Hexavalent Chromium

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

ACRONYMS

BSP	Blank Spike
CCAL	Continuing Calibration
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
%D	Percent Difference
ICAL	Initial Calibration
ICB	Initial Calibration Blank
IS	Internal Standard
LCS	Laboratory Control Sample
MS/MSD	Matrix Spike/Matrix Spike Duplicate
QA	Quality Assurance
QC	Quality Control
%R	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
%RSD	Percent Relative Standard Deviation
TAL	Target Analyte List (metals)
TCL	Target Compound List (organics)

Appendix A

Validated Analytical Results



Analytical Data Package

Prepared by:

Pace Analytical Services

Pace Project No.: 7068600

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

October 30, 2018

Jason Brydes
BE3 Environmental
1270 Niagara St
Buffalo, NY 14213

RE: Project: PART 375 SOIL-10/19
Pace Project No.: 7068600

Dear Jason Brydes:
Enclosed are the analytical results for sample(s) received by the laboratory on October 20, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Murphy
james.murphy@pacelabs.com
(518)860-9724
Project Manager

Enclosures

cc: Alex Brennen, BE3 Corp

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without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE SUMMARY

Project: PART 375 SOIL-10/19
Pace Project No.: 7068600

Lab ID	Sample ID	Matrix	Date Collected	Date Received
7068600001	SED-01	Solid	10/19/18 08:15	10/20/18 12:27
7068600002	SED-02	Solid	10/19/18 08:30	10/20/18 12:27

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

WO#: 7068600

Company: BE3 Corp	Billing Information: ← Same
Address: 1270 Niagara St Buffalo, NY 14213	
Report To: Jason Brydges	Email To: Jbrydges@be3corp.com
Copy To: abrennen@be3corp.com	Site Collection Info/Address:
Customer Project Name/Number: 31 WATER ST RI	State: NY County/City: Jamestown Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 716-946-9133 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order # : Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 375 VOC+TICs	Analyses: 375 SVOC+TICs_Inorgs	Analyses: PFA's
Sed-01	SL	G	10/9	0815				4	X	X	X
Sed-02	SL	G	10/9	0830				4	X	X	X

Lab Profile/Line:

Lab Sample Receipt Checklist:	
Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards: Please hold analysis on PFA's until contacted

Type of Ice Used: Wet Blue Dry None

Packing Material Used: Bubble bag/wrap

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 8119 2493 7510

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: TH091
Cooler 1 Temp Upon Receipt: 3.1 °C
Cooler 1 Therm Corr. Factor: 0.0 °C
Cooler 1 Corrected Temp: 3.1 °C
Comments:

Relinquished by/Company: (Signature)	Date/Time: 10/9 1630	Received by/Company: (Signature)	Date/Time: 10/9/19 1630	MTJL LAB USE ONLY Table #:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	PM: PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 2

SAMPLE NO.

SED-01

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL-10/19
Date Received: 10/20/2018 12:27
Matrix: Solid SDG No.: 7068600
Date Extracted: 10/28/2018 08:34
Lab Sample ID: 7068600001
Date Analyzed: 10/28/2018 12:44
Lab File ID: 102818.B\S61347.D
Initial wt/vol: 4.27 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV2 Percent Moisture: 25.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<3.1	U
71-43-2	Benzene	<3.1	U
78-93-3	2-Butanone (MEK)	<3.1	U
104-51-8	n-Butylbenzene	<3.1 UJ	U
135-98-8	sec-Butylbenzene	<3.1	U
98-06-6	tert-Butylbenzene	<3.1	U
56-23-5	Carbon tetrachloride	<3.1	U
108-90-7	Chlorobenzene	<3.1	U
67-66-3	Chloroform	<3.1	U
95-50-1	1,2-Dichlorobenzene	<3.1 UJ	U
541-73-1	1,3-Dichlorobenzene	<3.1	U
106-46-7	1,4-Dichlorobenzene	<3.1 UJ	U
75-34-3	1,1-Dichloroethane	<3.1	U
107-06-2	1,2-Dichloroethane	<3.1	U
75-35-4	1,1-Dichloroethene	<3.1	U
156-59-2	cis-1,2-Dichloroethene	<3.1	U
156-60-5	trans-1,2-Dichloroethene	<3.1	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<78.6~~ R	U
100-41-4	Ethylbenzene	<3.1	U
75-09-2	Methylene Chloride	<3.1	U
1634-04-4	Methyl-tert-butyl ether	<3.1	U
103-65-1	n-Propylbenzene	<3.1	U
127-18-4	Tetrachloroethene	<3.1	U
108-88-3	Toluene	<3.1	U
120-82-1	1,2,4-Trichlorobenzene	<3.1 UJ	U
71-55-6	1,1,1-Trichloroethane	<3.1	U
79-01-6	Trichloroethene	<3.1	U
95-63-6	1,2,4-Trimethylbenzene	<3.1	U
108-67-8	1,3,5-Trimethylbenzene	<3.1	U
75-01-4	Vinyl chloride	<3.1	U
1330-20-7	Xylene (Total)	<6.3	U

SAMPLE NO.

SED-02

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL-10/19
Date Received: 10/20/2018 12:27
Matrix: Solid SDG No.: 7068600
Date Extracted: 10/28/2018 08:34
Lab Sample ID: 7068600002
Date Analyzed: 10/28/2018 13:07
Lab File ID: 102818.B\S61348.D
Initial wt/vol: 5.01 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70MSV2 Percent Moisture: 18.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	<2.5	U
71-43-2	Benzene	<2.5	U
78-93-3	2-Butanone (MEK)	<2.5	U
104-51-8	n-Butylbenzene	<2.5 UJ	U
135-98-8	sec-Butylbenzene	<2.5	U
98-06-6	tert-Butylbenzene	<2.5	U
56-23-5	Carbon tetrachloride	<2.5	U
108-90-7	Chlorobenzene	<2.5	U
67-66-3	Chloroform	<2.5	U
95-50-1	1,2-Dichlorobenzene	<2.5 UJ	U
541-73-1	1,3-Dichlorobenzene	<2.5	U
106-46-7	1,4-Dichlorobenzene	<2.5 UJ	U
75-34-3	1,1-Dichloroethane	<2.5	U
107-06-2	1,2-Dichloroethane	<2.5	U
75-35-4	1,1-Dichloroethene	<2.5	U
156-59-2	cis-1,2-Dichloroethene	<2.5	U
156-60-5	trans-1,2-Dichloroethene	<2.5	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<61.4~~ R	U
100-41-4	Ethylbenzene	<2.5	U
75-09-2	Methylene Chloride	<2.5	U
1634-04-4	Methyl-tert-butyl ether	<2.5	U
103-65-1	n-Propylbenzene	<2.5	U
127-18-4	Tetrachloroethene	<2.5	U
108-88-3	Toluene	<2.5	U
120-82-1	1,2,4-Trichlorobenzene	<2.5 UJ	U
71-55-6	1,1,1-Trichloroethane	<2.5	U
79-01-6	Trichloroethene	<2.5	U
95-63-6	1,2,4-Trimethylbenzene	<2.5	U
108-67-8	1,3,5-Trimethylbenzene	<2.5	U
75-01-4	Vinyl chloride	<2.5	U
1330-20-7	Xylene (Total)	<4.9	U

SAMPLE NO.

SED-01

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/20/2018 12:27
Date Extracted: 10/22/2018 10:41
Date Analyzed: 10/24/2018 11:32
Initial wt/vol: 15.09 Final wt/vol: 1 mL Dilution: 5

Contract: PART 375 SOIL-10/19
Matrix: Solid SDG No.: 7068600
Lab Sample ID: 7068600001
Lab File ID: 8270-102418.B\R47079.D
Instrument: 70MSS3 Percent Moisture: 25.5%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
4161-60-8	2-Pentanone, 4-hydroxy-	3.307	~~2940~~ R - aldo condensation	N J
141-79-7	3-Penten-2-one, 4-methyl-	3.136	~~13600~~ R " "	N J
203-64-5	4H-Cyclopenta[def]phenanthrene	9.659	1020	N J
	Unknown	4.504	5920	J
	Unknown Ketone	3.526	~~193000~~ R	J
	Unknown Ketone	4.204	3790	J

SAMPLE NO.

SED-02

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Date Received: 10/20/2018 12:27
Date Extracted: 10/22/2018 10:41
Date Analyzed: 10/24/2018 11:59
Initial wt/vol: 15.12 Final wt/vol: 1 mL Dilution: 5

Contract: PART 375 SOIL-10/19
Matrix: Solid SDG No.: 7068600
Lab Sample ID: 7068600002
Lab File ID: 8270-102418.B\R47080.D
Instrument: 70MSS3 Percent Moisture: 18.7%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
141-79-7	3-Penten-2-one, 4-methyl-	3.136	~~6740~~ R aldo condensation	N J
99-87-6	Benzene, 1-methyl-4-(1-methylethyl)-	4.813	1360	N J
	Unknown Ketone	3.296	1310	J
	Unknown Ketone	4.204	~~2100~~ R	J
	Unknown Ketone	4.504	~~2860~~ R	J
	Unknown Ketone	3.499	~~96600~~ R	J

MVP 1/21/19

Pace Analytical®

Analytical Data Package

Prepared by:

Pace Analytical Services

Pace Project No.: 7070589

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

January 16, 2019

Jason Brydges
BE3 Environmental
1270 Niagara St
Buffalo, NY 14213

RE: Project: PART 375 SOIL-10/19
Pace Project No.: 7070589

Dear Jason Brydges:
Enclosed are the analytical results for sample(s) received by the laboratory on October 20, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Report revised 1/16/19 to include up dated qualifiers

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Murphy
james.murphy@pacelabs.com
(518)860-9724
Project Manager

Enclosures

cc: John Berry, BE3
Alex Brennen, BE3 Corp

NELAP ACCREDITED TNI LABORATORY

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE SUMMARY

Project: PART 375 SOIL-10/19
Pace Project No.: 7070589

Lab ID	Sample ID	Matrix	Date Collected	Date Received
7070589001	SED-01	Solid	10/19/18 08:15	10/20/18 10:20
7070589002	SED-02	Solid	10/19/18 08:30	10/20/18 10:20

REPORT OF LABORATORY ANALYSIS

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: PART 375 SOIL-10/19
Pace Project No.: 7070589

Date: January 16, 2019

MS (Lab ID: 418785)

- EPA Method 8081B: The breakdown for Endrin and DDT exceeded acceptance limits due to sample matrix.

MSD (Lab ID: 418786)

- EPA Method 8081B: The breakdown for Endrin and DDT exceeded acceptance limits due to sample matrix.

SED-02 (Lab ID: 7070589002)

- EPA Method 8081B: The breakdown for Endrin and DDT exceeded acceptance limits due to sample matrix.

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

WO#: 7070589

7070589

Company: BE3 Corp	Billing Information: ← Same
Address: 1270 Niagara St Buffalo, NY 14213	
Report To: Jason Brydges	Email To: Jbrydges@be3corp.com
Copy To: abrennen@be3corp.com	Site Collection Info/Address:
Customer Project Name/Number: 31 WATER ST RI	State: NY County/City: Jamestown Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 716-946-9133 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day ~~[X]~~ (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 375 VOC + TICs	375 SVOC + TICs Thorgs	537 PFAs	Lab Profile/Line:
Sed-01	SL	G	10/9	0815				4	X	X	X	
Sed-02	SL	G	10/9	0830				4	X	X	X	

Lab Sample Receipt Checklist:
Custody Seals Present/Intact: Y N NA
Custody Signatures Present: Y N NA
Collector Signature Present: Y N NA
Bottles Intact: Y N NA
Correct Bottles: Y N NA
Sufficient Volume: Y N NA
Samples Received on Ice: Y N NA
VOA - Headspace Acceptable: Y N NA
USDA Regulated Soils: Y N NA
Samples in Holding Time: Y N NA
Residual Chlorine Present: Y N NA
Cl Strips:
Sample pH Acceptable: Y N NA
pH Strips:
Sulfide Present: Y N NA
Lead Acetate Strips:

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards: Please hold analysis on PFA's until contacted

Type of Ice Used: Wet Blue Dry None

Packing Material Used: Bubble bag/wrap

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 819 6213 7510

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: TH091
Cooler 1 Temp Upon Receipt: 3.1 °C
Cooler 1 Therm Corr. Factor: 0.0 °C
Cooler 1 Corrected Temp: 3.1 °C
Comments:

	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	10/9 1630		
Relinquished by/Company: (Signature)			
Relinquished by/Company: (Signature)			

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 2

SAMPLE NO.

SED-01

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL-10/19
Date Received: 10/20/2018 10:20
Matrix: Solid SDG No.: 7070589
Date Extracted: 11/12/2018 11:32
Lab Sample ID: 7070589001
Date Analyzed: 11/14/2018 10:58
Lab File ID: 111318-1.B\312442.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
319-84-6	alpha-BHC	<2.3	U
319-85-7	beta-BHC	<2.3	U
319-86-8	delta-BHC	<2.3	U
58-89-9	gamma-BHC (Lindane)	<2.3	U
5103-71-9	alpha-Chlordane	<2.3	U
72-54-8	4,4'-DDD	<4.4	U
72-55-9	4,4'-DDE	<4.4	U
50-29-3	4,4'-DDT	<4.4	U
60-57-1	Dieldrin	<4.4	U
959-98-8	Endosulfan I	<2.3	U
33213-65-9	Endosulfan II	<4.4	U
1031-07-8	Endosulfan sulfate	<4.4	U
72-20-8	Endrin	<4.4	U
76-44-8	Heptachlor	<2.3	U

SAMPLE NO.

SED-01

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL-10/19
Date Received: 10/20/2018 10:20
Matrix: Solid SDG No.: 7070589
Date Extracted: 11/12/2018 11:32
Lab Sample ID: 7070589001
Date Analyzed: 11/14/2018 10:58
Lab File ID: 111318-2.B\312442.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	3.7 JY	

mwp 1/21/19

SAMPLE NO.

SED-02

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL-10/19
Date Received: 10/20/2018 10:20
Matrix: Solid SDG No.: 7070589
Date Extracted: 11/12/2018 11:32
Lab Sample ID: 7070589002
Date Analyzed: 11/27/2018 03:41
Lab File ID: 112618-1.B\312854.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS3 Percent Moisture: 18.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<2.1	U
319-84-6	alpha-BHC	<2.1	U
319-85-7	beta-BHC	<2.1	U
319-86-8	delta-BHC	<2.1	U
58-89-9	gamma-BHC (Lindane)	<2.1	U
5103-71-9	alpha-Chlordane	<2.1	U
72-54-8	4,4'-DDD	<4.1	U
72-55-9	4,4'-DDE	<4.1	U
50-29-3	4,4'-DDT	<4.1	U
60-57-1	Dieldrin	<4.1	U
959-98-8	Endosulfan I	<2.1	U
33213-65-9	Endosulfan II	<4.1	U
1031-07-8	Endosulfan sulfate	<4.1	U
72-20-8	Endrin	<4.1	U
76-44-8	Heptachlor	<2.1	U

SAMPLE NO.

SED-01

PCB - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL-10/19
Date Received: 10/20/2018 10:20
Matrix: Solid SDG No.: 7070589
Date Extracted: 11/12/2018 11:32
Lab Sample ID: 7070589001
Date Analyzed: 11/14/2018 11:45
Lab File ID: 111318-1.B\213007.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS2 Percent Moisture: 25.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<44.3	U
11104-28-2	PCB-1221 (Aroclor 1221)	<89.9	U
11141-16-5	PCB-1232 (Aroclor 1232)	<44.3	U
53469-21-9	PCB-1242 (Aroclor 1242)	<44.3	U
11097-69-1	PCB-1254 (Aroclor 1254)	<44.3	U
11096-82-5	PCB-1260 (Aroclor 1260)	<44.3	U

SAMPLE NO.

SED-01

PCB - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL-10/19
Date Received: 10/20/2018 10:20
Matrix: Solid SDG No.: 7070589
Date Extracted: 11/12/2018 11:32
Lab Sample ID: 7070589001
Date Analyzed: 11/14/2018 11:45
Lab File ID: 111318-2.B\213007.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS2 Percent Moisture: 25.5%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	334 J	

11/20/19

SAMPLE NO.

SED-02

PCB - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL-10/19
Date Received: 10/20/2018 10:20
Matrix: Solid SDG No.: 7070589
Date Extracted: 11/12/2018 11:32
Lab Sample ID: 7070589002
Date Analyzed: 11/14/2018 11:32
Lab File ID: 111318-1.B\213006.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS2 Percent Moisture: 18.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12674-11-2	PCB-1016 (Aroclor 1016)	<40.6	U
11104-28-2	PCB-1221 (Aroclor 1221)	<82.4	U
11141-16-5	PCB-1232 (Aroclor 1232)	<40.6	U
53469-21-9	PCB-1242 (Aroclor 1242)	<40.6	U
11097-69-1	PCB-1254 (Aroclor 1254)	<40.6	U
11096-82-5	PCB-1260 (Aroclor 1260)	<40.6	U

SAMPLE NO.

SED-02

PCB - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL-10/19
Date Received: 10/20/2018 10:20
Matrix: Solid SDG No.: 7070589
Date Extracted: 11/12/2018 11:32
Lab Sample ID: 7070589002
Date Analyzed: 11/14/2018 11:32
Lab File ID: 111318-2.B\213006.D
Initial wt/vol: 15 g Final wt/vol: 5 mL Dilution: 1
Instrument: 70GCS2 Percent Moisture: 18.7%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
12672-29-6	PCB-1248 (Aroclor 1248)	151 J	

01/15/2019 3:02

Appendix B

Laboratory QC Documentation

MSV - FORM III VOA-1

SOLID VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Pace Analytical - New York
Matrix Spike - Sample No: 409798MS
Date Extracted: 10/28/2018
Date Analyzed (1): 10/28/2018
Instrument: 70MSV2
Lab File ID: 102818.B\S61363.D
Parent Sample ID: SED-01
SDG No.: 7068600

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	MS CONCENTRATION (ug/kg)	MS %REC	QC LIMITS REC.
1,1,1-Trichloroethane	63.9	<3.1	64.2	100	59-134
1,1-Dichloroethane	63.9	<3.1	80.7	126	53-160
1,1-Dichloroethene	63.9	<3.1	61.7	96	47-152
1,2,4-Trichlorobenzene	63.9	<3.1	36.6	57	52-140
1,2,4-Trimethylbenzene	63.9	<3.1	47.5	74	59-126
1,2-Dichlorobenzene	63.9	<3.1	45.1	71	67-125
1,2-Dichloroethane	63.9	<3.1	89.1	139	65-143
1,3,5-Trimethylbenzene	63.9	<3.1	47.8	75	49-134
1,3-Dichlorobenzene	63.9	<3.1	43.2	68	64-124
1,4-Dichlorobenzene	63.9	<3.1	43.3	68	61-127
1,4-Dioxane (p-Dioxane)	1600	<78.6	354	22	10-205
2-Butanone (MEK)	63.9	<3.1	62.3	97	52-164
Acetone	63.9	<3.1	429	671	23-196
Benzene	63.9	<3.1	63.4	99	65-129
Carbon tetrachloride	63.9	<3.1	65.6	103	57-135
Chlorobenzene	63.9	<3.1	42.4	66	62-136
Chloroform	63.9	<3.1	76.6	120	71-135
Ethylbenzene	63.9	<3.1	39.7	62	59-135
Methyl-tert-butyl ether	63.9	<3.1	83.7	131	25-171
Methylene Chloride	63.9	<3.1	71.5	112	50-164
Tetrachloroethene	63.9	<3.1	40.7	64	10-176
Toluene	63.9	<3.1	57.4	90	66-131
Trichloroethene	63.9	<3.1	55.3	86	62-130
Vinyl chloride	63.9	<3.1	61.4	96	45-137
Xylene (Total)	192	<6.3	124	65	62-135
cis-1,2-Dichloroethene	63.9	<3.1	68.2	107	75-130
n-Butylbenzene	63.9	<3.1	42.4	66	54-121
n-Propylbenzene	63.9	<3.1	45.6	71	56-125
sec-Butylbenzene	63.9	<3.1	43.2	68	50-126
tert-Butylbenzene	63.9	<3.1	45.1	71	56-127
trans-1,2-Dichloroethene	63.9	<3.1	63.9	100	53-157

Spike Recovery: 1 out of 31 outside limits.

12/05/2018 1:45

MSV - FORM VIII VOA-1

MSV INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Pace Analytical - New York SDG No.: 7068600 Contract: PART 375 SOIL-10/19

Sample ID : 10859950CCV Date Analyzed: 10/28/2018

Instrument ID: 70MSV2 GC Column: Col 1 Time Analyzed: 07:54

Lab File ID: 102818.B\S61341.D

		AREA CBZ	RT	AREA DCB	RT	AREA DFB	RT	AREA PFB	RT
12 HOUR STD		156803	7.033	107611	9.299	300603	4.468	177311	3.885
UPPER LIMIT		313606	7.533	215222	9.799	601206	4.968	354622	4.385
LOWER LIMIT		78401.5	6.533	53805.5	8.799	150301.5	3.968	88655.5	3.385
LAB SAMPLE ID	SAMPLE NO.								
409796	409796BLANK	125677	7.031	84403	9.29	236682	4.465	144444	3.883
409797	409797LCS	123468	7.031	87265	9.297	231882	4.46	139027	3.883
409798	409798MS	102201	7.027	57027	9.292	178349	4.449	97407	3.866
7068600001	SED-01	91962	7.032	53118*	9.297	174611	4.46	96733	3.878
7068600002	SED-02	89342	7.031	53491*	9.297	167001	4.454	93575	3.871

CBZ = Chlorobenzene-D5 (IS)

DCB = 1,4-Dichlorobenzene-d4 (IS)

DFB = 1,4-Difluorobenzene (IS)

PFB = Pentafluorobenzene (IS)

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

* Values outside of QC Limits

MSV - FORM VI VOA-2

MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York Instrument ID: 70MSV2 GC Column: Col 1 SDG No.: 7068600

Calibration Date(s): 10/17/2018 10/17/2018 Calibration Time(s): 14:18 16:34

LAB FILE ID

CAL1 = 101718.B\S61201.D CAL2 = 101718.B\S61202.D CAL3 = 101718.B\S61203.D

CAL4 = 101718.B\S61204.D CAL5 = 101718.B\S61205.D CAL6 = 101718.B\S61206.D

CAL7 = 101718.B\S61207.D

COMPOUND	CURVE TYPE	CAL7	%RSD	R2	A1	A2	A3
Acetone	Linear	0.13849		0.99822	-0.0003317	0.13775	
Benzene	Averaged	2.06689	4.31050			2.13330	
2-Butanone (MEK)	Averaged	0.32398	6.23284			0.31931	
n-Butylbenzene	Averaged	5.70740	9.24663			6.17866	
sec-Butylbenzene	Averaged	6.46414	8.82191			7.03778	
tert-Butylbenzene	Averaged	4.03607	7.11244			4.33091	
Carbon tetrachloride	Averaged	0.62166	10.81732			0.66700	
Chlorobenzene	Averaged	2.42696	5.04880			2.48739	
Chloroform	Averaged	1.41441	5.55999			1.41696	
1,2-Dichlorobenzene	Averaged	2.00485	7.30030			1.99675	
1,3-Dichlorobenzene	Averaged	2.35741	5.79001			2.45864	
1,4-Dichlorobenzene	Averaged	2.33289	5.34701			2.41116	
1,1-Dichloroethane	Averaged	1.54596	4.28533			1.63505	
1,2-Dichloroethane	Averaged	0.68389	4.70048			0.68363	
1,1-Dichloroethene	Averaged	0.88013	5.57094			0.88041	
cis-1,2-Dichloroethene	Averaged	0.93293	7.38760			0.92503	
trans-1,2-Dichloroethene	Averaged	0.94523	6.53891			0.94120	
1,4-Dioxane (p-Dioxane)	Averaged	0.00301	18.37380			0.00227	
Ethylbenzene	Averaged	1.30528	6.19192			1.38979	
Methylene Chloride	Averaged	0.84548	2.17256			0.87063	
Methyl-tert-butyl ether	Averaged	1.58019	5.66636			1.54644	
n-Propylbenzene	Averaged	7.44808	7.69538			8.39479	
Tetrachloroethene	Averaged	0.94091	5.85094			1.00243	
Toluene	Averaged	1.88751	5.20661			1.97578	
1,2,4-Trichlorobenzene	Averaged	1.03716	10.85761			0.97529	
1,1,1-Trichloroethane	Averaged	0.69781	3.43203			0.74651	
Trichloroethene	Averaged	0.49491	3.78016			0.51307	
1,2,4-Trimethylbenzene	Averaged	4.47010	6.83017			4.89649	
1,3,5-Trimethylbenzene	Averaged	4.55551	7.70031			5.07928	
Vinyl chloride	Averaged	1.29262	4.82753			1.38996	
m&p-Xylene	Averaged	1.49242	8.09304			1.73703	
o-Xylene	Averaged	1.62577	6.59442			1.64489	
4-Bromofluorobenzene (S)	Averaged	0.76701	1.90693			0.75058	
1,2-Dichloroethane-d4 (S)	Averaged	0.23345	3.60724			0.22256	
Toluene-d8 (S)	Averaged	2.34867	1.07547			2.36083	

RF20.005

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

12/05/2018 1:45

Data File: \\v70wintarget\chem\70msv2.i\101718.B\S61209.D
Report Date: 21-Nov-2018 10:23

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	REVIEW C
	77	Tetrachloroethene	166	6.204	6.204	(0.883)	214798	50.0000	48.9	
	78	1,3-Dichloropropane	76	6.348	6.348	(0.903)	231331	50.0000	48.1	
	79	2-Hexanone	43	6.420	6.420	(0.914)	77915	50.0000	47.2	
	81	n-Butyl acetate	43	6.504	6.504	(1.460)	35038	50.0000	30.5	
	80	Dibromochloromethane	129	6.516	6.516	(0.927)	143729	50.0000	48.4	
	82	1,2-Dibromoethane (EDB)	107	6.624	6.624	(1.487)	117554	50.0000	47.8	
*	83	Chlorobenzene-d5 (IS)	82	7.027	7.027	(1.000)	219026	50.0000		
	84	Chlorobenzene	112	7.057	7.057	(1.004)	514528	50.0000	47.2	
	86	Ethylbenzene	106	7.141	7.141	(1.016)	296023	50.0000	48.6	
	85	1,1,1,2-Tetrachloroethane	131	7.147	7.147	(1.017)	166361	50.0000	47.1	
	88	n-Nonane	43	7.225	7.225	(1.028)	433496	50.0000	43.1(Q)	
	87	m&p-Xylene	106	7.255	7.255	(1.032)	743410	100.000	97.7	
	89	o-Xylene	106	7.634	7.634	(1.086)	340494	50.0000	47.2	
	90	Styrene	104	7.664	7.664	(1.091)	571560	50.0000	48.5	
	91	Bromoform	173	7.850	7.850	(1.117)	68475	50.0000	48.8	
	92	Isopropylbenzene (Cumene)	105	7.982	7.982	(0.859)	913450	50.0000	47.2	
$	93	4-Bromofluorobenzene (S)	95	8.168	8.168	(1.162)	164105	50.0000	49.9	
	94	Bromobenzene	156	8.295	8.295	(0.893)	164164	50.0000	47.8	
	95	1,1,2,2-Tetrachloroethane	83	8.367	8.367	(0.900)	141725	50.0000	45.6	
	98	n-Propylbenzene	91	8.379	8.379	(0.902)	1114562	50.0000	46.6	
	96	1,2,3-Trichloropropane	110	8.403	8.403	(0.904)	33450	50.0000	46.8	
	97	trans-1,4-Dichloro-2-butene	53	8.433	8.433	(0.908)	34079	50.0000	46.7	
	99	2-Chlorotoluene	91	8.475	8.475	(0.912)	724091	50.0000	47.1	
	100	4-Ethyltoluene	105	8.499	8.499	(0.915)	924805	50.0000	48.4	
	103	n-Decane	43	8.529	8.529	(1.214)	283523	50.0000	36.9(Q)	
	101	1,3,5-Trimethylbenzene	105	8.571	8.571	(0.922)	707770	50.0000	49.0	
	102	4-Chlorotoluene	91	8.595	8.595	(0.925)	694646	50.0000	47.7	
	104	tert-Butylbenzene	119	8.865	8.865	(0.954)	578669	50.0000	47.0	
	105	Pentachloroethane	167	8.913	8.913	(0.959)	99944	50.0000	49.3	
	106	1,2,4-Trimethylbenzene	105	8.931	8.931	(0.961)	675656	50.0000	48.5	
	107	sec-Butylbenzene	105	9.082	9.082	(0.977)	951296	50.0000	47.5	
	109	d-Limonene	136	9.166	9.166	(1.304)	59561	50.0000	51.2	
	108	1,3-Dichlorobenzene	146	9.214	9.214	(0.992)	326550	50.0000	46.7	
	110	p-Isopropyltoluene	119	9.238	9.238	(0.994)	745380	50.0000	49.3	
outlow →	111	1,4-Dichlorobenzene-d4 (IS)	152	9.292	9.292	(1.000)	142288	50.0000		
	112	1,4-Dichlorobenzene	146	9.316	9.316	(1.003)	320290	50.0000	46.7	
	113	1,2,3-Trimethylbenzene	105	9.346	9.346	(1.006)	627427	50.0000	47.1	
	114	Benzyl chloride	91	9.472	9.472	(1.019)	253684	50.0000	54.8	
	115	trans-Decalin	138	9.550	9.550	(1.028)	188998	50.0000	46.1	
	116	1,4-Diethylbenzene	119	9.616	9.616	(1.035)	424133	50.0000	49.4	
	117	n-Butylbenzene	91	9.640	9.640	(1.038)	865907	50.0000	49.2	
	118	1,2-Dichlorobenzene	146	9.676	9.676	(1.041)	268781	50.0000	47.3	
	119	n-Undecane	43	9.712	9.712	(1.045)	158859	50.0000	35.5(Q)	
	120	cis-Decalin	138	10.103	10.103	(1.087)	153067	50.0000	48.3	
	121	1,2,4,5-tetramethylbenzene	119	10.397	10.397	(1.119)	489084	50.0000	49.2	
	122	1,2-Dibromo-3-chloropropane	75	10.482	10.482	(1.128)	16625	50.0000	46.6	
	123	n-Dodecane	43	10.800	10.800	(1.162)	66766	50.0000	36.9(Q)	
	124	1,2,4-Trichlorobenzene	180	11.263	11.263	(1.212)	140821	50.0000	50.7	
	125	Hexachloro-1,3-butadiene	225	11.389	11.389	(1.226)	87748	50.0000	50.9(Q)	
	126	Naphthalene	128	11.509	11.509	(1.239)	229426	50.0000	48.6	
	127	1,2,3-Trichlorobenzene	180	11.761	11.761	(1.266)	108885	50.0000	50.4	

SAMPLE NO.

BLANK

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL-10/19
Date Received: 10/22/2018 13:13
Matrix: Solid SDG No.: 7068600
Date Extracted: 10/22/2018 10:41
Lab Sample ID: 405617
Date Analyzed: 10/23/2018 17:35
Lab File ID: 8270-102318.B\R47058.D
Initial wt/vol: 15 g Final wt/vol: 1 mL Dilution: 1
Instrument: 70MSS3 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
3102-33-8	3-Penten-2-one, (E)-	2.758	249	N J
119-61-9	Benzophenone	8.303	No EDD Data Found	N J
	Unknown	4.035	239	J
	Unknown	5.568	No EDD Data Found	J
	Unknown	5.867	No EDD Data Found	J
	Unknown Ketone	3.34	176	J
	Unknown Ketone	4.217	259	J
	Unknown Ketone	3.175	5200	J
	Unknown Ketone	3.608	73200	J
	Unknown Ketone	4.521	No EDD Data Found	J

Flag samples accordingly

FORM III INORGANIC-1
BLANKS

Lab Name: Pace Analytical - New York SDG No. : 7068600 Contract : PART 375 SOIL-10/19

Method Blank Matrix: Solid Instrument ID: 70ICP3

Method Blank Concentration Units: mg/kg

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)								Method Blank	
	10/24/2018 12:40	C	10/24/2018 12:46	C	10/24/2018 13:00	C	10/24/2018 13:13	C	406473	C
Arsenic	6.3	U	6.3	U	6.3	U	6.3	U	<0.50	U
Barium	0.13	J	0.10	U	1.7	J	0.11	J	<10.1	U
Beryllium	0.020	U	0.020	U	0.020	U	0.020	U	<0.25	U
Cadmium	0.23	U	0.23	U	0.23	U	0.23	U	<0.13	U
Chromium	0.60	U	0.60	U	0.60	U	0.60	U	0.052	J
Copper	3.1	U	3.1	U	3.1	U	3.1	U	0.16	J
Lead	2.7	U	2.7	U	2.7	U	2.7	U	<0.25	U
Manganese	0.10	U	0.10	U	2.1	J	0.26	J	0.10	J
Nickel	1.2	U	-1.4	J	1.2	U	1.2	U	<2.0	U
Selenium	6.7	U	6.7	U	6.7	U	6.7	U	<0.50	U
Silver	1.0	U	1.0	U	1.0	U	1.0	U	<0.50	U
Zinc	2.8	U	2.8	U	2.8	U	2.8	U	0.73	J

SAMPLE NO.

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

10970686PEM

Lab Name: Pace Analytical - New York
Analysis Date: 11/26/2018 Time: 19:06

Contract: PART 375 SOIL-10/19
SDG: 7070589

Instrument ID: 70GCS3 GC Column: Col 2
Init. Calib. Date(s): 11/26/2018 11/27/2018

Lab File ID: 112618-2.B\312819.D
Init. Calib. Time(s): 16:06 07:07

4,4'-DDT % 18.83*

Endrin %Breakdown: 29.37*

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

10970675PEM

Lab Name: Pace Analytical - New York
Analysis Date: 11/26/2018 Time: 19:06

Contract: PART 375 SOIL-10/19
SDG: 7070589

Instrument ID: 70GCS3 GC Column: Col 1
Init. Calib. Date(s): 11/26/2018 11/26/2018

Lab File ID: 112618-1.B\312819.D
Init. Calib. Time(s): 19:21 20:49

4,4'-DDT % 14.30

Endrin %Breakdown: 21.78*

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

10971359PEM

Lab Name: Pace Analytical - New York
Analysis Date: 11/27/2018 Time: 07:22

Contract: PART 375 SOIL-10/19
SDG: 7070589

Instrument ID: 70GCS3 GC Column: Col 1
Init. Calib. Date(s): 11/26/2018 11/26/2018

Lab File ID: 112618-1.B\312869.D
Init. Calib. Time(s): 19:21 20:49

4,4'-DDT %: 89.62*
Endrin %Breakdown: 5.25

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

SED-01

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: PART 375 SOIL-10/19

Lab Sample ID: 7070589001 SDG No.: 7070589 Date(s) Analyzed: 11/14/2018

Instrument ID (1): 70GCS3 Instrument ID (2): 70GCS3 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
Aldrin	1	4.15533	8.9	105
	2	4.01617	3.7	

SN

SAMPLE NO.

SED-01

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: PART 375 SOIL-10/19

Lab Sample ID: 7070589001 SDG No.: 7070589 Date(s) Analyzed: 11/14/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.40487	472	34.2
	2	3.96153	334	

J

SAMPLE NO.

SED-02

10A - FORM X PCB-1
IDENTIFICATION SUMMARY

Lab Name: Pace Analytical - New York Contract: PART 375 SOIL-10/19

Lab Sample ID: 7070589002 SDG No.: 7070589 Date(s) Analyzed: 11/14/2018

Instrument ID (1): 70GCS2 Instrument ID (2): 70GCS2 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
PCB-1248 (Aroclor 1248)	1	5.40528	237	44.4
	2	3.96028	151	

J

Appendix C

Validator Qualifications

KENNETH R. APPLIN
Geochemist/Data Validator

Ph.D., Geochemistry and Mineralogy, The Pennsylvania State University

M.S., Geochemistry and Mineralogy, The Pennsylvania State University

B.A., Geological Sciences, SUNY at Geneseo, NY

Dr. Applin has over 35 years of experience working with the geochemistry of natural waters. His prior experience includes working as an Assistant Professor of Geology at the University of Missouri-Columbia and as Chief Hydrogeologist and Geochemist with a leading engineering firm in Rochester, NY. In 1993, he established KR Applin and Associates, a small consulting business that focuses on the geochemistry of natural waters, especially as applied to problems involving the contamination of groundwater and surface water.

Dr. Applin is also an experienced analytical data validator and has provided data validation services since 1994 to a variety of clients performing brownfield cleanup projects, hazardous waste remediation, groundwater monitoring at solid waste facilities, and other projects requiring third-party data validation. Dr. Applin has several years of hands-on experience with the laboratory analysis of natural waters and has successfully completed the USEPA Region II certification courses for performing inorganic and organic analytical data validation.

MICHAEL K. PERRY
Chemist/Data Validator

B.S. Chemistry, Georgia State University, Atlanta, GA

A.A.S., Chemical Technology, Alfred State College, Alfred, NY

Mr. Perry has over 30 years of experience in the analytical laboratory business. During his early career, he spent several years as a laboratory analyst performing the analysis of soil, water, and air samples for inorganic and organic chemical parameters. During his last 20 years in the environmental laboratory business, he managed and directed two major analytical laboratories in Rochester, NY. His management responsibilities included oversight of the daily operations of the lab, staff training and supervision, the selection, purchase, and maintenance of analytical instruments, the introduction of new laboratory methods, analytical quality assurance and quality control, data acquisition and management, and other business-related activities.

Mr. Perry has an extensive working knowledge of the methods and procedures used for sampling and analyzing both inorganic and organic analytes in soil, water, and air. He is an accomplished laboratory chemist and is familiar with the analytical methods and procedures established under the USEPA Contract Laboratory Protocols (CLP), the NYSDEC Analytical Services Protocols (ASP), and the NYSDOH Environmental Laboratory Approval Program (ELAP).

DATA USABILITY SUMMARY REPORT (DUSR)

31 Water Street
Jamestown, NY
NYSDEC BCP # C907046

SDG: 7069845

1 soil sample

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

January 2019

EDU Environmental Data Usability 10028 Deer Park Dr. Dansville, NY 14437 585.991.9156

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APPENDIX A Validated Analytical Results
APPENDIX B Laboratory QC Documentation
APPENDIX C Validator Qualifications

Tables

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Table 4-2 Quality Control Criteria for Validating Laboratory Analytical Data

Summaries of Validated Results
Table 6-1 VOCs
Table 6-2 SVOCs
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Table 6-5 Metals
Table 6-6 TCN
Table 6-7 Hexavalent Chromium

REVIEWER'S NARRATIVE
SDG 7069845

The data associated with this Sample Delivery Group (SDG) 7069845, analyzed by Pace Analytical Services, LLC, Melville, NY have been reviewed in accordance with assessment criteria provided by the New York State Department of Environmental Conservation following the review procedures provided in the USEPA Functional Guidelines for evaluating organic and inorganic data.

All analytical results reported by the laboratory are considered valid and acceptable except results that have been qualified as rejected, "R". Results qualified as estimated "J", or as non-detects, "U", are considered usable for the purpose of evaluating water and/or soil quality. However, these qualifiers indicate that the accuracy and/or precision of the analytical result is questionable. A summary of all data that have been qualified and the reasons for qualification are provided in the following data usability summary report (DUSR).

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

Reviewer's Signature: Michael K. Perry Date: 1/16/19

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	31 Water St. Jamestown, NY
SAMPLING DATE:	October 31, 2018
SAMPLE TYPE:	1 soil sample
LABORATORY:	Pace Analytical Services, LLC Melville, NY
SDG No.:	7069845

2.0 INTRODUCTION

This data usability summary report (DUSR) was prepared in accordance with guidance provided by the New York State Department of Environmental Conservation (NYSDEC). The DUSR is based on a review and evaluation of the laboratory analytical data package. Specifically, the NYSDEC guidance recommends review and evaluation of the following elements of the data package:

- Completeness of the data package as defined under the requirements of the NYSDEC Analytical Services Protocols (ASP) Category B or the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) deliverables,
- Compliance with established analyte holding times,
- Adherence to quality control (QC) limits and specifications for blanks, instrument tuning and calibration, surrogate recoveries, spike recoveries, laboratory duplicate analyses, and other QC criteria,
- Adherence to established analytical protocols,
- Conformance of data summary sheets with raw analytical data, and
- Use of correct data qualifiers.

Data deficiencies, analytical protocol deviations, and quality control problems identified using the review criteria above and their effect on the analytical results are discussed in this report.

3.0 SAMPLE AND ANALYSIS SUMMARY

The data package consists of analytical results for one soil sample collected on October 31, 2018. These samples were analyzed for the Part 375 list of Volatile Organic Compounds, Semi-volatile Organic Compounds, PCBs, Pesticides, TCN, Hexavalent Chromium, and Metals.

All analyses were performed by Pace Analytical Services, LLC, Melville, NY and analyzed as SDG 7069845. The analytical results were provided in NYSDEC ASP Category B format, which includes all raw analytical data and laboratory QC data.

4.0 GUIDANCE DOCUMENTS AND DATA REVIEW CRITERIA

The guidance documents used for reviewing laboratory quality control (QC) data and assigning data qualifiers (flags) to analytical results are listed in Table 4-1. The QC limits established in the documents applicable to this data review were used to assess the quality of the analytical results. In some cases, however, QC limits established internally by the laboratory were taken into account to determine data quality.

The QC criteria considered for assessing the usability of the reported analytical results provided for each analyte type (i.e. VOCs, SVOCs, metals, etc.) are listed in Table 4-2. These criteria may vary with the analytical method utilized by the laboratory. These criteria comply with the guidance recommended in Section 2.0 above.

5.0 DATA VALIDATION QUALIFIERS

The letter qualifiers (flags) used to define data usability are described briefly below. These letters are assigned by the data validator to analytical results having questionable accuracy and/or precision as determined by reviewing the laboratory QC data associated with the analytical results.

TABLE 4-1

DATA VALIDATION GUIDANCE DOCUMENTS

Analyte Type	Validation Guidance
VOCs	USEPA, 2008, Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry; SW-846 Method 8260B; SOP # HW-24, Rev. 2. USEPA, 2008, Statement of Work for Organic Analysis of Low/Medium Concentration of Volatile Organic Compounds SOM01.2; SOP HW-33, Rev. 2.
SVOCs	USEPA, 2007, Statement of Work for Organic Analysis of Low/Medium Concentration of Semivolatile Organic Compounds SOM01.2; SOP HW-35, Rev. 1.
Pesticides/PCBs	USEPA, 2006, CLP Organics Data Review and Preliminary Review (CLP/SOW OLMO 4.3); SOP # HW-6, Rev. 14, Part C.
Metals	USEPA, 2006, Validation of Metals for the Contract Laboratory Program (CLP) based on SOW ILMO 5.3 (SOP Revision 13), SOP # HW-2, Rev. 13.
Gen Chemistry	NYSDEC, 2005, Analytical Services Protocols (ASP)
VOCs (Ambient air)	USEPA, 2006, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canister by Method TO-15; SOP # HW-31, Rev. 4.

TABLE 4-2

QUALITY CONTROL CRITERIA USED FOR VALIDATING
LABORATORY ANALYTICAL DATA

VOCs	SVOCs	Pesticides/PCBs	Metals	Gen Chemistry	Method TO-15
Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg
Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition	Sample Condition
Holding Time	Holding Time	Holding Time	Holding Time	Holding Times	Holding Time
System Monitoring Compounds	Surrogate Recoveries	Surrogate Recoveries	Initial/Continuing Calibration	Calibration	Canister Certification
Lab Control Sample	Lab Control Sample	Matrix Spikes	CRDL Standards	Lab Control Samples	Lab Control Sample
Matrix Spikes	Matrix Spikes	Blanks	Blanks	Blanks	Instrument Tuning
Blanks	Blanks	Instrument Calibration & Verification	Interference Check Sample	Spike Recoveries	Blanks
Instrument Tuning	Instrument Tuning	Analyte ID	Spike Recoveries	Lab Duplicates	Initial Calibration & System Performance
Internal Standards	Internal Standards	Lab Qualifiers	Lab Duplicate		Daily Calibration
Initial Calibration	Initial Calibration	Field Duplicate	Lab Control Sample		Field Duplicate
Continuing Calibration	Continuing Calibration		ICP Serial Dilutions		
Lab Qualifiers	Lab Qualifiers		Lab Qualifiers		
Field Duplicate	Field Duplicate		Field Duplicate		

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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

JN The analyte is considered to be "presumptively present." The associated numerical value represents its *approximate* concentration.

The validated analytical results are attached to this report. Validation qualifiers (flags) are indicated using red ink. Data sheets having qualified data are signed and dated by the data reviewer.

6.0 RESULTS OF THE DATA REVIEW

The results of the data review are summarized in Tables 6-1 through 6-7. The tables list the samples where QC criteria were found to exceed acceptable limits and the actions taken to qualify the associated analytical results.

7.0 TOTAL USABLE DATA

For SDG 70669845 one soil sample was analyzed and results were reported for 93 analytes. One result was rejected. Even though some results were flagged with a "J" as estimated, all other results (99 %) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

Table 6-1 VOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
TP-01 (6-8)	Acetone Vinyl Chloride 2-Butanone Toluene cis-1,2-Dichloroethene	J -detects	Lab Duplicate > 20 % RPD	Data is estimated
TP-01 (6-8)	1,4-Dioxane	R	Initial calibration RRF < 0.005	Based on the new low responders rule from SOM2.1, the RRF <0.005 is used
TP-01 (6-8)	Acetone	J -detects/UJ non-detects	CCV % D > QC limit	Data is estimated

Table 6-2 SVOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
TP-01 (6-8)	TICs detected in Method blank	TIC < 5X blank value, R TIC	Tentatively Identified Compounds were detected in the method blank	TICs were rejected

Table 6-3 Pesticides

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
TP-01 (6-8)	b-BHC	JN	>25 % D between dual column analysis	Matrix interference suspected
TP-01 (6-8)	4,4'-DDT Endrin	none	PEM for 4,4'DDT and Endrin > 20 %	No data was affected since it was non-detect

Table 6-4 PCBs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-5 Metals

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
TP-01 (6-8)	Mercury	J detect	Matrix Spike Rec < 70 %	Data should be considered estimated

Table 6-6 TCN

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-7 Hexavalent Chromium

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

ACRONYMS

BSP	Blank Spike
CCAL	Continuing Calibration
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
%D	Percent Difference
ICAL	Initial Calibration
ICB	Initial Calibration Blank
IS	Internal Standard
LCS	Laboratory Control Sample
MS/MSD	Matrix Spike/Matrix Spike Duplicate
QA	Quality Assurance
QC	Quality Control
%R	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
%RSD	Percent Relative Standard Deviation
TAL	Target Analyte List (metals)
TCL	Target Compound List (organics)

Appendix A

Validated Analytical Results



Analytical Data Package

Prepared by:

Pace Analytical Services

Pace Project No.: 7069845

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

December 14, 2018

Jason Brydges
BE3 Environmental
1270 Niagara St
Buffalo, NY 14213

RE: Project: PART 375 SOIL 10/31
Pace Project No.: 7069845

Dear Jason Brydges:
Enclosed are the analytical results for sample(s) received by the laboratory on November 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Report revised 123/12/18 with updates qualifiers

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Murphy
james.murphy@pacelabs.com
(518)860-9724
Project Manager

Enclosures

cc: Alex Brennen, BE3 Corp

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE SUMMARY

Project: PART 375 SOIL 10/31
Pace Project No.: 7069845

Lab ID	Sample ID	Matrix	Date Collected	Date Received
7069845001	TP-01 (6-8)	Solid	10/31/18 11:40	11/02/18 10:15

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: PART 375 SOIL 10/31
Pace Project No.: 7069845

Date: December 14, 2018

BLANK (Lab ID: 413941)

- Method 8081B: The breakdown for DDT exceeded acceptance limits due to sample matrix.
- Method 8081B: The breakdown for endrin exceeded acceptance limits due to sample matrix.

LCS (Lab ID: 413942)

- Method 8081B: The breakdown for DDT exceeded acceptance limits due to sample matrix.
- Method 8081B: The breakdown for endrin exceeded acceptance limits due to sample matrix.

LCS (Lab ID: 413943)

- Method 8081B: The breakdown for DDT exceeded acceptance limits due to sample matrix.
- Method 8081B: The breakdown for DDT exceeded acceptance limits due to sample matrix.

MS (Lab ID: 414011)

- Method 8081B: The breakdown for DDT exceeded acceptance limits due to sample matrix.
- Method 8081B: The breakdown for endrin exceeded acceptance limits due to sample matrix.

MSD (Lab ID: 414012)

- Method 8081B: The breakdown for DDT exceeded acceptance limits due to sample matrix.
- Method 8081B: The breakdown for endrin exceeded acceptance limits due to sample matrix.

DUP (Lab ID: 416700)

- Method 8260C: The internal standard response exceeded the lower acceptance limits and confirmed by reanalysis. Results may be biased high.

TP-01 (6-8) (Lab ID: 7069845001)

- Method 8260C: The internal standard response exceeded the lower acceptance limits and confirmed by reanalysis. Results may be biased high.
- Method 8081B: The breakdown for DDT exceeded acceptance limits due to sample matrix.
- Method 8081B: The breakdown for endrin exceeded acceptance limits due to sample matrix.

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB WO#: 7069845 Number or

7069845

Company: BE3	Billing Information: ← SAME
Address: 1270 Niagara St	
Report To: jbrydges@be3corp.com	Email To:
Copy To: abrennen@be3corp.com	Site Collection Info/Address: 31 Water St.
Customer Project Name/Number: 31 Water St. RI	State: NY County/City: Jamestown Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 716 946 9133 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Alex Brennen	Purchase Order # : Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Standard 10 day Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **

Lab Project Manager: [redacted]

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	VOC +TICs	SVOC +TICs	Inorg							Lab Sample # / Comments
TP-01 (6-8)																		
TP-01 (6-8)	SL	G	10/31	1140				2	X	X								001

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y (N)	NA
Custody Signatures Present	(Y) N	NA
Collector Signature Present	(Y) N	NA
Bottles Intact	(Y) N	NA
Correct Bottles	(Y) N	NA
Sufficient Volume	(Y) N	NA
Samples Received on Ice	(Y) N	NA
VOA - Headspace Acceptable	Y N	(NA)
USDA Regulated Soils	Y N	(NA)
Samples in Holding Time	(Y) N	NA
Residual Chlorine Present	Y N	(NA)
Cl Strips:		
Sample pH Acceptable	Y N	(NA)
pH Strips:		
Sulfide Present	Y N	(NA)
Lead Acetate Strips:		

LAB USE ONLY:

Customer Remarks / Special Conditions / Possible Hazards:

See Quote for specific analytes

Type of Ice Used: Wet Blue Dry (None)

Packing Material Used: LOOSE

Radchem sample(s) screened (<500 cpm): Y N (NA)

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #: 7273 7313 1365 [redacted]

Samples received via: (FEDEX) UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y (N) NA

Therm ID#: IR09

Cooler 1 Temp Upon Receipt: 3.6 °C

Cooler 1 Therm Corr. Factor: 0.0 °C

Cooler 1 Corrected Temp: 3.6 °C

Comments: [redacted]

Relinquished by/Company: (Signature)	Date/Time: 1730/10/31/18	Received by/Company: (Signature)	Date/Time: 11/2/18 1615
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

41 of 1559

Page 41 of 41

SAMPLE NO.

TP-01 (6-8)

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York | Contract: PART 375 SOIL 10/31

Date Received: 11/02/2018 10:15 | Matrix: Solid | SDG No.: 7069845

Date Extracted: 11/07/2018 10:00 | Lab Sample ID: 7069845001

Date Analyzed: 11/07/2018 13:23 | Lab File ID: 110718.B\S61487.D

Initial wt/vol: 2.4 g | Final wt/vol: 5 mL | Dilution: 1 | Instrument: 70MSV2 | Percent Moisture: 46.8%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
67-64-1	Acetone	453 J	
71-43-2	Benzene	<7.8	U
78-93-3	2-Butanone (MEK)	85.0	
104-51-8	n-Butylbenzene	<7.8	U
135-98-8	sec-Butylbenzene	5.9	J
98-06-6	tert-Butylbenzene	<7.8	U
56-23-5	Carbon tetrachloride	<7.8	U
108-90-7	Chlorobenzene	<7.8	U
67-66-3	Chloroform	<7.8	U
95-50-1	1,2-Dichlorobenzene	<7.8	U
541-73-1	1,3-Dichlorobenzene	<7.8	U
106-46-7	1,4-Dichlorobenzene	<7.8	U
75-34-3	1,1-Dichloroethane	<7.8	U
107-06-2	1,2-Dichloroethane	<7.8	U
75-35-4	1,1-Dichloroethene	<7.8	U
156-59-2	cis-1,2-Dichloroethene	16.6	
156-60-5	trans-1,2-Dichloroethene	<7.8	U
123-91-1	1,4-Dioxane (p-Dioxane)	~~<196~~ R	U
100-41-4	Ethylbenzene	6.1	J
75-09-2	Methylene Chloride	<7.8	U
1634-04-4	Methyl-tert-butyl ether	<7.8	U
103-65-1	n-Propylbenzene	<7.8	U
127-18-4	Tetrachloroethene	<7.8	U
108-88-3	Toluene	40.6	
120-82-1	1,2,4-Trichlorobenzene	<7.8	U
71-55-6	1,1,1-Trichloroethane	<7.8	U
79-01-6	Trichloroethene	11.8	
95-63-6	1,2,4-Trimethylbenzene	<7.8	U
108-67-8	1,3,5-Trimethylbenzene	<7.8	U
75-01-4	Vinyl chloride	16.9	
1330-20-7	Xylene (Total)	12.7	J

12/03/2018 12:21

MRP 1/16/19

SAMPLE NO.

TP-01 (6-8)

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL 10/31
Date Received: 11/02/2018 10:15
Matrix: Solid SDG No.: 7069845
Date Extracted: 11/05/2018 12:19
Lab Sample ID: 7069845001
Date Analyzed: 11/05/2018 22:47
Lab File ID: 8270-110518.B\R47296.D
Initial wt/vol: 15.05 Final wt/vol: 1 mL Dilution: 5
Instrument: 70MSS3 Percent Moisture: 46.8%

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
141-79-7	3-Penten-2-one, 4-methyl-	3.058	~~13200~~ R	N J
108-88-3	Toluene (CVOA)	2.834	~~2210~~ R	N J
	Unknown Ketone	3.428	~~223000~~ R	J
	Unknown Ketone	3.222	~~2310~~ R	J
	Unknown Ketone	16.213	2390	J
	Unknown Ketone	16.513	2560	J

12/03/2018 12:23

MKP 1/16/19

SAMPLE NO.

TP-01 (6-8)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York | Contract: PART 375 SOIL 10/31
Date Received: 11/02/2018 10:15 | Matrix: Solid | SDG No.: 7069845
Date Extracted: 11/05/2018 12:22 | Lab Sample ID: 7069845001
Date Analyzed: 11/09/2018 14:44 | Lab File ID: 110918-1.B\600148.D
Initial wt/vol: 15.09 g | Final wt/vol: 5 mL | Dilution: 1 | Instrument: 70GCS6 | Percent Moisture: 46.8%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
309-00-2	Aldrin	<3.2	U
319-84-6	alpha-BHC	<3.2	U
319-86-8	delta-BHC	<3.2	U
58-89-9	gamma-BHC (Lindane)	<3.2	U
5103-71-9	alpha-Chlordane	<3.2	U
72-54-8	4,4'-DDD	<6.2	U
72-55-9	4,4'-DDE	<6.2	U
50-29-3	4,4'-DDT	<6.2	U
60-57-1	Dieldrin	<6.2	U
959-98-8	Endosulfan I	<3.2	U
1031-07-8	Endosulfan sulfate	<6.2	U
72-20-8	Endrin	<6.2	U
76-44-8	Heptachlor	<3.2	U

SAMPLE NO.

TP-01 (6-8)

PESTICIDES - FORM I SVOA-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA

Lab Name: Pace Analytical - New York | Contract: PART 375 SOIL 10/31
Date Received: 11/02/2018 10:15 | Matrix: Solid | SDG No.: 7069845
Date Extracted: 11/05/2018 12:22 | Lab Sample ID: 7069845001
Date Analyzed: 11/09/2018 14:44 | Lab File ID: 110918-2.B\600148.D
Initial wt/vol: 15.09 g | Final wt/vol: 5 mL | Dilution: 1 | Instrument: 70GCS6 | Percent Moisture: 46.8%

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/kg	Q
319-85-7	beta-BHC	5.9 JN	
33213-65-9	Endosulfan II	<6.2	U

MKP 1/16/19

SAMPLE NO.

TP-01 (6-8)

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - New York SDG No. : 7069845 Contract: PART 375 SOIL 10/31

Lab Sample ID: 7069845001 Percent Moisture: 46.8

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7439-97-6	Mercury	0.34	U	mg/kg	1	11/09/2018 13:00

L

mrp 1/16/19

Appendix B

Laboratory QC Documentation

MSV - FORM III VOA-1

SOLID VOLATILE SAMPLE/DUPLICATE RECOVERY

Lab Name: Pace Analytical - New York
Date Extracted: 11/07/2018
Instrument 70MSV2
Lab Sample ID: TP-01 (6-8)

Duplicate Sample No: 7069845001DUP
Date Analyzed: 11/07/2018
Lab File ID: 110718.B\S61491.D
SDG No.: 7069845

COMPOUND	SAMPLE CONCENTRATION (ug/kg)	DUPLICATE CONCENTRATION (ug/kg)	RPD	RPD LIMITS
1,1,1-Trichloroethane	<7.8	<8.0		0-20
1,1-Dichloroethane	<7.8	<8.0		0-20
1,1-Dichloroethene	<7.8	<8.0		0-20
1,2,4-Trichlorobenzene	<7.8	<8.0		0-20
1,2,4-Trimethylbenzene	<7.8	<8.0		0-20
1,2-Dichlorobenzene	<7.8	<8.0		0-20
1,2-Dichloroethane	<7.8	<8.0		0-20
1,3,5-Trimethylbenzene	<7.8	<8.0		0-20
1,3-Dichlorobenzene	<7.8	<8.0		0-20
1,4-Dichlorobenzene	<7.8	<8.0		0-20
1,4-Dioxane (p-Dioxane)	<196	<200		0-20
2-Butanone (MEK)	85.0	147	54	0-20
Acetone	453	771	52	0-20
Benzene	<7.8	<8.0		0-20
Carbon tetrachloride	<7.8	<8.0		0-20
Chlorobenzene	<7.8	<8.0		0-20
Chloroform	<7.8	<8.0		0-20
Ethylbenzene	6.1J	6.7J		0-20
Methyl-tert-butyl ether	<7.8	<8.0		0-20
Methylene Chloride	<7.8	<8.0		0-20
Tetrachloroethene	<7.8	<8.0		0-20
Toluene	40.6	51.0	23	0-20
Trichloroethene	11.8	11.2	5	0-20
Vinyl chloride	16.9	12.8	28	0-20
Xylene (Total)	12.7J	12.9J		0-20
cis-1,2-Dichloroethene	16.6	13.2	23	0-20
n-Butylbenzene	<7.8	<8.0		0-20
n-Propylbenzene	<7.8	<8.0		0-20
sec-Butylbenzene	5.9J	7.9J		0-20
tert-Butylbenzene	<7.8	<8.0		0-20
trans-1,2-Dichloroethene	<7.8	<8.0		0-20

RPD: 5 out of 6 outside limits.

MSV - FORM VI VOA-2

MSV INITIAL CALIBRATION DATA

Lab Name: Pace Analytical - New York Instrument ID: 70MSV2 GC Column: Col 1 SDG No.: 7069845

Calibration Date(s): 10/17/2018 10/17/2018 Calibration Time(s): 14:18 16:34

LAB FILE ID

CAL1 = 101718.B\S61201.D CAL2 = 101718.B\S61202.D CAL3 = 101718.B\S61203.D

CAL4 = 101718.B\S61204.D CAL5 = 101718.B\S61205.D CAL6 = 101718.B\S61206.D

CAL7 = 101718.B\S61207.D

COMPOUND	CURVE TYPE	CAL7	%RSD	R2	A1	A2	A3
Acetone	Linear	0.13849		0.99822	-0.0003317	0.13775	
Benzene	Averaged	2.06689	4.31050			2.13330	
2-Butanone (MEK)	Averaged	0.32398	6.23284			0.31931	
n-Butylbenzene	Averaged	5.70740	9.24663			6.17866	
sec-Butylbenzene	Averaged	6.46414	8.82191			7.03778	
tert-Butylbenzene	Averaged	4.03607	7.11244			4.33091	
Carbon tetrachloride	Averaged	0.62166	10.81732			0.66700	
Chlorobenzene	Averaged	2.42696	5.04880			2.48739	
Chloroform	Averaged	1.41441	5.55999			1.41696	
1,2-Dichlorobenzene	Averaged	2.00485	7.30030			1.99675	
1,3-Dichlorobenzene	Averaged	2.35741	5.79001			2.45864	
1,4-Dichlorobenzene	Averaged	2.33289	5.34701			2.41116	
1,1-Dichloroethane	Averaged	1.54596	4.28533			1.63505	
1,2-Dichloroethane	Averaged	0.68389	4.70048			0.68363	
1,1-Dichloroethene	Averaged	0.88013	5.57094			0.88041	
cis-1,2-Dichloroethene	Averaged	0.93293	7.38760			0.92503	
trans-1,2-Dichloroethene	Averaged	0.94523	6.53891			0.94120	
1,4-Dioxane (p-Dioxane)	Averaged	0.00301	18.37380			0.00227	
Ethylbenzene	Averaged	1.30528	6.19192			1.38979	
Methylene Chloride	Averaged	0.84548	2.17256			0.87063	
Methyl-tert-butyl ether	Averaged	1.58019	5.66636			1.54644	
n-Propylbenzene	Averaged	7.44808	7.69538			8.39479	
Tetrachloroethene	Averaged	0.94091	5.85094			1.00243	
Toluene	Averaged	1.88751	5.20661			1.97578	
1,2,4-Trichlorobenzene	Averaged	1.03716	10.85761			0.97529	
1,1,1-Trichloroethane	Averaged	0.69781	3.43203			0.74651	
Trichloroethene	Averaged	0.49491	3.78016			0.51307	
1,2,4-Trimethylbenzene	Averaged	4.47010	6.83017			4.89649	
1,3,5-Trimethylbenzene	Averaged	4.55551	7.70031			5.07928	
Vinyl chloride	Averaged	1.29262	4.82753			1.38996	
4-Bromofluorobenzene (S)	Averaged	0.76701	1.90693			0.75058	
1,2-Dichloroethane-d4 (S)	Averaged	0.23345	3.60724			0.22256	
Toluene-d8 (S)	Averaged	2.34867	1.07547			2.36083	

RFL0.005

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

12/03/2018 12:21

SAMPLE NO.

10912403CCV

MSV - FORM VII VOA-1
MSV CONTINUING CALIBRATION DATA

Lab Name: Pace Analytical - New York | Calibration Date: 11/07/2018 | Time: 08:46

Instrument ID: 70MSV2 | GC Column: Col 1 | Init. Calib. Date(s): 10/17/2018 | 10/17/2018

Lab File ID: 110718.B\S61481.D | Init. Calib. Time(s): 14:18 | 16:34

SDG No.: 7069845

COMPOUND	CURVE	RRF or Amount	RRF or Amount	MIN RRF	%D	MAX %D
Acetone	Linear	50	37.47005	0.1000	-25.0599	20.0000
Benzene	Averaged	2.13330	2.17423	0.5000	1.9187	20.0000
2-Butanone (MEK)	Averaged	0.31931	0.30956	0.1000	-3.0536	20.0000
n-Butylbenzene	Averaged	6.17866	5.66003	0.1000	-8.3940	20.0000
sec-Butylbenzene	Averaged	7.03778	6.04890	0.1000	-14.0510	20.0000
tert-Butylbenzene	Averaged	4.33091	3.67847	0.1000	-15.0649	20.0000
Carbon tetrachloride	Averaged	0.66700	0.75635	0.1000	13.3962	20.0000
Chlorobenzene	Averaged	2.48739	2.26342	0.5000	-9.0039	20.0000
Chloroform	Averaged	1.41696	1.29813	0.2000	-8.3860	20.0000
1,2-Dichlorobenzene	Averaged	1.99675	1.86029	0.4000	-6.8340	20.0000
1,3-Dichlorobenzene	Averaged	2.45864	2.27921	0.6000	-7.2979	20.0000
1,4-Dichlorobenzene	Averaged	2.41116	2.22287	0.5000	-7.8091	20.0000
1,1-Dichloroethane	Averaged	1.63505	1.60052	0.2000	-2.1118	20.0000
1,2-Dichloroethane	Averaged	0.68363	0.65064	0.1000	-4.8256	20.0000
1,1-Dichloroethene	Averaged	0.88041	0.70603	0.1000	-19.8063	20.0000
cis-1,2-Dichloroethene	Averaged	0.92503	0.74470	0.1000	-19.4945	20.0000
trans-1,2-Dichloroethene	Averaged	0.94120	0.75777	0.1000	-19.4897	20.0000
1,4-Dioxane (p-Dioxane)	Averaged	0.00227	0.00074	0.0100	-67.2897	20.0000
Ethylbenzene	Averaged	1.38979	1.24975	0.1000	-10.0769	20.0000
Methylene Chloride	Averaged	0.87063	0.69127	0.1000	-20.6011	20.0000
Methyl-tert-butyl ether	Averaged	1.54644	1.37905	0.1000	-10.8244	20.0000
n-Propylbenzene	Averaged	8.39479	7.16251	0.1000	-14.6790	20.0000
Tetrachloroethene	Averaged	1.00243	1.10123	0.2000	9.8566	20.0000
Toluene	Averaged	1.97578	2.01621	0.4000	2.0467	20.0000
1,2,4-Trichlorobenzene	Averaged	0.97529	1.08889	0.2000	11.6474	20.0000
1,1,1-Trichloroethane	Averaged	0.74651	0.81960	0.1000	9.7912	20.0000
Trichloroethene	Averaged	0.51307	0.51429	0.2000	0.2377	20.0000
1,2,4-Trimethylbenzene	Averaged	4.89649	4.25320	0.1000	-13.1377	20.0000
1,3,5-Trimethylbenzene	Averaged	5.07928	4.49516	0.1000	-11.5000	20.0000
Vinyl chloride	Averaged	1.38996	1.32529	0.1000	-4.6524	20.0000
4-Bromofluorobenzene (S)	Averaged	0.75058	0.74505	0.1000	-0.7375	20.0000
1,2-Dichloroethane-d4 (S)	Averaged	0.22256	0.23665	0.1000	6.3339	20.0000
Toluene-d8 (S)	Averaged	2.36083	2.13392	0.1000	-9.6115	20.0000

The values for compounds reported as total are based on a summation of the components within the laboratory information management system.

12/03/2018 12:22

SAMPLE NO.

BLANK

MSSV FULL SCAN - FORM I SVOA-TIC-1
SEMI-VOLATILE ORGANICS ANALYSIS DATA
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL 10/31
Date Received: 11/05/2018 10:16
Matrix: Solid SDG No.: 7069845
Date Extracted: 11/05/2018 12:19
Lab Sample ID: 413939
Date Analyzed: 11/05/2018 20:30
Lab File ID: 8270-110518.B\R47291.D
Initial wt/vol: 15 g Final wt/vol: 1 mL Dilution: 1
Instrument: 70MSS3 Percent Moisture:

CAS NO.	COMPOUND	RT	EST. CONC. UNITS: ug/kg	Q
1599-67-3	1-Docosene	11.536	162	N J
3102-33-8	3-Penten-2-one, (E)-	2.676	275	N J
141-79-7	3-Penten-2-one, 4-methyl-	3.087	6510	N J
119-61-9	Benzophenone	8.228	511	N J
13048-33-4	Hexamethylene diacrylate	7.882	291	N J
	Unknown	3.963	259	J
	Unknown	5.796	244	J
	Unknown Aldol Condensate	4.145	198	J
	Unknown Amide	12.899	306	J
	Unknown Ketone	3.258	229	J
	Unknown Ketone	3.522	76400	J
	Unknown Ketone	5.496	166	J
	Unknown Organic Acid	6.384	194	J
	Unknown Organic Acid	7.946	150	J
1454-85-9	n-Heptadecanol-1	10.032	161	N J
57-10-3	n-Hexadecanoic acid	9.539	208	N J

Flag data accordingly

12/14/2018 3:50

MXP 1/16/19

SAMPLE NO.

11046399PEM

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: Pace Analytical - New York
Analysis Date: 11/09/2018 Time: 15:38

Contract: PART 375 SOIL 10/31
SDG: 7069845

Instrument ID: 70GCS6 GC Column: Col 1
Init. Calib. Date(s): 10/30/2018 10/30/2018

Lab File ID: 110918-1.B\600152.D
Init. Calib. Time(s): 17:42 19:03

4,4'-DDT % 83.64*

Endrin %Breakdown: 80.75*

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

PESTICIDES - FORM VII PEST-1
PESTICIDE CALIBRATION VERIFICATION SUMMARY

SAMPLE NO.
11046400PEM

Lab Name: Pace Analytical - New York
Contract: PART 375 SOIL 10/31
Instrument ID: 70GCS6 GC Column: Col 2
Lab File ID: 110918-2.B\600152.D

Analysis Date: 11/09/2018 Time: 15:38
SDG: 7069845
Init. Calib. Date(s): 10/30/2018 10/30/2018
Init. Calib. Time(s): 17:29 20:11

4,4'-DDT % 32.16*

Endrin %Breakdown: 7.17

QC LIMITS:
4,4'-DDT breakdown must be less than or equal to 15%
Endrin breakdown must be less than or equal to 15%

SAMPLE NO.

TP-01 (6-8)

10A - FORM X PEST-1
IDENTIFICATION SUMMARY

Lab Pace Analytical - New York Contract: PART 375 SOIL 10/31

Lab Sample ID: 7069845001 SDG No.: 7069845 Date(s) 11/09/2018

Instrument ID 70GCS6 Instrument ID 70GCS6 Dilution Factor: 1

ANALYTE	COL	RT	CONCENTRATION UNITS: ug/kg	RPD
beta-BHC	1	3.603	42.3	151 JN
	2	3.77717	5.9	

SAMPLE NO.

416909MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - New York SDG No. : 7069845 Contract: PART 375 SOIL 10/31

Matrix: Solid Basis: Dry Parent Sample ID: TP-01 (6-8)

Percent Moisture: 46.8

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Mercury	mg/kg	80-120	0.59	0.34	0.36	68*

* Spike Recovery outside QC Limits

12/04/2018 13:10

Appendix C

Validator Qualifications

KENNETH R. APPLIN
Geochemist/Data Validator

Ph.D., Geochemistry and Mineralogy, The Pennsylvania State University

M.S., Geochemistry and Mineralogy, The Pennsylvania State University

B.A., Geological Sciences, SUNY at Geneseo, NY

Dr. Applin has over 35 years of experience working with the geochemistry of natural waters. His prior experience includes working as an Assistant Professor of Geology at the University of Missouri-Columbia and as Chief Hydrogeologist and Geochemist with a leading engineering firm in Rochester, NY. In 1993, he established KR Applin and Associates, a small consulting business that focuses on the geochemistry of natural waters, especially as applied to problems involving the contamination of groundwater and surface water.

Dr. Applin is also an experienced analytical data validator and has provided data validation services since 1994 to a variety of clients performing brownfield cleanup projects, hazardous waste remediation, groundwater monitoring at solid waste facilities, and other projects requiring third-party data validation. Dr. Applin has several years of hands-on experience with the laboratory analysis of natural waters and has successfully completed the USEPA Region II certification courses for performing inorganic and organic analytical data validation.

MICHAEL K. PERRY
Chemist/Data Validator

B.S. Chemistry, Georgia State University, Atlanta, GA

A.A.S., Chemical Technology, Alfred State College, Alfred, NY

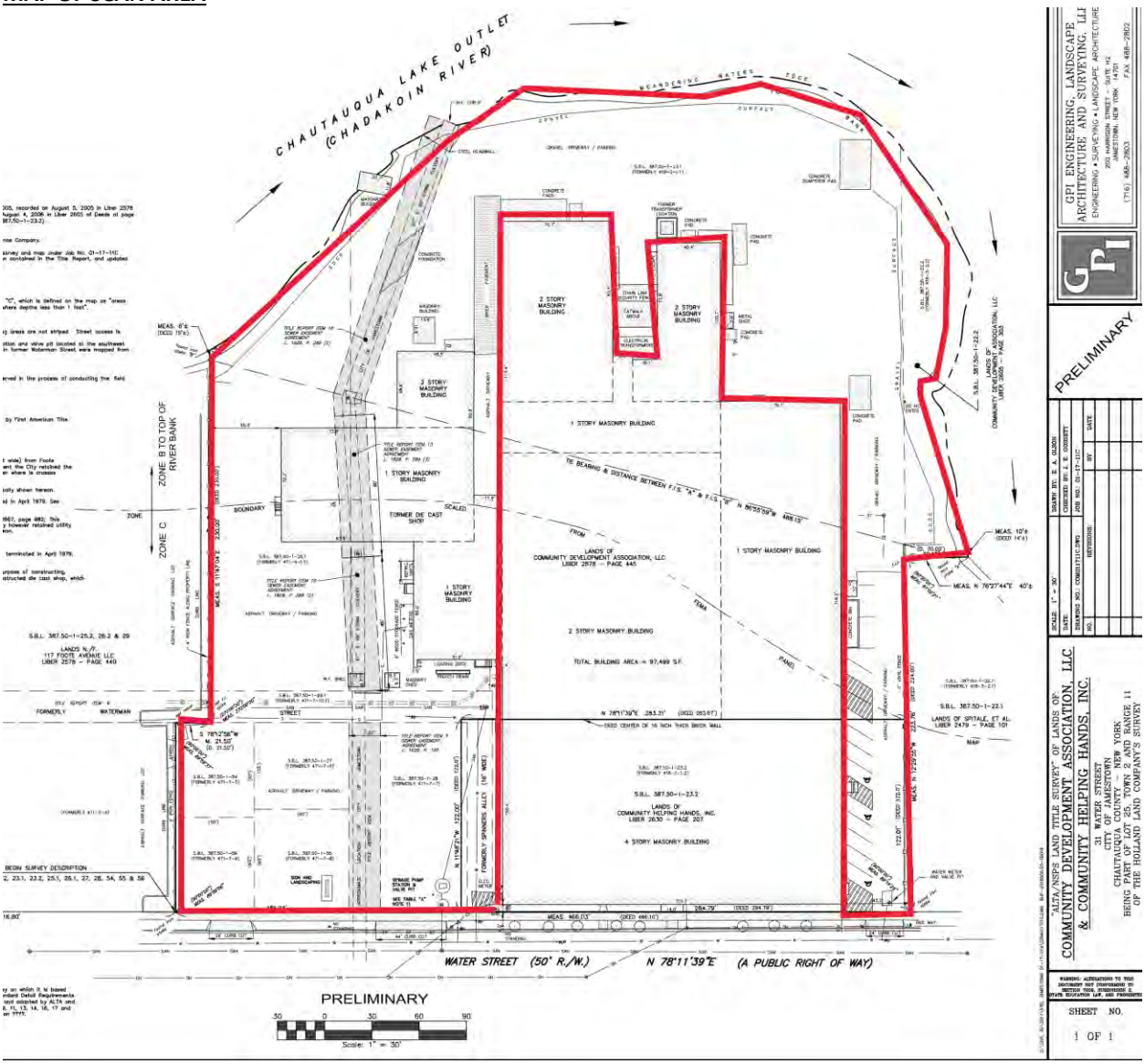
Mr. Perry has over 30 years of experience in the analytical laboratory business. During his early career, he spent several years as a laboratory analyst performing the analysis of soil, water, and air samples for inorganic and organic chemical parameters. During his last 20 years in the environmental laboratory business, he managed and directed two major analytical laboratories in Rochester, NY. His management responsibilities included oversight of the daily operations of the lab, staff training and supervision, the selection, purchase, and maintenance of analytical instruments, the introduction of new laboratory methods, analytical quality assurance and quality control, data acquisition and management, and other business-related activities.

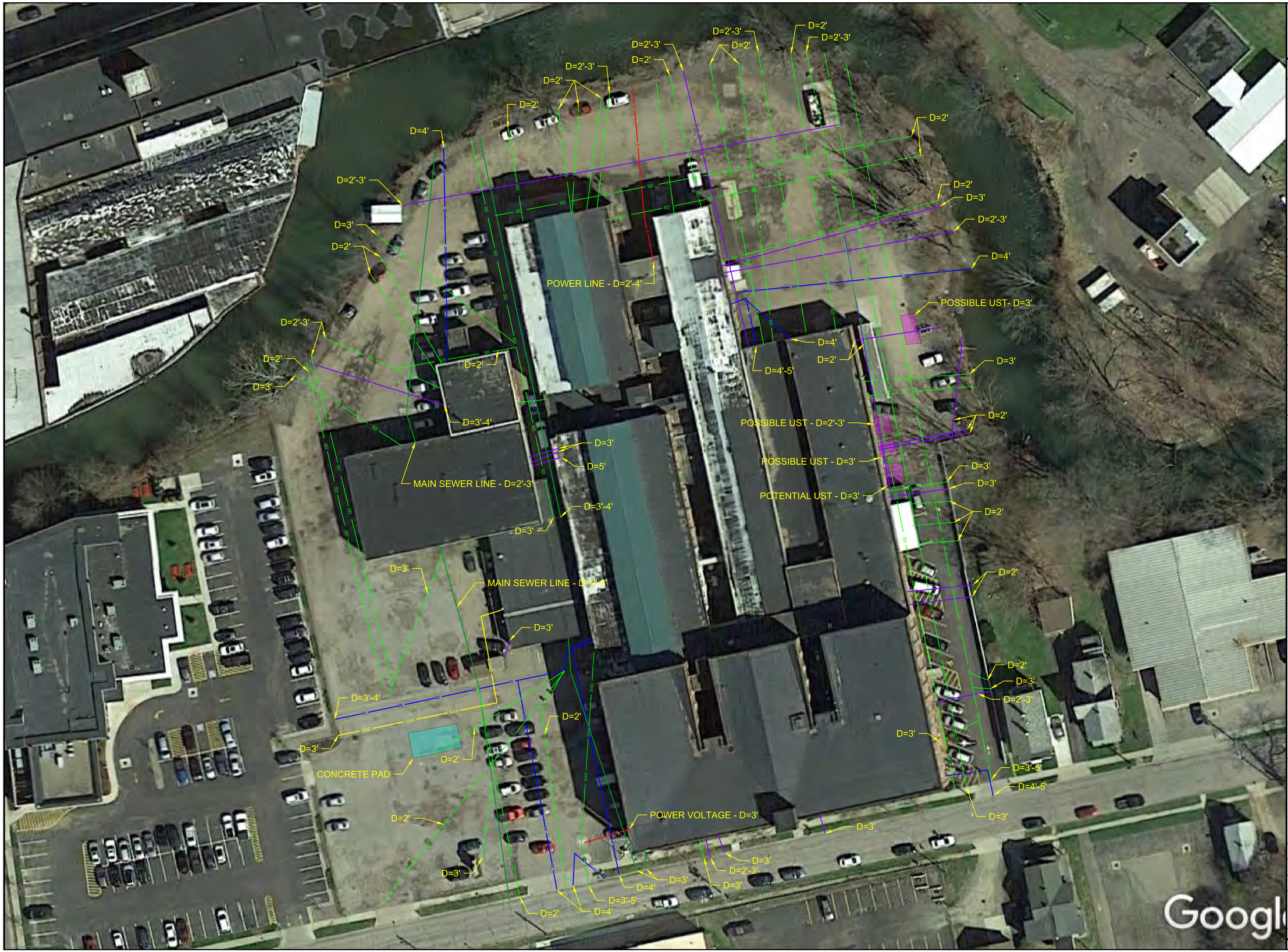
Mr. Perry has an extensive working knowledge of the methods and procedures used for sampling and analyzing both inorganic and organic analytes in soil, water, and air. He is an accomplished laboratory chemist and is familiar with the analytical methods and procedures established under the USEPA Contract Laboratory Protocols (CLP), the NYSDEC Analytical Services Protocols (ASP), and the NYSDOH Environmental Laboratory Approval Program (ELAP).

APPENDIX J

GEOPHYSICAL SURVEY RESULTS

MAP OF SCAN AREA





SUANNE DREES

PLOT DATE: 11/28/2018

GPRS SUBSURFACE SCANNING SOLUTIONS

TERMS AND CONDITIONS

1. THIS DRAWING IS INTENDED TO DOCUMENT MARKINGS AND COMMENTS AS INTERPRETED BY GROUND PENETRATING RADAR SYSTEMS (GPRS). GPRS PROVIDES UTILITY LOCATION SERVICES IN ACCORDANCE WITH ASCE STANDARD 38-02, QUALITY LEVEL "B" THAT INCLUDES GROUND PENETRATING RADAR (GPR) SERVICES. GPR IS A GOOD TOOL FOR UTILITY LOCATING; HOWEVER, IT IS NOT WITHOUT ITS LIMITATIONS. IN GENERAL, THE MAXIMUM DEPTH PENETRATION IS 3-7' DEEP, HOWEVER, THIS DEPTH IS COMPLETELY DEPENDENT ON THE COMPOSITION OF SOILS IN THE AREA BEING SURVEYED. CUSTOMER FULLY UNDERSTANDS THAT FOR EVERY FOOT IN DEPTH PENETRATION WITH THE GPR EQUIPMENT, THE PIPE/UTILITY MUST BE AT LEAST 1" IN DIAMETER TO BE LOCATED. FOR EXAMPLE, AT 4 FEET IN DEPTH, THE PIPE/UTILITY MUST BE 4" OR LARGER TO BE DETECTED. SOME TYPES OF PIPES ARE VERY DIFFICULT TO LOCATE, SUCH AS CLAY OR CONCRETE PIPES, AND EMPTY PVC TYPE PIPES. GIVEN THESE FACTORS, GPRS CANNOT GUARANTEE IT WILL BE ABLE TO LOCATE ALL UTILITIES ON SITE.
2. GPRS DOES NOT PROVIDE LAND SURVEY, OR CIVIL ENGINEERING DATA COLLECTION OR DOCUMENTATION.
3. COLLECTED INFORMATION IS SUBJECT TO GPS/GIS HAND HELD MAPPING UNIT ACCURACY (SUB-METER).
4. OUR GOAL IS TO PROVIDE YOU WITH THE ANSWERS TO YOUR QUESTIONS REGARDING WHAT LIES BELOW THE SURFACE, AND WHERE IT IS LOCATED. CUSTOMER ACKNOWLEDGES IT UNDERSTANDS THAT OUR ANSWERS ARE BASED UPON THE QUALITY OF THE DATA RETRIEVED AND ARE WHAT GPRS BELIEVES LIES BELOW THE SURFACE. THE DECISION TO PROCEED WITH CUTTING, CORING, DRILLING, BORING, OR EXCAVATION IS LEFT ENTIRELY UP TO THE CUSTOMER.
5. GPRS DOES NOT ACCEPT LIABILITY FOR AN INACCURATE INTERPRETATION OR ANY OTHER REASON, AND CUSTOMER AGREES TO RELEASE AND INDEMNIFY GPRS AND ITS OWNERS AND AGENTS FROM ALL LOSSES AND DAMAGES FROM ALL ALLEGED NEGLIGENCE AND/OR CONTRACT CLAIMS BY CUSTOMER OR ANY THIRD PARTY. THESE TERMS AND CONDITIONS SUPERSEDE ANY/ALL OTHER TERMS AND CONDITIONS EITHER ORAL OR WRITTEN.

LEGEND

- CONCRETE PAD
- UST
- E — ELECTRICAL
- W — WATER
- SD — STORM SEWER
- SAN — SANITARY SEWER
- SEWER
- GAS — GAS
- UNKNOWN
- E — ELEC MH
- S — SAN SEWER MH
- CLEAN OUT
- CB — CATCH BASIN
- D — STORM SEWER MH
- VALVE
- FH — HYDRANT
- POINT
- D= — DEPTH

18GP715 - 100604-BE3 CORP - 31 WATER ST.DWG

GPRS SCAN RESULTS

PLAN - AERIAL

DRAWN BY	
SUANNE DREES	
TECHNICIAN	
SEAN PARKER SEAN.PARKER@GPRSINC.COM 860-426-5693	
DATE	11/28/2018
DRAWING NO.	1 REV.

APPENDIX K

SWPPP

STORMWATER POLLUTION PREVENTION PLAN

Gateway Lofts
31 Water Street

City of Jamestown
Chautauqua County, NY

Prepared for:

Southern Tier Environments for Living, Inc.
715 Central Avenue
Dunkirk, NY 14048

Prepared by:

Greenman-Pedersen, Inc.
4950 Genesee Street, Suite 100
Buffalo, New York 14225

GPI No. BUF-2018012.00

June 5, 2019
Revised November 2019
Revised June 1, 2020

REVISION SCHEDULE

This storm water pollution prevention plan (SWPPP) should be revised and updated to address changes in site conditions, new or revised government regulations, and additional on-site storm water pollution controls.

All revisions to the SWPPP must be documented on the SWPPP Revision Documentation Form. The authorized facility representative who approves the SWPPP should be an individual at or near the top of the facility's management organization, such as the president, vice president, construction manager, site supervisor, or environmental manager. The signature of this representative attests that the SWPPP revision information is true and accurate. Previous authors and facility representatives are not responsible for the revisions.

SWPPP Revision Documentation Form

Date	Author	Description

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2. Site Soil Map
3. EAF Map

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B. SPDES General Permit, GP-0-20-001
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E Pretreatment Chamber Calculations
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G. Site Inspection Log Book
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102 Demo Plan
103 Utility Plan
104 Grading Plan
105 Landscape Plan
106 Site Details
107 Site Details
107a Site Details
108 Erosion & Sediment Control Plan

1.0 INTRODUCTION

1.1 REPORT OBJECTIVES

The purpose of this plan is to document the means and methods for controlling runoff and pollutants from the Project Site during and after construction activities. The principal objective of a SWPPP is to comply with the State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities by planning and implementing the following practices:

Reduction or elimination of erosion and sediment loading to waterbodies during construction;
Control of the impact of stormwater runoff on the water quality of the receiving waters;
Control of the increased volume and peak rate of runoff during and after construction; and
Maintenance of stormwater controls during and after construction.

The SWPPP is prepared in accordance with the following guidance documents:

New York State Standards and Specifications for Erosion and Sediment Control, New York State Department of Environmental Conservation, November 2016;
New York State Stormwater Management Design Manual, New York State Department of Environmental Conservation, January 2015; and *SPDES General Permit for Stormwater Discharges from Construction Activities, GP-0-20-001.*

A copy of *SPDES General Permit for Stormwater Discharges from Construction Activities, GP-0-20-001*, is provided in Appendix B. A copy of the Notice of Intent (NOI) form is provided in Appendix C.

1.2 CONTACT INFORMATION

Client referred to herein as “the Owner” and selected Contractor(s), shall maintain a copy of this SWPPP on site for the duration of the construction process.

For additional information regarding this project, contact the following:

Greenman-Pedersen, Inc.

Ms. Jessica L. Boudreau, P.E.
SWPPP Preparer
4950 Genesee St., Suite 100
Buffalo, NY 14225

Phone: (716) 633-4844
Fax: (716) 633-4940

Southern Tier Environments for Lining, Inc.

Mr. Thomas Whitney
Executive Director
715 Central Avenue
Dunkirk, NY 14048

Phone: (716) 366-7792

1.3 GENERAL PROJECT DESCRIPTION

The proposed Gateway Lofts project is a multifamily affordable / supportive housing project located at 31, 53, and 55 Water Street, Jamestown, New York. The project is located in the Western New York Regional council in the County Seat of Chautauqua. The project is a collaboration among STEL, Community Helping Hands, Inc. ("CHH") a local nonprofit services provider and co-developer of the project, the YWCA of Jamestown, NY, the Chautauqua County's Department of Mental Health and Department of Corrections and the Office of NYS Senator Catharine Young.

The project involves the adaptive reuse of a vacant portion of an underutilized, environmentally challenged former industrial property into quality, safe and affordable housing in an area where such housing options have been historically limited. The project will transform the vacant portion of the 4-story historic, former Worsted Mills building, into apartments for the target population. It will complement existing building uses such as the Community Helping Hands Thrift Store (an employer for the target population), E2CC BOCES Adult Education program, soup kitchen, and the Mental Health Association. The project will add housing to a building in which a number of essential support services are currently being provided to the target population.

The redevelopment project of the existing Gateway Center and create 110 units of affordable housing targeting families <=30% median income through 60% median income. The unit mix will include: 4 Studios, 71 one bedrooms, 21 two bedrooms and 14 three bedrooms. Site improvements will be made on the exterior of the building including a walkway along the Chadakoin River with seating areas, parking lot improvements, and proposed open space in the vacinity of 53 and 55 Water Street.

This project is a redevelopment project with a decrease in impervious area. In accordance with the NYS Stormwater design manual, runoff quantity calculations, channel protection volume (CPv) and runoff reduction volume (RRv) is not required when there is not an increase in impervious area and subsequently peak runoff from the site. Water Quality has been provided in accordance with Chapter 9 of the NYS Stormwater Design manual and has been provided with the use of a hydrodynamic separator as described herein.

Runoff from this site will discharge into the Chadakoin River running west to east along the northern property line. The entire site is fully developed and contains no wetlands.

Stormwater facilities on site are designed in accordance with the New York State Stormwater Design Manual and the requirements of SPDES General Permit for Stormwater Discharges from Construction Activities, GP-0-20-001 and City of Jamestown stormwater standards. The owner shall be responsible for long term maintenance of stormwater facilities.

2.0 EXISTING SITE CONDITIONS

2.1 LOCATION

The project site is located in the City of Jamestown, Chautauqua County, New York. The project location in relation to major roads is provided on Exhibit 1 – Site Location Map.

2.2 SITE DESCRIPTION

31, 53 and 55 Water Street are located on the south side of the Chadakoin River approximately 300 feet east of the intersection of Foote Street and Water Street in the City of Jamestown, NY. The existing sites totals 5.58 acres and is comprised of a large building with parking lot and two residential units. The existing parking lot does not contain any grassed islands and is paved/graveled right up to the side property lines. A small amount of green space exists along the bank of the Chadakoin River along the rear property line. Stormwater runoff from the parking areas sheet flows into the Chadakoin River. The building's rooftops connect into a large 6'x9' C.M.P.A. culvert running south to north along the western portion of the property.

The existing site contains a FEMA mapped 100 year floodplain. The building however is above the 100 year elevation and a LOMA has been accepted by FEMA removing the building from the 100 year floodplain.

The site has been accepted into the Brownfield Clean-up Program (BCP) and will be remediated during the proposed site construction. Approval of the BCP is being coordinated with the NYSDEC through BE3 Corp PanAmerican. Any requirements to the proposed site under the BCP and SHIPO review will be incorporated into the site design accordingly.

2.3 SOILS

The onsite watershed soils consist of 100% Type 'D'.

Exhibit 4 - Site Soil Map, depicts the various soil types identified within the project area, both on-site and offsite. The soil map and soil types were obtained from the USDA Natural Resources Conservation Service, Web Soil Survey and the Soil Survey of Erie County, New York. The results are summarized below:

SOIL SYMBOL	SOIL NAME & DESCRIPTION	HYDROLOGIC SOIL GROUP
Ur	Urban Land	D

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow filtration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural conditions are in group D are assigned to dual classes.

2.4 HISTORIC PLACES

The existing building located at 31 Water street is of historic value and has been listed as eligible for listing on the State Register of Historic Places. Tax credits are being given to project sponsor to restore certain aspects of the building during the redevelopment project. See Exhibit 3 for a map showing the CRIS and EAF mapping of the project site.

2.5 STORMWATER RUNOFF

Rainfall on previous areas will initially infiltrate into the ground surface. During more intense rainfall events stormwater on the soil surface may saturate the soil and subsequently run off into the manmade and naturally occurring ponds, drainage ditches and channels in the area. This site generally sheets flows across the parking lot and into the Chadakoin River.

3.0 PROPOSED SITE CONDITIONS

3.1 GENERAL SITE IMPROVEMENTS

The land use characteristics of the watershed area for existing and post developed site conditions are summarized in the following table:

Watershed Subarea (I.D)		Impervious Area Building (ac.)	Impervious Area (ac.)	Open Space (ac.)
On-Site	Existing	2.30	2.65	0.63
	Proposed	2.08	2.16	1.34

Approximately 3.80+/- acres of the 5.58+/- acre property will be disturbed during this project. The majority of the disturbance is associated with parking lot improvements which include the installation of grassed/landscaped islands and resurfacing. The footprint of the building remains generally the same however two interior courtyards are proposed for the building as well as a small green roof area. The adjacent residential properties will be demolished and transformed into additional parking and a large open space area for recreational use. The above chart shows that there will be a reduction of impervious area on the site by 0.71 acres. As noted above, since this project is a redevelopment project with a decrease in impervious area, water quantity,

channel protection volume and runoff reduction volume are not required in accordance with the NYSDEC SPDES permit. Water quality will be provided on the site by the use of a manufactured pretreatment unit. The unit will be installed just before the connection to the large arch pipe currently onsite as shown on the attached paving and drainage plan.

4.0 WATER QUANTITY & CHANNEL PROTECTION

In accordance with the New York State Stormwater Design Manual and the NYSDEC SPDES permit, water quantity and channel protection is not required for redevelopment projects with a decrease in impervious area. This is partially because the runoff generated from the site with a decrease in impervious area in inherently less. This project will remove approximately XX acres of impervious area from the property converting it to grass or landscaped areas.

5.0 RUNOFF REDUCTION REQUIREMENTS (RRv)

Runoff Reduction volume is defined as the reduction of the total water quality volume by the application of green infrastructure techniques and SMP's that aim to replicate pre-development hydrology. Along with a good site plan that reduces disturbance and minimizes impervious area, the following techniques as described by the NYS Stormwater Management Design Manual, may be implemented to achieve runoff reduction.

- Conservation of Natural Areas
- Sheetflow to Riparian Buffers or filter strips
- Vegetated Open Swales
- Tree Planting/Tree box
- Disconnection of Rooftop Runoff
- Stream Daylighting
- Rain Gardens
- Green Roofs
- Stormwater Planters
- Rain Tanks/Cisterns
- Porous Pavement
- Standard SMPs with RRv Capacity; Infiltration Practices, Bioretention Practice, Dry Swale (Open Channel Practice)

In accordance with the New York State Stormwater Design Manual Section 9.2B and the NYSDEC SPDES permit, runoff reduction is not required for redevelopment projects. This project however is proposing the installation of a green roof. The roof will be located on the 2nd floor and will total approximately 1,850 sq.ft.

6.0 STORMWATER QUALITY

Once construction is complete, the site will have 0.50 acres of additional pervious area to help the water quality. Based on the New York State stormwater Design Manual Section 9.2B IV, water quality required for the site is as follows:

Total Site Area = 5.58 acres
Disturbance Area = 3.80 acres
Existing Imp. Area within dist. area = 3.17 acres (83.4% impervious)
Proposed Imp. Area within dist. area = 2.46 acres (64.7% impervious= 18.7% IC reduction)

Total Water Quality Volume required by alternate practice:
WQv = (25 - (%IC reduction + %WQv by standard practice + % runoff reduction)) * 3
WQv = (25- (18.7 + 0 +0))*3
WQv by alt. practice = 18.9%

Total WQv required = (P*Rv*A)/12*18.9%; where Rv = 0.05+0.009(64.7%) = 0.632
WQv required = ((1.0*0.632*3.80)/12)* 18.9%
WQv Required = 0.200 ac-ft * 18.9%
WQv Required = 0.038 ac-ft

The WQv will be provided by a manufactured pretreatment unit as described below.

The specific model for each unit is as follows:

Unit Number	Model
PreTreat 1	Unistorm 5R

Pretreatment chambers are to be manufactured by Environment 21, LLC or approved equal. Stormwater Quality Volume calculations, and pre-treatment chamber manufacturer's calculations and maintenance recommendations can be found in Appendix E.

7.0 EROSION CONTROL MEASURES

7.1 GENERAL

Structural erosion and sediment control measures are classified as either temporary or permanent, according to how they are used. Temporary structural measures shall be used during construction to prevent offsite sedimentation. Permanent structural measures shall be utilized following construction and shall be implemented to convey surface water safely to the existing drainage ways present in the pre-development condition. The permanent structural measures shall remain in-place and continue to function after the completion of construction. General construction notes and maintenance plan for implementing the temporary and permanent stormwater erosion control structures during and after construction have been developed for the site. The proposed temporary and permanent stormwater and erosion control structures for the project are depicted on the attached drawings.

The owner or operator shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the trained contractor. The owner or operator shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed. Erosion control measures shall be inspected weekly by a qualified professional experienced in erosion and sedimentation control techniques until the site is completely stabilized. If more than 5 acres are disturbed at any one time the inspection frequency by a qualified professional shall increase to twice weekly. Town approval is required to disturb more than 5 acres at any one time. Inspections of erosion control structures are described under Section 8.0 – Site Assessment and Inspection, and shall be in accordance with *SPDES General Permit for Stormwater Discharges from Construction Activities, GP-0-20-001*. The Owner is responsible for filing a Notice of Intent (NOI) Form with NYSDEC prior to commencement of

construction activities for the project site. A copy of the signed NOI and the NYSDEC acknowledgement letter is provided as Appendix C.

7.2 TEMPORARY STRUCTURE MEASURES

This subsection describes the specific temporary control measures that are to be implemented and additional measures that may be added during construction to reduce and/or eliminate erosion and sedimentation during the construction phase of this project.

7.2.1 EARTH DIKE

A temporary berm or ridge of compacted soil, located in such a manner as to channel water to a desired location. The purpose of an earth dike is to direct runoff to a sediment trapping device, thereby reducing the potential for erosion and off site sedimentation. Earth dikes can also be used for diverting clean water away from disturbed areas.

7.2.2 TEMPORARY SWALE

A temporary excavated drainage way. The purpose of a temporary swale is to prevent runoff from entering disturbed areas by intercepting and diverting it to a stabilized outlet to intercept sediment laden water and divert it to a sediment trapping device.

7.2.3 PERIMETER DIKE/SWALE

A temporary of soil excavated from an adjoining swale located along the perimeter of the site or disturbed area. The purpose of a perimeter dike/swale is to prevent off site storm runoff from entering a disturbed area to prevent sediment laden storm runoff from leaving the construction site or disturbed area.

7.2.4 SILT FENCE

A temporary barrier of geotextile fabric (filter cloth) shall be used to intercept sediment-laden runoff along the borders of disturbed site areas during construction. The geotextile filter fabric fence requires periodic maintenance and should be checked for tears or clogging with silt or debris. Silt can be removed from the woven filter cloth with a stiff brush if clogging occurs. Standard details for silt fence installation are presented in Appendix F, as well as, shown on the accompanying drawings.

7.2.5 STONE CHECK DAMS

Stone check dams shall be used to limit erosion by reducing velocities within drainage channels. The check dams shall be spaced as necessary so the crest of the downstream dam is at the elevation of the toe of the upstream dam. Stone for check dams shall consist of a well-graded mixture of field stone or rough quarry stone the meets the grading requirements of NYSDOT Item 620.03M – Stone Filling (light). The maximum drainage area above the check dam shall not exceed two acres. A standard detail for a temporary stone check dam is provided in Appendix F, as well as shown on the accompanying drawings.

7.2.6 SEDIMENT TRAPS

A temporary sediment trap shall be utilized during construction to intercept sediment-laden runoff and retain sediment prior to discharge. Temporary sediment traps shall be installed in the areas of construction prior to any earth disturbance. The sediment traps shall be placed where they will collect runoff prior to leaving the site, and will consist of excavating a large depression into existing soils. Sediment traps will be limited to maximum drainage areas of 2 acres and provide sediment storage volume of 3,600 cubic feet (cf) for each acre of drainage area. A standard detail for a temporary sediment trap is provided in Appendix F, as well as shown on the accompanying drawings.

7.2.7 STABILIZED CONSTRUCTION ENTRANCE

A stabilized pad of aggregate underlain with filter cloth shall be positioned at points where traffic will be entering or leaving the construction site area onto public roads. This measure will reduce the tracking of soils onto public roads or streets. A standard detail for a stabilized construction entrance is presented in Appendix F, as well as, shown on the accompanying drawings.

7.2.8 CONSTRUCTION ROAD STABILIZATION

The stabilization of temporary construction access routes, on-site vehicle transportation routes, and construction parking areas. This measure is to control erosion on temporary construction routes and parking areas. A standard detail for construction road stabilization is presented in Appendix F.

7.2.9 DUST CONTROL

The control of dust resulting from land–disturbing activities on construction roads, access points, and other disturbed areas subject to surface dust movement and dust blowing where off-site damage may occur if dust is not controlled. To prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems.

7.2.10 STORM DRAIN INLET PROTECTION

A permeable barrier installed around inlets in the form of a fence, berm or excavation around an opening, thereby reducing the sediment content of sediment laden water.

7.2.11 SEDIMENT BASIN

A temporary barrier or dam constructed across a drainage way or at other suitable locations to intercept sediment laden runoff and to trap and retain the sediment.

7.2.12 SUMP PIT

A temporary pit which is constructed to trap and filter water for pumping to a suitable drainage area.

7.2.13 SEDIMENT FILTER BAGS

Sediment filter bags shall be utilized during construction to filter water being pumped during excavation. The filter bags lie on the vegetated ground and sediment-laden water is pumped

into the bag. The bag's geotextile filter cloth acts as a baffler to the sediment, retaining the sediment inside of the filter bag, and discharging the sediment free water.

7.2.14 TEMPORARY SEED & MULCH

Temporary seed and mulch will be applied within 100' of all wetlands and culvert crossings. Annual rye seed and 90% mulch coverage will be applied. Notes and application tables are provided on the accompanying drawings.

7.3 PERMANENT STRUCTURAL MEASURES

7.3.1 RIPRAP OUTLET PROTECTION

Riprap outlet protection shall be placed at the inlet and/or outlet of culverts and channels as called for on the design plans for the purpose of reducing the depth, velocity, and energy of water, such that the flow will not erode the receiving downstream reach. Stone for riprap shall consist of a well-graded mixture of field stone or rough quarry stone and shall be hard and angular, and of a quality that will not disintegrate on exposure to water or weathering. A well-graded mixture is defined as a mixture composed primarily of larger stone sizes, but with a sufficient mixture of other sizes to fill the smaller voids between the stones. Stone used for riprap shall meet the grading requirements of NYSDOT Item 620.03 – Stone Filling (light). The minimum blanket thickness shall be 18". A standard detail for Riprap Outlet Protection is provided on the accompanying drawings.

7.3.1 LAND GRADING

Reshaping of the existing land surface in accordance with a plan as determined by engineering survey and layout.

7.3.3 SURFACE ROUGHENING

Roughening a bare soil surface whether through creating horizontal grooves across a slope, stair-stepping, or tracking with construction equipment. To aid the establishment of vegetative cover from seed, to reduce runoff velocity and increase infiltration, and to reduce erosion and provide for trapping of sediment.

7.3.4 PRETREATMENT CHAMBER

One (1) stormwater pretreatment chamber is to be installed in accordance with the design plans to remove pollutions from stormwater runoff before discharging into natural occurring waterbodies.

7.4 MAINTENANCE OF TEMPORARY AND PERMANENT CONTROL STRUCTURES

7.4.1 TEMPORARY & PERMANENT STORMWATER FACILITIES DURING CONSTRUCTION

Temporary stormwater and erosion control structures must be constructed in accordance with their design intent and maintained to prevent sediment-laden runoff from leaving the site during construction. In general, the temporary structures during construction should be inspected by a qualified professional at least one every seven calendar-days for disturbance areas under five

acres and twice every seven calendar-days for sites with disturbance areas greater than five acres, and maintained as follows:

a. Stabilized construction entrance: Inspect weekly and after each rainfall event. Maintain the entrance in a condition that will prevent tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way must be removed immediately. When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device. All sediment shall be prevented from entering storm drains, ditches, or watercourses.

b. Silt fence, straw bale dike, and sediment traps: Inspect weekly and after each rainfall event. Remove accumulated sediment when the sediment reaches 50% of capacity; clean, repair, or replace as needed.

c. Check dams: Inspect after each runoff event. Remove sediment accumulated behind the dam when the sediment reaches 50% of the check dam's capacity, to allow channel to drain and prevent large flows from carrying sediment over the dam. Replace stones as needed to maintain design cross section.

d. Sediment filter bags: Inspect daily when being utilized. Cease pumping and remove and replace sediment filter bag when sediment reaches 50% of the filter bag's capacity.

e. Disturbed soil areas: In areas where soil disturbance activities has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the technical standards, New York Standards and Specifications for Erosion and Sediment Control.

   Temporary seed and mulch within 100' of wetlands and culvert crossings within 48 hours of a rainfall event or before an expected rainfall event. Inspect every seven calendar days and after each rainfall event. Repair any eroded sediment to original contours and reseed & mulch as needed.

7.4.2 PERMANENT STORMWATER FACILITIES AFTER CONSTRUCTION

Permanent stormwater control structures must be constructed in accordance with their design intent and maintained on a routine basis to remain effective. In general, the structures after construction should be inspected periodically and maintained as follows and as described by the Town of Amherst's stormwater maintenance agreement which shall be completed by the owner.

a. Storm drainage systems: Inspect semi-annually and after every heavy rainfall to insure structural integrity, detect vandalism and damage, and for cleaning. Clean, repair, or replace stormwater drainage components (culverts) as required.

b. Riprap outlet protection: Inspect semi-annually and after every heavy rainfall to insure structural integrity and to verify that stone is not by-passed, or developing excessive scour at the stone base, or that sediment has not built up. Remove sediment accumulated within the riprap stone aprons at inlets and outlets of culverts and replace stone, as required.

c. Permanent Lawns and Landscaped Areas: Inspect and maintain on a regular basis, consistent with favorable plant growth, soil, and climatic conditions to insure soil protection and structural integrity of the sites plant cover. Maintenance involves regular seasonal work for mowing, fertilizing, liming, watering, pruning, fire controls, weed and pest control, re-seeding, and timely repairs, as required. Maintenance of vegetative areas shall also include removal of debris and protection from unintended uses or traffic.

d. Pretreatment Chamber: Inspect periodically and make any repairs necessary in accordance with the manufacturer's recommendations. Maintenance is to be performed by the Owner.

7.5 CONSTRUCTION SCHEDULE

1. Obtain plan approval and other applicable permits.
2. Hold pre-construction conference at least one week prior to starting construction.
3. Flag clearing limits in accordance with erosion control plan.
4. Install stabilized construction entrance at all access points. Install silt fence where shown on Erosion and Sediment Control Plan.
5. Set-up equipment Staging Area and all other temporary erosion and sediment control practices.
6. Perform initial site inspection of all installed erosion and sediment control practices as designed on plans.
7. Install site utilities, sanitary sewers, storm sewers, and waterlines as needed.
8. Filter fabric drop inlet protection to be installed at designated catch basins as the structures are installed.
9. Install curbing and parking lot pavement. Remove filter fabric drop inlet protection as needed to install curbing.
10. Grade, topsoil and seed pervious areas as soon as practical upon completion of utilities installation.
11. Stabilize all remaining disturbed areas.
12. Once all disturbed areas are vegetated, all temporary sediment control measures can be removed. Site contractor must have the entire site stabilized prior to withdrawing from site.
13. The owner is responsible for making arrangements to have the site re-stabilized as needed after private utility companies, gas, phone, cable, etc., have installed their utilities.

8.0 SITE WASTE MANAGEMENT AND SPILL PREVENTION

The following sections provide a description of pollution prevention measures utilized to control litter, construction chemicals, and construction debris from becoming a pollutant source to stormwater discharges. In addition, storage practices to minimize the exposure of materials to stormwater, as well as, spill prevention and response measures are described in this section.

8.1 GENERAL

The following information describes Spill Prevention, Containment, and Countermeasure Planning for the project.
Personnel responsible for the oversight of the petroleum products and hazardous or controlled substances include:

a. Construction Manager
b. Job-site coordination designated by the Construction Manager

8.2 PETROLEUM PRODUCTS AND HAZARDOUS OR CONTROLLED SUBSTANCES

Petroleum products and hazardous or controlled substances will be stored at a temporary storage staging area approved by the Town Engineer. It is anticipated that the following hazardous or controlled substances and petroleum products may be stored on site, within regulatory approved containers.

a. Gasoline
b. Diesel Fuel
c. Equipment oils and lubricants
d. Commercial Fertilizer

8.3 POLLUTION PREVENTION

The following sections provide a description of pollution prevention measures that will be used to control litter, construction chemicals, and construction debris from becoming a pollutant source to the stormwater discharges. In addition, storage practices to minimize the exposure of materials to stormwater as well as spill prevention and response measure are detailed.

8.3.1 MATERIAL DELIVERY AND STORAGE

a. Locate material storage and delivery areas at a minimum distance of 100 feet away from any drain inlet and surface water bodies.
b. Keep inventory low.
c. Store dry chemicals and bagged materials on pallets.
d. Store all flammable products away from any heat and/or ignition source.
e. Provide secondary containment for liquids.
f. Keep designated storage areas clean and well organized. Contractor to conduct weekly inspections to check for damaged containers, leaks, etc.
g. Comply with State and Local requirements for storage of hazardous waste.
h. During the wet season, cover chemicals, drums, and bagged materials to prevent contact with rainwater (e.g. tarps, bins, structures).
I. During the wet season, cover secondary containment areas to prevent accumulation of water.
j. Keep chemicals labeled and in original containers.
k. Train employees and contractors on the proper use of storage area.

8.3.2 SPILL PREVENTION AND CONTROL

a. Notify all construction workers of the location of materials used to cleanup spills.
b. Store spill cleanup materials on site and near potential spill areas.
c. Keep commercially available spill kits for construction equipment on site.
d. Keep drums, barrels, temporary storage bags, or equivalent materials for containment and transportation on site.
e. Keep absorbent pads, oil booms, mat, or equivalent materials on site.
f. Keep washable, reusable rags for cleaning up small lubricant leaks on site.
g. Train employees and subcontractors on proper spill prevention and control methods.
h. Never hose down or bury dry material spills. Cleanup as much as possible and dispose of properly.
i. In the event of a spill occurrence, the following actions are to be taken:

- Document the spill and report to the project Construction Manager and Town Designated Inspector.
- For spills less than 5 gallons on an impervious surface, attempt to confine and clean the spill.
- For spills greater than 5 gallons, attempt to confine the spill and call a remediation contractor if assistance is required with product recovery and containment.
- For spills greater than 5 gallons, report to NYSDEC Region 9 Spill Prevention and response (716-851-7220) within two hours of discovery.
- Provide written documentation of the spill.
- Disposal of recovered materials must be conducted in accordance with State and Federal regulations.

8.3.3 SOLID WASTE MANAGEMENT

a. Provide as many waste bins as needed to keep the site clean of litter and waste.
b. During the wet season, waste bins must be covered to prevent runoff from trash.
c. Collect trash on a daily basis.
d. Arrange for regular waste collection by a licensed trash hauler.
e. Segregate and recycle waste materials (e.g. paints, solvents, oil, etc.).
f. Provide covered waste binds for disposal of all empty products (e.g. paints, solvents, glues, pesticides, etc.).
g. Locate waste container storage area(s) at a minimum distance of 100 feet away from any drain inlet and surface water bodies.
h. Provide secondary containment for hazardous waste containers.
i. Comply with all Local and State solid waste disposal and nuisance requirements.
j. Do not hose out waste containers on site.
k. Train employees and subcontractors to use proper solid waste management.

8.3.4 VEHICLE & EQUIPMENT MAINTENANCE

a. Do not discharge vehicle/machinery wash waters or solvents to storm drains or to surface water bodies.
b. Locate areas for fueling and maintenance at a minimum distance of 100 feet away from any drain inlet and surface water bodies.
c. Any equipment which must be refueled in the field will be refueled from tanks carried to the work site by truck.
d. Prevent spills and leaks during fueling and maintenance operations.
e. Inspect and maintain vehicles regularly to minimize leaks and drips; place drip pans or absorbent materials under leak-prone machinery when idle.
f. Comply with Federal, State, and Local requirements for fuel storage tanks.

8.3.5 LANDSCAPING OPERATIONS

a. Carefully follow manufacturer recommended usage instructions for the application of all fertilizer.
b. Disposal of trees, brush, or other debris in any stream corridor, wetland, or surface water is prohibited.
c. Avoid applications of fertilizers prior to storm events.
d. Apply fertilizers in multiple smaller applications, as opposed to on large application.

e. Train employees and subcontractors in the proper use of landscaped materials and chemicals.

8.3.6 CONCRETE MANAGEMENT

a. Avoid mixing excess amounts of concrete or fresh cement on site.
b. Store concrete, grout, and mortar under cover and away from drainage areas.
c. Designate a wash out area on site and insure that material cannot flow to storm drains, open ditches, streets, or surface water bodies by constructing a temporary pit or bermed area.
d. Concrete from washout area should be allowed to set. Upon completion of the concrete work, the contractor shall break up, remove, and haul away solid concrete that has accumulated in the washout.
e. Train employees and subcontractors in proper concrete waste management.

8.3.7 SANITARY/SEPTIC WASTE MANAGEMENT

a. Located sanitary facilities for convenient access and at a minimum of 100 feet away from drain inlets and surface water bodies.
b. Untreated raw wastewater may not be discharged to land, the storm drain system, or to surface water bodies.
c. Sanitary/septic facilities should be maintained in good working order by a licensed service.
d. Arrange regular waste collection by a licensed hauler before facilities overflow.
e. If washing out of interior or portable toilets is needed, insure that wash water is discharged to land and does not flow into street, the storm drain system, or surface water bodies.

9.0 SITE ASSESSMENT AND INSPECTION

9.1 INITIAL INSPECTION

The owner or operator shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the trained contractor. The Owner shall have a qualified professional conduct an assessment of the site prior to the commencement of construction. A qualified professional shall include professional engineers, licensed landscape architects, certified erosion control specialists, or an individual with practical applied construction experience who possesses familiarity with BMP's and erosion and sediment control techniques. The qualified professional shall certify that the appropriate erosion and sediment control methods as described in this SWPPP and as required by the permit have been adequately installed or implemented to ensure overall preparedness of the site for commencement of construction. The qualified professional shall meet the requirements of the *SPDES General Permit for Stormwater Runoff from Construction Activities, GP-0-20-001*.

9.2 INSPECTIONS AND RECORDS DURING CONSTRUCTION

9.2.1 INSPECTION FREQUENCY

After commencement of construction, the owner or operator shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being

performed. Further, the Owner shall have a qualified professional perform site inspections weekly for sites with disturbance areas of less than five (5) acres and twice weekly for sites with disturbance areas of greater than five (5) acres. Prior to filing a Notice of Termination (NOT) form with NYSDEC for each project site or at the end of the permit term, the Owner shall have the qualified professional perform a final site inspection.

9.2.2 RECORDS DURING INSPECTION

A site map shall be maintained at each project site indicating the extent of all disturbed on-site areas and drainage ways throughout the duration of construction. The site map shall contain all areas expected to undergo initial disturbance or significant site work within every inspection period. The map shall indicate all areas of the site that have undergone temporary or permanent stabilization. All disturbed areas that have not undergone active site work since the previous inspection period shall be noted on the map. All sediment control measures shall be inspected and the degree of accumulation as a percentage of the sediment storage volume shall be recorded. Any maintenance required for installed erosion and sediment control structures shall be noted, and documentation of areas where adjustments are needed to those measures shall be provided. Any deficiencies identified with the implementation of the SWPPP shall be recorded. Digital photographs, with date stamp, shall be taken to clearly show the condition of all practices that have been identified as needing corrective actions. The qualified inspector shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The qualified inspector shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The qualified inspector shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

9.2.3 INSPECTION LOG BOOK

The Owner and selected Contractor(s) shall maintain an inspection logbook, which shall contain a record of all inspection reports for each project site. The logbook shall be maintained on site and shall be made available to the permitting authority upon request. The Owner and/or selected Contractor shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis. A copy of the Site Inspection Log Book is provided in Appendix I.

9.2.4 CERTIFICATIONS

At the final site inspection the qualified professional shall certify that the site has undergone final stabilization using either a vegetative or structural stabilization methods, and that all temporary erosion and sedimentation measures have been removed. The Owner shall certify that the requirements of the permit have been satisfied within 48 hours of actually meeting such requirements, and submit a Notice of Termination (NOT) form with NYSDEC. A copy of a typical NOT form is provided in Appendix J.

10.0 SWPPP CERTIFICATION & SITE CONTRACT INFORMATION

10.1 OWNER'S CERTIFICATION & CONTACT INFORMATION

Southern Tier Environments for Living, Inc (STEL), *("the Owner") retained Greenman-Pedersen, Inc. to prepare this SWPPP and agree that the recommendations within this Report and accompanying documents support the requirements set forth by the New York State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Runoff from Construction Activities, GP-0-20-001. The Owner agrees to employ a Contractor who will follow the recommendations of this SWPPP and any requirements set forth by SPDES General Permit GP-0-20-001. The Owner acknowledges the following certification statement referenced from SPDES General Permit GP-0-20-001:*

Certification Statement

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that the qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the systems, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am sure that false statements made herein are punishable as a Class A misdemeanor to Section 210.45 of the Penal Law."

Owner Southern Tier Environments for Living, Inc.

Owner's Representative: Thomas Whitney Date:

Title: Executive Director

Address: 715 Central Avenue

Dunkirk, NY 14048

Phone: (716) 366-7792

Fax:

10.2 ENGINEER'S CERTIFICATION & CONTACT INFORMATION

Greenman-Pedersen, Inc. understands that the Owner intends to utilize this SWPPP to support an application for a New York State Pollutant Discharge Elimination System 9SPDES) General Permit for Stormwater Runoff from Construction Activity, GP-0-20-001. The SWPPP has been prepared in accordance with the standards outlined in Section 1.1 of this Report and the permit conditions of SPDES General Permit GP-0-20-001. Greenman-Pedersen, LLC acknowledges the following certification statement referenced from SPDES General Permit GP-0-20-001:

Certification Statement

Greenman-Pedersen, Inc.
Engineering and Construction Services
4950 Genesee Street, Suite 100
Buffalo, New York 14225

Phone: (716) 633-4844
Fax: (716) 633-4940

Prepared By: _____ Date: 06-01-2020

Jessica L. Boudreau, P.E.
Project Engineer

10.3 CONTRACTOR'S/SUB-CONTRACTOR'S CERTIFICATION & CONTACT INFORMATION

All Contractors and Sub-Contractors agree to the following certification statement referenced from SPDES General Permit GP-0-20-001:

Certification Statement
"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Contractor:_____

Contractor's Representative:_____ Date:_____

Title:_____

Description of SWPPP Responsibility:_____

_____

_____

[1]Company's Trained Contractor:_____

Address:_____

_____

_____

Phone:_____

Fax:_____

[1]Trained Contractor is an employee from the contracting (construction) company that has received four (4) hours of NYS Department of Environmental Conservation endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years. The *trained contractor* will be responsible for the day to day implementation of the SWPPP.

Contractor:_____

Contractor's Representative:_____ Date:_____

Title:_____

Description of SWPPP Responsibility:_____

_____

_____

[1]Company's Trained Contractor:_____

Address:_____

_____

_____

Phone:_____

Fax:_____

Contractor:_____

Contractor's Representative:_____ Date:_____

Title:_____

Description of SWPPP Responsibility:_____

_____

_____

[1]Company's Trained Contractor:_____

Address:_____

_____

_____

Phone:_____

Fax:_____

[1]Trained Contractor is an employee from the contracting (construction) company that has received four (4) hours of NYS Department of Environmental Conservation endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years. The *trained contractor* will be responsible for the day to day implementation of the SWPPP.

Sub-Contractor:_____

Sub-Contractor's Representative:_____ Date:_____

Title:_____

Description of SWPPP Responsibility:_____

_____

_____

[1]Company's Trained Contractor:_____

Address:_____

_____

_____

Phone:_____

Fax:_____

Sub-Contractor:_____

Sub-Contractor's Representative:_____ Date:_____

Title:_____

Description of SWPPP Responsibility:_____

_____

_____

[1]Company's Trained Contractor:_____

Address:_____

_____

_____

Phone:_____

Fax:_____

[1]Trained Contractor is an employee from the contracting (construction) company that has received four (4) hours of NYS Department of Environmental Conservation endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years. The *trained contractor* will be responsible for the day to day implementation of the SWPPP.

Sub-Contractor:_____

Sub-Contractor's Representative:_____ Date:_____

Title:_____

Description of SWPPP Responsibility:_____

_____

_____

[1]Company's Trained Contractor:_____

Address:_____

_____

_____

Phone:_____

Fax:_____

Sub-Contractor:_____

Sub-Contractor's Representative:_____ Date:_____

Title:_____

Description of SWPPP Responsibility:_____

_____

_____

[1]Company's Trained Contractor:_____

Address:_____

_____

_____

Phone:_____

Fax:_____

[1]Trained Contractor is an employee from the contracting (construction) company that has received four (4) hours of NYS Department of Environmental Conservation endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years. The *trained contractor* will be responsible for the day to day implementation of the SWPPP.

A. CORRESPONDENCE

B. SPDES GENERAL PERMIT, GP-0-20-001

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* (“SWPPP”) the reason(s) for the

deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharge*s.** The following *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharge*s that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the “MS4 SWPPP Acceptance” form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

    a. Background information about the scope of the project, including the location, type and size of project

b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

Table 2
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

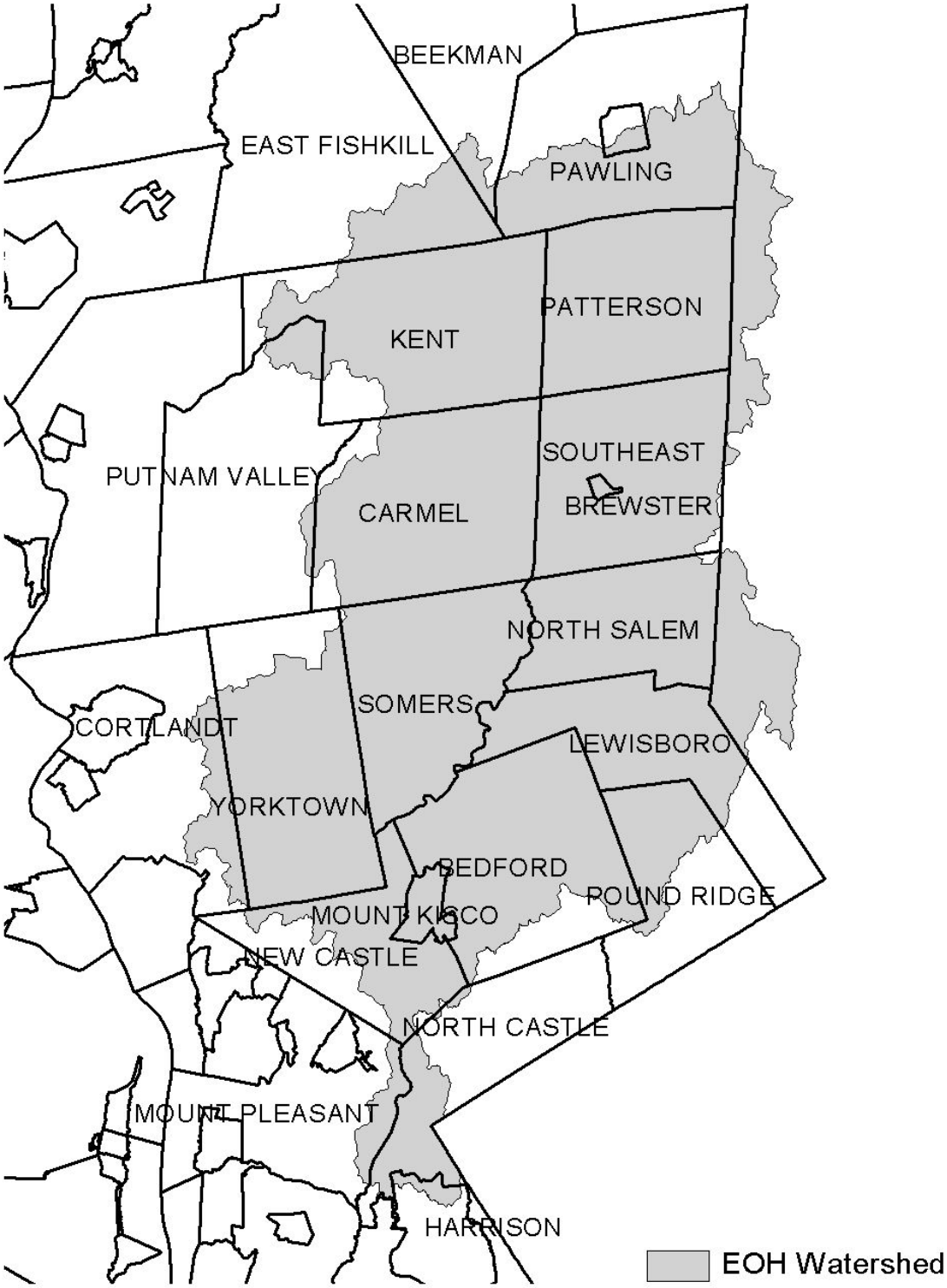


Figure 2 - Onondaga Lake Watershed



Figure 3 - Greenwood Lake Watershed

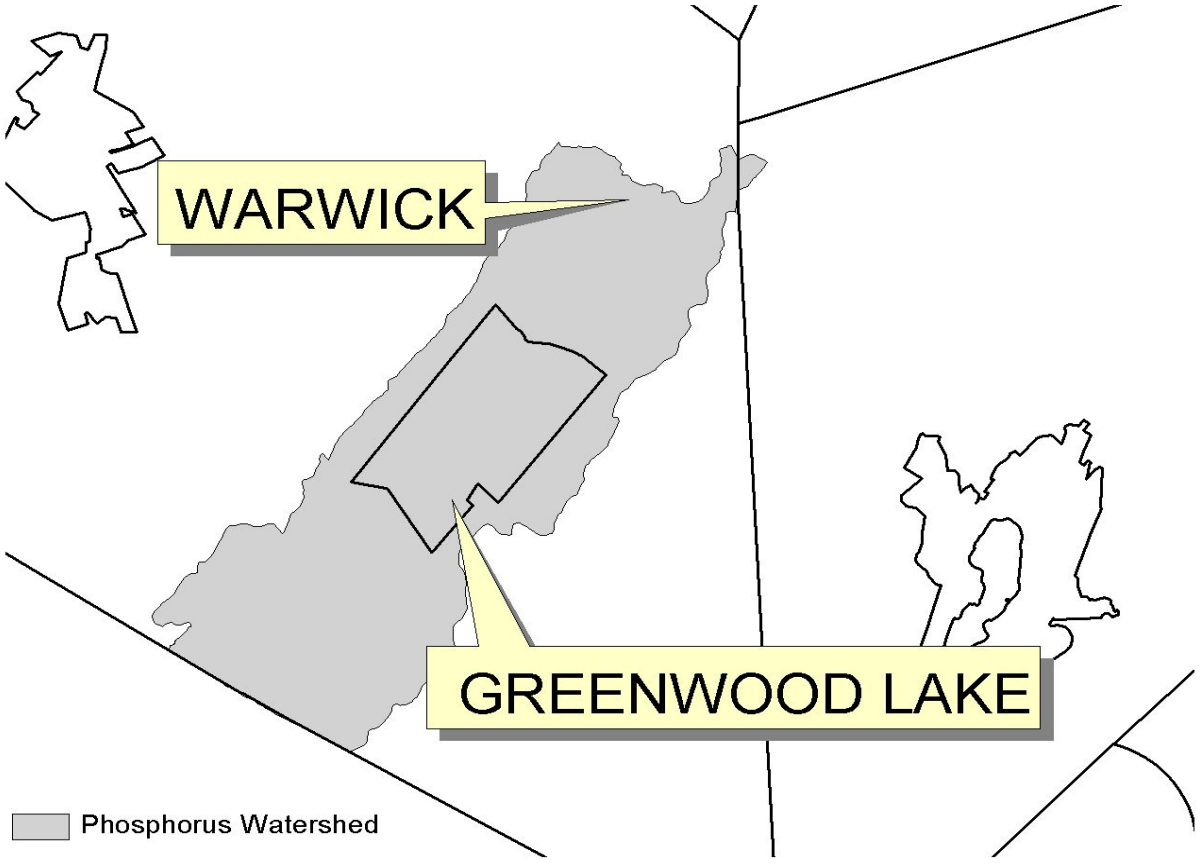


Figure 4 - Oscawana Lake Watershed

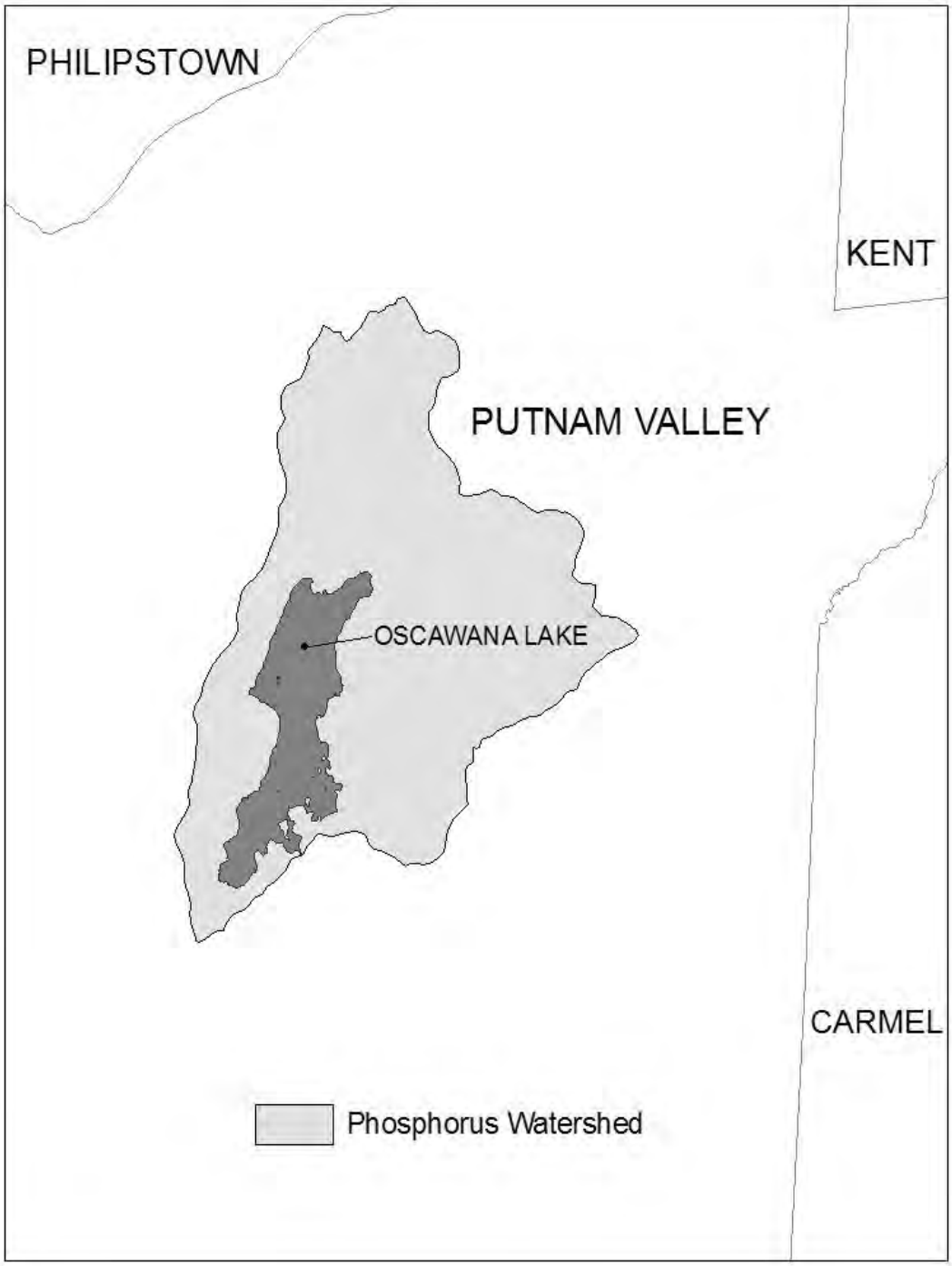
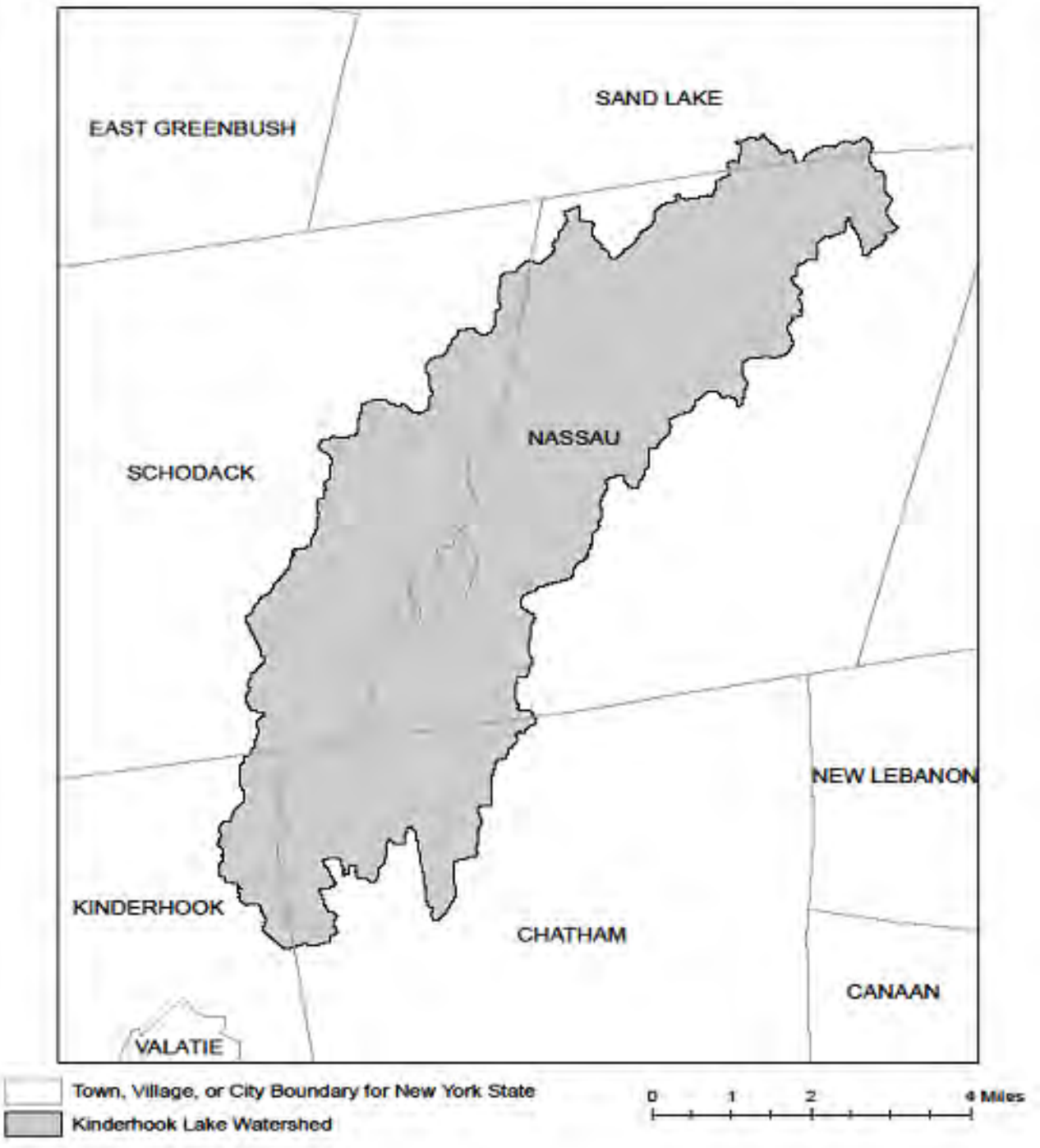


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1W White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

C. NOTICE OF INTENT (NOI) AND ACKNOWLEDGEMENT LETTER

6154147110

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-10-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Southern Tire Environments for Living

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Whitney

Owner/Operator Contact Person First Name
Thomas

Owner/Operator Mailing Address
715 Central Avenue

City
Dunkirk

State
NY

Zip
14048 -

Phone (Owner/Operator)
7163667792

Fax (Owner/Operator)
- -

Email (Owner/Operator)
whitney@stel.org

FED TAX ID
- (not required for individuals)

Project Site Information

Project/Site Name
Gateway Lofts

Street Address (NOT P.O. BOX)
31 Water Street

Side of Street
● **North** ○ **South** ○ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Jamestown

State: NY
Zip: **14701**-
County: Chautauqua
DEC Region: 9

Name of Nearest Cross Street
Foote Avenue

Distance to Nearest Cross Street (Feet)
400

Project In Relation to Cross Street
○ **North** ○ **South** ● **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel
387.50-1-23.1

Tax Map Numbers
387.50-1-23.2

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)

Y Coordinates (Northing)

2. What is the nature of this construction project?

○ **New Construction**

○ **Redevelopment with increase in impervious area**

● **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ○ FOREST
- ○ PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ● COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

Post-Development Future Land Use

- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION — Number of Lots
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ● OTHER: Multi-use Res.

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area
6.0	3.8	3.2	2.5

5. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ● **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
%	%	%	100 %

7. Is this a phased project? ○ **Yes** ● **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date	End Date
07/01/2020	10/30/2021

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

Chadakoin River

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ○ Stream / Creek Off Site
- ● River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-10-001? ● **Yes** ○ **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-10-001? ○ **Yes** ● **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ● **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ○ **No**
If Yes, what is the acreage to be disturbed?

.

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ● **No**

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ● Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

City of Jamestown

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ● No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ● Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ● Yes ○ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- (●) **Professional Engineer (P.E.)**
- ( ) **Soil and Water Conservation District (SWCD)**
- ( ) **Registered Landscape Architect (R.L.A)**
- ( ) **Certified Professional in Erosion and Sediment Control (CPESC)**
- ( ) **Owner/Operator**
- ( ) **Other**

SWPPP Preparer
Greenman-Pedersen, Inc.

Contact Name (Last, Space, First)
Boudreau, Jessica

Mailing Address
4950 Genesee Street, Suite 100

City
Buffalo

State Zip
NY 14225-

Phone
7166834844

Fax
7166834940

Email
Jboudreau@gpinet.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-10-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name
Jessica

MI

Last Name
Boudreau

Signature

Date
06/12/2020

25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ● Check Dams
- ○ Construction Road Stabilization
- ● Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ● Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ● Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ● Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ● Temporary Swale
- ● Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ● Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ● **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ○ **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ● **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.0038 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)		and/or	
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or	
○ Tree Planting/Tree Pit (RR-3)		and/or	
○ Disconnection of Rooftop Runoff (RR-4)		and/or	
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			
○ Rain Garden (RR-6)			
○ Stormwater Planter (RR-7)			
○ Rain Barrel/Cistern (RR-8)			
○ Porous Pavement (RR-9)			
○ Green Roof (RR-10)			
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			
○ Infiltration Basin (I-2)			
○ Dry Well (I-3)			
○ Underground Infiltration System (I-4)			
○ Bioretention (F-5)			
○ Dry Swale (O-1)			
Standard SMPs			
○ Micropool Extended Detention (P-1)			
○ Wet Pond (P-2)			
○ Wet Extended Detention (P-3)			
○ Multiple Pond System (P-4)			
○ Pocket Pond (P-5)			
○ Surface Sand Filter (F-1)			
○ Underground Sand Filter (F-2)			
○ Perimeter Sand Filter (F-3)			
○ Organic Filter (F-4)			
○ Shallow Wetland (W-1)			
○ Extended Detention Wetland (W-2)			
○ Pond/Wetland System (W-3)			
○ Pocket Wetland (W-4)			
○ Wet Swale (O-2)			

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
○ Hydrodynamic	
○ Wet Vault	
○ Media Filter	
○ Other	

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name

Manufacturer

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.00 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ● **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

0.00 **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

● **Yes** ○ **No**

If Yes, go to question 33.
If No, the sizing criteria has not been met. Contact Regional Office stormwater contact person to discuss next steps.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

0.0338 **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

0.0338

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ● **Yes** ○ **No**

If Yes, go to question 36.
If No, the sizing criteria has not been met. Contact Regional Office stormwater contact person to discuss next steps.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

0.00.0 **acre-feet**

CPv Provided

0.00.0 **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

. **CFS**

Post-development

. **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

. **CFS**

Post-development

. **CFS**

37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required
- ☑ Redevelopment site with decrease in impervious area

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ● Yes ○ No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

Owner

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

This is a redevelopment project with a decrease in impervious area (0.71 acres), as such runoff reduction, channel protection and water quantity controls are not required. A green roof is proposed for a portion of the redeveloped building however has not been included herein. Water Quality is being provided by a manufactured pretreatment unit.

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ● **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ○ **Yes** ● **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ][ ]

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name **MI**

Print Last Name

Owner/Operator Signature

Date / /

D. STORM SEWER CALCULATIONS

DRAINAGE COMPUTATIONS

SEWER LOCATION			TRIBUTARY AREA		RUNOFF COEFFICIENT			TIME OF CONCENTRATION			REQUIRED CAPACITY		DESIGN n = 0.012						PROFILE				EXISTING CAPACITY	
STREET	FROM	TO	A (ac)	ΣA (ac)	C	CA	ΣCA	IN CHANNEL (sec)	IN CHANNEL (min)	Tc (min)	i (in/hr)	q (cfs)	D (in)	V (fps)	Q_{full} (cfs)	LENGTH (ft)	s (%)					Q (cfs)	% REQ'D
	RCVR 1	RCVR 2	0.27	0.27	0.90	0.24	0.24	26.71	0.45	10.00	4.08	0.99	12	4.72	4.66	126	1.46%	1.84					
	RCVR 2	RCVR 3	0.40	0.67	0.90	0.36	0.60	20.83	0.35	10.45	4.00	2.41	12	5.18	3.86	108	1.00%	1.08					
	RCVR 3	EX. CULVERT	0.22	0.89	0.90	0.20	0.80	11.67	0.19	10.79	3.95	3.16	12	5.48	3.86	64	1.00%	0.64					
	RCVR 4	RCVR 5	0.05	0.05	0.90	0.05	0.05	15.45	0.26	10.00	4.08	0.18	12	2.98	4.88	46	1.60%	0.74					
	RCVR 5	PRE TREAT 1	0.08	0.13	0.90	0.07	0.12	24.14	0.40	10.26	4.03	0.47	12	3.93	4.88	95	1.60%	1.52					
	RCVR 16	RCVR 14	0.20	0.20	0.90	0.18	0.18	29.06	0.48	10.00	4.08	0.73	12	5.09	5.85	148	2.30%	3.40					
	RCVR 14	RCVR 15	0.17	0.37	0.90	0.15	0.33	29.18	0.49	10.48	3.99	1.33	12	2.84	2.11	83	0.30%	0.25					
	RCVR 15	RCVR 8	0.10	0.47	0.90	0.09	0.42	25.21	0.42	10.97	3.93	1.66	15	2.90	3.64	73	0.27%	0.20					
	RCVR 8	RCVR 6	0.12	0.59	0.90	0.11	0.53	22.35	0.37	11.39	3.86	2.05	15	3.18	3.83	71	0.30%	0.21					
	RCVR 6	RCVR 7	0.06	0.65	0.90	0.05	0.59	24.39	0.41	11.76	3.82	2.23	15	4.76	6.41	116	0.84%	0.97					
	RCVR 7	RCVR 9	0.33	0.98	0.90	0.30	0.88	23.89	0.40	12.17	3.77	3.32	15	3.52	3.83	84	0.30%	0.25					
	COURTYARD	RCVR 9	0.18	0.18	0.90	0.16	0.16	138.83	2.31	10.00	4.08	0.66	8	2.88	0.93	400	0.50%	2.00					
	RCVR 9	PRE TREAT 1	0.06	1.22	0.90	0.05	1.10	21.28	0.35	12.31	3.75	4.12	15	4.51	4.95	96	0.50%	0.48					
	TOTAL INTO	PRE TREAT 1	0.18	1.53	0.90	0.16	1.38	3.93	0.07	12.67	3.71	5.11	15	4.59	4.95	18	0.50%	0.09					
	RCVR 10	RCVR 11	0.10	0.10	0.90	0.09	0.09	38.63	0.64	10.00	4.08	0.37	15	1.71	3.13	66	0.20%	0.13					
	RCVR 11	RCVR 12	0.13	0.23	0.90	0.12	0.21	12.06	0.20	10.64	3.97	0.82	15	2.49	3.83	30	0.30%	0.09					
	DRAIN	RCVR 11																					
	RCVR 12	EX. CULVERT	0.12	0.35	0.90	0.11	0.11	28.65	0.48	10.84	3.94	0.43	15	2.06	3.83	59	0.30%	0.18					

COMPUTED BY: JLB DATE: 06/05/19

CHECKED BY: DATE:

LOCATION: Gateway Lofts

City of Jamestown, NY

SHEET 1

OF 1

FIRE SERVICE WATERLINE GENERAL NOTES:

1. MECHANICAL JOINT (M.J.) DUCTILE IRON PIPE SHALL CONFORM TO CURRENT A.W.W.A. C 151 (ANSI A21.51), SHALL BE DOUBLE CEMENT-LINED PER A.W.W.A. C104, CLASS 52, INSTALLED IN ACCORDANCE WITH A.W.W.A. C600, AND PIPE SHALL BE WRAPPED IN POLYETHYLENE PER A.W.W.A. C105.

3. FITTINGS SHALL CONFORM TO A.W.W.A. C 110 (ANSI 21.10) FOR GRAY & DUCTILE IRON FITTINGS OR SHORT BODY DUCTILE IRON FITTINGS IN ACCORDANCE WITH A.W.W.A. C 153 (ANSI 21.53) MECHANICAL JOINTS SHALL CONFORM TO A.W.W.A. C 111 (ANSI 21.11).

4. VALVES SHALL BE MJ GATE VALVES IN ACCORDANCE WITH A.W.W.A. C 509, 2" NUT OPEN CLOCKWISE

5. HYDROSTATIC PRESSURE TESTING OF WATERLINES (AWWA C600)

   THE TEST PRESSURE SHALL NOT BE LESS THAN 150% OF THE STATIC PRESSURE AT THE HIGHEST POINT ALONG THE TEST SECTION. NO AIR TESTING SHALL BE ALLOWED.

   THE TEST SHALL BE AT LEAST 2 HOURS IN DURATION AND BE WITNESSED BY THE DESIGN ENGINEER.

   THE PRESSURE SHALL NOT VARY BY MORE THAN +/- 5 psi FOR THE DURATION OF THE TEST.

   NO VALVES SHALL BE OPERATED DURING THE TEST.

   ALL AIR SHALL BE REMOVED PRIOR TO ANY TESTING.
   LEAKAGE SHALL BE DEFINED BY THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE PIPE TO MAINTAIN THE PRESSURE WITHIN 5 psi OF THE SPECIFIED TEST PRESSURE. THE ALLOWABLE LEAKAGE IS DETERMINED BY THE FOLLOWING FORMULA:

   $$\frac{L = SD\ (P^{0.5})}{133,200}$$

   WHERE:
   L = ALLOWABLE LEAKAGE IN GPH (0.89 GPH/1,000' @ 175 psi FOR A 16" PIPE)
   S = LENGTH TESTED IN FEET
   D = NOMINAL DIAMETER OF PIPE IN INCHES.
   P = AVERAGE TEST PRESSURE DURING TEST IN POUNDS PER SQUARE INCH (GAUGE)

6. DISINFECTION OF WATERLINES

   WATER MAINS AND ACCESSORIES SHALL BE DISINFECTED IN ACCORDANCE WITH ANSI/AWWA C 601, THE MOST RECENT APPLICABLE AWWA STANDARD. THIS STANDARD SHALL BE AT JOBSITE WITH ACCESS GRANTED TO RESIDENT PROJECT REPRESENTATIVE (RPR) AND ENGINEER. CARE SHALL BE TAKEN TO MINIMIZE ENTRANCE OF FOREIGN MATERIAL INTO PIPE, FITTINGS AND VALVES. THE MAIN SHALL BE FLUSHED PRIOR TO DISINFECTION WITH SUFFICIENT FLOW TO PRODUCE A VELOCITY OF 2.50 fps. FLUSHING SHALL TAKE PLACE IN AREAS WITH ADEQUATE DRAINAGE.

   A CHLORINE APPLICATION BY AN APPROVED METHOD SHALL BE MADE USING WATER FROM THE EXISTING DISTRIBUTION SYSTEM OR WATER SUPPLY. THE INITIAL CHLORINE CONCENTRATION IN THE WATER TO BE USED SHALL BE A MINIMUM OF 50 MG/L AVAILABLE CHLORINE. THE CHLORINATED WATER SHALL BE RETAINED IN THE MAIN FOR AT LEAST 24 HOURS, BUT NOT MORE THAN 72 HOURS DURING WHICH TIME ALL VALVES AND HYDRANTS IN THE SECTION TREATED SHALL BE OPERATED. AT THE END OF THIS PERIOD, THE TREATED WATER SHALL CONTAIN NO LESS THAN 25 MG/L CHLORINE THROUGHOUT, AND FINAL FLUSHING SHALL FOLLOW TO ENSURE THAT THE CHLORINE CONCENTRATION IS NOT HIGHER THAN THAT GENERALLY PREVAILING IN THE SYSTEM. CHLORINATED WATER SHALL NOT BE DISCHARGED TO ANY WATER COURSE OR DRAINAGEWAY UNTIL IT IS DILUTED OR REDUCED TO A LEVEL WHICH WILL RESULT IN NO DAMAGE TO AQUATIC LIFE.

   BACTERIOLOGICAL TESTS: AFTER FINAL FLUSHING AND BEFORE THE WATER MAIN IS PLACED IN SERVICE, 2 CONSECUTIVE SAMPLES SHALL BE COLLECTED AT 24 HOURS INTERVALS FOR EACH 3,000 FT. OF LINE OR AT EACH END OF A SHORT SECTION OF PIPE. THESE SAMPLES SHALL BE TESTED FOR BACTERIOLOGICAL QUALITY BY THE STATE OR OTHER CERTIFIED LABORATORY AND SHALL SHOW THE ABSENCE OF COLIFORM ORGANISMS. SAMPLES WILL BE COLLECTED BY THE CONTRACTOR THROUGH THE USE OF SAMPLE TAPS SUPPLIED BY THE CONTRACTOR FOR THE LINE SECTIONS NOTED. IF THE INITIAL DISINFECTION FAILS TO PRODUCE SATISFACTORY SAMPLES, DISINFECTION SHALL BE REPEATED UNTIL SATISFACTORY SAMPLES HAVE BEEN OBTAINED.

7. NO CONNECTION MAY BE MADE TO ANY EXISTING WATERMAIN PRIOR TO DISINFECTION & CHAUTAUQUA COUNTY HEALTH DEPARTMENT APPROVAL OF COMPLETED WORKS AND ACCEPTANCE BY THE JAMESTOWN B.P.U. AFTER APPROVAL, CONNECTIONS CAN BE MADE.

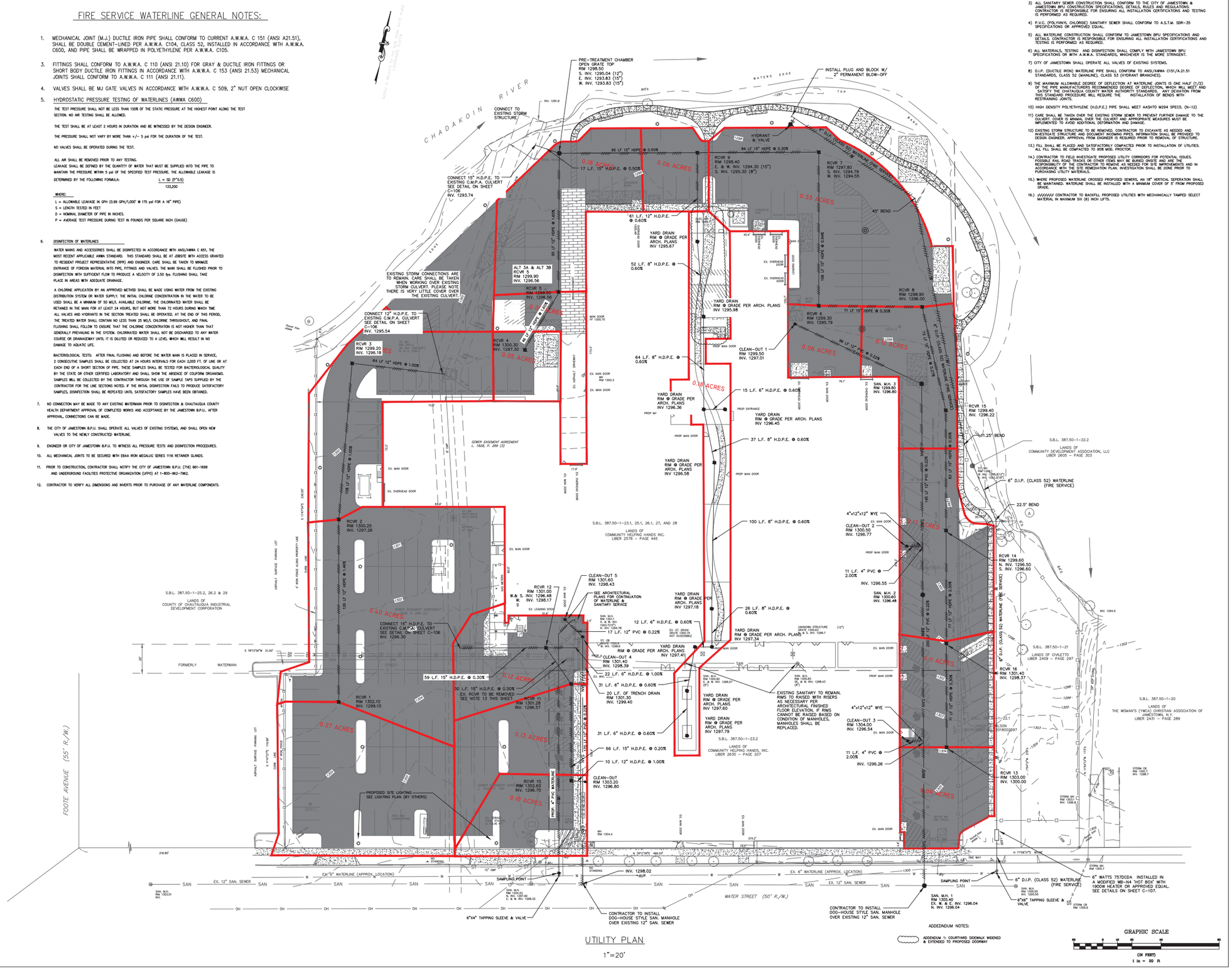
8. THE CITY OF JAMESTOWN B.P.U. SHALL OPERATE ALL VALVES OF EXISTING SYSTEMS, AND SHALL OPEN NEW VALVES TO THE NEWLY CONSTRUCTED WATERLINE.

9. ENGINEER OR CITY OF JAMESTOWN B.P.U. TO WITNESS ALL PRESSURE TESTS AND DISINFECTION PROCEDURES.

10. ALL MECHANICAL JOINTS TO BE SECURED WITH EBAA IRON MEGALUG SERIES 1116 RETAINER GLANDS.

11. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL NOTIFY THE CITY OF JAMESTOWN B.P.U. (716) 661-1699 AND UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION (UFPO) AT 1-800-962-7962.

12. CONTRACTOR TO VERIFY ALL DIMENSIONS AND INVERTS PRIOR TO PURCHASE OF ANY WATERLINE COMPONENTS.



UTILITY PLAN

1"=20'

GENERAL NOTES:

1) THE CONTRACTOR IS TO VERIFY EXACT DEPTHS AND LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. TEST PITS SHALL BE DUG AS NEEDED TO DETERMINE EXISTING UTILITY DEPTHS AND LOCATIONS.

2) ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF JAMESTOWN AND JAMESTOWN BPU CONSTRUCTION SPECIFICATIONS AND DETAILS

3) ALL SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE CITY OF JAMESTOWN & JAMESTOWN BPU CONSTRUCTION SPECIFICATIONS, DETAILS, RULES AND REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL INSTALLATION CERTIFICATIONS AND TESTING IS PERFORMED AS REQUIRED.

4) P.V.C. (POLYVINYL CHLORIDE) SANITARY SEWER SHALL CONFORM TO A.S.T.M. SDR-35 SPECIFICATIONS OR APPROVED EQUAL.

5) ALL WATERLINE CONSTRUCTION SHALL CONFORM TO JAMESTOWN BPU SPECIFICATIONS AND DETAILS. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL INSTALLATION CERTIFICATIONS AND TESTING IS PERFORMED AS REQUIRED.

6) ALL MATERIALS, TESTING AND DISINFECTION SHALL COMPLY WITH JAMESTOWN BPU SPECIFICATIONS OR WITH A.W.W.A. STANDARDS, WHICHEVER IS THE MORE STRINGENT.

7) CITY OF JAMESTOWN SHALL OPERATE ALL VALVES OF EXISTING SYSTEMS.

8) D.I.P. (DUCTILE IRON) WATERLINE PIPE SHALL CONFORM TO ANSI/AWWA C151/A.21.51 STANDARDS, CLASS 52 (MAINLINE), CLASS 53 (HYDRANT BRANCHES).

9) THE MAXIMUM ALLOWABLE DEGREE OF DEFLECTION AT WATERLINE JOINTS IS ONE HALF (1/2) OF THE PIPE MANUFACTURERS RECOMMENDED DEGREE OF DEFLECTION, WHICH WILL MEET AND SATISFY THE CHATAUQUA COUNTY WATER AUTHORITY STANDARDS. ANY DEVIATION FROM THIS STANDARD PROCEDURE WILL REQUIRE THE INSTALLATION OF BENDS WITH RESTRAINING JOINTS.

10) HIGH DENSITY POLYETHYLENE (H.D.P.E.) PIPE SHALL MEET AASHTO M294 SPECS. (N-12)

11) CARE SHALL BE TAKEN OVER THE EXISTING STORM SEWER TO PREVENT FURTHER DAMAGE TO THE CULVERT. COVER IS MINIMAL OVER THE CULVERT AND APPROPRIATE MEASURES MUST BE IMPLEMENTED TO AVOID ADDITIONAL DEFORMATION AND DAMAGE.

12) EXISTING STORM STRUCTURE TO BE REMOVED. CONTRACTOR TO EXCAVATE AS NEEDED AND INVESTIGATE STRUCTURE AND DOCUMENT INCOMING PIPES. INFORMATION SHALL BE PROVIDED TO DESIGN ENGINEER. APPROVAL FROM ENGINEER IS REQUIRED PRIOR TO REMOVAL OF STRUCTURE.

13.) FILL SHALL BE PLACED AND SATISFACTORILY COMPACTED PRIOR TO INSTALLATION OF UTILITIES. ALL FILL SHALL BE COMPACTED TO 95% MOD. PROCTOR.

14.) CONTRACTOR TO FIELD INVESTIGATE PROPOSED UTILITY CORRIDORS FOR POTENTIAL ISSUES. POSSIBLE REAL ROAD TRACE OF OTHER ITEMS MAY BE BURIED SHALLOW AND ARE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AS NEEDED FOR SITE IMPROVEMENTS AND IN ACCORDANCE WITH THE SITE REMEDIATION PLAN. INVESTIGATION SHALL BE DONE PRIOR TO PURCHASING UTILITY MATERIALS.

15.) WHERE PROPOSED WATERLINE CROSSED PROPOSED SEWERS, AN 18" VERTICAL SEPERATION SHALL BE MAINTAINED. WATERLINE SHALL BE INSTALLED WITH A MINIMUM COVER OF 5' FROM PROPOSED GRADE.

16.) ////////// CONTRACTOR TO BACKFILL PROPOSED UTILITIES WITH MECHANICALLY TAMPED SELECT MATERIAL IN MAXIMUM 9IX (6) INCH LIFTS.

SWBR
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585.232.6000 | rschleider@swbr.com
GPI
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Engineering and Construction Services
Surveying Services Performed by GPI Engineering, Landscape Architecture and Surveying, LLP
4500 Genesee Street, Buffalo, NY 14225
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WARNING! Alterations to this document not conforming to Section 7209, Subdivision 2, state education law, are prohibited

Drawn By:	EAO
Checked By:	JEG
Project Manager:	JLB

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Revisions

Addendum 1: 7/10/18 JLB
Adjustment Parcels Added 4/30/19 JLB

STEL - Gateway Lofts
31 Water St
Jamestown, NY 14701
SWBR Project Number 17445.00

Southern Tier Enviroments For Living (STEL), INC.
715 Central Avenue
Dunkirk, NY 14048

C-103
Utility Plan

Construction Documents
6/18/2018

N:\2017\17445-20180530 Gateway Lofts\Design\Drawings\Utility Plan - Gateway Lofts.dwg, Wide, 2018/06/01 11:36 am

E. STORMWATER QUALITY PRE-TREATMENT CHAMBER CALCULATIONS

STORMWATER PRE-TREATMENT CHAMBER WORKSHEET

Stormwater Pre-Treatment Chamber No. 1

PROJECT DATA

Project Name:	Gateway Lofts
Project Number:	BUF-2018012
Municipality:	City of Jamestown
Engineer:	Greenman-Pedersen, Inc.
Designer:	JLB
E-mail:	Jboudreau@gpinet.com
Data Entry Date:	Friday, June 7, 2019

REQUIRED TREATMENT BEFORE BYPASSING (RTBB)

Design Storm:	90% Rainfall Event	
Rainfall, *in*:	1.00	
Redev. Water Quality Volume (WQ_v), *ac-ft*:	0.0681	0.068 req
Runoff, *in*:	0.53	
RTBB, *cfs*:	**1.00**	

DESIGN STORM HYDROLOGY

Return Interval, *yrs*:	10	Area, *ac*:	1.53	C
Storm Intensity, *in/hr*:	3.71	% Impervious:	93.4%	0.95
CA:	1.38			
Peak Runoff, *cfs*:	5.11	% Pervious:	6.6%	0.20

TREATMENT CHAMBER

Structure:	Pre-Treat 1
Rim:	1298.50
Inlet Invert(s):	1293.83
Outlet Invert:	1293.83

OUTLET PIPE

Pipe Material:	HDPE
Pipe Diameter, *in*:	15
Pipe Length, *ft*:	17
Pipe Slope, *%*:	0.50
Downstream Inv.:	1293.74

INLET PIPE 1

Pipe Material:	HDPE
Pipe Diameter, *in*:	15
Pipe Length, *ft*:	95
Pipe Slope, *%*:	0.50

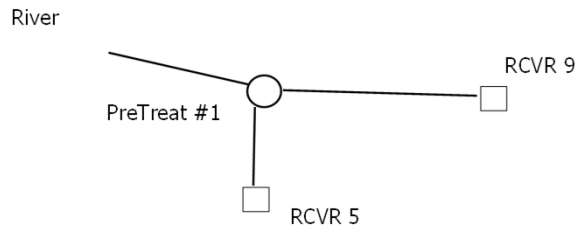
PIPE VELOCITY

Area, *sf*:	1.23
Flow, *cfs*:	4.95
Velocity, *fps*:	4.59

UPSTREAM

Structure(s):	RCVR 9
Rim(s):	1298.40
Outlet Invert(s):	1294.30
Outlet Dia.(s), *in*:	15

SKETCH



8713 Read Road • PO Box 55
East Pembroke, NY 14056
Phone 585-762-8314 Fax 585-762-8315
www.env21.com
E-mail:envengr@env21.com

UniStorm Manhole Maintenance

UNISTORM –RFV DESCRIPTION

The UNISTORM-RFV is a Precast Concrete manhole consisting of inlet and outlet stages of treatment separated by a Precast concrete baffle wall. The baffle wall is designed to meet site-specific flow requirements and provides three functions:

(1) Remove floatables and sediment in the inlet stage
(2) Provide a low head loss flow path between the first and second stages and provide for additional sediment removal in the second stage.
(3) Support the Environment 21 Flow Control Vanes mounted in the upstream side of the baffle wall.

UNISTORM-RFV manholes are manufactured from standard precast concrete components. These components are designed to reduce the weight that needs to be handled during shipment and installation.

Normal water depth in the UNISTORM-R sump will be 4-5 ft. This shallow sump reduces excavation costs and the depth to be accessed from a pumper truck.

POLLUTANT STORAGE CAPACITY AND CLEANOUT FREQUENCY

Recommended practice for the UNISTORM-RFV is to plan on semi-annual inspections and annual pumpout based on the following general design guidelines:

(1) Sediment Sump -- the rate at which sediment is accumulated will depend on land use and other pavement activities (e.g., heavy winter sanding will create extra sediment, while regular sweeping will reduce accumulation). Environment 21 recommends sediment pumpout when the average depth of the sediment pile is 0.50 ft. The UNISTORM-RFV sump is designed to store an average sediment pile depth of 1.0 ft.

(2) Floatables Chambers -- oil sheen and floating debris will be retained in the inlet stage of the UNISTORM-RFV. Annual accumulation of floatables is estimated at less than 0.50 inches but can vary depending on land use.

During the first year of operation, Environment 21 recommends visual inspections in February, May, and October. This inspection schedule can be modified in subsequent years according to experience and/or to meet specific stormwater permit requirements.

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SEDIMENT PILE DEPTH MEASUREMENT

Cast iron manhole frames with vented covers are provided in the UNISTORM-R roof to make the sediment pile readily accessible for measurement and cleaning. Sediment should be removed when the first-stage sediment pile depth is 6”-12”. Normal water depth in the UNISTORM-RFV sump will be 4-5 ft.

To detect the surface of the first stage sediment pile, use a measuring rod with 3-6 inch diameter end plate. Lower the rod into the UNISTORM-RFV until a slight resistance to movement occurs when the end plate contacts the top of the sediment pile.
To determine sediment pile depth, twist the measuring rod into the sediment pile and measure the additional depth needed to contact the floor of the UNISTORM-RFV.

Organic debris that has become waterlogged and settled to the floor is expected to be present in relatively small quantities that will be removed during pumpout of the mineral sediment.

FLOATABLES OBSERVATION AND MEASUREMENT

Oil sheen and floating debris can be observed by using a flood light to illuminate the water surface in the inlet stage of the UNISTORM-RFV. Gently stir the floatables to estimate depth. This depth will typically be less than one inch and floatables can be skimmed from the surface prior to pumpout of the sediment.

PUMPOUT

Pumpout of the UNISTORM-RFV is achieved using standard truck-mounted sewer and catch basin cleaners with positive displacement rotary lobe vacuum pumps. Manhole openings provide access to both stages of the UNISTORM-RFV. Site Plans for the project should include a driveway area for pumper truck access to the UNISTORM-RFV.

DISPOSAL OF WASTEWATER, SEDIMENT, AND FLOATABLES

Commercial and retail sites are usually adjacent and tributary to public stormwater systems, and accordingly pumper truck contents should be delivered to an approved waste disposal facility. Facilities used by the local Highway Department may be acceptable. For industrial sites, pumper truck contents should be delivered to a disposal site approved by the owner of the industrial site.

H. TEMPORARY EROSION CONTROL MEASURES

STANDARD AND SPECIFICATIONS FOR EARTH DIKE



Definition & Scope

A **temporary** berm or ridge of compacted soil, located in such a manner as to channel water to a desired location. Its purpose is to direct runoff to a sediment trapping device, thereby reducing the potential for erosion and off site sedimentation. Earth dikes can also be used for diverting clean water away from disturbed areas.

Conditions Where Practice Applies

Earth dikes are often constructed across disturbed areas and around construction sites such as graded parking lots and subdivisions. The dikes shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 3.5 on page 3.15 for details.

General

	Dike A	Dike B
Drainage Area	<5 Ac	5-10 Ac
Dike Height	18 in.	36 in.
Dike Width	24 in.	36 in.
Flow Width	4 ft.	6 ft.
Flow Depth in Channel	8 in.	15 in.
Side Slopes	2:1 or flatter	2:1 or flatter
Grade	0.5% Min. 10% Max.	0.5% Min. 10% Max.

For drainage areas larger than 10 acres, refer to the Standard and Specifications for Diversion on page 3.9.

Stabilization

Stabilization of the dike shall be completed within 2 days of installation in accordance with the standard and specifications for seed and straw mulch or straw mulch only if not in seeding season. The flow channel shall be stabilized as per the following criteria:

Type of Treatment	Channel Grade[1]	Flow Channel	
		A (<5 Ac.)	B (5-10 Ac.)
1	0.5-3.0%	Seed & Straw Mulch	Seed & Straw Mulch
2	3.1-5.0%	Seed & Straw Mulch	Seed and cover with RECP, sod, or lined with plastic or 2" stone
3	5.1-8.0%	Seed and cover with RECP, Sod, or line with plastic or 2 in. stone	Line with 4-8 in. rip-rap or, geotextile
4	8.1-10%	Line with 4-8 in. rip-rap or geotextile	Site Specific Design

1 In highly erodible soils, as defined by the local approving agency, refer to the next higher slope grade for type of stabilization.

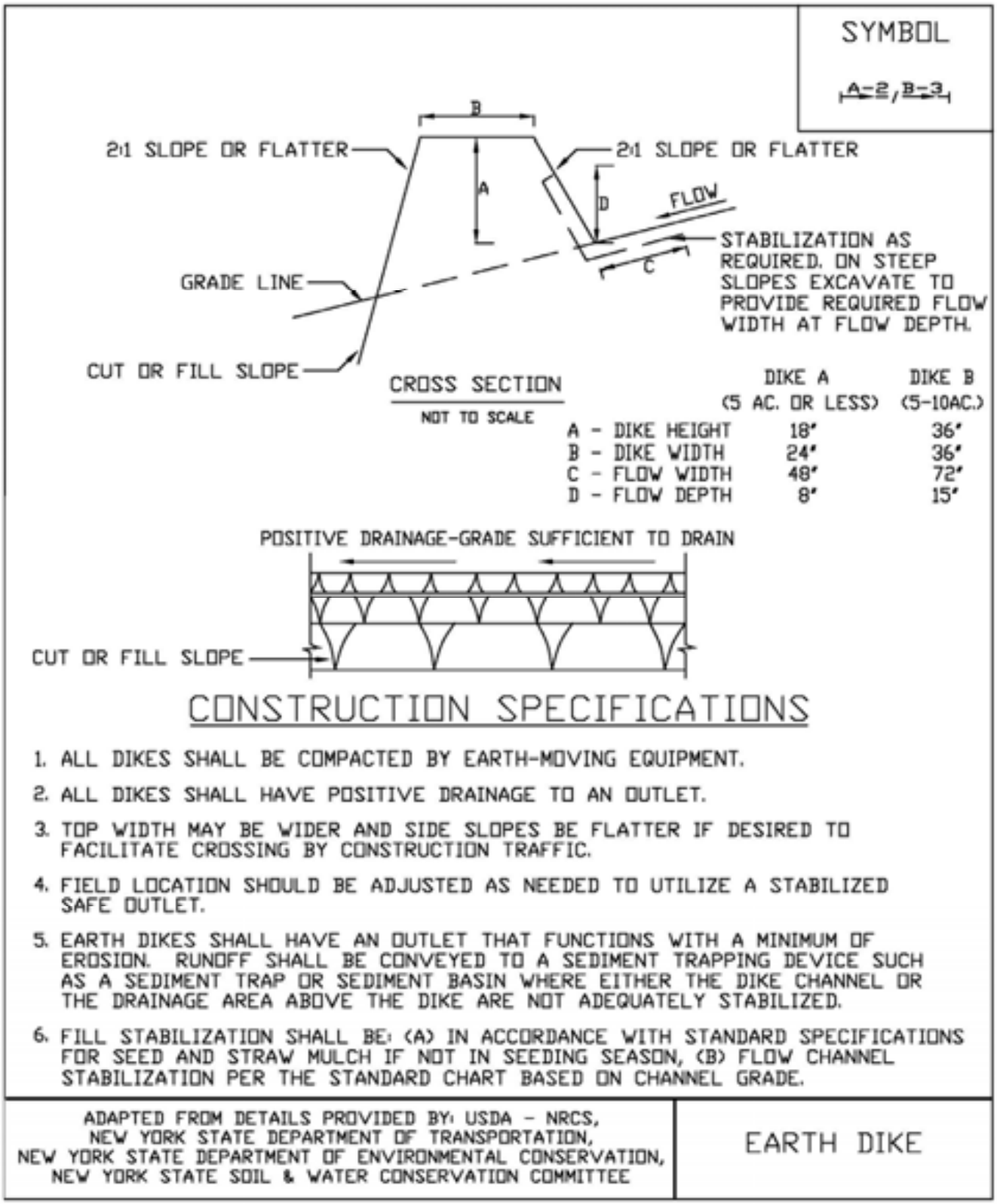
Outlet

Earth dikes shall have an outlet that functions with a minimum of erosion.

Runoff shall be conveyed to a sediment trapping device until the drainage area above the dike is adequately stabilized.

The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.

Figure 3.5
Earth Dike Detail



STANDARD AND SPECIFICATIONS FOR CONSTRUCTION DITCH



Definition & Scope

A **temporary** excavated drainage way to intercept sediment laden water and divert it to a sediment trapping device or to prevent runoff from entering disturbed areas by intercepting and diverting it to a stabilized outlet.

Conditions Where Practice Applies

Construction ditches are constructed:

1. to divert flows from entering a disturbed area.
2. intermittently across disturbed areas to shorten overland flow distances.
3. to direct sediment laden water along the base of slopes to a trapping device.
4. to transport offsite flows across disturbed areas such as rights-of-way.

Ditches collecting runoff from disturbed areas shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 3.2 on page 3.6 for details.

General

	Ditch A	Ditch B
Drainage Area	<5 Ac	5-10 Ac
Bottom Width of Flow Channel	4 ft.	6 ft.
Depth of Flow Channel	1 ft.	1 ft.
Side Slopes	2:1 or flatter	2:1 or flatter
Grade	0.5% Min. 10% Max.	0.5% Min. 10% Max.

For drainage areas larger than 10 acres, refer to the Standard and Specification for Grassed Waterways on page 3.23 and 3.24.

Stabilization

Stabilization of the ditch shall be completed within 2 days of installation in accordance with the appropriate standard and specifications for vegetative stabilization or stabilization with mulch as determined by the time of year. The flow channel shall be stabilized as per the following criteria:

The seeding for vegetative stabilization shall be in accordance with the standard on Page 4.78. The seeded area will be mulched in accordance with the standard on Page 4.39.

Type of Treatment	Channel Grade[1]	Flow Channel	
		A (<5 Ac.)	B (5-10 Ac.)
1	0.5-3.0%	Seed & Straw Mulch	Seed & Straw Mulch
2	3.1-5.0%	Seed & Straw Mulch	Seed and cover with RECP[2], Sod, or lined with plastic or 2" stone
3	5.1-8.0%	Seed and cover with RECP[2], Sod, or line with plastic or 2 in. stone	Line with 4-8 in. rip-rap or, geotextile
4	8.1-10%	Line with 4-8 in. rip-rap or geotextile	Site Specific Design

1 In highly erodible soils, as defined by the local approving agency, refer to the next higher slope grade for type of stabilization.
2 Rolled Erosion Control Product.

Outlet

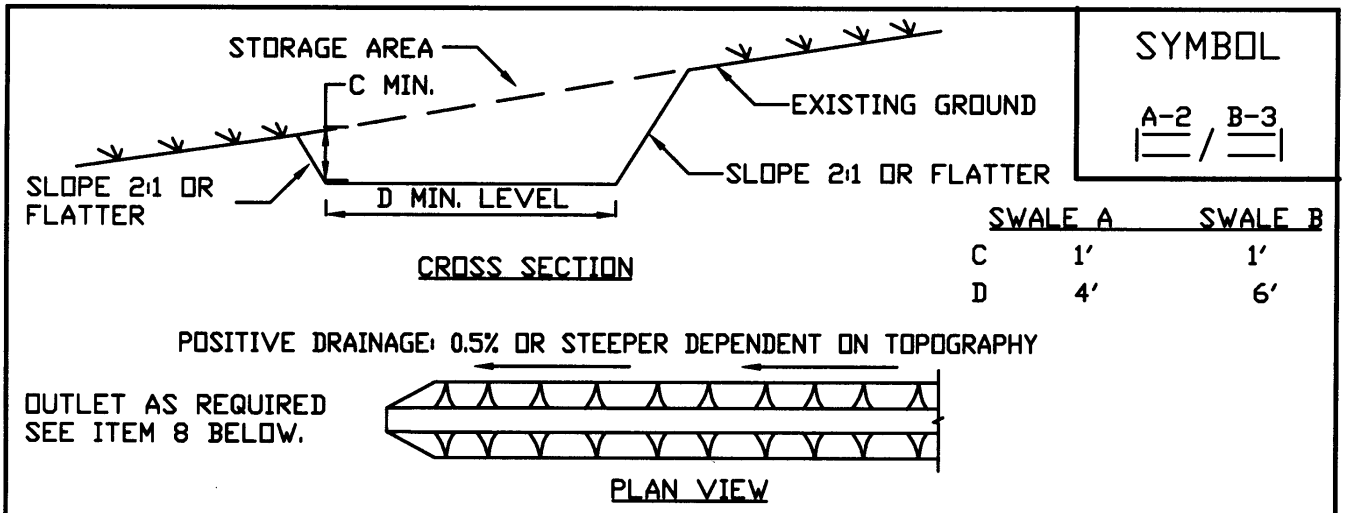
Ditch shall have an outlet that functions with a minimum of erosion, and dissipates runoff velocity prior to discharge off the site.

Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin until the drainage area above the ditch is adequately stabilized.

The on-site location may need to be adusted to meet field conditions in order to utilize the most suitable outlet condition.

If a ditch is used to divert clean water flows from entering a disturbed area, a sediment trapping device may not be needed.

Figure 5A.2
Temporary Swale



CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE FLOW CHANNEL STABILIZATION CHART BELOW:

TYPE OF TREATMENT	CHANNEL GRADE	A(5 AC. OR LESS)	B(5 AC -10AC)
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED AND COVER USING RECP
3	5.1-8.0%	SEED AND COVER WITH RECP	LINED WITH 4-8" RIP-RAP OR GEOTEXTILE
4	8.1-20.%	LINED WITH 4-8" RIP-RAP OR GEOTEXTILE	ENGINEERED DESIGN

9. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

TEMPORARY SWALE

STANDARD AND SPECIFICATIONS FOR PERIMETER DIKE/SWALE



Definition

A temporary ridge of soil excavated from an adjoining swale located along the perimeter of the site or disturbed area.

Purpose

The purpose of a perimeter dike/swale is to prevent off site storm runoff from entering a disturbed area and to prevent sediment laden storm runoff from leaving the construction site or disturbed area.

Conditions Where Practice Applies

Perimeter dike/swale is constructed to divert flows from entering a disturbed area, or along tops of slopes to prevent flows from eroding the slope, or along base of slopes to direct sediment laden flows to a trapping device.

The perimeter dike/swale shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 5A.3 on page 5A.8 for details.

The perimeter dike/swale shall not be constructed outside the property lines without obtaining legal easements from affected adjacent property owners. A design is not required for perimeter dike/swale. The following criteria shall be used:

Drainage area – Less than 2 acres (for drainage areas larger than 2 acres but less than 10 acres, see earth dike or temporary swale; for drainage areas larger than 10 acres, see standard and specifications for diversion).

Height – 18 inches minimum from bottom of swale to top of dike evenly divided between dike height and swale depth.

Bottom width of dike – 2 feet minimum.

Width of swale – 2 feet minimum.

Grade – Dependent upon topography, but shall have positive drainage (sufficient grade to drain) to an adequate outlet. Maximum allowable grade not to exceed 8 percent.

Stabilization – The disturbed area of the dike and swale shall be stabilized within 7 days of installation, in accordance with the standard and specifications for temporary swales.

Outlet

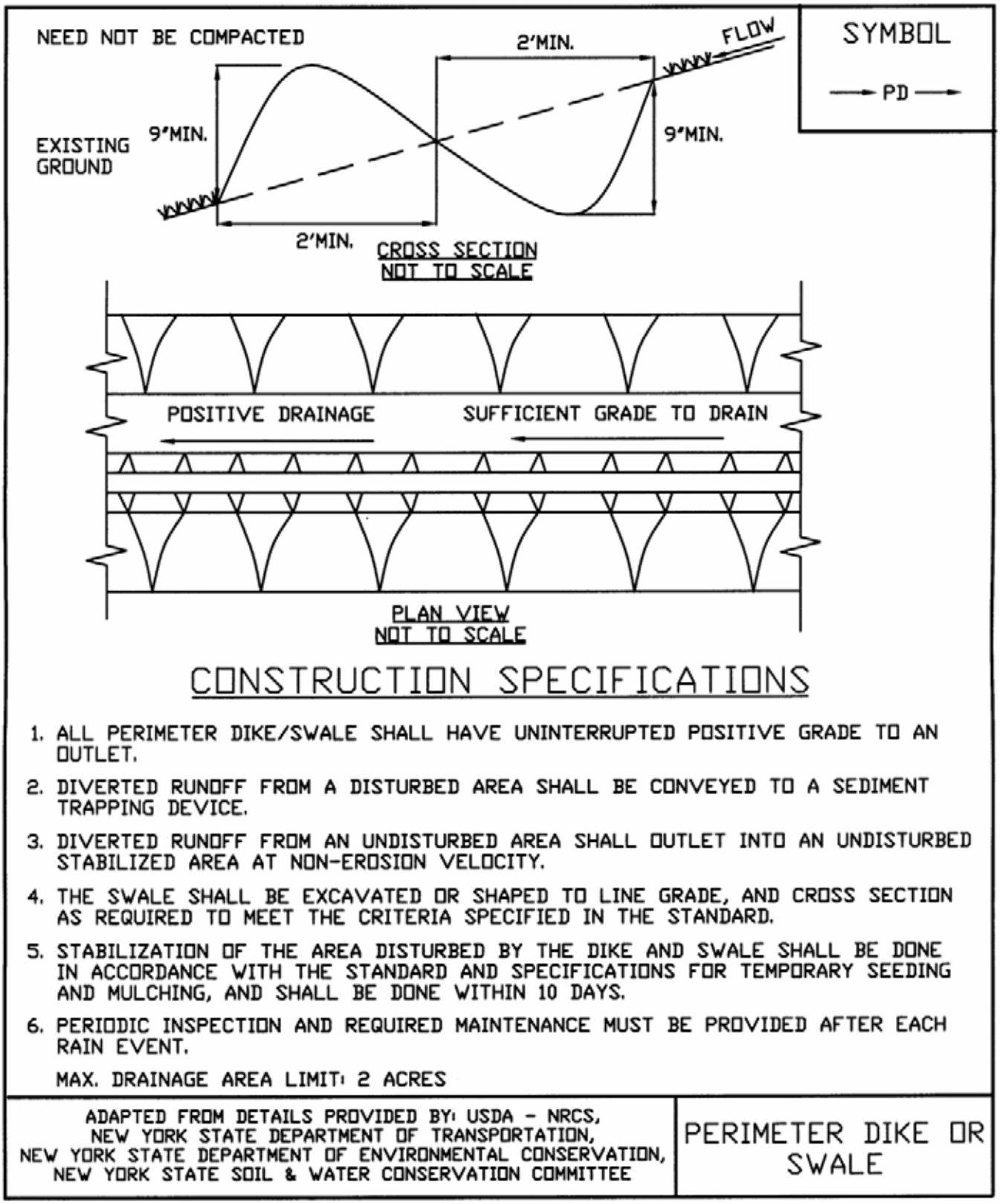
1. Perimeter dike/swale shall have a stabilized outlet.

2. Diverted runoff from a protected or stabilized upland area shall outlet directly onto an undisturbed stabilized area.

3. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as a sediment trap, sediment basin, or to an area protected by any of these practices.

4. The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.

Figure 5A.3
Perimeter Dike/Swale



CONSTRUCTION SPECIFICATIONS

1. ALL PERIMETER DIKE/SWALE SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSION VELOCITY.
4. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED IN THE STANDARD.
5. STABILIZATION OF THE AREA DISTURBED BY THE DIKE AND SWALE SHALL BE DONE IN ACCORDANCE WITH THE STANDARD AND SPECIFICATIONS FOR TEMPORARY SEEDING AND MULCHING, AND SHALL BE DONE WITHIN 10 DAYS.
6. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

MAX. DRAINAGE AREA LIMIT: 2 ACRES

ADAPTED FROM DETAILS PROVIDED BY: USDA – NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

PERIMETER DIKE OR SWALE

STANDARD AND SPECIFICATIONS FOR STRAW BALE DIKE



Definition & Scope

A **temporary** barrier of straw, or similar material, used to intercept sediment laden runoff from small drainage areas of disturbed soil to reduce runoff velocity and effect deposition of the transported sediment load. Straw bale dikes have an estimated design life of three (3) months.

Condition Where Practice Applies

The straw bale dike is used where:

1. No other practice is feasible.
2. There is no concentration of water in a channel or other drainageway above the barrier.
3. Erosion would occur in the form of sheet erosion.
4. Length of slope above the straw bale dike does not exceed the following limits with the bale placed 10 feet from the toe of the slope:

Constructed Slope	Percent Slope	Slope Length (ft.)
2:1	50	25
3:1	33	50
4:1	25	75

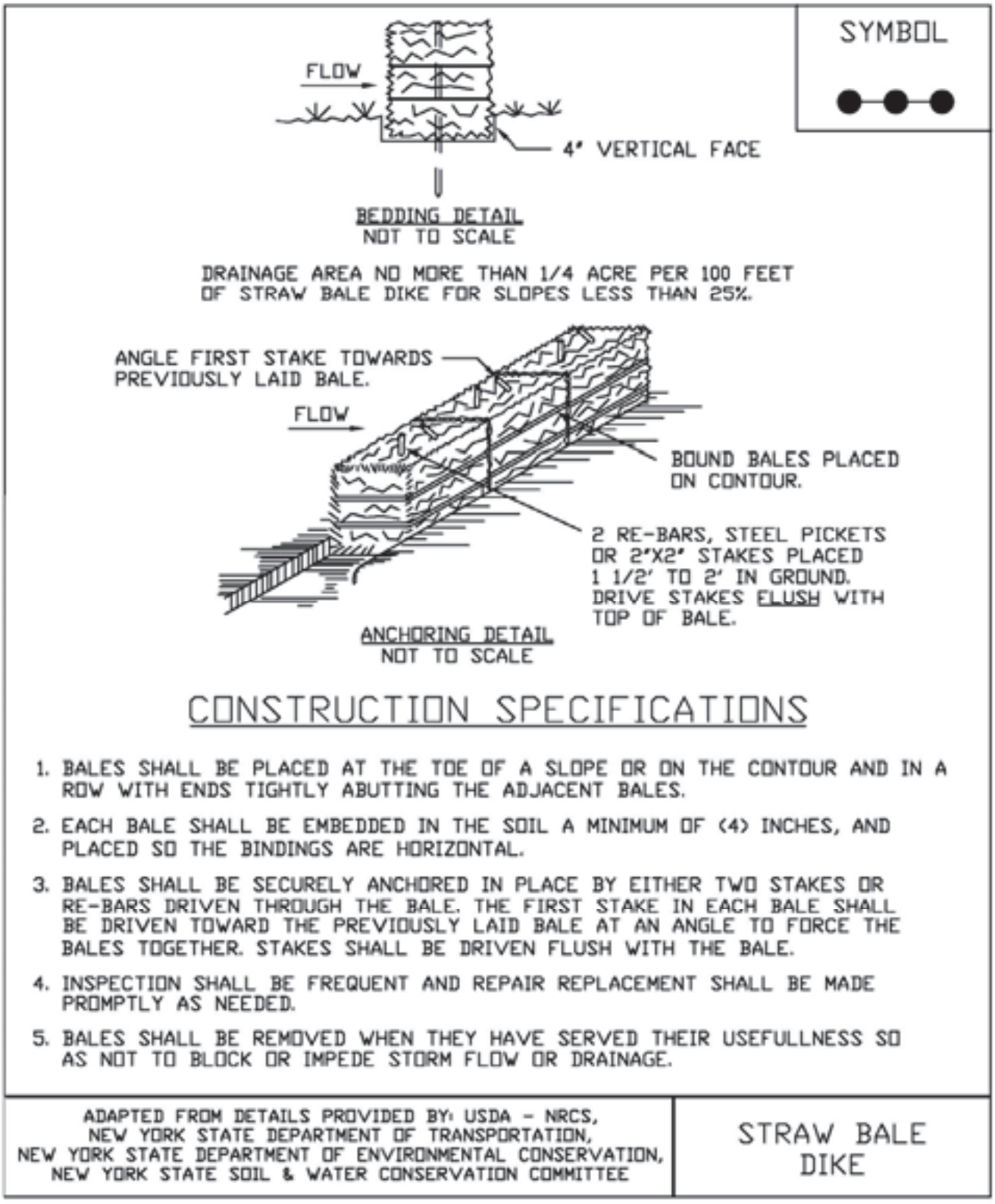
Where slope gradient changes through the drainage area, steepness refers to the steepest slope section contributing to the straw bale dike.

The practice may also be used for a single family lot if the slope is less than 15 percent. The contributing drainage areas in this instance shall be less than one quarter of an acre per 100 feet of dike and the length of slope above the dike shall be less than 100 feet.

Design Criteria

The above table is adequate, in general, for a one-inch rainfall event. Larger storms could cause failure of this practice. Use of this practice in sensitive areas for longer than one month should be specifically designed to store expected runoff. All bales shall be placed on the contour with cut edge of bale adhering to the ground. See Figure 5.34 on page 5.64 for details.

Figure 5.34
Straw Bale Dike



STANDARD AND SPECIFICATIONS FOR SILT FENCE



Definition & Scope

A **temporary** barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil by temporarily ponding the sediment laden runoff allowing settling to occur. The maximum period of use is limited by the ultraviolet stability of the fabric (approximately one year).

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope length and fence length will not exceed the limits shown in the Design Criteria for the specific type of silt fence used ; and
2. Maximum ponding depth of 1.5 feet behind the fence; and
3. Erosion would occur in the form of sheet erosion; and
4. There is no concentration of water flowing to the barrier; and
5. Soil conditions allow for proper keying of fabric, or other anchorage, to prevent blowouts.

Design Criteria

1. Design computations are not required for installations of 1 month or less. Longer installation periods should be designed for expected runoff.
2. All silt fences shall be placed as close to the disturbed area as possible, but at least 10 feet from the toe of a slope steeper than 3H:1V, to allow for maintenance and roll down. The area beyond the fence must be undisturbed or stabilized.
3. The type of silt fence specified for each location on the plan shall not exceed the maximum slope length and maximum fence length requirements shown in the following table:

		Slope Length/Fence Length (ft.)		
Slope	Steepness	Standard	Reinforced	Super
<2%	< 50:1	300/1500	N/A	N/A
2-10%	50:1 to 10:1	125/1000	250/2000	300/2500
10-20%	10:1 to 5:1	100/750	150/1000	200/1000
20-33%	5:1 to 3:1	60/500	80/750	100/1000
33-50%	3:1 to 2:1	40/250	70/350	100/500
>50%	> 2:1	20/125	30/175	50/250

Standard Silt Fence (SF) is fabric rolls stapled to wooden stakes driven 16 inches in the ground.
Reinforced Silt Fence (RSF) is fabric placed against welded wire fabric with anchored steel posts driven 16 inches in the ground.
Super Silt Fence (SSF) is fabric placed against chain link fence as support backing with posts driven 3 feet in the ground.

4. Silt fence shall be removed as soon as the disturbed area has achieved final stabilization.

The silt fence shall be installed in accordance with the appropriate details. Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. Butt joints are not acceptable. A detail of the silt fence shall be shown on the plan. See Figure 5.30 on page 5.56 for Reinforced Silt Fence as an example of details to be provided.

Criteria for Silt Fence Materials

1. Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance.

Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	110	ASTM D 4632
Elongation at Failure (%)	20	ASTM D 4632
Mullen Burst Strength (PSI)	300	ASTM D 3786
Puncture Strength (lbs)	60	ASTM D 4833
Minimum Trapezoidal Tear Strength (lbs)	50	ASTM D 4533
Flow Through Rate (gal/min/sf)	25	ASTM D 4491
Equivalent Opening Size	40-80	US Std Sieve ASTM D 4751
Minimum UV Residual (%)	70	ASTM D 4355

2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.5 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot. Posts for super silt fence shall be standard chain link fence posts.

3. Wire Fence for reinforced silt fence: Wire fencing shall be a minimum 14 gage with a maximum 6 in. mesh opening, or as approved.

4. Prefabricated silt fence is acceptable as long as all material specifications are met.

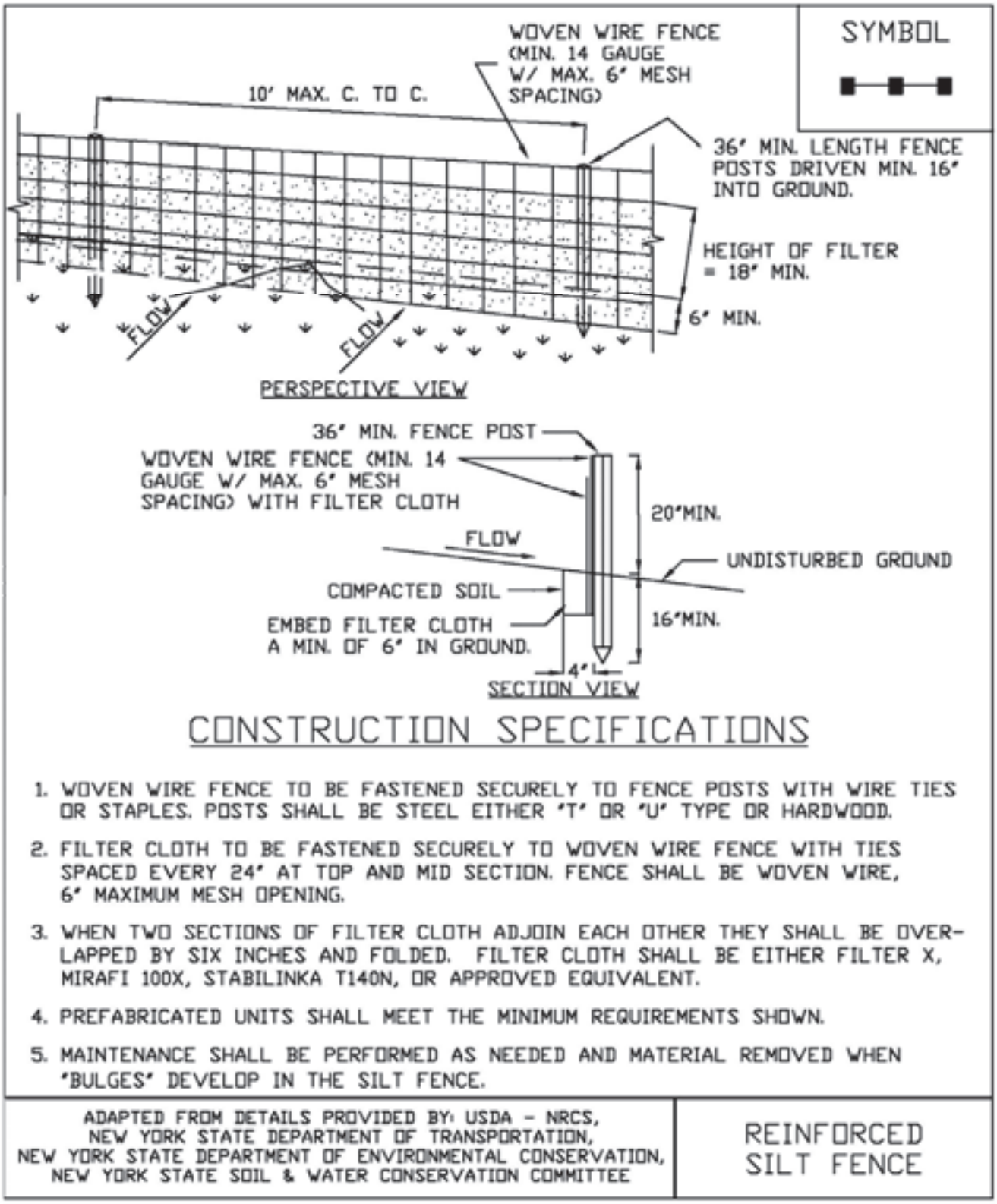
Super Silt Fence



Reinforced Silt Fence



Figure 5.30
Reinforced Silt Fence



STANDARD AND SPECIFICATIONS FOR COMPOST FILTER SOCK



Definition & Scope

A **temporary** sediment control practice composed of a degradable geotextile mesh tube filled with compost filter media to filter sediment and other pollutants associated with construction activity to prevent their migration offsite.

Condition Where Practice Applies

Compost filter socks can be used in many construction site applications where erosion will occur in the form of sheet erosion and there is no concentration of water flowing to the sock. In areas with steep slopes and/or rocky terrain, soil conditions must be such that good continuous contact between the sock and the soil is maintained throughout its length. For use on impervious surfaces such as road pavement or parking areas, proper anchorage must be provided to prevent shifting of the sock or separation of the contact between the sock and the pavement. Compost filter socks are utilized both at the site perimeter as well as within the construction areas. These socks may be filled after placement by blowing compost into the tube pneumatically, or filled at a staging location and moved into its designed location.

Design Criteria

1. Compost filter socks will be placed on the contour with both terminal ends of the sock extended 8 feet upslope at a 45 degree angle to prevent bypass flow.

2. Diameters designed for use shall be 12" – 32" except that 8" diameter socks may be used for residential lots to control areas less than 0.25 acres.

3. The flat dimension of the sock shall be at least 1.5 times the nominal diameter.

4. The **Maximum Slope Length** (in feet) above a compost filter sock shall not exceed the following limits:

Dia. (in.)	Slope %						
	2	5	10	20	25	33	50
8	225*	200	100	50	20	—	—
12	250	225	125	65	50	40	25
18	275	250	150	70	55	45	30
24	350	275	200	130	100	60	35
32	450	325	275	150	120	75	50
* Length in feet							



5. The compost infill shall be well decomposed (matured at least 3 months), weed-free, organic matter. It shall be aerobically composted, possess no objectionable odors, and contain less than 1%, by dry weight, of man-made foreign matter. The physical parameters of the compost shall meet the standards listed in Table 5.2 - Compost Standards Table. **Note: All biosolids compost produced in New York State (or approved for importation) must meet NYS DEC's 6 NYCRR Part 360 (Solid Waste Management Facilities) requirements. The Part 360 requirements are equal to or more stringent than 40 CFR Part 503 which ensure safe standards for pathogen reduction and heavy metals content. When using compost filter socks adjacent to surface water, the compost should have a low nutrient value.**

6. The compost filter sock fabric material shall meet the

7. Compost filter socks shall be anchored in earth with 2" x 2" wooden stakes driven 12" into the soil on 10 foot centers on the centerline of the sock. On uneven terrain, effective ground contact can be enhanced by the placement of a fillet of filter media on the disturbed area side of the compost sock.

8. All specific construction details and material specifications shall appear on the erosion and sediment control constructions drawings when compost filter socks are included in the plan.

Maintenance

1. Traffic shall not be permitted to cross filter socks.

2. Accumulated sediment shall be removed when it reaches half the above ground height of the sock and disposed of in accordance with the plan.

3. Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired in the manner required by the manufacturer or replaced within 24 hours of inspection notification.

4. Biodegradable filter socks shall be replaced after 6 months; photodegradable filter socks after 1 year. Polypropylene socks shall be replaced according to the manufacturer's recommendations.

5. Upon stabilization of the area contributory to the sock, stakes shall be removed. The sock may be left in place and vegetated or removed in accordance with the stabilization plan. For removal the mesh can be cut and the compost spread as an additional mulch to act as a soil supplement.

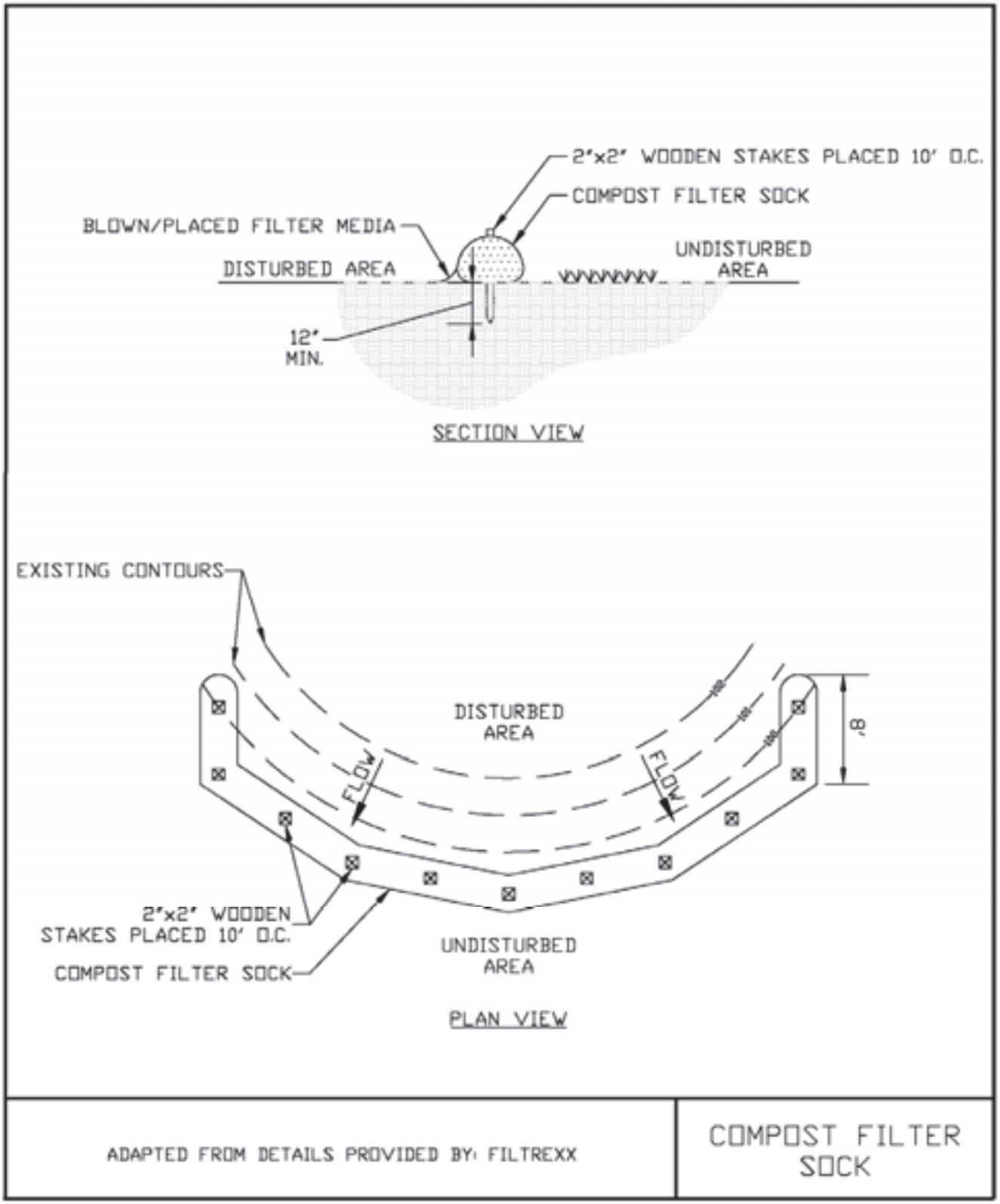
Table 5.1 - Compost Sock Fabric Minimum Specifications Table

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photodegradable	Photodegradable	Biodegradable	Photodegradable	Photodegradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years

Table 5.2 - Compost Standards Table

Organic matter content	25% - 100% (dry weight)
Organic portion	Fibrous and elongated
pH	6.0 – 8.0
Moisture content	30% - 60%
Particle size	100% passing a 1" screen and 10 - 50% passing a 3/8" screen
Soluble salt concentration	5.0 dS/m (mmhos/cm) maximum

Figure 5.2
Compost Filter Sock



STANDARD AND SPECIFICATIONS FOR CHECK DAM



Definition & Scope

Small barriers or dams constructed of stone, bagged sand or gravel, or other durable materials across a drainageway to reduce erosion in a drainage channel by reducing the velocity of flow in the channel.

Conditions Where Practice Applies

This practice is used as a **temporary** and, in some cases, a **permanent** measure to limit erosion by reducing velocities in open channels that are degrading or subject to erosion or where permanent stabilization is impractical due to short period of usefulness and time constraints of construction.

Design Criteria

Drainage Area: Maximum drainage area above the check dam shall not exceed two (2) acres.

Height: Not greater than 2 feet. Center shall be maintained 9 inches lower than abutments at natural ground elevation.

Side Slopes: Shall be 2:1 or flatter.

Spacing: The check dams shall be spaced as necessary in the channel so that the crest of the downstream dam is at the elevation of the toe of the upstream dam. This spacing is equal to the height of the check dam divided by the channel slope.

Therefore: $$S = \frac{h}{s}$$

Where: S = spacing interval (ft.)
h = height of check dam (ft.)
s = channel slope (ft./ft.)

Example:

For a channel with a 4% slope and 2 ft. high stone check dams, they are spaced as follows:

$$S = \frac{2\ \text{ft}}{0.04\ \frac{\text{ft}}{\text{ft}}} = 50\ \text{ft}$$

For stone check dams: Use a well graded stone matrix 2 to 9 inches in size (NYS – DOT Light Stone Fill meets these requirements).

The overflow of the check dams will be stabilized to resist erosion that might be caused by the check dam. See Figure 3.1 on page 3.3 for details.

Check dams should be anchored in the channel by a cutoff trench 1.5 ft. wide and 0.5 ft. deep and lined with filter fabric to prevent soil migration.

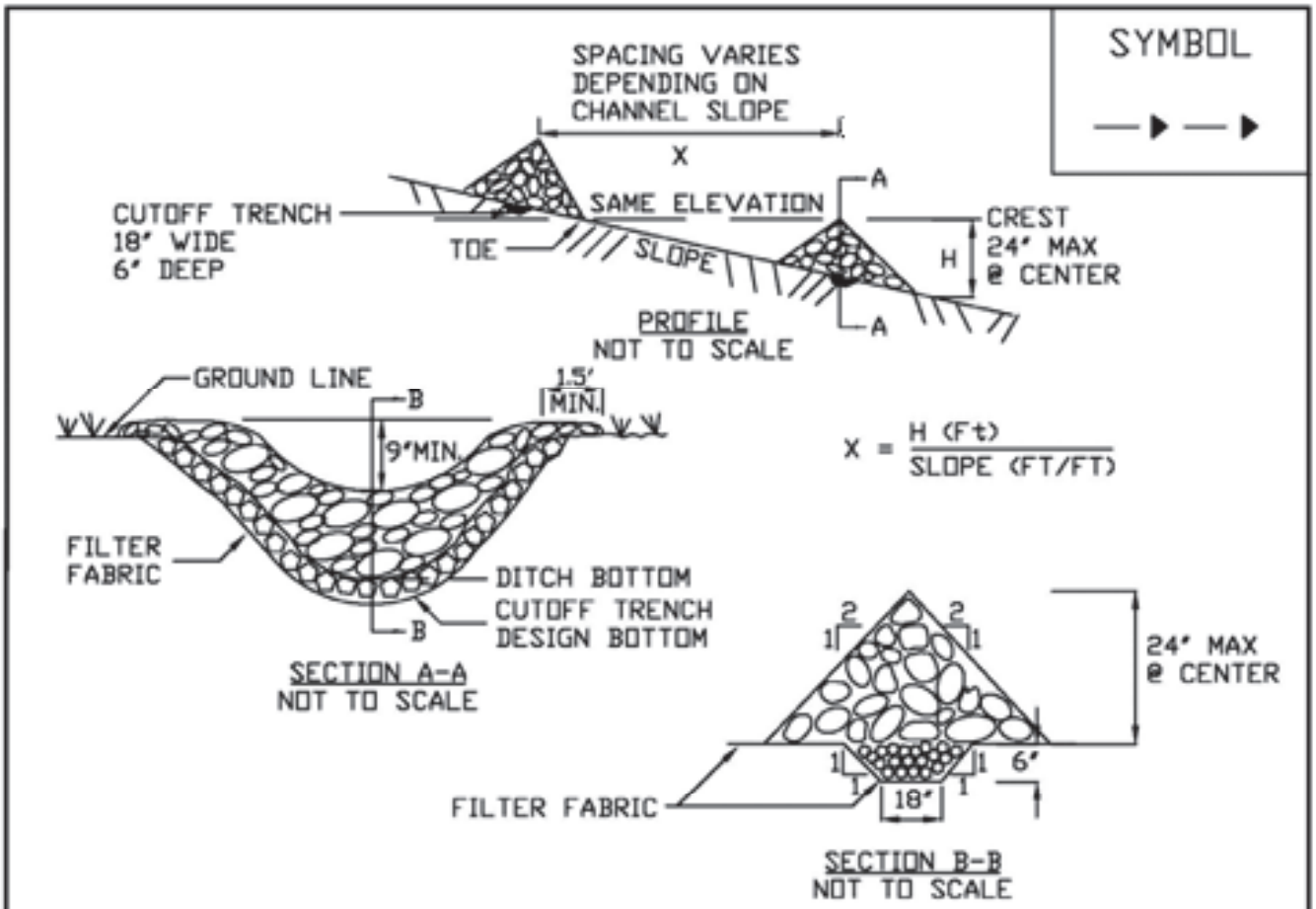
For filter sock or fiber roll check dams: The check dams will be anchored by staking the dam to the earth contact surface. The dam will extend to the top of the bank. The check dam will have a splash apron of NYS DOT #2 crushed stone extending a minimum 3 feet downstream from the dam and 1 foot up the sides of the channel. The compost and materials for a filter sock check dam shall meet the requirements shown in the standard for Compost Filter Sock on page 5.7.

Maintenance

The check dams should be inspected after each runoff event. Correct all damage immediately. If significant erosion has occurred between structures, a liner of stone or other suitable material should be installed in that portion of the channel or additional check dams added.

Remove sediment accumulated behind the dam as needed to allow channel to drain through the stone check dam and prevent large flows from carrying sediment over the dam.

Figure 3.1
Stone Check Dam Detail



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

STONE CHECK DAM

STANDARD AND SPECIFICATIONS FOR TURBIDITY CURTAIN



Definition & Scope

A **temporary** flexible, impenetrable barrier used to trap sediment in water bodies. This curtain is weighted at the bottom to achieve closure while supported at the top through a flotation system and used to prevent the migration of silt from a work site in a water environment into the larger body of water. Top bar float has to support weight of curtain material. Bottom anchor has to be flexible so that it will lie along the contour of the water body bottom.

Condition Where Practice Applies

A turbidity curtain is generally used when construction activity occurs within a waterbody or along its shoreline and is of short duration, generally less than one month. Curtains are used in calm water surfaces and not in areas of flowing water. **Turbidity curtains are not to be used across flowing watercourses.**

Design Criteria

The turbidity curtain shall be located beyond the lateral limits of the construction site and firmly anchored in place. The alignment should be set as close to the work area as possible but not so close as to be disturbed by applicable construction equipment. The height of the curtain shall be 20 percent greater than the depth of the water to allow for water level fluctuations. The area that the turbidity curtain protects shall not contain large culverts or drainage areas that if flows occur behind the curtain would cause a breach or lost contact at the bottom surface.

If water depths at the design alignment are minimal, the toe can be anchored in place by staking.

See Figure 5.35 on page 5.66.

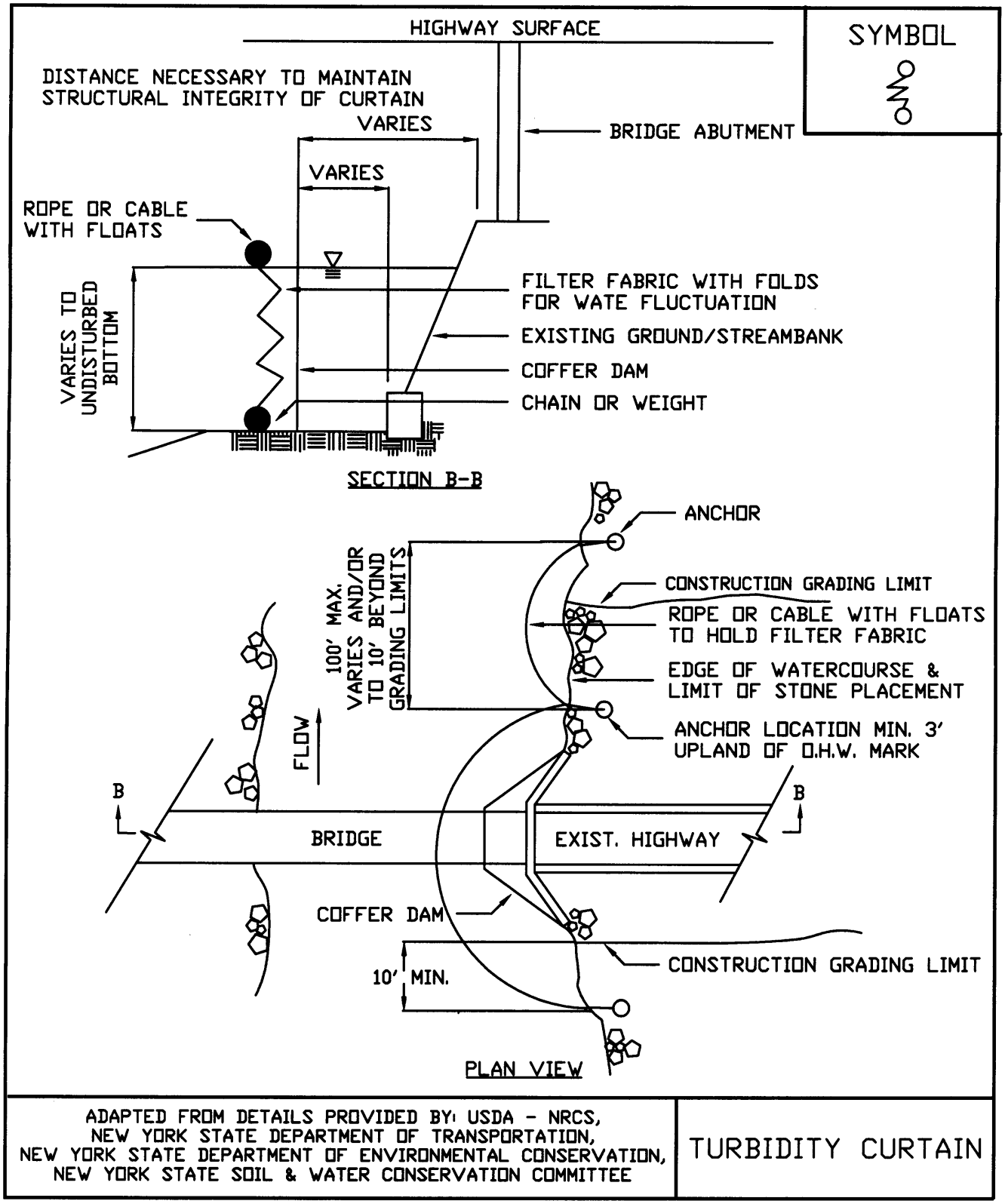
Construction Specifications

The area of proposed installation of the curtain shall be inspected for obstacles and impediments that could damage the curtain or impair its effectiveness to retain sediment. All materials shall be removed so they cannot enter the waterbody. Shallow installations can be made by securing the curtain by staking rather than using a flotation system. Supplemental anchors of the turbidity curtain toe shall be used, as needed, depending on water surface disturbances such as boats and wave action by winds.

Maintenance

The turbidity curtain shall be inspected daily and repaired or replaced immediately. It is not normally necessary to remove sediment deposited behind the curtain; but, when necessary, removal is usually done by hand prior to removal of the barrier. All removed silt is stabilized away from the waterbody. The barrier shall be removed by carefully pulling it toward the construction site to minimize the release of attached sediment. Any floating construction or natural debris shall be immediately removed to prevent damage to the curtain. If the curtain is oriented in a manner that faces the prevailing winds, frequent checks of the anchorage shall be made.

Figure 5A.15
Turbidity Curtain



STANDARD AND SPECIFICATIONS FOR SEDIMENT TRAP



Definition & Scope

A **temporary** sediment control device formed by excavation and/or embankment to intercept sediment-laden runoff and trap the sediment in order to protect drainageways, properties, and rights-of-way below the sediment trap from sedimentation.

Conditions Where Practice Applies

A sediment trap is usually installed in a drainageway, at a storm drain inlet, or other points of collection from a disturbed area for one construction season.

Sediment traps should be used to artificially break up the natural drainage area into smaller sections where a larger device (sediment basin) would be less effective.

Design Criteria

If the drainage area to the proposed trap location exceeds 5 acres, or the trap is in place beyond one construction season, or any of the additional design criteria presented here cannot be met, a full Sediment Basin must be used. See Standard and Specification for Sediment Basin on page 5.19.

Drainage Area

The maximum drainage area for all sediment traps shall be 5 acres.

Location

Sediment traps shall be located so that they can be installed prior to grading or filling in the drainage area they are to protect. Traps must **not be located any closer than 20 feet** from a proposed building foundation if the trap is to function during building construction. Locate traps to obtain maximum storage benefit from the terrain and for ease of cleanout and disposal of the trapped sediment.

Trap Size

The volume of a sediment trap as measured at the elevation of the crest of the outlet shall be at least 3,600 cubic feet per acre of drainage area. A minimum length to width ratio of 2:1 should be provided. The volume of a constructed trap shall be calculated using standard mathematical procedures. The volume of a natural sediment trap may be approximated by the equation: Volume (cu.ft.) = 0.4 x surface area (sq.ft.) x maximum depth (ft.).

Trap Cleanout

Sediment shall be removed and the trap restored to the original dimensions when the sediment has accumulated to ½ of the design depth of traps I-II, and 1/3 the depth for trap III. Sediment removed from the trap shall be deposited in a protected area and in such a manner that it will not erode.

Embankment

All earth embankments for sediment traps shall not exceed five (5) feet in height as measured at the low point of the original ground along the centerline of the embankment. Embankments shall have a minimum four (4) foot wide top and side slopes of 2:1 or flatter. The embankment shall be compacted by traversing with equipment while it is being constructed. The embankment shall be stabilized with seed and mulch as soon as it is completed

The elevation of the top of any dike directing water to any sediment trap will equal or exceed the maximum height of the outlet structure along the entire length of the trap.

Excavation

All excavation operations shall be carried out in such a manner that erosion and water pollution shall be minimal. Excavated portions of sediment traps shall have 1:1 or flatter slopes.

Outlet

The outlet shall be designed, constructed, and maintained in such a manner that sediment does not leave the trap and that erosion at or below the outlet does not occur.

Sediment traps must outlet onto stabilized (preferable undisturbed) ground, into a watercourse, stabilized channel, or into a storm drain system. Distance between inlet and outlet should be maximized to the longest length practicable.

All traps must be seeded and mulched immediately after construction.

Trap Details Needed on Erosion and Sediment Control Plans

Each trap shall be delineated on the plans in such a manner that it will not be confused with any other features. Each trap on a plan shall indicate all the information necessary to properly construct and maintain the structure. If the drawings are such that this information cannot be delineated on the drawings, then a table shall be developed. If a table is developed, then each trap on a plan shall have a number and the numbers shall be consecutive.

The following information shall be shown for each trap in a summary table format on the plans.

1. Trap number
2. Type of trap
3. Drainage area
4. Storage required
5. Storage provided (if applicable)
6. Outlet length or pipe sizes
7. Storage depth below outlet or cleanout elevation
8. Embankment height and elevation (if applicable)

Type of Sediment Traps

There are three (3) specific types of sediment traps which vary according to their function, location, or drainage area.

I. Pipe Outlet Sediment Trap
II. Stone Outlet Sediment Trap
III. Compost Filter Sock Sediment Trap

I. Pipe Outlet Sediment Trap

A Pipe Outlet Sediment Trap consists of a trap formed by embankment or excavation. The outlet for the trap is through a perforated riser and a pipe through the embankment. The outlet pipe and riser shall be made of steel, corrugated metal or other suitable material. The top of the embankment shall be at least 1 ½ feet above the crest of the riser. The preferred method of dewatering the sediment trap is by surface skimmer. See Dewatering Device Standard, page 5.10. If the riser alone is used for dewatering, the top 2/3 of the riser shall be perforated with one (1) inch nominal diameter holes or slits spaced six (6) inches vertically and horizontally placed in the concave portion of the corrugated pipe.

No holes or slits will be allowed within six (6) inches of the top of the horizontal barrel. All pipe connections shall be watertight. The riser shall be wrapped with ½ to ¼ inch hardware cloth wire then wrapped with filter cloth with a sieve size between #40-80 and secured with strapping or connecting band at the top and bottom of the cloth. The cloth shall cover an area at least six (6) inches above the highest hole and six (6) inches below the lowest hole. The top of the riser pipe shall not be covered with filter cloth. The riser shall have a base with sufficient weight to prevent flotation of the riser. Two approved bases are:

1. A concrete base 12 in. thick with the riser embedded 9 in. into the concrete base, or
2. One quarter inch, minimum, thick steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2.5 feet of stone, gravel, or earth placed on it to prevent flotation. In either case, each side of the square base measurement shall be the riser diameter plus 24 inches.

Pipe outlet sediment traps shall be limited to a five (5) acre maximum drainage area. Pipe outlet sediment trap is interchangeable in the field with stone outlet provided that these sediment traps are constructed in accordance with the detail and specifications for that trap.

Select pipe diameter from the following table:
See details for Pipe Outlet Sediment Trap ST-I in Figure 5.25 and 5.26 on pages 5.49 and 5.50.

Optional sediment trap dewatering devices are shown on Figure 5.29 on Page 5.53.

Minimum Sizes

Barrel Diameter[1] (in.)	Riser Diameter[1] (in.)	Maximum Drainage Area (ac.)
12	15	1
15	18	2
18	21	3
21	24	4
21	27	5

[1] Barrel diameter may be same size as riser diameter



II. Stone Outlet Sediment Trap

A Stone Outlet Sediment Trap consists of a trap formed by an embankment or excavation. The outlet of this trap is over a stone section placed on level ground. The minimum length (feet) of the outlet shall be equal to four (4) times the drainage area (acres).

Required storage shall be 3,600 cubic feet per acre of drainage area.

The outlet crest (top of stone in weir section) shall be level, at least one (1) foot below top of embankment and no more than one (1) foot above ground beneath the outlet. Stone used in the outlet shall be small riprap (4 in. x 8 in.). To provide more efficient trapping effect, a layer of filter cloth should be embedded one (1) foot back into the upstream face of the outlet stone or a one (1) foot thick layer of two (2) inch or finer aggregate shall be placed on the upstream face of the outlet.

Stone Outlet Sediment Traps may be interchangeable in the field with pipe outlet sediment traps provided they are constructed in accordance with the detail and specifications for those traps. Stone outlet sediment traps shall be limited to a five (5) acre maximum drainage area.

See details for Stone Outlet Sediment Trap ST-II in Figure 5.27 on page 5.51



III. Compost Sock Sediment Trap

A compost sock sediment trap consists of a trap formed by creating an enclosure of geotextile mesh tubes filled with a compost filter media. These traps are used in locations where there is no opportunity to direct runoff into larger traps or well vegetated areas. This could occur at site entrances and access points or in tight areas due to construction boundary limits.

Surface runoff can be directed to the trap with standard conveyance practices. Groundwater or surface ponding in low areas can be pumped into the compost sock sediment trap with appropriate energy dissipation at the pump outlet to prevent scour.

Design criteria for Compost Sock Sediment Trap

1. The maximum drainage area tributary to the trap shall be 5 acres.

2. The minimum settled height above ground shall be 2.0 feet formed by staking 3 compost filter socks in a pyramid as shown in Figure 5.28 on page 5.52.

3. The storage volume provided in the compost sock sediment trap shall be 3,600 cubic feet per tributary drainage acre.

4. If necessary, additional storage area can be created by excavating a sump 1 foot deep beginning at least 5 feet away from the inside sock.

5. All compost filter sock materials, mesh, and compost, will meet the material specifications listed in the Compost Filter Sock standard. No spillway is required.

6. Compost filter sock sediment traps shall be inspected weekly and after every rainfall event. Sediment shall be removed when it reaches one third, 1/3, the height of the trap.

7. The maximum limit of use for a compost sock sediment trap is one (1) year. The existing trap shall be replaced if there is a need for a trap beyond that time limit.

8. Upon completion of the work, the compost sock sediment trap shall be removed. The compost within the socks may be used during cleanup as a vegetative growth medium in accordance with the site stabilization plan.



Figure 5A.16(1)
Pipe Outlet Sediment Trap: ST-I

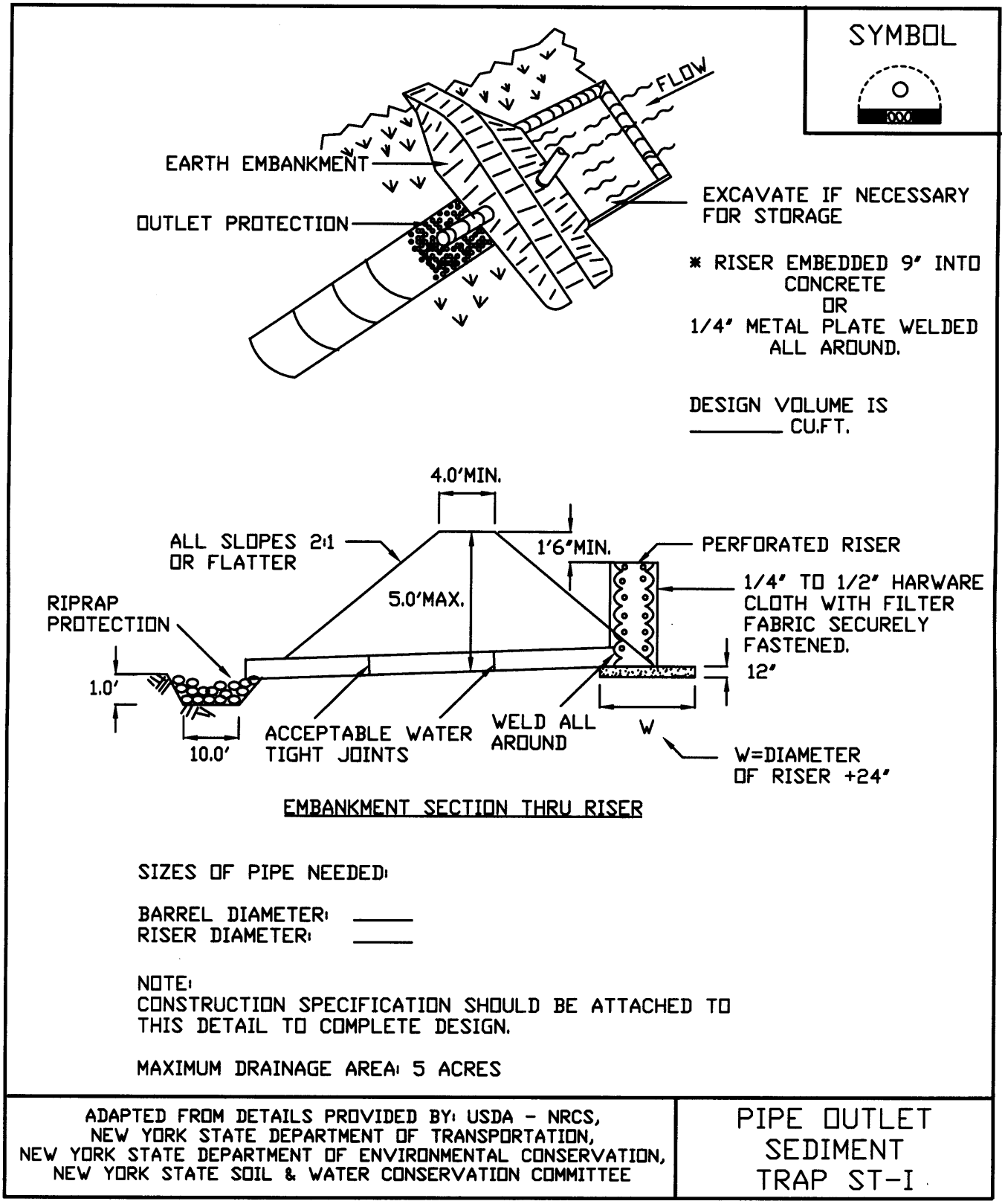


Figure 5A.16(2)
Pipe Outlet Sediment Trap: ST-I—Construction Specifications

SYMBOL



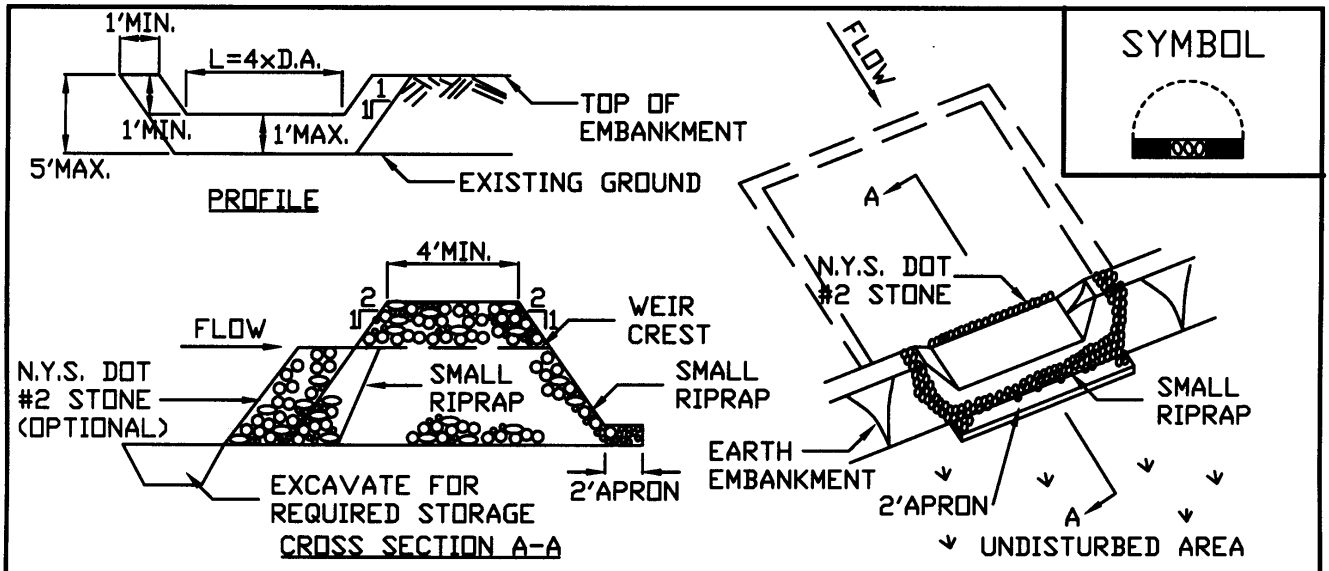
CONSTRUCTION SPECIFICATIONS

1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
3. VOLUME OF SEDIMENT STORAGE SHALL BE 3600 CUBIC FEET PER ACRE OF CONTRIBUTORY DRAINAGE.
4. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND STABILIZED.
5. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
6. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND SEDIMENT ARE CONTROLLED.
7. THE STRUCTURE SHALL BE REMOVED AND AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
8. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER; CUT SLOPES 1:1 OR FLATTER.
9. ALL PIPE CONNECTIONS SHALL BE WATERTIGHT.
10. THE TOP 2/3 OF THE RISER SHALL BE PERFORATED WITH ONE (1) INCH DIAMETER HOLES OR SLITS SPACED SIX (6) INCHES VERTICALLY AND HORIZONTALLY AND PLACED IN THE CONCAVE PORTION OF PIPE. NO HOLES WILL BE ALLOWED WITHIN SIX (6) INCHES OF THE HORIZONTAL BARREL.
11. THE RISER SHALL BE WRAPPED WITH 1/4 TO 1/2 INCH HARDWARE CLOTH WIRE THEN WRAPPED WITH FILTER CLOTH (HAVING AN EQUIVALENT SIEVE SIZE OF 40-80). THE FILTER CLOTH SHALL EXTEND SIX (6) INCHES ABOVE THE HIGHEST HOLE AND SIX (6) INCHES BELOW THE LOWEST HOLE. WHERE ENDS OF THE FILTER CLOTH COME TOGETHER, THEY SHALL BE OVER-LAPPED, FOLDED AND STAPLED TO PREVENT BYPASS.
12. STRAPS OR CONNECTING BANDS SHALL BE USED TO HOLD THE FILTER CLOTH AND WIRE FABRIC IN PLACE. THEY SHALL BE PLACED AT THE TOP AND BOTTOM OF THE CLOTH.
13. FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE HAND COMPACTED IN FOUR (4) INCH LAYERS. A MINIMUM OF TWO (2) FEET OF HAND COMPACTED BACKFILL SHALL BE PLACED OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
14. THE RISER SHALL BE ANCHORED WITH EITHER A CONCRETE BASE OR STEEL PLATE BASE TO PREVENT FLOTATION. FOR CONCRETE BASED THE DEPTH SHALL BE TWELVE (12) INCHES WITH THE RISER EMBEDDED NINE (9) INCHES. A 1/4 INCH MINIMUM THICKNESS STEEL PLATE SHALL BE ATTACHED TO THE RISER BY A CONTINUOUS WELD AROUND THE BOTTOM TO FORM A WATERTIGHT CONNECTION AND THEN PLACE TWO (2) FEET OF STONE, GRAVEL, OR TAMPED EARTH ON THE PLATE.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

PIPE OUTLET
SEDIMENT TRAP
ST-I

Figure 5A.19
Stone Outlet Sediment Trap: ST-IV



OPTION: A ONE FOOT LAYER OF N.Y.S. DOT #2 STONE MAY BE PLACED ON THE UPSTREAM SIDE OF THE RIPRAP INPLACE OF THE EMBEDDED FILTER CLOTH.

CONSTRUCTION SPECIFICATIONS

1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS AND OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
4. THE STONE USED IN THE OUTLET SHALL BE SMALL RIPRAP 4"-8" ALONG WITH A 1' THICKNESS OF 2" AGGREGATE PLACED ON THE UP-GRADE SIDE ON THE SMALL RIPRAP OR EMBEDDED FILTER CLOTH IN THE RIPRAP.
5. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. IT SHALL BE PLACED ON SITE AND STABILIZED.
6. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
7. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND SEDIMENT ARE CONTROLLED.
8. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

MAXIMUM DRAINAGE AREA 5 ACRES

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	STONE OUTLET SEDIMENT TRAP ST-IV

Figure 5A.202)
Riprap Outlet Sediment Trap: ST-V—Construction Specifications

SYMBOL



CONSTRUCTION SPECIFICATIONS

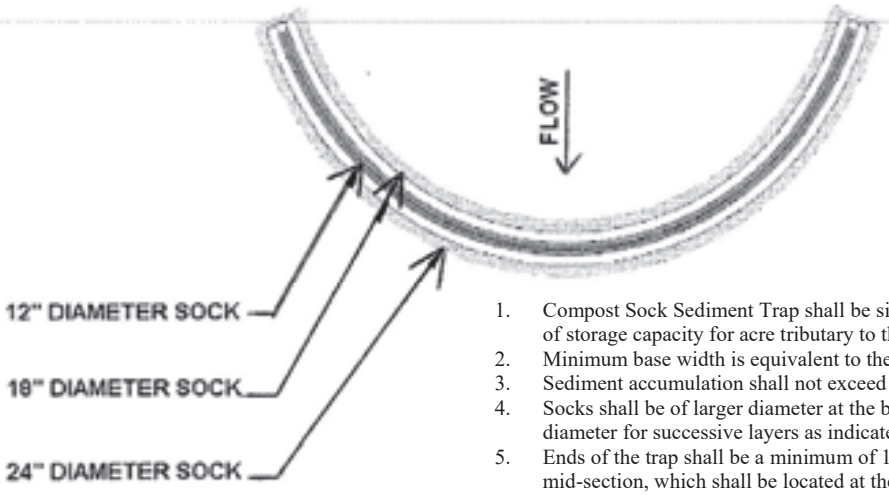
1. THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF OF EMBANKMENT SHALL BE FIVE (5) FEET, MEASURED AT CENTERLINE OF EMBANKMENT.
3. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER, CUT SLOPES 1:1 OR FLATTER.
4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF EMBANKMENT.
5. STORAGE AREA PROVIDED SHALL BE FIGURED BY COMPUTING THE VOLUME AVAILABLE BEHIND THE OUTLET CHANNEL UP TO AN ELEVATION OF ONE (1) FOOT BELOW THE LEVEL WEIR CREST.
6. FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTIONS OF FABRIC MUST OVERLAP AT LEAST ONE (1) FOOT WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNEL.
7. STONE USED IN THE OUTLET CHANNEL SHALL BE FOUR (4) TO EIGHT (8) INCH RIPRAP. TO PROVIDE A FILTERING EFFECT, A LAYER OF FILTER CLOTH SHALL BE EMBEDDED ONE (1) FOOT WITH SECTION NEAREST ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
8. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
9. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRED AS NEEDED.
10. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
11. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
12. DRAINAGE AREA FOR THIS PRACTICE IS LIMITED TO 15 ACRES OR LESS.

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

RIPRAP OUTLET
SEDIMENT TRAP
ST-V

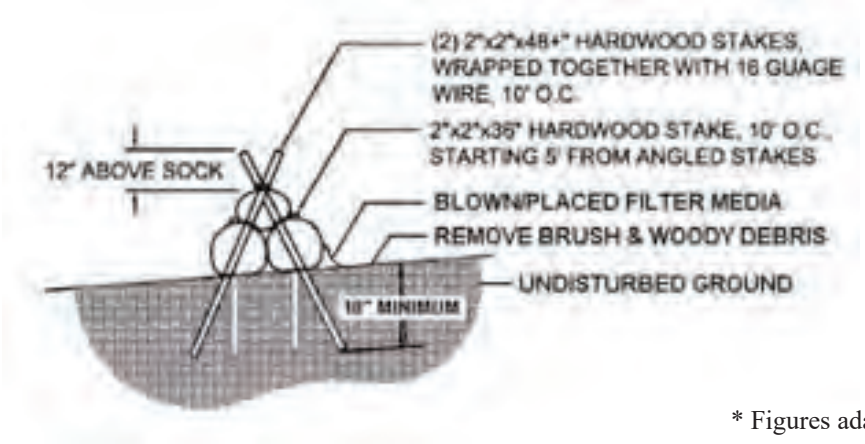
Figure 5.28
Compost Filter Sock Sediment Trap: ST-III

Plan View



1. Compost Sock Sediment Trap shall be sized to provide 3,600 cubic feet of storage capacity for acre tributary to the trap.
2. Minimum base width is equivalent to the height.
3. Sediment accumulation shall not exceed 1/3 the total height of the trap.
4. Socks shall be of larger diameter at the base of the trap and decrease in diameter for successive layers as indicated to the left.
5. Ends of the trap shall be a minimum of 1 foot higher in elevation that the mid-section, which shall be located at the point of discharge.

Staking Detail



* Figures adapted from Filtrexx

Specifications:

1. Sock infill and filter media material shall meet the standards of Table 5.1 on page 5.8 . Compost shall meet the compost filter sock standard of Table 5.2 on page 5.8.

2. Compost sock sediment traps shall not exceed three socks in height and shall be stacked in pyramidal form as shown above. Minimum trap height is one 24 inch diameter sock. Additional storage may be provided by means of an excavated sump 12 inches deep extending 1 to 3 feet upslope of the socks along the lower side of the trap.

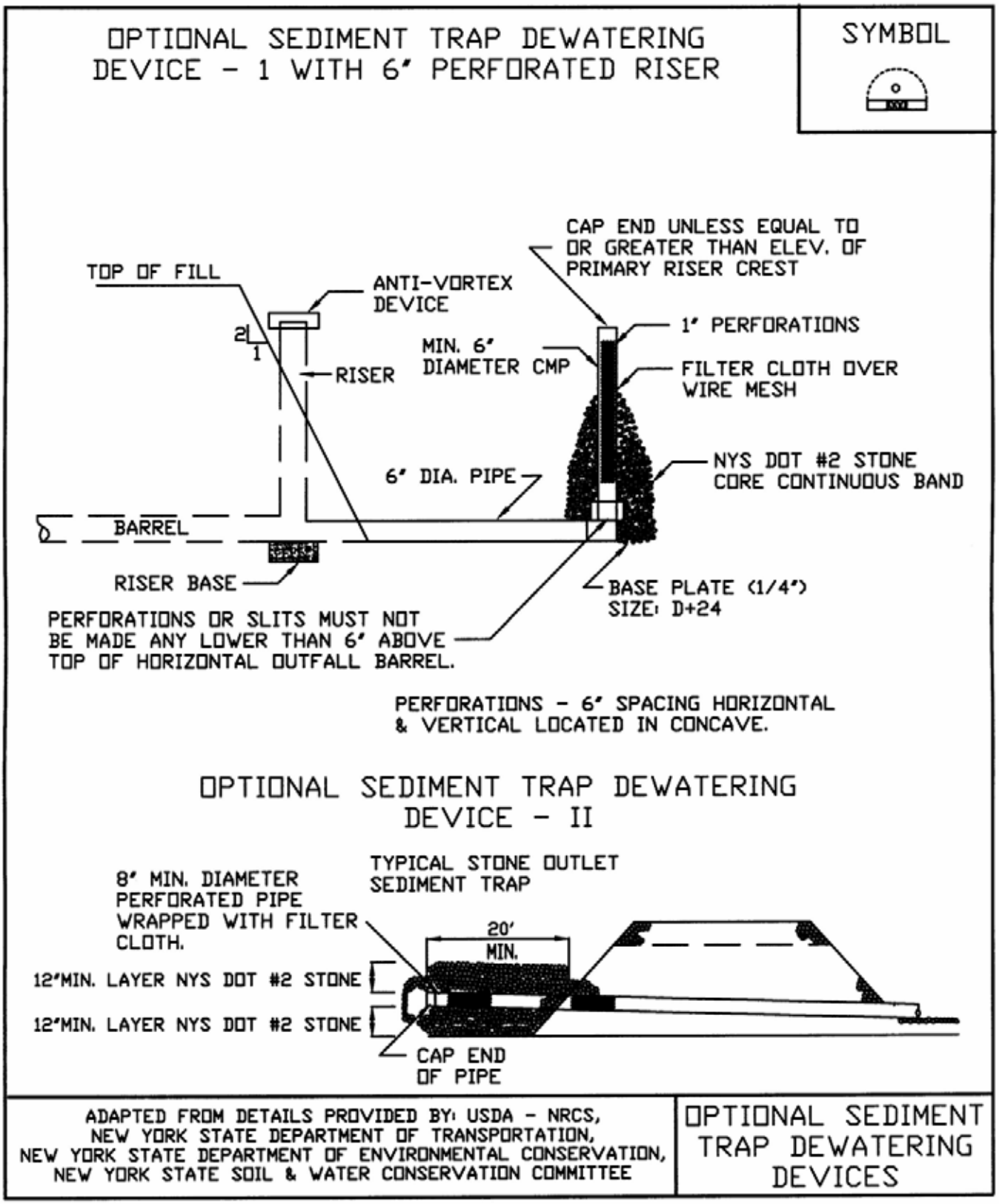
3. Compost sock sediment traps shall provide 3,600 cubic feet storage capacity with 12 inches of freeboard for each tributary drainage acreage. (See manufacturer for anticipated settlement.)

4. The maximum tributary drainage area is 5.0 acres. Since compost socks are “flow-through,” no spillway is required.

5. Compost sock sediment traps shall be inspected weekly and after each runoff event. Sediment shall be removed when it reaches 1/3 the height of the socks.

6. Photodegradable and biodegradable socks shall not be used for more than 1 year.

Figure 5A.21
Optional Sediment Trap Dewatering Devices



STANDARD AND SPECIFICATIONS FOR STABILIZED CONSTRUCTION ACCESS



Definition & Scope

A stabilized pad of aggregate underlain with geotextile located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk, or parking area. The purpose of stabilized construction access is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets.

Conditions Where Practice Applies

A stabilized construction access shall be used at all points of construction ingress and egress.

Design Criteria

See Figure 2.1 on page 2.31 for details.

Aggregate Size: Use a matrix of 1-4 inch stone, or reclaimed or recycled concrete equivalent.

Thickness: Not less than six (6) inches.

Width: 12-foot minimum but not less than the full width of points where ingress or egress occurs. 24-foot minimum if there is only one access to the site.

Length: As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum would apply).

Geotextile: To be placed over the entire area to be covered with aggregate. Filter cloth will not be required on a single-family residence lot. Piping of surface water under entrance shall be provided as required. If piping is impossible, a mountable berm with 5:1 slopes will be permitted.

Criteria for Geotextile: The geotextile shall be woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydro-carbons, mildew, rot resistant, and conform to the fabric properties as shown:

Fabric Properties[3]	Light Duty[1] Roads Grade Subgrade	Heavy Duty[2] Haul Roads Rough Graded	Test Method
Grab Tensile Strength (lbs)	200	220	ASTM D1682
Elongation at Failure (%)	50	60	ASTM D1682
Mullen Burst Strength (lbs)	190	430	ASTM D3786
Puncture Strength (lbs)	40	125	ASTM D751 Modified
Equivalent	40-80	40-80	US Std Sieve
Opening Size			CW-02215
Aggregate Depth	6	10	-

[1]Light Duty Road: Area sites that have been graded to subgrade and where most travel would be single axle vehicles and an occasional multi-axle truck. Acceptable materials are Trevira Spunbond 1115, Mirafi 100X, Typar 3401, or equivalent.

[2]Heavy Duty Road: Area sites with only rough grading, and where most travel would be multi-axle vehicles. Acceptable materials are Trevira Spunbond 1135, Mirafi 600X, or equivalent.

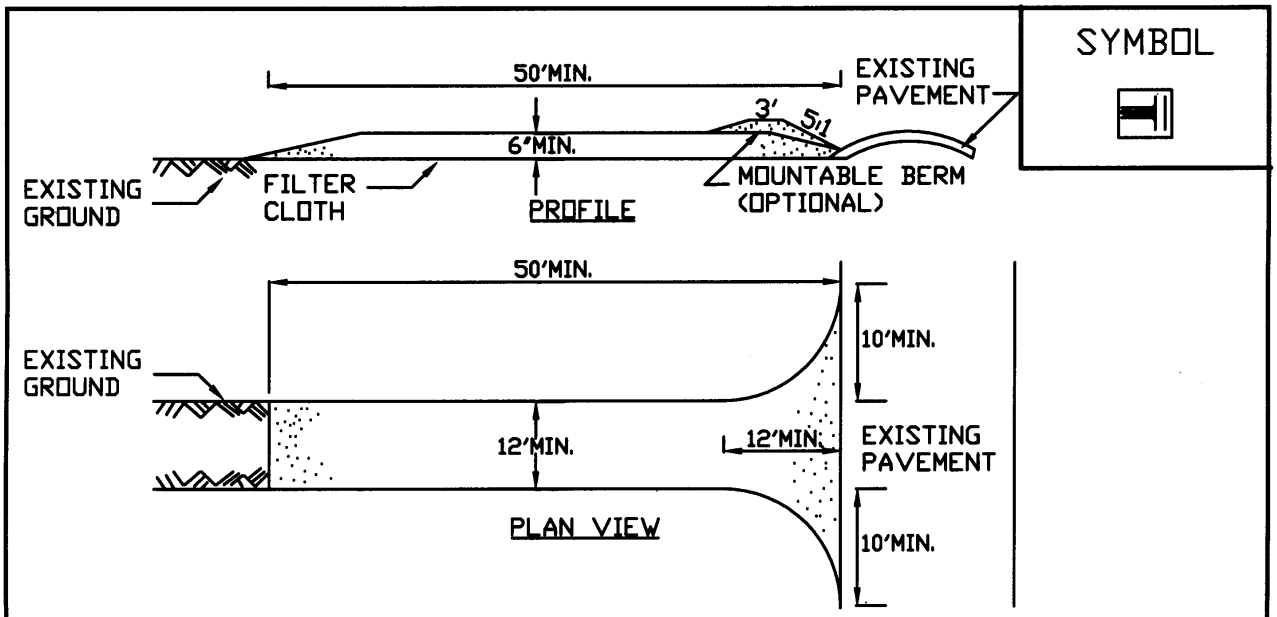
[3]Fabrics not meeting these specifications may be used only when design procedure and supporting documentation are supplied to determine aggregate depth and fabric strength.

Maintenance

The access shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way must be removed immediately.

When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device. All sediment shall be prevented from entering storm drains, ditches, or watercourses.

Figure 5A.35
Stabilized Construction Entrance



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 1-4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	STABILIZED CONSTRUCTION ENTRANCE

STANDARD AND SPECIFICATIONS FOR CONSTRUCTION ROAD STABILIZATION



Definition & Scope

The stabilization of temporary construction access routes, on-site vehicle transportation routes, and construction parking areas to control erosion on temporary construction routes and parking areas.

Conditions Where Practice Applies

All traffic routes and parking areas for temporary use by construction traffic.

Design Criteria

Construction roads should be located to reduce erosion potential, minimize impact on existing site resources, and maintain operations in a safe manner. Highly erosive soils, wet or rocky areas, and steep slopes should be avoided. Roads should be routed where seasonal water tables are deeper than 18 inches. Surface runoff and control should be in accordance with other standards.

Road Grade – A maximum grade of 12% is recommended, although grades up to 15% are possible for short distances.

Road Width – 12 foot minimum for one-way traffic or 24 foot minimum for two-way traffic.

Side Slope of Road Embankment – 2:1 or flatter.

Ditch Capacity – On-site roadside ditch and culvert capacities shall be the 10 yr. peak runoff.

Composition – Use a 6-inch layer of NYS DOT sub-base Types 1,2,3, 4 or equivalent as specified in NYSDOT Standard Specifications.

Construction Specifications

1. Clear and strip roadbed and parking areas of all vegetation, roots, and other objectionable material.

2. Locate parking areas on naturally flat areas as available. Keep grades sufficient for drainage, but not more than 2 to 3 percent.

3. Provide surface drainage and divert excess runoff to stabilized areas.

4. Maintain cut and fill slopes to 2:1 or flatter and stabilized with vegetation as soon as grading is accomplished.

5. Spread 6-inch layer of sub-base material evenly over the full width of the road and smooth to avoid depressions.

6. Provide appropriate sediment control measures to prevent offsite sedimentation.

Maintenance

Inspect construction roads and parking areas periodically for condition of surface. Top dress with new gravel as needed. Check ditches for erosion and sedimentation after rainfall events. Maintain vegetation in a healthy, vigorous condition. Areas producing sediment should be treated immediately.

STANDARD AND SPECIFICATIONS FOR TEMPORARY ACCESS WATERWAY CROSSING



Definition & Scope

A temporary access waterway crossing is a structure placed across a waterway to provide access for construction purposes for a period of less than one year. Consideration should be given to stream flow capacity and velocity anticipated during the period of time that the temporary structures will be in place. Temporary access crossings shall not be utilized to maintain traffic for the general public. The purpose of the temporary access waterway crossing is to provide safe, environmentally sound access across a waterway for construction equipment by establishing minimum standards and specifications for the design, construction, maintenance, and removal of the structure. This standard and specification may represent a channel constriction, thus, the temporary nature of waterway access crossing must be stressed. They should be planned to be in service for the shortest practical period of time and removed as soon as their function is completed.

Conditions Where Practice Applies

This standard and specification for temporary access waterway crossings is applicable in non-tidal waterways. It provides designs based on waterway geometry rather than the drainage area contributing to the point of crossing.

The principal consideration for development of the standard and specifications is concern for erosion and sediment control, tracking soil into waterways, blocking fish passage and destruction of aquatic habitat. Structural utility and safety must also be considered when designing temporary access waterway crossings to withstand expected loads.

The three types of standard temporary access waterway crossings are bridges, culverts, and fords.

General Requirements

1. In-Stream Excavation: In-Stream excavation shall be limited to only that necessary to allow installation of the standard methods as presented in Subsection "Temporary Access Waterway Crossing Methods."

2. Elimination of Fish Migration Barriers: Of the two basic methods presented in Subsection "Temporary Access Waterway Crossing Methods," bridges pose the least potential for creating barriers to aquatic migration. The construction of any specific crossing method as presented in Subsection "Temporary Access Waterway Crossing Methods," shall not cause a significant water level difference between the upstream and downstream water surface elevations. Fish spawning or migration within waterways generally occurs between October 1 to May 31 for water classified for trout and from March 15 to July 15 for other streams. Fish spawning or migration dates can vary across New York and restrictions imposed by the NYS Department of Environmental Conservation may vary and must be checked.

3. Crossing Alignment: The temporary waterway crossing shall be at right angles to the stream. Where approach conditions dictate, the crossing may vary 15 degrees from a line drawn perpendicular to the centerline of the stream at the intended crossing location.

4. Road Approaches: The centerline of both roadway approaches shall coincide with the crossing alignment centerline for a minimum distance of 50 feet from each bank of the waterway being crossed. If physical or right-of-way restraints preclude the 50 feet minimum, a shorter distance may be provided. All fill materials associated with the roadway approach shall be limited to a maximum height of 2 feet above the existing flood plain elevation.

5. Surface Water Diverting Structure: A water diverting structure such as a swale shall be constructed (across the roadway on both roadway approaches) 50 feet (maximum) on either side of the waterway crossing. This will prevent roadway surface runoff from directly entering the waterway. The 50 feet is measured from the top of the waterway bank. Design criteria for this diverting structure shall be in accordance with the "Standard and Specification" for

the individual design standard of choice. If the roadway approach is constructed with a reverse grade away from the waterway, a separate diverting structure is not required.

6. Road Width: All crossings shall have one traffic lane. The minimum width shall be 12 feet with a maximum width of 20 feet.

7. Time of Operation: All temporary crossing shall be removed within 14 calendar days after the structure is no longer needed. Unless prior written approval is obtained, all structures shall be removed within one year from the date of the installation.

8. Materials

A. Aggregate: There shall be no earth or soil materials used for construction within the waterway channel. NYS DOT specifications for coarse aggregate designation No. 4 (2" to 4"), also referenced as AASHTO designation No. 1, shall be the minimum acceptable aggregate size for temporary crossings. Larger aggregates will be allowed.

B. Filter Cloth: Filter cloth is a fabric consisting of either woven or nonwoven plastic, polypropylene, or nylon used to distribute the load, retain fines, allow increased drainage of the aggregate and reduce mixing of the aggregate with the subgrade soil. The designer shall specify the appropriate filter fabric/cloth for a specific use.

Temporary Access Waterway Crossing Methods

The following criteria for erosion and sediment control shall be considered when selecting a specific temporary access waterway crossing standard method:

1. Site aesthetics: Select a standard design method that will least disrupt the existing terrain of the stream reach. Consider the effort that will be required to restore the area after the temporary crossing is removed.

2. Site location: Locate the temporary crossing where there will be the least disturbance to the soils of the existing waterway banks. When possible, locate the crossing at a point receiving minimal surface runoff.

3. Physical site constraints: The physical constraints of a site may preclude the selection of one or more of the standard methods.

4. Time of year: The time of year may preclude the selection of one or more of the standard methods due to fish spawning or migration restrictions.

5. Vehicular loads and traffic patterns: Vehicular loads, traffic patterns, and frequency of crossing should be considered in choosing a specific method.

6. Maintenance of crossing: The standard methods will require various amounts of maintenance. The bridge method should require the least maintenance, whereas the ford method will probably require more intensive maintenance.

7. Removal of the Structure: Ease of removal and subsequent damage to the waterway should be primary factors in considering the choice of a standard method.

Temporary Access Bridge (Figure 2.2 on page 2.36)

A temporary access bridge is a structure made of wood, metal, or other materials, which provides access across a stream or waterway.

Considerations:

1. This is the preferred method for temporary access waterway crossings. Normally, bridge construction causes the least disturbance to the waterway bed and banks when compared to the other access waterway crossings.

2. Most bridges can be quickly removed and reused.

3. Temporary access bridges pose the least chance for interference with fish migration when compared to the other temporary access waterway crossings.

4. Span width will be limited by the length of the bridging material and weight of equipment that will drive over the temporary bridge. Spans of over 10 feet are difficult to construct.

5. Restrictions and Permits: A permit from the New York State Department of Environmental Conservation, Division of Environmental Permits, Regional Permit Administrator, will be needed to install and remove temporary access culverts in streams with a classification of C(T) and higher. Installation and removal may not be permitted during the period of time from the start of trout spawning until the eggs have hatched. In some instances, restrictions may also be applied to bass spawning waters.

Construction Specifications:

1. Restriction: Construction, use, or removal of a temporary access bridge will not normally have any time of year restrictions if construction, use, or

removal does not disturb the stream or its banks.

2. Bridge Placement: A temporary bridge structure shall be constructed at or above bank elevation to prevent the entrapment of floating materials and debris.

3. Abutments: Abutments shall be placed parallel to and on stable banks.

4. Bridge Span: Bridges shall be constructed to span the entire channel. If a footing, pier, or bridge support is constructed within the waterway, a stream- disturbance permit may be required.

5. Stringers: Stringers shall either be logs, saw timber, pre-stressed concrete beams, metal beams, or other approved materials.

6. Deck Material: Decking shall be of sufficient strength to support the anticipated load. All decking members shall be placed perpendicular to the stringers, butted tightly, and securely fastened to the stringers. Decking materials must be butted tightly to prevent any soil material tracked onto the bridge from falling into the waterway below.

7. Run Planks (optional): Run planking shall be securely fastened to the length of the span. One run plank shall be provided for each track of the equipment wheels. Although run planks are optional, they may be necessary to properly distribute loads.

8. Curbs or Fenders: Curbs or fenders may be installed along the outer sides of the deck. Curbs or fenders are an option, which will provide additional safety.

9. Bridge Anchors: Bridges shall be securely anchored at only one end using steel cable or chain. Anchoring at only one end will prevent channel obstruction in the event that floodwaters float the bridge. Acceptable anchors are large trees, large boulders, or driven steel anchors. Anchoring shall be sufficient to prevent the bridge from floating downstream and possibly causing an obstruction to the flow.

10. Stabilization: All areas disturbed during installation shall be stabilized within 14 calendar days of that disturbance in accordance with the Standard and Specification for Temporary Construction Area Seeding on page 4.58.

Bridge Maintenance Requirements

1. Inspection: Periodic inspection shall be performed by the user to ensure that the bridge, streambed, and streambanks are maintained and not damaged.

2. Maintenance: Maintenance shall be performed, as needed to ensure that the structure complies with the standard and specifications. This shall include removal and disposal of any trapped sediment or debris. Sediment shall be disposed of outside of the floodplain and stabilized.

Bridge Removal and Clean-Up Requirements

1. Removal: When the temporary bridge is no longer needed, all structures including abutments and other bridging materials shall be removed within 14 calendar days. In all cases, the bridge materials shall be removed within one year of installation.

2. Final Clean-Up: Final clean-up shall consist of removal of the temporary bridge from the waterway, protection of banks from erosion, and removal of all construction materials. All removed materials shall be stored outside the waterway floodplain.

3. Method: Removal of the bridge and clean-up of the area shall be accomplished without construction equipment working in the waterway channel.

4. Final Stabilization: All areas disturbed during removal shall be stabilized within 14 calendar days of that disturbance in accordance with the Standard and Specifications for Permanent Construction Area Planting on page 4.42.

Temporary Access Culvert (Figure 2.3 on page 2.37)

A temporary access culvert is a structure consisting of a section(s) of circular pipe, pipe arches, or oval pipes of reinforcing concrete, corrugated metal, or structural plate, which is used to convey flowing water through the crossing.

Considerations

1. Temporary culverts are used where a) the channel is too wide for normal bridge construction, b) anticipated loading may prove unsafe for single span bridges, or c) access is not needed from bank to bank.

2. This temporary waterway crossing method is normally preferred over a ford type of crossing, since disturbance to the waterway is only during construction and removal of the culvert.

3. Temporary culverts can be salvaged and reused.

Construction Specifications

1. Restrictions and Permits: A permit from the New York State Department of Environmental

Conservation, Division of Environmental Permits, Regional Permit Administrator, will be needed to install and remove temporary access culverts in streams with a classification of C(T) and higher. Installation and removal may not be permitted during the period of time from the start of trout spawning until the eggs have hatched. In some instances, restrictions may also be applied to bass spawning waters.

2. Culvert Strength: All culverts shall be strong enough to support their cross sectional area under maximum expected loads.

3. Culvert Size: The size of the culvert pipe shall be the largest pipe diameter that will fit into the existing channel without major excavation of the waterway channel or without major approach fills. If a channel width exceeds 3 feet, additional pipes may be used until the cross sectional area of the pipes is greater than 60 percent of the cross sectional area of the existing channel. The minimum size culvert that may be used is 12-inch diameter pipe.

4. Culvert Length: The culvert(s) shall extend a minimum of one foot beyond the upstream and downstream toe of the aggregate placed around the culvert. In no case shall the culvert exceed 40 feet in length.

5. Filter Cloth: Filter cloth shall be placed on the streambed and streambanks prior to placement of the pipe culvert(s) and aggregate. The filter cloth shall cover the streambed and extend a minimum six inches and a maximum one foot beyond the end of the culvert and bedding material. Filter cloth reduces settlement and improves crossing stability.

6. Culvert Placement: The invert elevation of the culvert shall be installed on the natural streambed grade to minimize interference with fish migration (free passage of fish).

7. Culvert Protection: The culvert(s) shall be covered with a minimum of one foot of aggregate. If multiple culverts are used, they shall be separated by at least 12 in. of compacted aggregate fill. At the minimum, the bedding and fill material used in the construction of the temporary access culvert crossings shall conform with the aggregate requirements cited in the General Requirements subsection.

8. Stabilization: All areas disturbed during culvert installation shall be stabilized within 14 calendar days of the disturbance in accordance with the Standard for Permanent Construction Area Plantings.

Culvert Maintenance Requirements

1. Inspection: Periodic inspection shall be performed to ensure that the culverts, streambed, and streambanks are not damaged, and that sediment is not entering the stream or blocking fish passage or migration.

2. Maintenance: Maintenance shall be performed, as needed in a timely manner to ensure that structures are in compliance with this standard and specification. This shall include removal and disposal of any trapped sediment or debris. Sediment shall be disposed of and stabilized outside the waterway flood plain.

Culvert Removal and Clean-Up Requirements

1. Removal: When the crossing has served its purpose, all structures, including culverts, bedding, and filter cloth materials shall be removed within 14 calendar days. In all cases, the culvert materials shall
be removed within one year of installation. No structure shall be removed during the spawning season (generally October 1 through May 31 for trout waters and March 15 through July 15 for other waters).

2. Final Clean-Up: Final clean-up shall consist of removal of the temporary structure from the waterway, removal of all construction materials, restoration of original stream channel cross section, and protection of the streambanks from erosion. Removed material shall be stored outside of the waterway floodplain.

3. Method: Removal of the structure and clean-up of the area shall be accomplished without construction equipment working in the waterway channel.

4. Final Stabilization: All areas disturbed during culvert removal shall be stabilized within 14 calendar days of the disturbance in accordance with the Standard for Permanent Construction Area Plantings.

NOTE: Any temporary access crossing shall conform to the technical requirements of this Standard and Specifications as well as any specific requirement imposed by the New York State Department of Environmental Conservation and the US Army Corps of Engineers. Permits may be required for streambank disturbance.

Figure 5A.36
Temporary Access Bridge

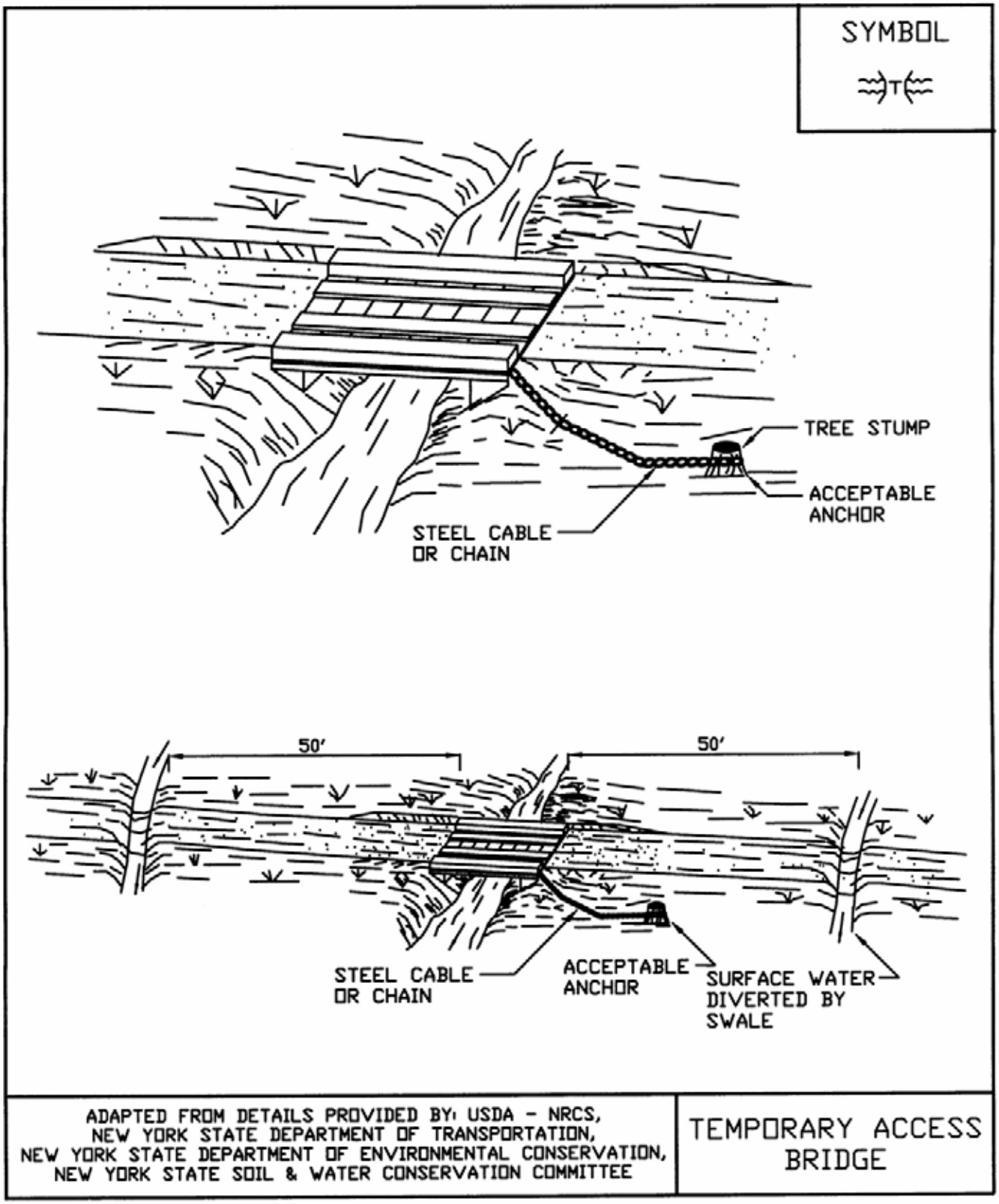


Figure 5A.37
Temporary Access Culvert

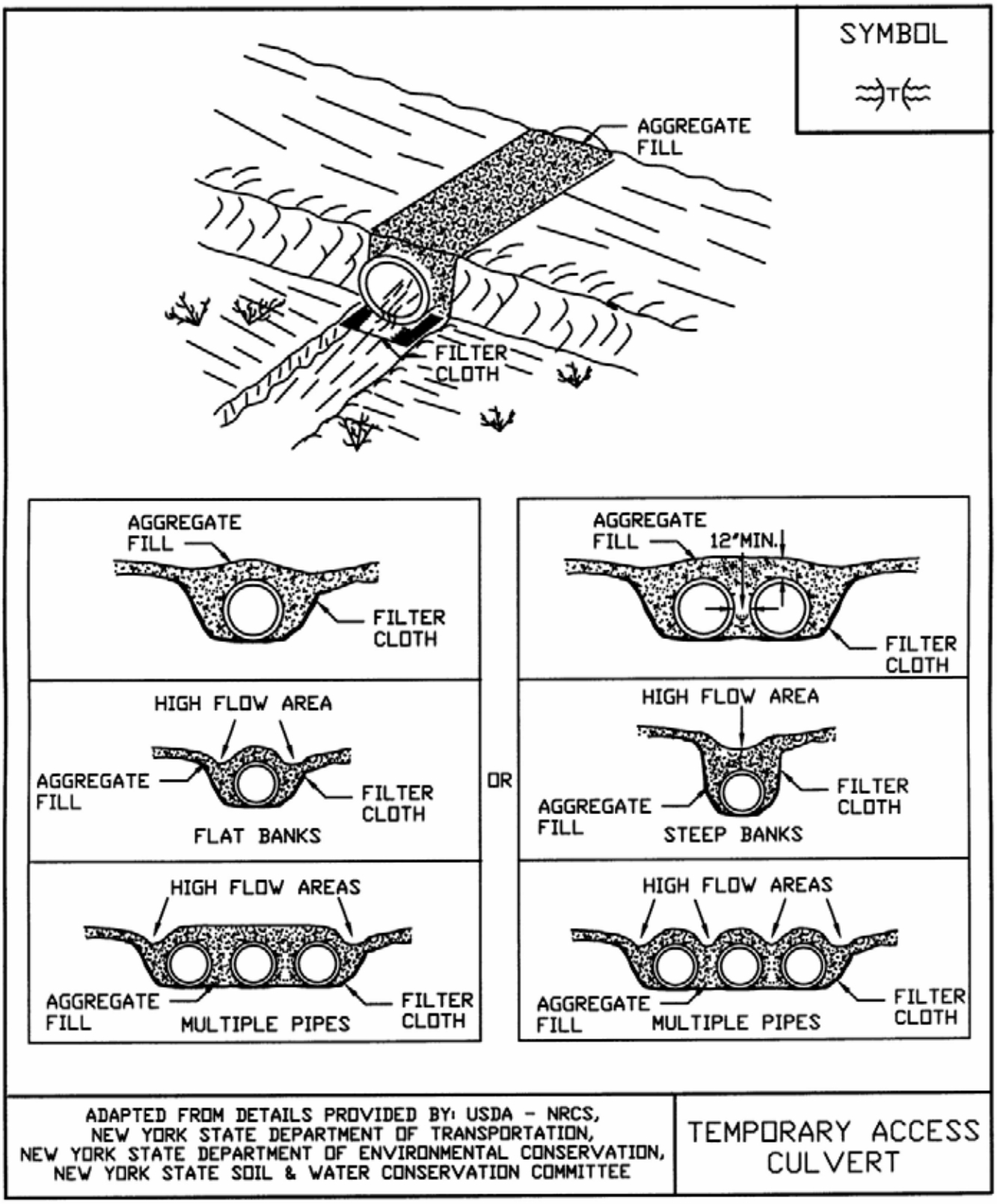
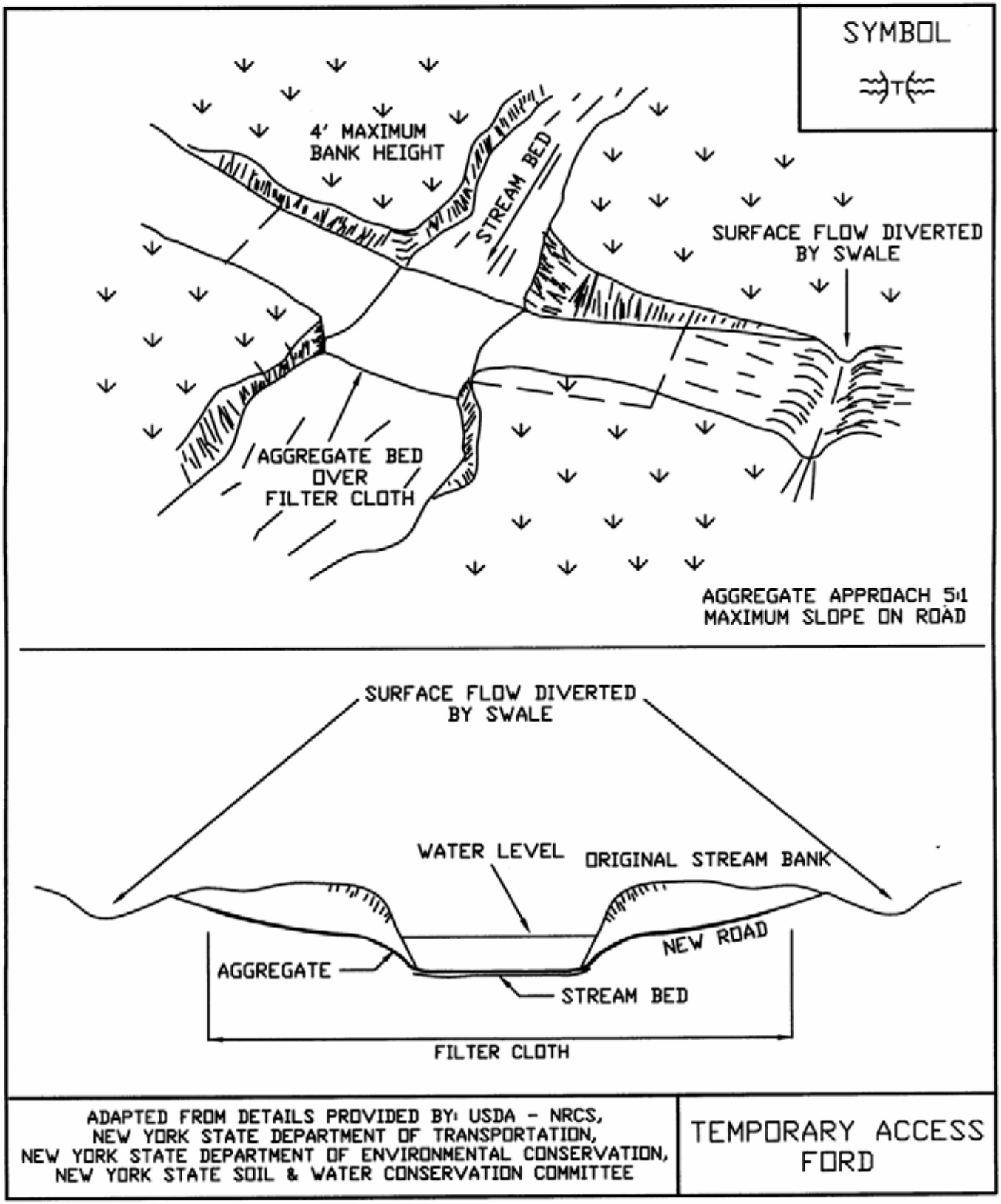


Figure 5A.38
Temporary Access Ford



STANDARD AND SPECIFICATIONS FOR DUST CONTROL



Definition & Scope

The control of dust resulting from land-disturbing activities, to prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems.

Conditions Where Practice Applies

On construction roads, access points, and other disturbed areas subject to surface dust movement and dust blowing where off-site damage may occur if dust is not controlled.

Design Criteria

Construction operations should be scheduled to minimize the amount of area disturbed at one time. Buffer areas of vegetation should be left where practical. Temporary or permanent stabilization measures shall be installed. No specific design criteria is given; see construction specifications below for common methods of dust control.

Water quality must be considered when materials are selected for dust control. Where there is a potential for the material to wash off to a stream, ingredient information must be provided to the NYSDEC.

No polymer application shall take place without written approval from the NYSDEC.

Construction Specifications

A. **Non-driving Areas** – These areas use products and materials applied or placed on soil surfaces to prevent airborne migration of soil particles.

Vegetative Cover – For disturbed areas not subject to traffic, vegetation provides the most practical method of dust control (see Section 3).

Mulch (including gravel mulch) – Mulch offers a fast effective means of controlling dust. This can also include rolled erosion control blankets.

Spray adhesives – These are products generally composed of polymers in a liquid or solid form that are mixed with water to form an emulsion that is sprayed on the soil surface with typical hydroseeding equipment. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations for the specific soils on the site. In no case should the application of these adhesives be made on wet soils or if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators and others working with the material.

B. **Driving Areas** – These areas utilize water, polymer emulsions, and barriers to prevent dust movement from the traffic surface into the air.

Sprinkling – The site may be sprayed with water until the surface is wet. This is especially effective on haul roads and access route to provide short term limited dust control.

Polymer Additives – These polymers are mixed with water and applied to the driving surface by a water truck with a gravity feed drip bar, spray bar or automated distributor truck. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations. Incorporation of the emulsion into the soil will be done to the appropriate depth based on expected traffic. Compaction after incorporation will be by vibratory roller to a minimum of 95%. The prepared surface shall be moist and no application of the polymer will be made if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators working with the material.

Barriers – Woven geo-textiles can be placed on the driving surface to effectively reduce dust throw and particle migration on haul roads. Stone can also be used for construction roads for effective dust control.

Windbreak – A silt fence or similar barrier can control air currents at intervals equal to ten times the barrier height. Preserve existing wind barrier vegetation as much as practical.

Maintenance

Maintain dust control measures through dry weather periods until all disturbed areas are stabilized.

All Stormwater Pollution Prevention Plans must contain the NYS DEC issued “Conditions for Use” and “Application Instructions” for any polymers used on the site. This information can be obtained from the NYS DEC website.

Maintenance

Maintain dust control measures through dry weather periods until all disturbed areas are stabilized.

STANDARD AND SPECIFICATIONS FOR CONCRETE TRUCK WASHOUT



Definition & Scope

A temporary excavated or above ground lined constructed pit where concrete truck mixers and equipment can be washed after their loads have been discharged, to prevent highly alkaline runoff from entering storm drainage systems or leaching into soil.

Conditions Where Practice Applies

Washout facilities shall be provided for every project where concrete will be poured or otherwise formed on the site. This facility will receive highly alkaline wash water from the cleaning of chutes, mixers, hoppers, vibrators, placing equipment, trowels, and screeds. Under no circumstances will wash water from these operations be allowed to infiltrate into the soil or enter surface waters.

Design Criteria

Capacity: The washout facility should be sized to contain solids, wash water, and rainfall and sized to allow for the evaporation of the wash water and rainfall. Wash water shall be estimated at 7 gallons per chute and 50 gallons per hopper of the concrete pump truck and/or discharging drum. The minimum size shall be 8 feet by 8 feet at the bottom and 2 feet deep. If excavated, the side slopes shall be 2 horizontal to 1 vertical.

Location: Locate the facility a minimum of 100 feet from drainage swales, storm drain inlets, wetlands, streams and other surface waters. Prevent surface water from entering the structure except for the access road. Provide appropriate access with a gravel access road sloped down to the structure. Signs shall be placed to direct drivers to the facility after their load is discharged.

Liner: All washout facilities will be lined to prevent leaching of liquids into the ground. The liner shall be plastic sheeting with a minimum thickness of 10 mils with no holes or tears, and anchored beyond the top of the pit with an earthen berm, sand bags, stone, or other structural appurtenance except at the access point.

If pre-fabricated washouts are used they must ensure the capture and containment of the concrete wash and be sized based on the expected frequency of concrete pours. They shall be sited as noted in the location criteria.

Maintenance

- All concrete washout facilities shall be inspected daily. Damaged or leaking facilities shall be deactivated and repaired or replaced immediately. Excess rainwater that has accumulated over hardened concrete should be pumped to a stabilized area, such as a grass filter strip.
- Accumulated hardened material shall be removed when 75% of the storage capacity of the structure is filled. Any excess wash water shall be pumped into a containment vessel and properly disposed of off site.
- Dispose of the hardened material off-site in a construction/demolition landfill. On-site disposal may be allowed if this has been approved and accepted as part of the projects SWPPP. In that case, the material should be recycled as specified, or buried and covered with a minimum of 2 feet of clean compacted earthfill that is permanently stabilized to prevent erosion.
- The plastic liner shall be replaced with each cleaning of the washout facility.
- Inspect the project site frequently to ensure that no concrete discharges are taking place in non-designated areas.

STANDARD AND SPECIFICATIONS FOR WINTER STABILIZATION



Definition & Scope

A temporary site specific, enhanced erosion and sediment control plan to manage runoff and sediment at the site during construction activities in the winter months to protect off-site water resources.

Conditions Where Practice Applies

This standard applies to all construction activities involved with ongoing land disturbance and exposure between November 15th to the following April 1st.

Design Criteria

1. Prepare a snow management plan with adequate storage for snow and control of melt water, requiring cleared snow to be stored in a manner not affecting ongoing construction activities.

2. Enlarge and stabilize access points to provide for snow management and stockpiling. Snow management activities must not destroy or degrade installed erosion and sediment control practices.

3. A minimum 25 foot buffer shall be maintained from all perimeter controls such as silt fence. Mark silt fence with tall stakes that are visible above the snow pack.

4. Edges of disturbed areas that drain to a waterbody within 100 feet will have 2 rows of silt fence, 5 feet apart, installed on the contour.

5. Drainage structures must be kept open and free of snow and ice dams. All debris, ice dams, or debris from plowing operations, that restrict the flow of runoff and meltwater, shall be removed.

6. Sediment barriers must be installed at all appropriate perimeter and sensitive locations. Silt fence and other practices requiring earth disturbance must be installed before the ground freezes.

7. Soil stockpiles must be protected by the use of established vegetation, anchored straw mulch, rolled stabilization matting, or other durable covering. A barrier must be installed at least 15 feet from the toe of the stockpile to prevent soil migration and to capture loose soil.

8. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures should be initiated by the end of the next business day and completed within three (3) days. Rolled erosion control blankets must be used on all slopes 3 horizontal to 1 vertical or steeper.

9. If straw mulch alone is used for temporary stabilization, it shall be applied at double the standard rate of 2 tons per acre, making the application rate 4 tons per acre. Other manufactured mulches should be applied at double the manufacturer's recommended rate.

10. To ensure adequate stabilization of disturbed soil in advance of a melt event, areas of disturbed soil should be stabilized at the end of each work day unless:

    a. work will resume within 24 hours in the same area and no precipitation is forecast or;

    b. the work is in disturbed areas that collect and retain runoff, such as open utility trenches, foundation excavations, or water management areas.

11. Use stone paths to stabilize access perimeters of buildings under construction and areas where construction vehicle traffic is anticipated. Stone paths should be a minimum 10 feet in width but wider as necessary to accommodate equipment.

Maintenance

The site shall be inspected frequently to ensure that the erosion and sediment control plan is performing its winter stabilization function. If the site will not have earth disturbing activities ongoing during the "winter season", **all** bare exposed soil must be stabilized by established vegetation, straw or other acceptable mulch, matting, rock, or other approved material such as rolled erosion control products. Seeding of areas with mulch cover is preferred but seeding alone is not acceptable for proper stabilization.

Compliance inspections must be performed and reports filed properly in accordance with the SWPPP for all sites under a winter shutdown.

EXHIBITS

EXHIBIT 1

SITE LOCATION MAP

Greenman-Pedersen, Inc.
Engineering and Construction Services
BUFFALO, NEW YORK (716) 852-4990 • ROCHESTER, NEW YORK (585) 454-6110 • JAMESTOWN, NEW YORK (716) 484-0310

GPI

JOB No. BUF-2018012 DATE: JANUARY 2018

Exhibit 1
Site Location Map
Gateway Lofts
CITY OF JAMESTOWN, CHAUTAUQUA, STATE OF NEW YORK

GRAPHIC SCALE
(IN FEET)
1 in = 1000 ft.
2000 1000 0 500 1000

N:\2018\BUF-2018012.00 Gateway Lofts\Design\Engineering\Drainage\BUD-2018012_Drainage Exihbits.dwg, SITE LOCATION MAP, 2018/01/19 02:31 pm

EXHIBIT 2

SITE SOIL MAP



Map Scale: 1:4,750 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Chautauqua County, New York
Survey Area Data: Version 15, Sep 26, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Mar 7, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CnC	Chenango gravelly loam, 8 to 15 percent slopes	A	2.6	2.5%
FmC	Fremont silt loam, 8 to 15 percent slopes	D	19.0	17.7%
Ur	Urban land		81.2	75.4%
W	Water		4.8	4.5%
Totals for Area of Interest			**107.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

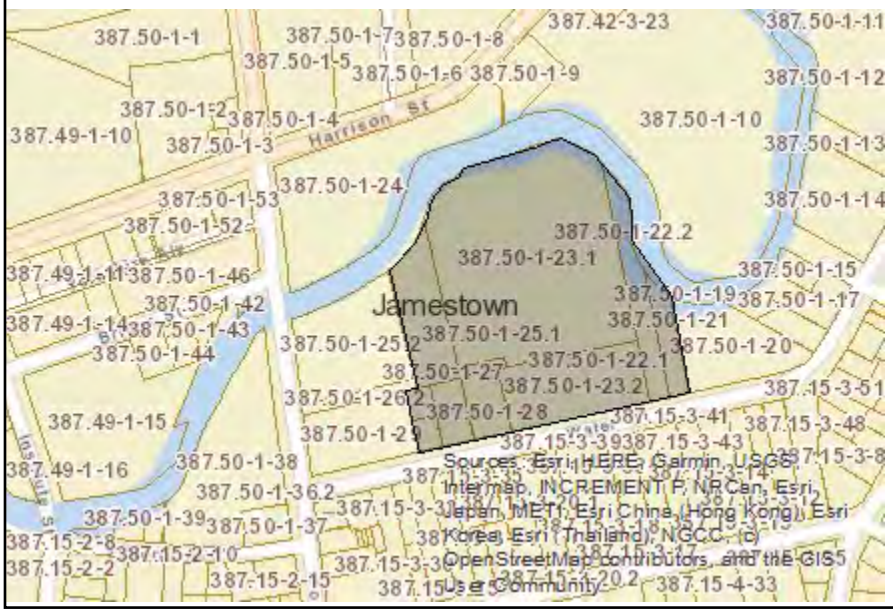
Tie-break Rule: Higher

EXHIBIT 3

EAF MAP

EAF Mapper Summary Report

Thursday, May 23, 2019 3:28 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	Remediaton Sites:C907046
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Yes - Digital mapping data for Spills Incidents are not available for this location. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Yes
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Yes
E.1.h.i [DEC Spills or Remediation Site - DEC ID Number]	C907046
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	907036, C907029, C907045, C907046
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	800.8-1
E.2.h.iv [Surface Water Features - Stream Classification]	C
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters

E.2.h.v [Impaired Water Bodies]	Yes
E.2.h.v [Impaired Water Bodies - Name and Basis for Listing]	Name - Pollutants - Uses:Chadakoin River and tribs – Nutrients;Unknown Toxicity – Recreation;Aquatic Life
E.2.i. [Floodway]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.j. [100 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.k. [500 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer, Primary Aquifer
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	Yes
E.2.p. [Rare Plants or Animals - Name]	Spiny Softshell
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook.
E.3.e.ii [National or State Register of Historic Places or State Eligible Sites - Name]	Eligible property:Empire Worsted Mills
E.3.f. [Archeological Sites]	No
E.3.i. [Designated River Corridor]	No

Addendum 1 6/15/2020 JLB

NOTES:

1. ELEVATIONS SHOWN BASED ON NAVD 88
2. 100 YEAR FLOODPLAIN ELEV. AT 1297.9 NGVD 29 (1297.4 NAVD 88). CONVERSION = 0.50 FT
3. LOMA DETERMINATION DOCUMENT FOR BUILDING FOOTPRINT DATED JULY 23, 2018 CONFIRMS THAT THE BUILDING DOES NOT FALL WITHIN THE 100 YEAR FLOODPLAIN.
   BUILDING LOWEST ADJACENT GRADE IN 2018 = 1299.2 NGVD 29 (1298.70 NAVD 88).
   BUILDING LOWEST ADJACENT GRADE PROPOSED = 1299.4 NGVD 29 (1298.9 NAVD 88).
4. CONTRACTOR SHALL NOT DISTURB BANKS OF CHADAKOIN RIVER. SEE CONSTRUCTION PLANS.

SITE DATA TABLE:

LOT AREA PROVIDED:
- 31 WATER STREET = 5.18 ACRES +/- (225,829 SF +/-)
- 53 WATER STREET = 0.21 ACRES +/- (9,236 SF +/-)
- 55 WATER STREET = 0.18 ACRES +/- (7,816 SF +/-)
- COMBINED LOT AREA = 5.58 ACRES +/- (242,981 SF +/-)

LOT WIDTH PROVIDED:
- 31 WATER STREET = 466 FT
- 53 WATER STREET = 40 FT
- 55 WATER STREET = 40 FT
- COMBINED LOT WIDTH = 546 FT

CURRENT ZONING: M (MANUFACTURING)
WD-D (DOWNTOWN SUB-DISTRICT)

BUILDING INFORMATION:
BUILDING FOOTPRINT = 90,564 SF
(EXCLUDES COURTYARD/PLAYGROUND AREA)

	REQUIRED	EXISTING	PROVIDED
MIN FRONT YARD SETBACK	10 FT	4.5 FT	4.5 FT
MIN SIDE YARD SETBACK	10 FT	41.1 FT	45.3 FT
MIN REAR YARD SETBACK	NA	NA	NA

*PARKING REQUIREMENTS
REQUIRED PER CODE:
MIXED USE WITH 110 RESIDENTIAL UNITS
1.5 SPACES PER UNIT = 1.5 x 110 UNITS = 165 SPACES
FF OFFICE SPACE = 23,497 SF; 1 SPACE/350 SF = 67 SPACES
WAREHOUSE SPACE = 5,140 SF; 1 SPACE/2,500 SF = 2 SPACES
RETAIL SPACE = 2,588 SF; 1 SPACE/300 SF = 9 SPACES
SERVICE ESTABLISHMENT = 2,249 SF; 1 SPACE/300 SF = 8 SPACES
TOTAL REQUIRED = 251 SPACES

*SQUARE FOOTAGE NUMBERS ARE PRELIMINARY AND ARE SUBJECT TO CHANGE AS THE DESIGN OF THE FIRST FLOOR IS FINALIZED.

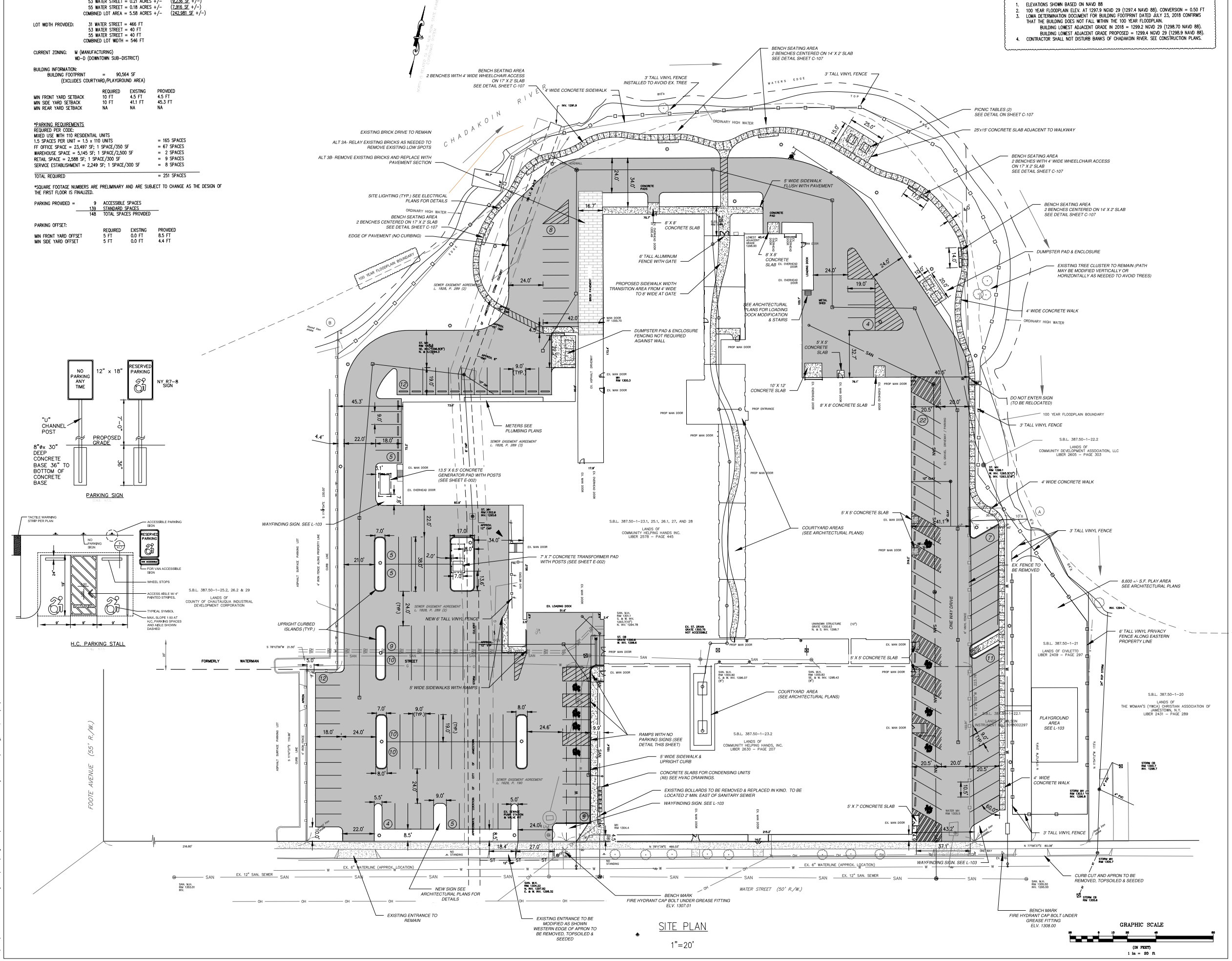
PARKING PROVIDED = 9 ACCESSIBLE SPACES
139 STANDARD SPACES
148 TOTAL SPACES PROVIDED

PARKING OFFSET:

	REQUIRED	EXISTING	PROVIDED
MIN FRONT YARD OFFSET	5 FT	0.0 FT	8.5 FT
MIN SIDE YARD OFFSET	5 FT	0.0 FT	4.4 FT

PARKING SIGN

H.C. PARKING STALL



SWBR
307 East Main Street Rochester NY 14604
585.232.6000 | rochester@swbr.com
GPI
Greenman-Pedersen, Inc.
Engineering and Construction Services
Surveying Services Performed by
GPI Engineering, Landscape Architecture and Surveying, LLP
4500 Genesee Street, Buffalo, NY 14225
TEL (716) 633-6464 Fax: (716) 633-6465

WARNING: Alterations to this document not conforming to Section 7209, Subdivision 2, state education law, are prohibited

Drawn By:	JLB
Checked By:	DFP
Project Manager:	JLB

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Revisions

Addendum 1 6/15/2020 JLB
Ordinary High Water added 6/29/2020 JLB

STEL - Gateway Lofts
31 Water St
Jamestown, NY 14701
SWBR Project Number 17445.00

Southern Tier Enviroments For Living (STEL), INC.
715 Central Avenue
Dunkirk, NY 14048

C-101
Site Plan

Construction Documents
6/01/2020

N:\2018\18JF-201807\2.00 Gateway Lofts\CAD\Design Plans\18JF-201807x2.00 Gateway Lofts-site plan.dwg, Model, 2020/06/29 11:42 am

LEGEND

INDICATES DEMOLITION OF EXISTING BUILDINGS, DEBRIS TO BE REMOVED FROM SITE AND DISPOSED OF OFF SITE. CONCRETE FOUNDATIONS/WALLS/SLABS, AND GRANULAR BASE MATERIAL TO BE REMOVED, AND VOID TO BE BACKFILLED WITH SUITABLE MATERIAL (A.O.B.E.), AND MECHANICALLY TAMPED IN MAX 6" LIFTS TO 95% PROCTOR.

12" LOCUST

INDICATES REMOVAL AND DISPOSAL OF EXISTING ASPHALT AND CONCRETE DRIVES, CONCRETE WALKS AND GRANULAR MATERIAL. AREA MAY BE GRINDED UP AND USED FOR SUBBASE IF PERMITTED BASED ON SITE REMEDIATION PLAN AND ENVIRONMENTAL PLANS & REPORTS.

12" LOCUST

INDICATES EXISTING TREE TO BE SAVED. (CARE MUST BE TAKEN DURING CONSTRUCTION TO PROTECT TREE)

INDICATES EXISTING TREE TO BE REMOVED (STUMPS SHALL BE GRINDED)

NOTES:

1. REFER TO ENVIRONMENTAL REPORTS FOR DEMOLITION SPECS.
2. ALL EXISTING BUILDING UTILITIES TO BE CAPPED OR PLUGGED AS APPROPRIATE PRIOR TO DEMOLITION.

NOTES:

1.) THE CONTRACTOR IS TO VERIFY EXACT DEPTHS AND LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. TEST PITS SHALL BE DUG AS NEEDED TO DETERMINE EXISTING UTILITY DEPTHS AND LOCATIONS.

2.) ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF JAMESTOWN AND JAMESTOWN BPU CONSTRUCTION SPECIFICATIONS AND DETAILS

3.) EROSION & SEDIMENT CONTROL MEASURES SHALL BE USED IN ACCORDANCE WITH THE NYS STANDARDS AND SPECIFICATIONS FOR EROSION & SEDIMENT CONTROL AND AS SHOWN ON THE DETAIL SHEETS. CONSTRUCTION ENTRANCES SHALL BE INSTALLED FOR ALL WORK SITES. SILT FENCE SHALL BE INSTALLED AS NEEDED.

4.) SEE ELECTRICAL & PLUMBING DRAWINGS FOR GAS AND ELECTRIC SERVICE CONNECTION POINTS.

5.) REMOVAL OF ONSITE MATERIAL SHALL BE DONE IN ACCORDANCE WITH THE SITE REMEDIAL DRAWINGS PROVIDED BY OTHERS.

6.) ALL EXISTING TREES ONSITE SHALL REMAIN UNLESS OTHERWISE NOTED

7.) CARE SHALL BE TAKEN OVER THE EXISTING STORM SEWER TO PREVENT FURTHER DAMAGE TO THE CULVERT. COVER IS MINIMAL OVER THE CULVERT AND APPROPRIATE MEASURES MUST BE IMPLEMENTED TO AVOID ADDITIONAL DEFORMATION AND DAMAGE. WHEN EXISTING CONSTRUCTION WHICH IS TO REMAIN IS DAMAGED DURING CONSTRUCTION, IT SHALL BE REPAIRED OR REPLACED IN KIND WITHOUT COMPENSATION.

8.) EXISTING TREES ALONG THE WATERFRONT ARE TO REMAIN UNLESS OTHERWISE NOTED. PLANTINGS SHALL BE TRIMMED TO GRADE AS SHOWN ON THE LANDSCAPE PLAN.

9.) REFER TO SITE REMEDIATION PLANS FOR SPECIFICATIONS ON SOIL REMOVAL. CONTRACTOR SHALL COORDINATE ALL WORK WITH HAZARDOUS MATERIALS ABATEMENT WORK (UNDER SEPARATE CONTRACT).

10.) EXISTING GRAVEL AND PAVEMENT AREAS MAY BE GRINDED UP AND USED AS SUBBASE AS PERMITTED BY THE SITE REMEDIATION PLAN AND ENVIRONMENTAL PLANS AND REPORTS.

11.) CONTRACTOR TO TAKE PAVEMENT BORES AS NEEDED TO DETERMINE EXISTING PAVEMENT AND SUBBASE THICKNESS.

12.) CONTRACTOR TO AVOID DAMAGING EXISTING TREES AND ANY TURTLE NESTS FOUND ONSITE.

13.) CONTRACTOR TO FIELD INVESTIGATE DEMOLITION AREAS FOR POTENTIAL ISSUES. POSSIBLE RAIL ROAD TIES, OTHER DEBRIS AND BURIED STRUCTURES. ALL DEBRIS SHALL BE DISPOSED OF BY THE CONTRACTOR TO REMOVE AS NEEDED FOR SITE IMPROVEMENTS AND IN ACCORDANCE WITH THE SITE REMEDIATION PLAN.

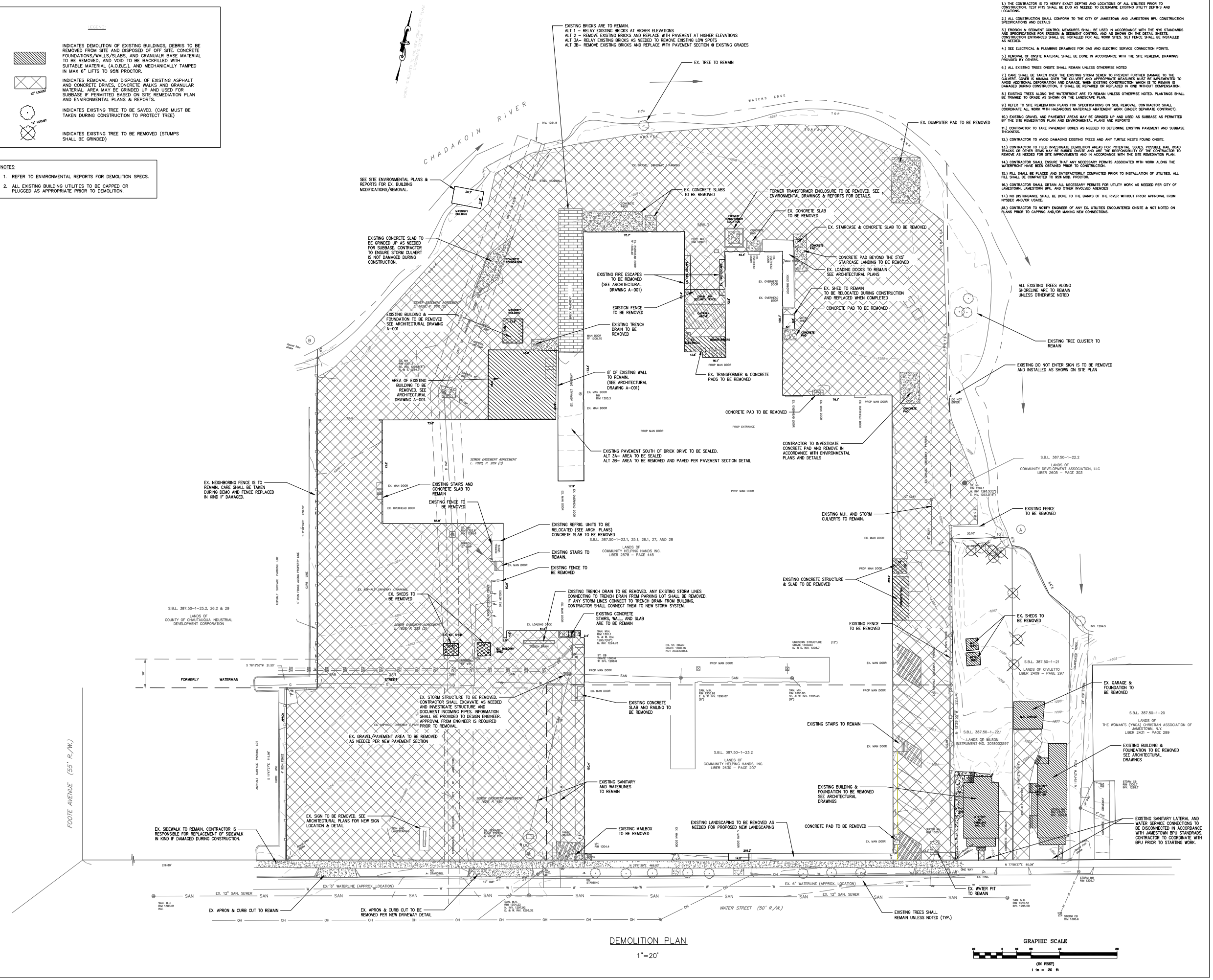
14.) CONTRACTOR SHALL ENSURE THAT ANY NECESSARY PERMITS ASSOCIATED WITH WORK ALONG THE WATERFRONT HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION.

15.) FILL SHALL BE PLACED AND SATISFACTORILY COMPACTED PRIOR TO INSTALLATION OF UTILITIES. ALL FILL SHALL BE COMPACTED TO 95% MOD. PROCTOR.

16.) CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR UTILITY WORK AS NEEDED PER CITY OF JAMESTOWN, JAMESTOWN BPU, AND OTHER INVOLVED AGENCIES

17.) NO DISTURBANCE SHALL BE DONE TO THE BANKS OF THE RIVER WITHOUT PRIOR APPROVAL FROM NYSDEC AND/OR USACE.

18.) CONTRACTOR TO NOTIFY ENGINEER OF ANY EX. UTILITIES ENCOUNTERED ONSITE & NOT NOTED ON PLANS PRIOR TO CAPPING AND/OR MAKING NEW CONNECTIONS.



DEMOLITION PLAN

1"=20'

SWBR

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GPI

Greenman-Pedersen, Inc.
Engineering and Construction Services

Surveying Services Performed by:
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Drawn By:	JLB
Checked By:	DFP
Project Manager:	JLB

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Revisions

Advisent Permits Added 4/30/19 JLB
Notes added 7/29/19 JLB

STEL - Gateway Lofts
31 Water St
Jamestown, NY 14701
SWBR Project Number 17445.00

Southern Tier Environments For Living (STEL), INC.
715 Central Avenue
Dunkirk, NY 14048

C-102
Demo Plan

Construction Documents
6/01/2020

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FIRE SERVICE WATERLINE GENERAL NOTES:

1. MECHANICAL JOINT (M.J.) DUCTILE IRON PIPE SHALL CONFORM TO CURRENT A.W.W.A. C 151 (ANSI A21.51), SHALL BE DOUBLE CEMENT-LINED PER A.W.W.A. C104, CLASS 52, INSTALLED IN ACCORDANCE WITH A.W.W.A. C600, AND PIPE SHALL BE WRAPPED IN POLYETHYLENE PER A.W.W.A. C105.

3. FITTINGS SHALL CONFORM TO A.W.W.A. C 110 (ANSI 21.10) FOR GRAY & DUCTILE IRON FITTINGS OR SHORT BODY DUCTILE IRON FITTINGS IN ACCORDANCE WITH A.W.W.A. C 153 (ANSI 21.53) MECHANICAL JOINTS SHALL CONFORM TO A.W.W.A. C 111 (ANSI 21.11).

4. VALVES SHALL BE MJ GATE VALVES IN ACCORDANCE WITH A.W.W.A. C 509, 2" NUT OPEN CLOCKWISE

5. HYDROSTATIC PRESSURE TESTING OF WATERLINES (AWWA C600)

   THE TEST PRESSURE SHALL NOT BE LESS THAN 150lb OF THE STATIC PRESSURE AT THE HIGHEST POINT ALONG THE TEST SECTION. NO AIR TESTING SHALL BE ALLOWED.

   THE TEST SHALL BE AT LEAST 2 HOURS IN DURATION AND BE WITNESSED BY THE DESIGN ENGINEER.

   THE PRESSURE SHALL NOT VARY BY MORE THAN +/- 5 psi FOR THE DURATION OF THE TEST.

   NO VALVES SHALL BE OPERATED DURING THE TEST.

   ALL AIR SHALL BE REMOVED PRIOR TO ANY TESTING.
   LEAKAGE SHALL BE DEFINED BY THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE PIPE TO MAINTAIN THE PRESSURE WITHIN 5 psi OF THE SPECIFIED TEST PRESSURE. THE ALLOWABLE LEAKAGE IS DETERMINED BY THE FOLLOWING FORMULA:

   $$L = \frac{SD\,(P^{0.5})}{133{,}200}$$

   WHERE:

   L = ALLOWABLE LEAKAGE IN GPH (0.89 GPH/1,000' @ 175 psi FOR A 16" PIPE)
   S = LENGTH TESTED IN FEET
   D = NOMINAL DIAMETER OF PIPE IN INCHES.
   P = AVERAGE TEST PRESSURE DURING TEST IN POUNDS PER SQUARE INCH (GAUGE)

6. DISINFECTION OF WATERLINES

   WATER MAINS AND ACCESSORIES SHALL BE DISINFECTED IN ACCORDANCE WITH ANSI/AWWA C 601, THE MOST RECENT APPLICABLE AWWA STANDARD. THIS STANDARD SHALL BE AT JOBSITE WITH ACCESS GRANTED TO RESIDENT PROJECT REPRESENTATIVE (RPR) AND ENGINEER. CARE SHALL BE TAKEN TO MINIMIZE ENTRANCE OF FOREIGN MATERIAL INTO PIPE, FITTINGS AND VALVES. THE MAIN SHALL BE FLUSHED PRIOR TO DISINFECTION WITH SUFFICIENT FLOW TO PRODUCE A VELOCITY OF 2.50 fps. FLUSHING SHALL TAKE PLACE IN AREAS WITH ADEQUATE DRAINAGE.

   A CHLORINE APPLICATION BY AN APPROVED METHOD SHALL BE MADE USING WATER FROM THE EXISTING DISTRIBUTION SYSTEM OR WATER SUPPLY. THE INITIAL CHLORINE CONCENTRATION IN THE WATER TO BE USED SHALL BE A MINIMUM OF 50 MG/L AVAILABLE CHLORINE. THE CHLORINATED WATER SHALL BE RETAINED IN THE MAIN FOR AT LEAST 24 HOURS, BUT NOT MORE THAN 72 HOURS DURING WHICH TIME ALL VALVES AND HYDRANTS IN THE SECTION TREATED SHALL BE OPERATED. AT THE END OF THIS PERIOD, THE TREATED WATER SHALL CONTAIN NO LESS THAN 25 MG/L CHLORINE THROUGHOUT, AND FINAL FLUSHING SHALL FOLLOW TO ENSURE THAT THE CHLORINE CONCENTRATION IS NOT HIGHER THAN THAT GENERALLY PREVAILING IN THE SYSTEM. CHLORINATED WATER SHALL NOT BE DISCHARGED TO ANY WATER COURSE OR DRAINAGEWAY UNTIL IT IS DILUTED OR REDUCED TO A LEVEL WHICH WILL RESULT IN NO DAMAGE TO AQUATIC LIFE.

   BACTERIOLOGICAL TESTS: AFTER FINAL FLUSHING AND BEFORE THE WATER MAIN IS PLACED IN SERVICE, 2 CONSECUTIVE SAMPLES SHALL BE COLLECTED AT 24 HOURS INTERVALS FOR EACH 3,000 FT. OF LINE OR AT EACH END OF A SHORT SECTION OF PIPE. THESE SAMPLES SHALL BE TESTED FOR BACTERIOLOGICAL QUALITY BY THE STATE OR OTHER CERTIFIED LABORATORY AND SHALL SHOW THE ABSENCE OF COLIFORM ORGANISMS. SAMPLES WILL BE COLLECTED BY THE CONTRACTOR THROUGH THE USE OF SAMPLE TAPS SUPPLIED BY THE CONTRACTOR FOR THE LINE SECTIONS NOTED. IF THE INITIAL DISINFECTION FAILS TO PRODUCE SATISFACTORY SAMPLES, DISINFECTION SHALL BE REPEATED UNTIL SATISFACTORY SAMPLES HAVE BEEN OBTAINED.

7. NO CONNECTION MAY BE MADE TO ANY EXISTING WATERMAIN PRIOR TO DISINFECTION & CHAUTAUQUA COUNTY HEALTH DEPARTMENT APPROVAL OF COMPLETED WORKS AND ACCEPTANCE BY THE JAMESTOWN B.P.U. AFTER APPROVAL, CONNECTIONS CAN BE MADE.

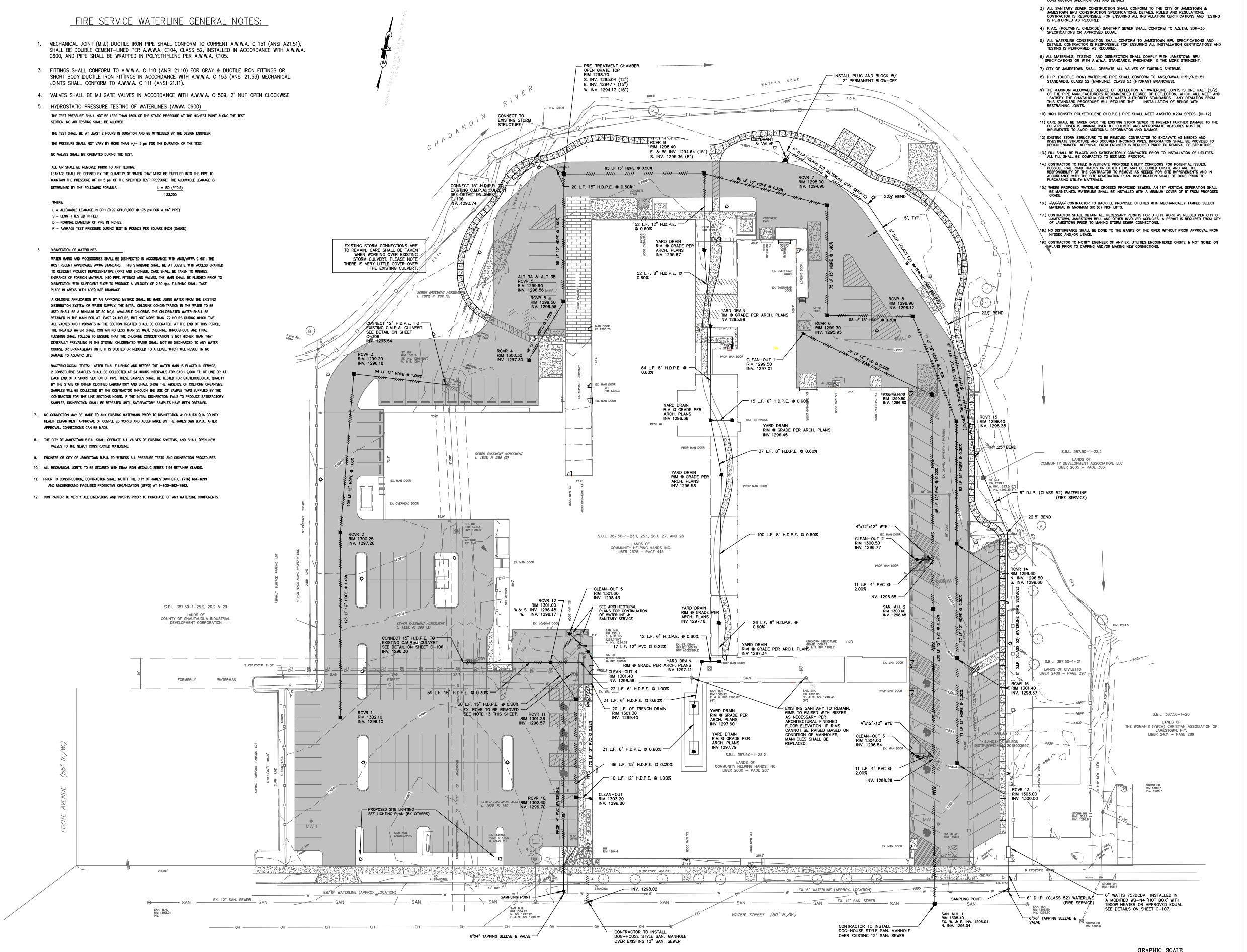
8. THE CITY OF JAMESTOWN B.P.U. SHALL OPERATE ALL VALVES OF EXISTING SYSTEMS, AND SHALL OPEN NEW VALVES TO THE NEWLY CONSTRUCTED WATERLINE.

9. ENGINEER OR CITY OF JAMESTOWN B.P.U. TO WITNESS ALL PRESSURE TESTS AND DISINFECTION PROCEDURES.

10. ALL MECHANICAL JOINTS TO BE SECURED WITH EBAA IRON MEGALUG SERIES 1116 RETAINER GLANDS.

11. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL NOTIFY THE CITY OF JAMESTOWN B.P.U. (716) 661-1699 AND UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION (UFPO) AT 1-800-962-7962.

12. CONTRACTOR TO VERIFY ALL DIMENSIONS AND INVERTS PRIOR TO PURCHASE OF ANY WATERLINE COMPONENTS.



UTILITY PLAN
1"=20'

GENERAL NOTES:

1) THE CONTRACTOR IS TO VERIFY EXACT DEPTHS AND LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. TEST PITS SHALL BE DUG AS NEEDED TO DETERMINE EXISTING UTILITY DEPTHS AND LOCATIONS.

2) ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF JAMESTOWN AND JAMESTOWN BPU CONSTRUCTION SPECIFICATIONS AND DETAILS

3) ALL SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE CITY OF JAMESTOWN & JAMESTOWN BPU CONSTRUCTION SPECIFICATIONS, DETAILS, RULES AND REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL INSTALLATION CERTIFICATIONS AND TESTING IS PERFORMED AS REQUIRED.

4) P.V.C. (POLYVINYL CHLORIDE) SANITARY SEWER SHALL CONFORM TO A.S.T.M. SDR-35 SPECIFICATIONS OR APPROVED EQUAL.

5) ALL WATERLINE CONSTRUCTION SHALL CONFORM TO JAMESTOWN BPU SPECIFICATIONS AND DETAILS. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL INSTALLATION CERTIFICATIONS AND TESTING IS PERFORMED AS REQUIRED.

6) ALL MATERIALS, TESTING AND DISINFECTION SHALL COMPLY WITH JAMESTOWN BPU SPECIFICATIONS OR WITH A.W.W.A. STANDARDS, WHICHEVER IS THE MORE STRINGENT.

7) CITY OF JAMESTOWN SHALL OPERATE ALL VALVES OF EXISTING SYSTEMS.

8) D.I.P. (DUCTILE IRON) WATERLINE PIPE SHALL CONFORM TO ANSI/AWWA C151/A.21.51 STANDARDS, CLASS 52 (MAINLINE), CLASS 53 (HYDRANT BRANCHES).

9) THE MAXIMUM ALLOWABLE DEGREE OF DEFLECTION AT WATERLINE JOINTS IS ONE HALF (1/2) OF THE PIPE MANUFACTURERS RECOMMENDED DEGREE OF DEFLECTION, WHICH WILL MEET AND SATISFY THE CHATAUQUA COUNTY WATER AUTHORITY STANDARDS. ANY DEVIATION FROM THIS STANDARD PROCEDURE WILL REQUIRE THE INSTALLATION OF BENDS WITH RESTRAINING JOINTS.

10) HIGH DENSITY POLYETHYLENE (H.D.P.E.) PIPE SHALL MEET AASHTO M294 SPECS. (N-12)

11) CARE SHALL BE TAKEN OVER THE EXISTING STORM SEWER TO PREVENT FURTHER DAMAGE TO THE CULVERT. COVER IS MINIMAL OVER THE CULVERT AND APPROPRIATE MEASURES MUST BE IMPLEMENTED TO AVOID ADDITIONAL DEFORMATION AND DAMAGE.

12) EXISTING STORM STRUCTURE TO BE REMOVED. CONTRACTOR TO EXCAVATE AS NEEDED AND INVESTIGATE STRUCTURE AND DOCUMENT INCOMING PIPES. INFORMATION SHALL BE PROVIDED TO DESIGN ENGINEER. APPROVAL FROM ENGINEER IS REQUIRED PRIOR TO REMOVAL OF STRUCTURE.

13) FILL SHALL BE PLACED AND SATISFACTORILY COMPACTED PRIOR TO INSTALLATION OF UTILITIES. ALL FILL SHALL BE COMPACTED TO 95% MOD. PROCTOR.

14) CONTRACTOR TO FIELD INVESTIGATE PROPOSED UTILITY CORRIDORS FOR POTENTIAL ISSUES. POSSIBLE REAL ROAD TRACKS OF OTHER ITEMS MAY BE BURIED SHALLOW AND ARE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AS NEEDED FOR SITE IMPROVEMENTS AND IN ACCORDANCE WITH THE SITE REMEDIATION PLAN. INVESTIGATION SHALL BE DONE PRIOR TO PURCHASING UTILITY MATERIALS.

15) WHERE PROPOSED WATERLINE CROSSED PROPOSED SEWERS, AN 18" VERTICAL SEPERATION SHALL BE MAINTAINED. WATERLINE SHALL BE INSTALLED WITH A MINIMUM COVER OF 5' FROM PROPOSED GRADE.

16) CONTRACTOR TO BACKFILL PROPOSED UTILITIES WITH MECHANICALLY TAMPED SELECT MATERIAL IN MAXIMUM SIX (6) INCH LIFTS.

17) CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR UTILITY WORK AS NEEDED PER CITY OF JAMESTOWN, JAMESTOWN BPU, AND OTHER INVOLVED AGENCIES. A PERMIT IS REQUIRED FROM CITY OF JAMESTOWN PRIOR TO MAKING STORM SEWER CONNECTIONS.

18) NO DISTURBANCE SHALL BE DONE TO THE BANKS OF THE RIVER WITHOUT PRIOR APPROVAL FROM NYSDEC AND/OR USACE.

19) CONTRACTOR TO NOTIFY ENGINEER OF ANY EX. UTILITIES ENCOUNTERED ONSITE & NOT NOTED ON PLANS PRIOR TO CAPPING AND/OR MAKING NEW CONNECTIONS.

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4500 Genesee Street, Buffalo, NY 14225
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Drawn By: EAO
Checked By: JEG
Project Manager: JLB

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Revisions

STEL - Gateway Lofts
31 Water St
Jamestown, NY 14701
SWBR Project Number 17445.00

Southern Tier Enviroments For Living (STEL), INC.
715 Central Avenue
Dunkirk, NY 14048

C-103
Utility Plan

Construction Documents
6/01/2020

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GRADING & PAVING PLAN– ALT 3A & ALT 3B

1"=20'

NOTES:

1.) THE CONTRACTOR IS TO VERIFY EXACT DEPTHS AND LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. TEST PITS SHALL BE DUG AS NEEDED TO DETERMINE EXISTING UTILITY DEPTHS AND LOCATIONS.

2.) ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF JAMESTOWN AND JAMESTOWN BPU CONSTRUCTION SPECIFICATIONS AND DETAILS

3.) EROSION & SEDIMENT CONTROL MEASURES SHALL BE USED IN ACCORDANCE WITH THE NYS STANDARDS AND SPECIFICATIONS FOR EROSION & SEDIMENT CONTROL AND AS SHOWN ON THE DETAIL SHEETS.

4.) SEE ELECTRICAL & PLUMBING DRAWINGS FOR GAS AND ELECTRIC SERVICE CONNECTION POINTS.

5.) REMOVAL OF ONSITE MATERIAL SHALL BE DONE IN ACCORDANCE WITH THE SITE REMEDIAL DRAWINGS PROVIDED BY OTHERS.

6.) ALL EXISTING TREES ONSITE SHALL REMAIN UNLESS OTHERWISE NOTED

7.) CARE SHALL BE TAKEN OVER THE EXISTING STORM SEWER TO PREVENT FURTHER DAMAGE TO THE CULVERT. COVER IS MINIMAL OVER THE CULVERT AND APPROPRIATE MEASURES MUST BE IMPLEMENTED TO AVOID ADDITIONAL DEFORMATION AND DAMAGE. WHEN EXISTING CONSTRUCTION WHICH IS TO REMAIN IS DAMAGED DURING CONSTRUCTION, IT SHALL BE REPAIRED OR REPLACED IN KIND WITHOUT COMPENSATION.

8.) EXISTING TREES ALONG THE WATERFRONT ARE TO REMAIN UNLESS OTHERWISE NOTED. PLANTINGS SHALL BE TRIMMED TO GRADE AS SHOWN ON THE LANDSCAPE PLAN.

9.) REFER TO SITE REMEDIATION PLANS FOR SPECIFICATIONS ON SOIL REMOVAL. CONTRACTOR SHALL COORDINATE ALL WORK WITH HAZARDOUS MATERIALS ABATEMENT WORK (UNDER SEPARATE CONTRACT).

10.) EXISTING GRAVEL AND PAVEMENT AREAS MAY BE GRINDED UP AND USED AS SUBBASE AS PERMITTED BY THE SITE REMEDIATION PLAN AND ENVIRONMENTAL PLANS AND REPORTS

11.) CONTRACTOR TO TAKE PAVEMENT BORES AS NEEDED TO DETERMINE EXISTING PAVEMENT AND SUBBASE THICKNESS.

12.) CONTRACTOR TO AVOID DAMAGING EXISTING TREES AND ANY TURTLE NESTS FOUND ONSITE.

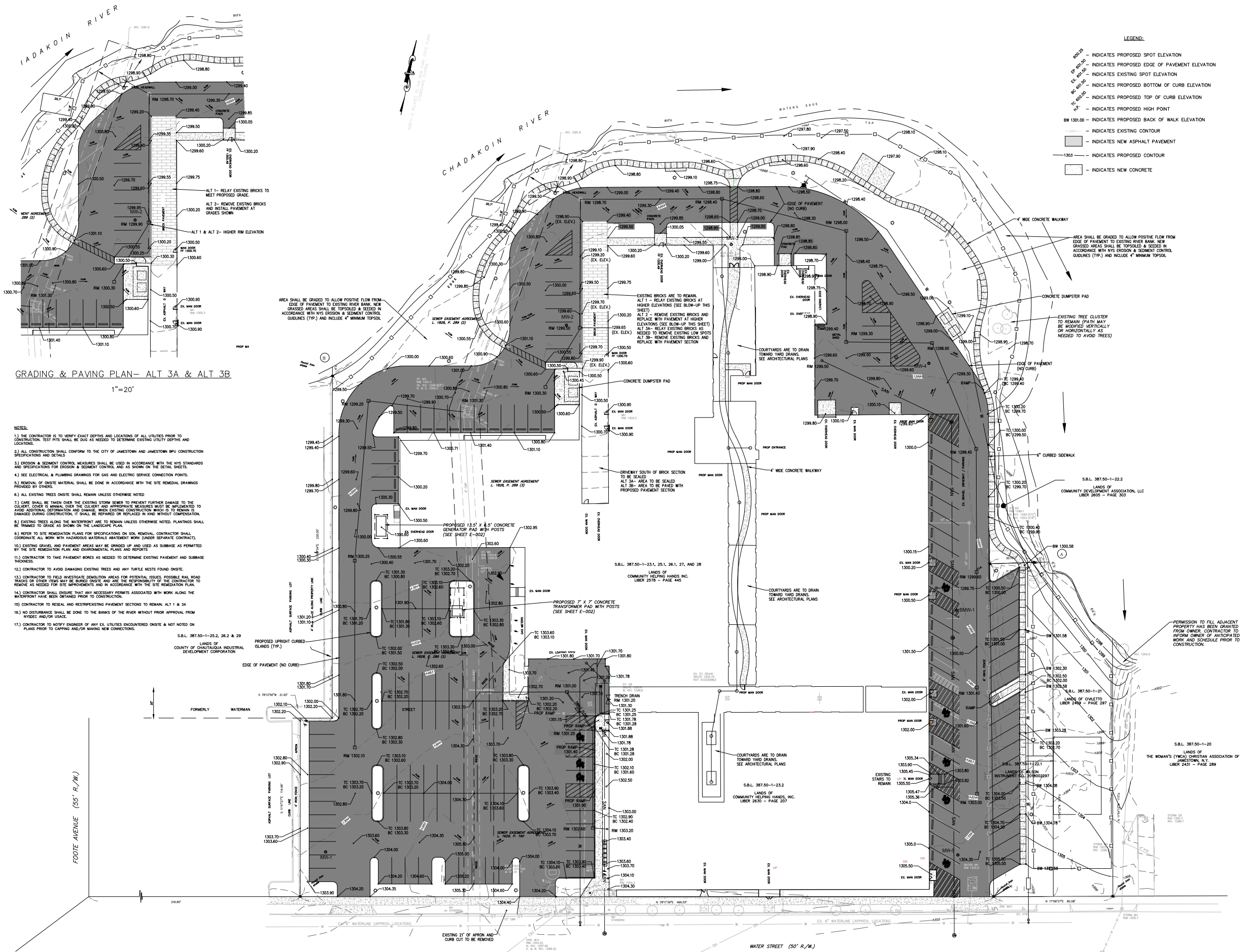
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14.) CONTRACTOR SHALL ENSURE THAT ANY NECESSARY PERMITS ASSOCIATED WITH WORK ALONG THE WATERFRONT HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION.

15) CONTRACTOR TO RESEAL AND RESTRIPEXISTING PAVEMENT SECTIONS TO REMAIN. ALT 1 & 3A

16.) NO DISTURBANCE SHALL BE DONE TO THE BANKS OF THE RIVER WITHOUT PRIOR APPROVAL FROM NYSDEC AND/OR USACE.

17.) CONTRACTOR TO NOTIFY ENGINEER OF ANY EX. UTILITIES ENCOUNTERED ONSITE & NOT NOTED ON PLANS PRIOR TO CAPPING AND/OR MAKING NEW CONNECTIONS.

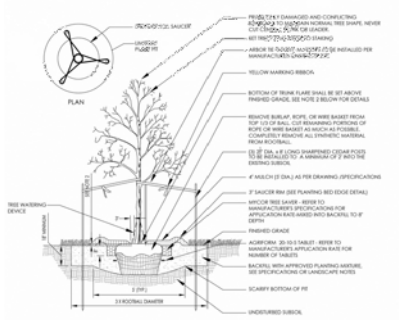

CHADAKOIN RIVER
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LANDSCAPE/PLANTING NOTES:

1. IT IS THE LANDSCAPE CONTRACTORS RESPONSIBILITY TO VISIT THE SITE PRIOR TO BID MOBILIZATION, TO BECOME FAMILIAR WITH EXISTING CONDITIONS AT THE SITE.
2. STANDARDS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK", ANSI Z60.1 (LATEST EDITION) REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE THE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIALS DELIVERED AND INSTALLED ON THIS PROJECT.
3. ALL PLANTS MUST BE HEALTHY, VIGOROUS AND FREE OF PESTS AND DISEASE.
4. ALL PLANTS MUST BE HARDY UNDER CLIMATE CONDITIONS THAT EXIST AT THE PROJECT SITE AND GROWN AT A NURSERY IN THE SAME HARDINESS ZONE AS THE PROJECT LOCATION.
5. ALL PLANTS MUST BE CONTAINER GROWN OR BALLED AND BURLAPPED AS INDICATED ON THE PLANT LIST.
6. ANY PROPOSED DEVIATION TO THE LANDSCAPE PLAN MUST FIRST BE REVIEWED AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO THE INSTALLATION OF THE PROPOSED LANDSCAPING CHANGES.
7. ALL TREES MUST BE STRAIGHT-TRUNKED, INJURY FREE, HAVE A FULL SYMMETRICAL CROWN (HEAD) AND MEET ALL REQUIREMENTS SPECIFIED (E.G. SINGLE STEM, MULTI-STEM, HEAVY BRANCHED, ETC.).
8. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS.
9. ANY DISCREPANCIES IN THE QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND/OR LANDSCAPE ARCHITECT (OWNER'S REPRESENTATIVE).
10. ANY CONCERNS RELATED TO SITE CONDITIONS AND/OR PLANT LOCATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND/OR DESIGN LANDSCAPE ARCHITECT (OWNER'S REPRESENTATIVE) PRIOR TO INSTALLATION.
11. ALL GRADING AND UTILITY WORK SHALL BE COMPLETED PRIOR TO INSTALLATION OF PLANT MATERIAL AND LANDSCAPE MULCH.
12. THE FINAL LOCATION OF TREES AND OTHER LANDSCAPING SHALL BE DETERMINED IN THE FIELD BASED ON UTILITY STAKEOUT AND SHALL NOT CONFLICT WITH TRAFFIC SIGNS AND/OR UTILITIES. STAKE OUT SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK.
13. PLANTING BACKFILL MIXTURE: 2/3 PARTS ON-SITE SOIL, 1/3 PARTS SCREENED TOPSOIL, 5 PARTS PEAT MOSS, 5 PARTS ALL GROW, 2.5 PARTS WELL ROTTED MANURE AND 10 LBS. 5-10-5 PLANTING FERTILIZER, MIXED THOROUGHLY PER CUBIC YARD.
14. MULCH ALL PLANT BEDS, AND INDIVIDUAL TREES IN LAWN AREAS WITH COMPOSTED AND AGED SHREDDED HARDWOOD BARK MULCH TO A DEPTH OF FOUR (4") INCHES UNLESS OTHERWISE SPECIFIED ON PLANTING DETAILS, OR AS DIRECTED BY THE LANDSCAPE ARCHITECT DUE TO SITE CONDITIONS. MULCH SAMPLE TO BE SUBMITTED TO THE OWNER OR THE OWNER'S REPRESENTATIVE FOR FINAL APPROVAL.
15. ANY PLANT WHICH TURNS BROWN, DEFOLIATES OR DIES PRIOR TO FINAL ACCEPTANCE BY THE OWNER, OR LANDSCAPE ARCHITECT, SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH THE SAME PLANT (SPECIES, VARIETY AND SIZE) AS SPECIFIED ON THE PLANT SCHEDULE (LIST).
16. THE CONTRACTOR SHALL MAINTAIN ALL PLANT MATERIALS UNTIL THE PROJECT HAS RECEIVED FINAL ACCEPTANCE BY THE OWNER OR OWNER'S REPRESENTATIVE. MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO: WATERING, MULCHING, FERTILIZING, SPRAYING (FUNGICIDE, PESTICIDE, ANTI-DESICCANT, AS WELL AS RAISING PLANTS THAT HAVE SETTLED TOO DEEP OR REQUIRE STRAIGHTENING.
17. ALL AREAS DISTURBED BY SITE GRADING AND/OR UTILITY INSTALLATION SHALL RECEIVE APPROVED TOPSOIL (BASED ON APPROVED SAMPLES SUBMITTED BY THE CONTRACTOR) AND SPREAD TO A DEPTH NOT LESS THAN SIX (6") INCHES AFTER COMPACTION. TOPSOIL PLACED FOR LAWNS SHALL BE FINE GRADED, SEEDED, MULCHED AND WATERED UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED. THIS IS EXCLUDING FOUNDATION PLANT BEDS, LANDSCAPE ISLANDS AND ENTRANCE AREAS.
18. ALL AREAS BETWEEN ASPHALT AND RIVER'S EDGE SCHEDULED TO RECEIVE PLANTINGS, TURFGRASS OR NATURALIZATION SHALL BE FINE GRADED TO REMOVE ALL CONSTRUCTION DEBRIS AND ALL UNSUITABLE MATERIALS TO A DEPTH OF 18" OR UNTIL SUITABLE SUB-SOIL IS ENCOUNTERED, AT A MINIMUM. REFERENCE SITE REMEDIATION FOR ADDITIONAL REQUIREMENTS.
19. LOCATIONS OF EXISTING BURIED UTILITIES SHOWN ON THE SITE PLAN ARE BASED UPON THE BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE.THE CONTRACTOR IS RESPONSIBLE TO CALL FOR A UTILITY STAKEOUT PRIOR TO COMMENCING PLANT INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, AND SITE APPURTENANCES WHICH OCCURS AS A RESULT OF LANDSCAPE INSTALLATION OPERATIONS.
20. EXISTING TREES INDICATED TO BE REMOVED SHALL OCCUR UNDER THE SITE CONTRACT FOR THIS PROJECT. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR NEW PLANTINGS OR RESTORATION OF THE DISTURBED AREA (LAWNS, PLANT BEDS).
21. EXISTING TREES TO REMAIN SHALL BE PROTECTED BY INSTALLING A TEMPORARY FENCE AT THE OUTER LIMITS OF THE TREE CANOPY.
22. ALL SHRUB BEDS ADJACENT TO LAWN AREAS SHALL HAVE A SPADED EDGE BORDER.

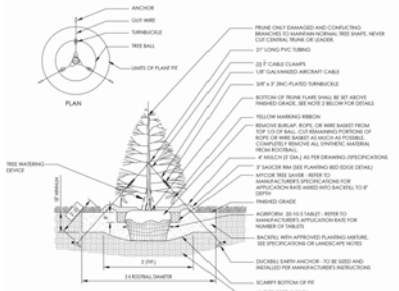
PLANTING NOTES:

1. ALL INTERIOR LANDSCAPED AREAS SHALL HAVE A MINIMUM PLANTING SOIL DEPTH OF THREE (3) FEET AND BE FREE FROM ALL FORMS OF CONSTRUCTION DEBRIS AND FOREIGN MATERIAL.
2. ALL TREE SAUCERS AND SHRUB BEDS SHALL RECEIVE PREEN PRE-EMERGENT HERICIDE AND A MINIMUM OF THREE (3) INCHES DEPTH OF DARK SHREDDED HARDWOOD BARK MULCH.
3. ALL TREES SHALL BE STAKED WITH THREE (3) WOOD STAKES AS SHOWN ON THE TREE PLANTING DETAIL.



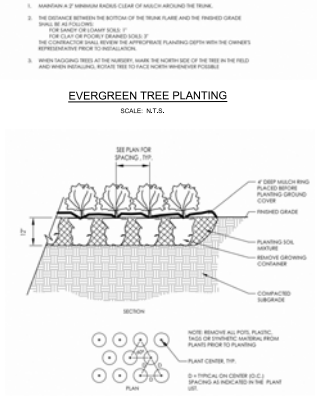
NOTES:
1. MAINTAIN A 3' MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. THE DISTANCE BETWEEN THE BOTTOM OF THE TRUNK FLARE AND THE FINISHED GRADE SHALL BE AS FOLLOWS:
FOR SANDY OR LOAMY SOILS: 1"
FOR CLAY OR POORLY DRAINED SOILS: 3"
THE CONTRACTOR SHALL REVIEW THE APPROPRIATE PLANTING DEPTH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
3. WHEN TAGGING TREES AT THE NURSERY, MARK THE NORTH SIDE OF THE TREE IN THE FIELD AND WHEN INSTALLING, ROTATE TREE TO FACE NORTH WHENEVER POSSIBLE

DECIDUOUS TREE PLANTING
SCALE: N.T.S.

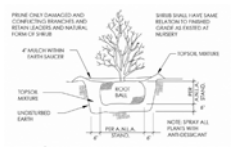


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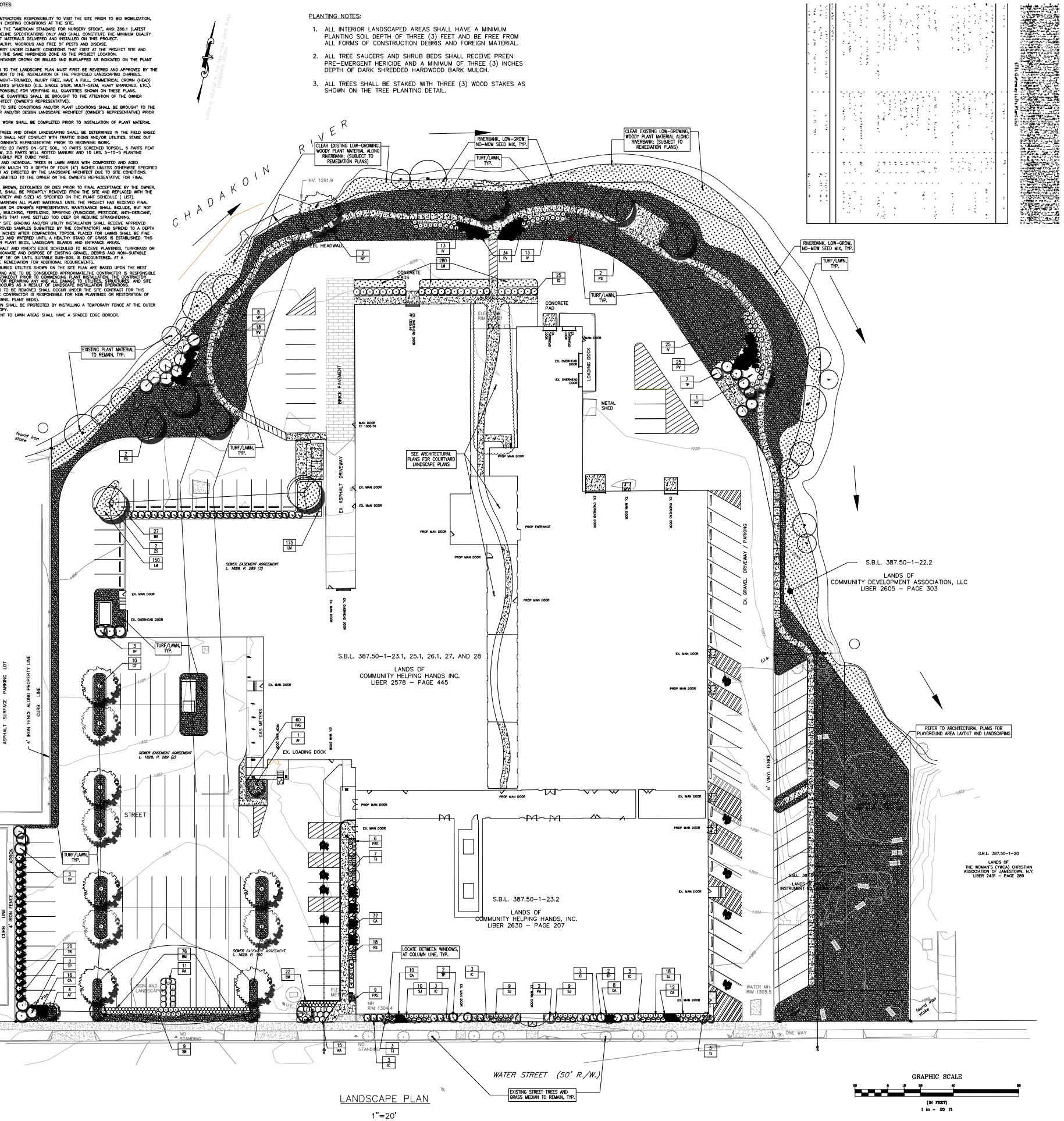
EVERGREEN TREE PLANTING
SCALE: N.T.S.



ORN. GRASS/PERENNIAL PLANTING
SCALE: N.T.S.



SHRUB PLANTING
SCALE: N.T.S.



ADDENDUM NOTES:

ADDENDUM 1: PLANT LIST TYPO CORRECTED; COURTYARD SIDEWALK WIDENED & EXTENDED TO PROPOSED DOORWAY

LANDSCAPE PLAN
1"=20'

GRAPHIC SCALE
0 4 10 20 40 60
(IN FEET)
1 in = 20 ft

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Drawn By: JLB
Checked By: DFP
Project Manager: JLB

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Revisions
Addendum 1 7/18/18 JLB
Adjacent Parcels Added 4/30/19 JLB

STEL - Gateway Lofts
31 Water St
Jamestown, NY 14701
SWBR Project Number 17445.00

Southern Tier Environments For Living (STEL) INC.
715 Central Avenue
Dunkirk, NY 14048

C-105
Landscape Plan

Construction Documents
6/18/2018

Add ad
number
given

N:\SWBR\GPI-SWBR\GIS Survey\Civil\CAD\Xplan Files\GPI-SWBR100 Survey (Jim Hollister).plan_-_8-2020.dwg, Layout1, 2020/6/26 11:37 am

SANITARY SEWER TESTING METHODS
GENERAL NOTES

(A) LEAKAGE TESTS

01. THE TEST PERIOD WHEREIN THE MEASUREMENTS ARE TAKEN SHALL NOT BE LESS THAN 24 HOURS, REGARDLESS OF THE TEST METHOD USED.
02. THE TOTAL LEAKAGE OF ANY SECTION TESTED BY ANY TEST METHOD SHALL NOT EXCEED THE RATE OF 100 GALLONS PER MILE OF PIPE PER 24 HOURS PER INCH OF NOMINAL PIPE DIAMETER.
03. MANHOLES SHALL BE CONSIDERED AS SECTIONS OF 48" DIAMETER PIPE AND THE EQUIVALENT LEAKAGE ALLOWANCE SHALL BE COMPUTED PER NOTE 02 USING THE SUBMERGED HEIGHT OF MANHOLE AS THE LENGTH.
04. WHEN MANHOLES ARE TESTED SEPARATELY, ALL PIPE OPENINGS SHALL BE PLUGGED AND THE TEST PROCEDURES AND CRITERIA SHALL BE APPLIED IN THE SAME MANNER AS FOR TESTS INVOLVING ONLY THE PIPE OR A COMBINATION OF PIPE AND MANHOLES.

(B) INFILTRATION TEST CRITERIA FOR USE

01. THIS TEST METHOD MAY ONLY BE USED WHEN GROUND WATER LEVELS ARE AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE FOR THE ENTIRE LENGTH OF THE SECTION TO BE TESTED DURING THE ENTIRE PERIOD OF THE TESTS.
02. GROUND WATER LEVELS MAY BE MEASURED IN AN OPEN TRENCH OR IN STANDPIPES PREVIOUSLY PLACED IN BACKFILLED TRENCHES DURING BACKFILLING.
03. THE NUMBER OF STANDPIPES REQUIRED AND LOCATION OF THE SAME ARE TO BE AS ORDERED BY THE ENGINEER. STANDPIPES MAY BE OF ANY PIPE MATERIAL BUT MUST BE OF SUCH DIAMETER (2-1/2" MINIMUM) AS TO PERMIT THE INSERTION OF A RULE OR LEVEL ROD. CRUSHED STONE SHALL BE PLACED AROUND THE LOWER OPEN ENDS OF THE STANDPIPES.
04. STANDPIPES ARE TO BE REMOVED AT THE SATISFACTORY COMPLETION OF THE TESTS.
05. IF IN LIEU OF STANDPIPES, THE TRENCH IS TO BE LEFT OPEN FOR GROUND WATER OBSERVATION, THE LENGTH OF UNBACKFILLED TRENCH AT ANY ONE TIME MAY HAVE TO BE LIMITED FOR REASONS OF SAFETY.

(C) EXFILTRATION TEST CRITERIA FOR USE

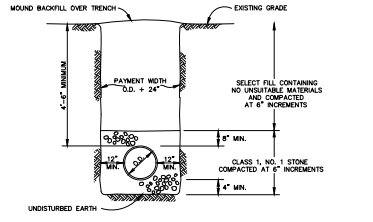
01. THIS TEST CONSISTS OF FILLING THE PIPE WITH WATER TO PROVIDE A HEAD OF AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE OR ABOVE GROUND WATER WHICHEVER IS HIGHER AT THE HIGHEST POINT OF THE PIPE LINE UNDER TEST, AND THEN MEASURING THE LOSS OF WATER TO MAINTAIN THE ORIGINAL LEVEL.
02. IN THIS TEST THE PIPE LINE MUST BE FILLED WITH WATER AND ALLOWED TO REMAIN SO FILLED FOR AT LEAST 24 HOURS PRIOR TO TAKING MEASUREMENTS.
03. REGARDING GROUND WATER MEASUREMENTS: SEE NOTES 02 THROUGH 05 ABOVE.
04. REGARDING THE TEST STANDPIPE: THERE MUST BE SOME POSITIVE METHOD OF RELEASING ENTRAPPED AIR IN THE SEWER PRIOR TO TAKING MEASUREMENTS.

(D) DEFLECTION TEST FOR PVC SEWER PIPE

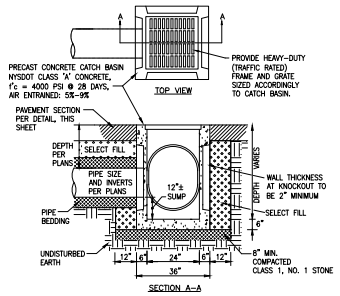
01. DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE GRAVITY SEWER PIPE. TESTS SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS.
02. NO PIPE SHALL EXCEED DEFLECTION OF 5%. DEFLECTION GAGE MAY BE BORROWED FROM THE TOWN ENGINEER FOR 8" AND 10" PIPE. THE DEFLECTION TEST MUST BE EXECUTED AFTER 30 DAYS OF PLACEMENT OF FINAL BACKFILL. THE TEST WILL ALSO BE DONE WITHOUT MECHANICAL PULLING DEVICES.

GENERAL NOTES:

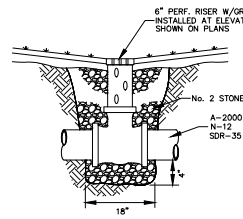
01. THE CONTRACTOR SHALL COMPLY WITH THE CITY OF JAMESTOWN AND JAMESTOWN BPU STANDARD DRAWINGS AND SPECIFICATIONS.
02. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND THE TOWN OF AMHERST ENG. DEPT. OF ANY HAZARDOUS SUBSTANCE ENCOUNTERED DURING THE CONSTRUCTION OF THE WORK. HE SHALL AT HIS EXPENSE, CONFORM TO ALL LAWS, RULES, REGULATIONS AND DIRECTIONS AS PROMULGATED BY THE UNITED STATES DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, THE NEW YORK STATE DEPARTMENT OF HEALTH AND ANY SUCH LOCAL RULES, ORDINANCES AND LAWS WHEN ENCOUNTERING OR WORKING WITH ANY SUCH HAZARDOUS SUBSTANCE.
03. THE CONTRACTOR SHALL COMPLY IN ALL RESPECTS TO THE INDUSTRIAL CODE PART (RULE NO.) 53 RELATING TO CONSTRUCTION, EXCAVATION AND DEMOLITION OPERATIONS AT OR NEAR UNDERGROUND FACILITIES, AS ISSUED BY THE STATE OF NEW YORK DEPARTMENT OF LABOR, BOARD OF STANDARD AND APPEALS.
04. SINCE THE ERIE COUNTY WATER AUTHORITY OPERATES AND MAINTAINS THE EXISTING WATER LINES, THEY ARE TO BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF THE START OF CONSTRUCTION. ALL EXISTING VALVES ARE TO BE OPERATED BY THE ERIE COUNTY WATER AUTHORITY PERSONNEL.
05. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AHEAD OF THE PIPE LAYING OPERATION, SO THAT, IF MINOR ADJUSTMENTS MUST BE MADE IN ELEVATION AND/OR ALIGNMENT DUE TO INTERFERENCE FROM THESE UTILITIES, SAID CHANGES CAN BE MADE IN ADVANCE OF THE WORK.
06. WHERE SUCH FACILITIES ARE UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER, HE SHALL CERTIFY TO THE ENGINEERING DEPARTMENT OF THE TOWN OF AMHERST THAT SAID FACILITIES AS CONSTRUCTED WERE SUPERVISED BY HIMSELF (HERSELF) AND THAT THE WORKS HAVE BEEN FULLY COMPLETED IN ACCORDANCE WITH THE APPROVED ENGINEERING REPORTS, PLANS, SPECIFICATIONS, CONTRACT DOCUMENTS AND ANY AND ALL ADDENDA TO SAME.
07. THE CONSTRUCTION OF THE FACILITIES SHALL BE UNDER THE SUPERVISION OF A PERSON OR FIRM QUALIFIED TO PRACTICE PROFESSIONAL ENGINEERING IN NEW YORK STATE UNDER THE EDUCATION LAW OF THE STATE, WHENEVER ENGINEERING SERVICES ARE REQUIRED BY SUCH LAW FOR SUCH PURPOSES.
08. A WRITTEN CERTIFICATE OF CONSTRUCTION COMPLIANCE, INCLUDING THE RESULTS OF HYDROSTATIC LEAKAGE TESTS, MADE BY THE PROFESSIONAL ENGINEER SUPERVISING THE CONSTRUCTION, SHALL BE SUBMITTED TO THE ERIE COUNTY DEPART. OF ENVIRONMENT PLANNING AND NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION WITHIN THIRTY (30) DAYS AFTER CONSTRUCTION COMPLETION.
09. UNSUITABLE MATERIALS SUCH AS FROZEN ORGANIC AND/OR VEGETABLE MATERIAL, DEBRIS, TREES, LUMBER, LARGE STONES OR CLODS (6.0" OR LARGER), MUCK, PEAT, ORGANIC SILT WILL NOT BE ACCEPTABLE FILL AND CERTAIN MAN-MADE DEPOSITS OF INDUSTRIAL WASTE, SLUDGE OR LANDFILL MAY ALSO BE DETERMINED AS UNSUITABLE HAZARDOUS MATERIAL.
10. THE COMPACTION OF ALL MATERIALS WILL OCCUR AT 6" INCREMENTS.
11. VERIFICATION OF ALL EXISTING EASEMENTS IS THE RESPONSIBILITY OF THE DESIGN ENGINEER AND THEY MUST BE SHOWN ALONG WITH ALL PROPOSED EASEMENTS ON PLAN DRAWINGS.
12. SHOULD A FLUID CONDITION BE ENCOUNTERED AT THE TRENCH BOTTOM, THE CONTRACTOR IS TO INSTALL ADDITIONAL STONE CRADLE AS ORDERED BY THE ENGINEER.
13. ALL PIPE CROSSING UNDER PAVED AREAS ARE TO BE BACKFILLED TO SUBGRADE WITH COMPACTED SELECT MATERIAL TO FIVE (5) FEET OUTSIDE THE PAVEMENT EDGES.
14. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED TREE EXPERT TO REMOVE, WHERE NECESSARY, BRANCHES WHICH INTERFERE WITH THE CONSTRUCTION OPERATION, OR REPAIR TREES HAVING SUFFERED DAMAGE BY CONSTRUCTION ACTIVITIES. THE COST INVOLVED IN THE ABOVE IS TO BE INCLUDED IN THE VARIOUS ITEMS OF THE CONTRACT.
15. SEWERS SHALL BE LAID AT LEAST TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATERMAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A TEN FOOT SEPARATION, THE APPROPRIATE REVIEWING AGENCY MAY ALLOW DEVIATION ON A CASE-BY-CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF THE SEWER UNDER A WATERMAIN, PROVIDED THAT THE WATERMAIN IS IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AND AT AN ELEVATION SO THE BOTTOM OF THE WATERMAIN IS AT LEAST 18" (460M) ABOVE THE TOP OF THE SEWER.
16. SEWERS CROSSING WATERMAINS SHALL BE LAID TO PROVIDE MINIMUM VERTICAL DISTANCE OF 18" (460M) BETWEEN THE OUTSIDE OF A WATERMAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHERE THE WATERMAIN IS EITHER ABOVE OR BELOW THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATERMAIN JOINTS. WHERE A WATERMAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER, TO PREVENT DAMAGE TO THE WATERMAIN.
17. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, THE SEWER SHALL BE DESIGNED AND CONSTRUCTED EQUAL TO WATER PIPE AND SHALL BE PRESSURE TESTED AS TO ASSURE WATERTIGHTNESS PRIOR TO BACKFILLING.
18. THE PIPE SHALL BE P.V.C. SEWER PIPE CONFORMING TO THE LATEST REVISIONS OF ASTM DESIGNATION D-3034, SDR-35, INSTALLED IN ACCORDANCE WITH ASTM.
19. THE MANHOLE COVERS ARE TO BEAR THE INSCRIPTION "PRIVATE SANITARY".



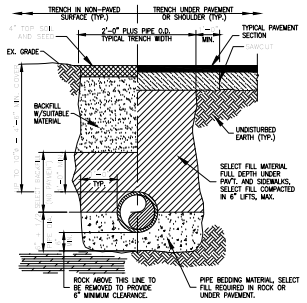
P.V.C. OR H.D.P.E. PIPE
STORM SEWER TRENCH DETAILS



PRECAST CONCRETE CATCH BASIN (RCVR)

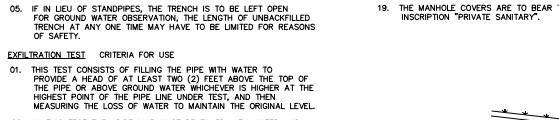


YARD DRAIN
DETAIL



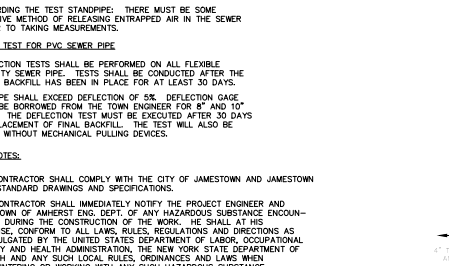
TRENCH DETAI

MACHINE FORMED
UPRIGHT CONCRETE CURB DETAIL



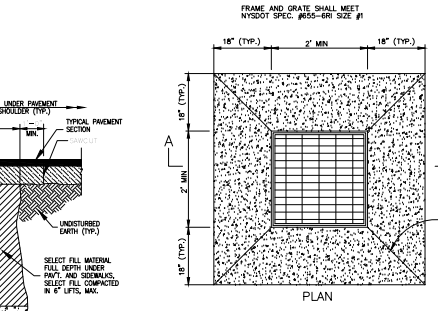
NOTE: EXISTING SUBBASE ONSITE SHALL BE VERIFIED BY THE CONTRACTOR TO ENSURE PROPOSED SECTION IS MET. ASPHALT PAVEMENT SECTION MAY BE MODIFIED IN ACCORDANCE WITH A GEOTECHNICAL REPORT

ASPHALT PAVEMENT SECTION



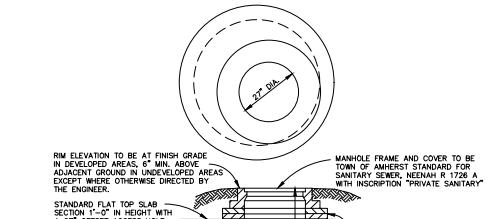
NOTES
1. INSTALL TOOLED CONTROL JOINTS AT MAXIMUM 10 FOOT INTERVALS.
3. INSTALL ISOLATION JOINTS TO ISOLATE THE PAVEMENT FROM STRUCTURES SUCH AS BUILDINGS, LIGHT STANDARDS, DROP INLETS, MANHOLES, ETC.
4. PROVIDE LIGHT BROOM FINISH (PERPENDICULAR TO THE PATH OF TRAVEL) WITH ¼" R. TOOLED EDGES.
5. CONCRETE SHALL BE SEALED WITH AN EXTERIOR CONCRETE SEALANT SUCH AS LAM CONSTRUCTION CHEMICALS, CHEM HARD AND AQUAFEL PLUS (OR APPROVED EQUAL).

ON-SITE CONCRETE PAVEMENT SECTION

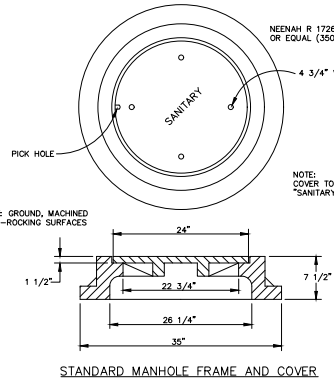


PLAN

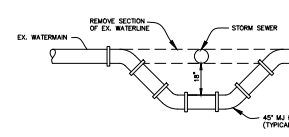
CONCRETE CATCH BASIN APRON



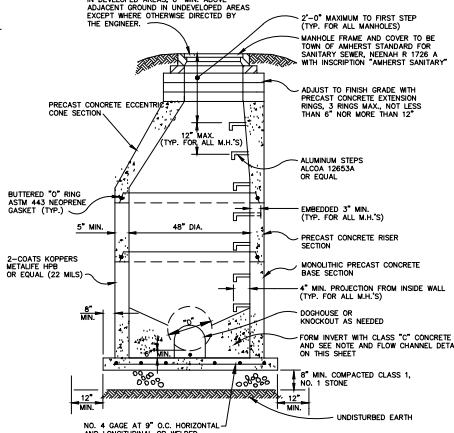
SANITARY MANHOLE DETAIL



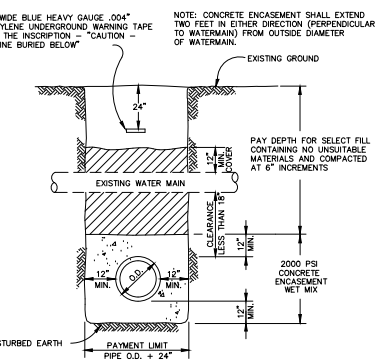
STANDARD MANHOLE FRAME AND COVER
VENTED COVER



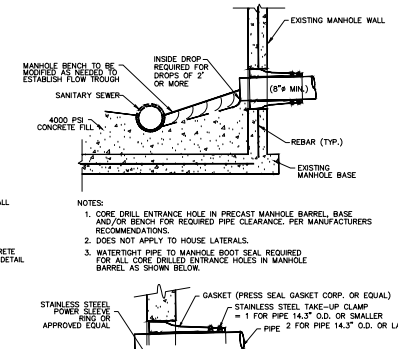
WATERLINE LOWERING DETAIL



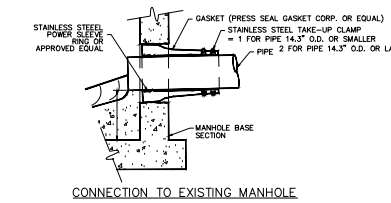
PRECAST CONCRETE MANHOLE
OVER EXISTING SEWER (8"-15" DIA.)
(DOG-HOUSE STYLE MANHOLE)



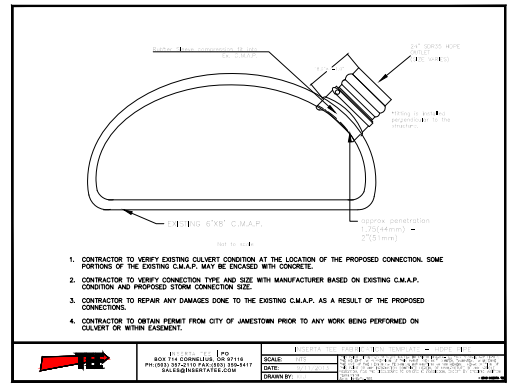
WATER CROSSING DETAIL
CLEARANCE LESS THAN 18"



NOTES:
1. CORE DRILL ENTRANCE HOLE IN PRECAST MANHOLE BARREL, BASE AND/OR BENCH FOR REQUIRED PIPE CLEARANCE. PER MANUFACTURERS RECOMMENDATIONS.
2. DOES NOT APPLY TO HOUSE LATERALS.
3. WATERTIGHT PIPE TO MANHOLE BOOT SEAL REQUIRED FOR ALL CORE DRILLED ENTRANCE HOLES IN MANHOLE BARREL AS SHOWN BELOW.



CONNECTION TO EXISTING MANHOLE

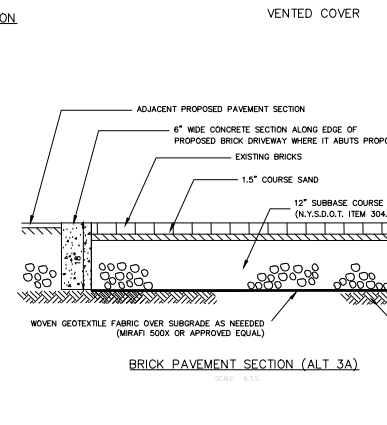


1. CONTRACTOR TO VERIFY EXISTING CULVERT CONDITION AT THE LOCATION OF THE PROPOSED CONNECTION. SOME PORTIONS OF THE EXISTING C.M.A.P. MAY BE ENCASED WITH CONCRETE.
2. CONTRACTOR TO VERIFY CONNECTION TYPE AND SIZE WITH MANUFACTURER BASED ON EXISTING C.M.A.P. CONDITION AND PROPOSED STORM CONNECTION SIZE.
3. CONTRACTOR TO REPAIR ANY DAMAGES DONE TO THE EXISTING C.M.A.P. AS A RESULT OF THE PROPOSED CONNECTIONS.
4. CONTRACTOR TO OBTAIN PERMIT FROM CITY OF JAMESTOWN PRIOR TO ANY WORK BEING PERFORMED ON CULVERT OR WITHIN EASEMENT.

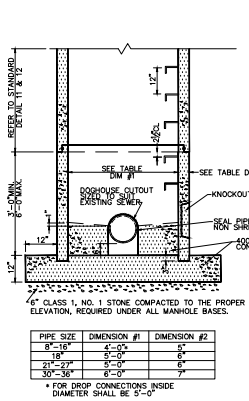
PROPOSED HDPE CONNECTION TO EXISTING C.M.A.P.
OR APPROVED EQUAL



BOLLARD DETAIL



BRICK PAVEMENT SECTION (ALT 3A)

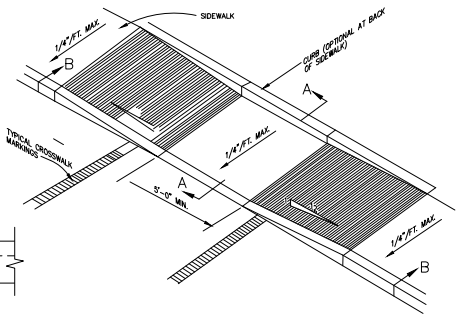


PIPE SIZE	DIMENSION #1	DIMENSION #2
8"-12"	4'-0"	2'-0"
18"	5'-0"	3'-0"
21"-27"	5'-0"	4'-0"
30"-36"	6'-0"	5'-0"

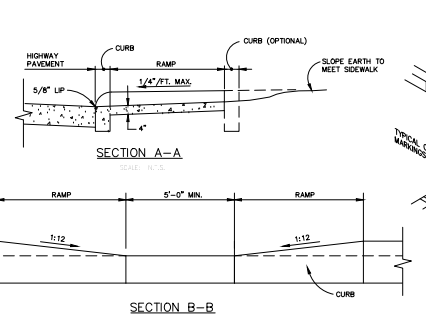
* FOR DROP CONNECTIONS INSIDE DIAMETER SHALL BE 5'-0"

NOTE:
AREA AROUND DOGHOUSE CUTOUT & PIPE TO BE MADE WATERTIGHT UTILIZING A HYDRAULIC CEMENT MIXTURE (WATERPLUG PRECO-PATCH, OR APPROVED EQUAL).

DOG-HOUSE MANHOLE

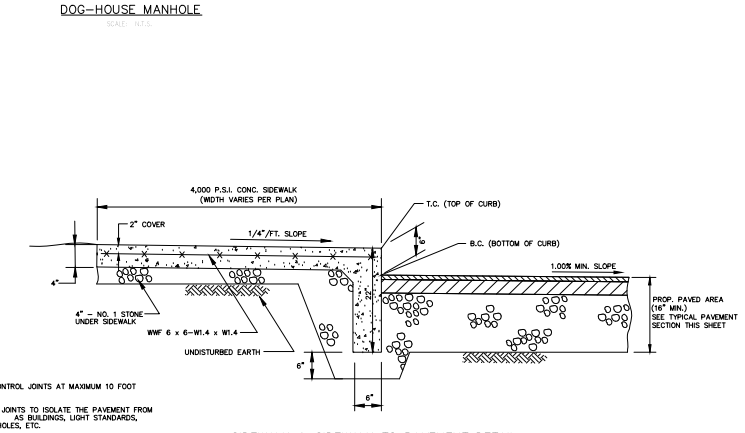


SIDEWALK CURB RAMP



NOTES
SIDEWALK CURB RAMP CRITERIA
1. THE MAXIMUM SLOPE OF A SIDEWALK CURB RAMP IN NEW CONSTRUCTION SHALL BE 1:12.IF SPACE LIMITATIONS ON EXISTING SITES PROHIBIT THE USE OF 1:12, THE FOLLOWING SLOPES AND RISES MAY BE USED:
   A) STEEPER THAN 1:12 (8.33%) BUT NO STEEPER THAN 1:10 (10%) 6" MAXIMUM RISE, 5'-0" MAXIMUM RUN
   B) STEEPER THAN 1:10 (10%) BUT NO STEEPER THAN 1:8 (12.5%) 3" MAXIMUM RISE, 2'-0" MAXIMUM RUN
   C) A SLOPE STEEPER THAN 1:8 (12.5%) NOT ALLOWED.
2. THE MINIMUM WIDTH OF A SIDEWALK CURB RAMP SHALL BE FIVE FEET, EXCLUSIVE OF FLARED SIDES.
3. ALL SIDEWALK CURB RAMPS SHALL HAVE FLUSH, SMOOTH TRANSITIONS TO THE ADJACENT STREET OR HIGHWAY SURFACE.

SURFACE FINISH
4. THE SURFACE OF ALL SIDEWALK CURB RAMPS SHALL BE STABLE, FIRM, AND SLIP RESISTANT. (E.G., A COARSE BROOM FINISH PERPENDICULAR TO THE RAMP SLOPE IS ACCEPTABLE ON CEMENT CONCRETE CURB RAMPS.)



SIDEWALK & SIDEWALK TO PAVEMENT DETAIL

SIDEWALK NOTES
1. INSTALL TOOLED CONTROL JOINTS AT MAXIMUM 10 FOOT INTERVALS.
3. INSTALL ISOLATION JOINTS TO ISOLATE THE PAVEMENT FROM STRUCTURES SUCH AS BUILDINGS, LIGHT STANDARDS, DROP INLETS, MANHOLES, ETC.
4. PROVIDE LIGHT BROOM FINISH (PERPENDICULAR TO THE PATH OF TRAVEL) WITH ¼" R. TOOLED EDGES.
5. CONCRETE SHALL BE SEALED WITH AN EXTERIOR CONCRETE SEALANT SUCH AS LAM CONSTRUCTION CHEMICALS, CHEM HARD AND AQUAFEL PLUS (OR APPROVED EQUAL).

NOTE: ALL CITY OF JAMESTOWN CONSTRUCTION SPECIFICATIONS SHALL APPLY. NO DEVIATION FROM THE SPECIFICATION WILL BE ALLOWED WITHOUT THE WRITTEN APPROVAL FROM THE CITY OF JAMESTOWN ENGINEERING DEPARTMENT.

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Checked By:	DFP
Project Manager:	JLB

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Revisions

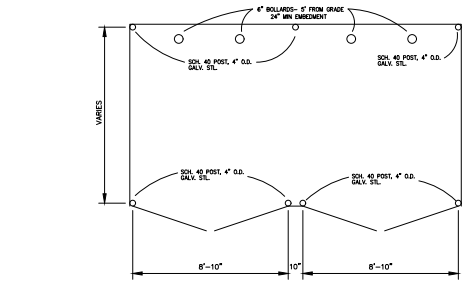
STEL • Gateway Lofts
31 Water St
Jamestown, NY 14701
SWBR Project Number 17445.00

Southern Tier Environments For Living (STEL), INC.
715 Central Avenue
Dunkirk, NY 14048

C-106
Site Details

Construction Documents
6/01/2020

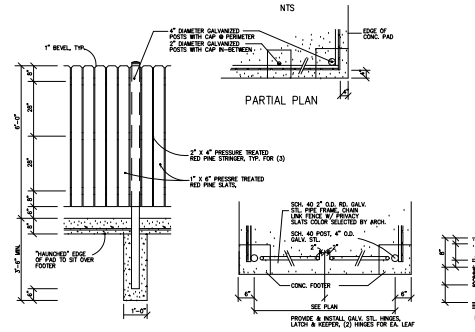
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PLAN VIEW

DUMPSTER ENCLOSURE & BOARD-ON-BOARD FENCE DETAIL

NTS



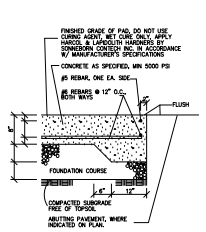
PARTIAL ELEVATION

PARTIAL PLAN

ELEVATION / SECTION

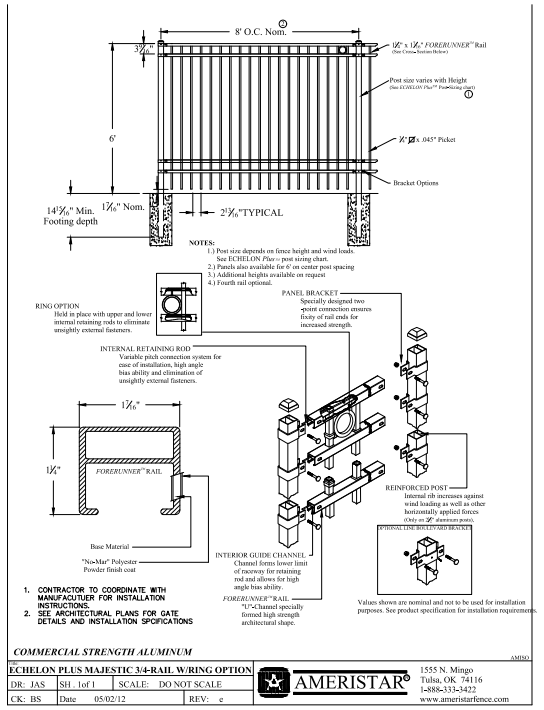
DUMPSTER ENCLOSURE & BOARD-ON-BOARD FENCE DETAIL

NTS



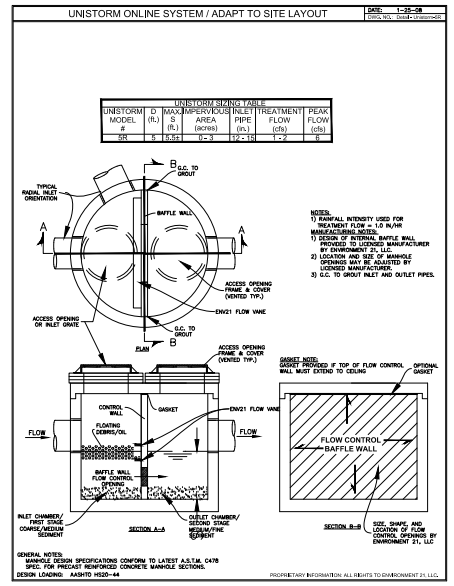
D U M P S T E R P A D

NTS



TYPICAL 6' TALL ALUMINUM FENCE WITH GATE

(OR APPROVED EQUAL)



NOTE:

STORMWATER PRE-TREATMENT CHAMBERS SHALL BE AS MANUFACTURED BY KISTNER/ENVIRONMENT 21 GLOBAL STORMWATER SOLUTIONS OR APPROVED EQUAL.

PRE-TREATMENT CHAMBER SPECIFICATIONS:

A. The unit shall be capable of removing 80% of a sample having an average partical size of between 50 microns and 240 microns for flows up to the units rated treatment capacity.

B. The stormwater pre-treatment chamber shall be capable of treating the water quality flow rate specified before by-pass.

C. The stormwater pre-treatment chamber shall be capable of passing the 10 year storm design flow rate.

D. The stormwater pre-treatment chamber shall provide the capture of oil and floating debris.

E. The stormwater pre-treatment chamber shall not re-suspend trapped sediments nor allow for re-entrainment of floating containments at flow rates up to and including the specified design treatment capacity.

F. Stormwater pre-treatment chamber shall be fabricated in accordance with ASTM standards for H-20 loading and NYSDOT Standard specifications, Section 604 (Drainage Structures).

G. Stormwater pretreatment chamber frames and covers shall be standard cast iron for H-20 loading and must be compatible with NYSDOT Standard Specification Section 655 (Frames, Grates and Covers).

H. Manhole design specifications shall conform to ASTM C478 Specification for precast reinforced concrete manhole sections and NYSDOT Standard Specifications Section 604.

I. Shop drawings shall be submitted to the Engineer for review and approval. PRE-TREATMENT CHAMBER

MAINTENANCE:

1. The contractor shall check the chambers bi-weekly during construction and remove sediment and debris as needed, and thoroughly cleaned upon completion of construction.

2. Inspect semi-annually for the accumulation of sediment and debris, and clean in accordance with manufacturer's recommendation, but no longer than once every five years.

STORMWATER PRETREATMENT CHAMBER WORKSHEET

STRUCTURE NO. 1 INLINE

DESIGN STORM HYDROLOGY

return interval, yrs	10		Cr=runoff coefficient
Intensity, in/hr	3.75	A=area, acres	1.00
		% Impervious	59.4
Cr	0.95		0.95
peak runoff, cfs	3.24	% pervious	11.6
			0.20

REQUIRED TREATMENT BEFORE BYPASSING (RTBB)

Design Storm : 90% Rainfall Event		
Rain-fall	1.00	inches
Water Quality Volume (WQv)	0.0200	ac-ft
Runoff	0.85	inches
RTBB	1.05	cfs

INLET PIPE 1

pipe material	HDPE
pipe dia., in.	15
pipe length, ft.	15
pipe slope, %	1.00

INLET PIPE 1 VELOCITY

area, sf	1.23
flow, cfs	2.93
velocity, fps	3.93

INLET PIPE 2

pipe material	HDPE
pipe dia., in.	12
pipe length, ft.	10
pipe slope, %	1.00

INLET PIPE 2 VELOCITY

area, sf	0.79
flow, cfs	0.81
velocity, fps	2.89

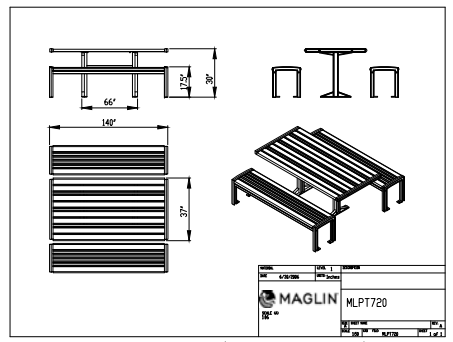
PRETREATMENT CHAMBER

rim	1298.50
inlet invert	1293.83
outlet invert	1293.83

OUTLET PIPE 1

pipe material	HDPE
pipe dia., in.	15
pipe length, ft.	0.50
pipe slope, %	1.00
downstream inv.	1293.74

TYPICAL BENCH DETAIL (OR APPROVED EQUAL)



TYPICAL TABLE DETAIL (OR APPROVED EQUAL)

SCALE: NTS



TYPICAL 6' TALL VINYL FENCE

(OR APPROVED EQUAL)

TYPICAL 3' TALL VINYL FENCE

(OR APPROVED EQUAL)

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Drawn By: JLB
Checked By: DFP
Project Manager: JLB

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Revisions

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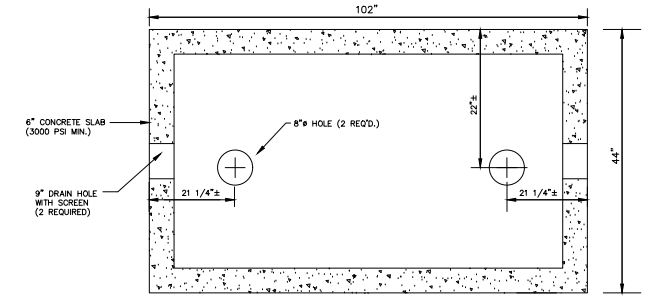
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C-107

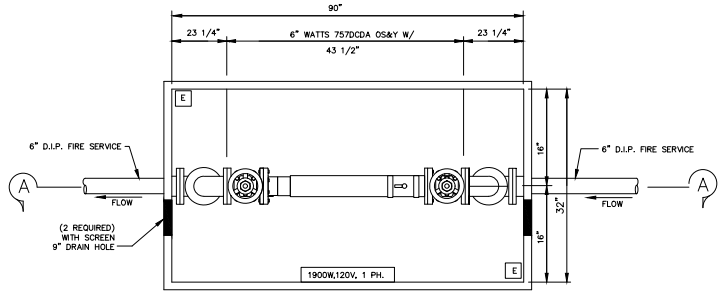
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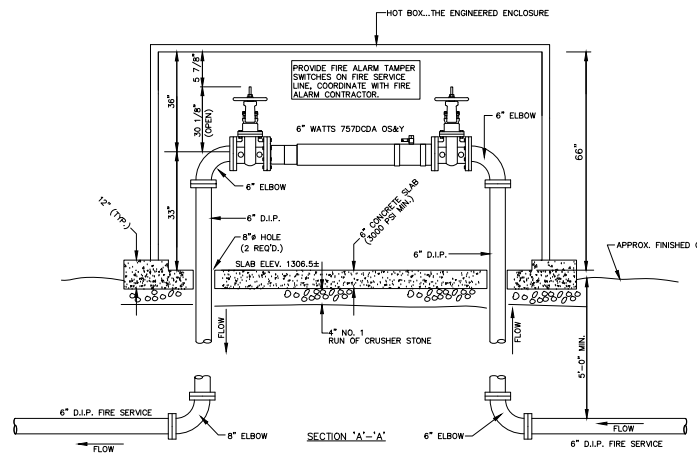
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CONCRETE PAD PLAN



PLAN VIEW



6" WATTS 757DCDA OS&Y 1900W HEATER OR APPROVED EQUAL IN MODIFIED "HOT-BOX" ENCLOSURE (# WB-N4)

N.T.S.

NOTE:

The enclosure shall have four drain ports that are 10"W x 6.5"H to handle the full discharge of the backflow prevention within. The ports shall be located to either end of the enclosure (two per end). Each port has a hinge type, flapper that will swing to the exterior to release discharged liquids but deny wind or vermin intrusion when it returns to it proper position.

All dimensions are approximated in inches.

GENERAL NOTES:

1 SITE PREPARATION

A) PROVIDE A 120V GROUND FAULT PROTECTED CIRCUIT TO THE BACKFLOW PREVENTION DEVICE(s). THE 120V OUTLET SHALL BE INSTALLED 6" MIN. ABOVE THE RPZ DISCHARGE OUTLET

B) POUR A CONCRETE PAD 6" THICK AROUND THE BACKFLOW PREVENTION DEVICE IN ALL DIRECTIONS. THE CONCRETE SLAB SHALL EXTEND 8" BEYOND THE INSIDE DIMENSIONS OF THE HEATED ENCLOSURE

2 INSTALLATION

A) PLACE HEATED ENCLOSURE OVER BACKFLOW PREVENTION DEVICE ONTO PAD ALL SECTIONAL BOXES SHOULD BE COMPLETELY ASSEMBLED BEFORE PROCEEDING

B) ACCESS DOORS MUST BE PLACED ON SIDE OF BACKFLOW PREVENTION DEVICE THAT HAS THE TESTING VALVES

C) DRILL ANCHOR BOLT HOLES FULL THROUGH THE BASE FLANGE AROUND THE PERIMETER OF THE HEATED ENCLOSURE. INSERT "RED HEAD" EXPANSION ANCHORS THROUGH HOLE INTO THE FOOTER OR PAD AND BOLT THE BOX DOWN FIRMLY, OR USE POURED IN PLACE, 8" LONG FULLY EMBEDDED ANCHOR BOLTS.

D) PLUG HEAT SOURCE INTO THE 120V CIRCUIT THAT HAS BEEN PROVIDED

E) ALL ESCUTHEON COVERS (WHERE APPLICABLE) SHOULD BE SECURED TO THE HEATED ENCLOSURE, RAIN TIGHT

F) MINIMUM CLEARANCE SHOWN ONLY APPLY DURING ACTUAL MAINTENANCE OPERATION. IF THE ENCLOSURE IS TOTALLY REMOVABLE OR PIVOTS ON HINGES AWAY FROM THE INSTALLATION, THE MIN. CLEARANCES DO NOT APPLY.

MISCELLANEOUS NOTES:

1. MATERIALS USED, TYPE OF ENCLOSURE & LOCATION, AND MISCELLANEOUS APPURTENANCES, SHALL BE GOVERNED BY ERIE COUNTY WATER AUTHORITY SPECIFICATIONS AND LOCAL ORDINANCES.

2. ALL DUCTILE IRON PIPE SHALL BE THICKNESS CLASS 52 UNLESS SPECIFIED OTHERWISE.

3. ALL DUCTILE IRON FITTINGS SHALL BE CLASS 350 ANSI/AWWA C110/A21.01-82 UNLESS SPECIFIED OTHERWISE.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND VERIFYING ALL LOCATIONS, DIMENSIONS AND ELEVATIONS SHOWN PRIOR TO ORDERING MATERIALS.

5. ENCLOSURE MUST HAVE HEAT & ACCESS PANELS POSITIONED TO FACILITATE TESTING/MAINTENANCE OF BACKFLOW PREVENTION DEVICE(S) AND/OR METER.

6. DIMENSIONS SHOWN FOR THE WATER METER ARE STANDARD FOR THE SIZE & MODEL SHOWN. ADEQUATE CLEARANCES IN THE HEATED ENCLOSURE MUST BE MAINTAINED ON ALL SIDES.

7. CLEARANCE DIMENSIONS SHOWN FOR THE BACKFLOW PREVENTION DEVICE(S) ARE NYSDOH STANDARDS.

8. BACKFLOW PREVENTION DEVICE(S) MUST BE PROPERLY SUPPORTED.

9. PRIOR TO THE PLACEMENT OF THE ENCLOSURE SHELL ON THE CONCRETE PAD, CONTACT ECWA METER SHOP A MINIMUM OF THREE (3) WORKING DAYS TO SCHEDULE THE INSTALLATION OF THE METER. TELEPHONE NO. 685-8226

10. POWER SOURCE: ELECTRICAL POWER SOURCE FOR THE HEATED ENCLOSURE SHALL BE INSTALLED BY THE CONTRACTOR PER APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND HEATED ENCLOSURE MANUFACTURER. CONTRACTOR SHALL COORDINATE LOCATION OF POWER SOURCE AND ELECTRICAL SERVICE WITH THE ELECTRICAL PLANS (BY OTHERS).

11. UPON COMPLETION OF THE BACKFLOW PREVENTER ASSEMBLY INSTALLATION(S), THE BACKFLOW PREVENTION DEVICE(S) SHALL BE TESTED BY A "NYS DEPARTMENT OF HEALTH CERTIFIED BACKFLOW PREVENTION DEVISE TESTER".

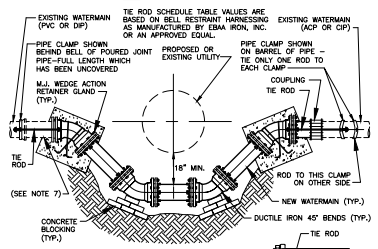
NOTES: (WATERLINES)

1. CONTRACTOR TO LOCATE AND INDICATE EXISTING UTILITIES AND VERIFY THEIR EXISTING AS COMPATIBLE TO THESE PLANS PRIOR TO START OF CONSTRUCTION
2. WATERLINES MUST BE INSTALLED TO MAINTAIN AT LEAST A MINIMUM VERTICAL AND HORIZONTAL SEPARATION FROM EXISTING OR PROPOSED SANITARY SEWERS IN ACCORDANCE WITH PARTS 8.6.2 AND 8.6.3 OF THE RECOMMENDED STANDARDS FOR WATER WORKS (NEW YORK STATE HEALTH DEPARTMENT BULLETIN 42).
3. IN ACCORDANCE WITH PART 5.122 OF THE NEW YORK STATE SANITARY CODE, ANY WATER SYSTEM ADDITION, EXTENSION AND/OR MODIFICATION MUST BE SUBMITTED TO THE COUNTY HEALTH DEPARTMENT FOR APPROVAL PRIOR TO CONSTRUCTION. PART 5.122 ALSO REQUIRES THAT APPROVAL PROJECTS, ONCE CONSTRUCTED, BE PLACED INTO SERVICE ONLY AFTER "COMPLETED WORKS CERTIFICATION" IS ISSUED BY THE HEALTH DEPARTMENT.
4. PIPE: DUCTILE IRON PIPE SHALL CONFORM TO CURRENT A.W.W.A. C 151 (ANSI A21.51), SHALL BE DOUBLE CEMENT-LINED PER A.W.W.A. C104, CLASS 52, INSTALLED IN ACCORDANCE WITH A.W.W.A. C600, AND PIPE SHALL BE WRAPPED IN POLYETHYLENE PER A.W.W.A. C105
5. VALVES: RON BODY RESILIENT SEATED GATE VALVES CONFORMING TO ANSI/AWWA C-500-80. VALVES SHALL BE AS MANUF. BY THE KENNEDY VALVE MFG. CO. MODEL 1571X APPROVAL EQUAL.
6. HYDRANTS: SHALL CONFORM TO AWWA C502-85. HYDRANTS SHALL BE AS MANUF. BY THE KENNEDY VALVE MFG. CO. "CENTURIAN " MODEL OR APPROVAL EQUAL.
7. FITTINGS: SHALL BE DUCTILE IRON, MECHANICAL JOINT, FULL BODY (CLASS 350) CONFORMING TO ANSI/AWWA C110/A21.10-82.
8. MAGNETIC TAPE: MARKING TAPE FOR LAYING OVER PVC WATER PIPE SHALL BE 3" WIDE AND AS MANUF. BY PAUL KOTTER WARNING TAPES, INC. "ALARMTAPE" OR APPROVED EQUAL. TAPE TO BE FULL LENGTH OF PIPE AND 18" BELOW GROUND SURFACE.
9. COPPER TUBING SHALL BE TYPE K, SOFT TEMPER, AND IN ACCORDANCE WITH ASTM B-88.
10. CURB BOXES: SHALL BE AS MANUF. BY BIBBY-ST. CROIX FOUNDERIES, INC. MODEL B-2000, SIZE 95E, OR APPROVED EQUAL.
11. SERVICE FITTINGS: SHALL BE AS MANUF. BY THE MUELLER CO. OR APPROVED EQUAL, AS FOLLOWS:

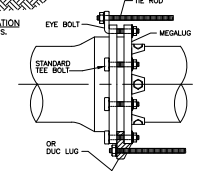
CORPORATION STOPS	MODEL #E-15000
CURB STOPS	MODEL #E-15204
UNIONS	MODEL #E-15405
COUPLING AND GASKETS	MODEL #E-15063

NOTE:

TIE ROD SCHEDULE TABLE VALUES ARE BASED ON WELL RESTRAINT HARNESSES AS MANUFACTURED BY EBAA IRON, INC. OR AN APPROVED EQUAL.



ELEVATION
N.T.S.



NOTES:

1. RESTRAINED MECHANICAL JOINTS SHOWN EXCEPT AS NOTED.
2. TIE ROD BENDS BACK TO FULL LENGTH OF PIPE IN UNEXCAVATED TRENCH.
3. VALVES, TEES AND HYDRANTS MAY BE HARNESSED SIMILARLY.
4. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURES--PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
5. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
6. TIE RODS SHALL BE PLACED ON SIDES OF PIPE.
7. IF EXISTING PIPE IS CIP OR PVC, CONNECT TO NEW FITTING ONLY WHEN ALLOWED BY ENGINEER.

TIE ROD SCHEDULE

PIPE SIZE	PIPE TYPE	ROD ø	NUMBER OF RODS	SERIES NUMBER
8"	C900 PVC	3/4" X 18"	2	1500
10"	C900 PVC	3/4" X 22"	4	1500
10"	DIP	3/4" X 18"	8	1700

STANDARD DETAIL HARNESSING DETAILS--INSTALL OFFSET IN EXISTING WATERMAIN

NOTES: (WATERLINES)

12. UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS OR DRAWINGS, THE INSTALLATION OF WATER PIPE SHALL BE GOVERNED BY THE AWWA STANDARD SPECIFICATIONS FOR INSTALLATION OF PVC PIPE.
13. WHEN COMPLETED AND BEFORE THE WORK IS ACCEPTED, EACH SECTION OF PIPE SHALL BE FLUSHED, TESTED AND DISINFECTED PRIOR TO BEING PLACE IN SERVICE. WHERE CONNECTIONS TO EXISTING WATER MAINS ARE CALLED FOR, ONLY ONE SUCH CONNECTION WILL BE ALLOWED. PRIOR TO FINAL TESTING AND DISINFECTION NO NEW WATER MAIN SHALL BE PUT INTO SERVICE UNTIL A "COMPLETED WORKS CERTIFICATION" HAS BEEN ISSUED BY THE COUNTY OF HEALTH DEPARTMENT BASED UPON SUBMITTAL OF A SATISFACTORY BACTERIOLOGICAL REPORT.
14. THE CONTRACTOR SHALL DO ALL WORK AND SHALL FURNISH ALL MEANS AND APPARATUS NECESSARY FOR ADMITTING WATER INTO THE MAINS FOR FLUSHING, TESTING AND DISINFECTION, INCLUDING PROVIDING NECESSARY PUMPS, CALIBRATED GAUGES AND METERING SERVICES.
15. HYDROSTATIC (LEAKAGE TESTING), AT A MINIMUM SHALL COMPLY WITH THE REQUIREMENTS OF AWWA C600--82 SECTION 4. IF LEAKAGE DISCOVERED EXCEEDS THE AMOUNT SPECIFIED, THE CONTRACTOR SHALL REPLACE DEFECTIVE PIPES, VALVES OR SPECIALS AND DO ANY WORK NECESSARY IMMEDIATELY AND CONDUCT RE--TEST.
16. DISINFECTION SHALL BE CARRIED OUT IN ACCORDANCE WITH AWWA C651--86 (EXCLUDING SECTION 5.1). THE SECTIONS OF MAIN TO BE DISINFECTED SHALL BE FLUSHED FIRST TO REMOVE ANY SOLIDS OR CONTAMINATED MATERIAL THAT MAY EXIST. SAMPLES SHALL BE TAKEN FROM THE BEGINNING AND END OF EACH SECTION AS WELL AS FROM ANY STUB ATTACHED TO THAT SECTION. IF THE MAINS BEING TESTED ARE ALONG, SAMPLES SHALL BE TAKEN AT INTERVALS NOT TO EXCEED 1000 FEET. IN THE EVENT THAT THE TESTS PROVE UNSATISFACTORY BY THE COUNTY HEALTH DEPARTMENT STANDARDS, CHLORINATION AND SAMPLING SHALL BE REPEATED.
17. CONCRETE BLOCKING SHALL BE PROVIDED AT ALL BENDS AND TEES OF A SIZE AND SHAPE AS SPECIFIED. WHERE BLOCKING IS NECESSARY FOR VERTICAL BENDS, THE BENDS SHALL BE STRAPPED TO THE BLOCKS AS SHOWN OR AS DIRECTED BY THE ENGINEER.
18. WHENEVER SELECT BACKFILL IS REQUIRED, THE BACKFILL SHALL BE PLACED IN THE EXCAVATION IN SIX (6") INCH LAYERS AND THOROUGHLY COMPACTED. THE MATERIAL TO BE USED FOR BEDDING OF PIPE SHALL BE CLEAN #1 STONE.

NOTE:

PIPING SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH A.W.W.A. C-600--82 FOR DUCTILE IRON WATERMAINS OR A.W.W.A. C--900 FOR P.V.C. PIPE WITH INSTALLATION AND TESTING AS PER A.W.W.A. MANUAL M--23.

DISINFECTION, FLUSHING AND BACTERIOLOGICAL TESTING SHALL BE PERFORMED IN ACCORDANCE WITH A.W.W.A. SPECIFICATION C--851--86 (EXCEPTING SECTION 51).

NOTES: (WATERLINES -- CONTINUED)

JAMESTOWN BPU AND CITY OF JAMESTOWN SHALL OPERATE ALL VALVES OF EXISTING SYSTEMS AND SHALL OPEN NEW VALVES TO NEWLY CONSTRUCTED WATERMAINS.

ONLY ONE CONNECTION MAY BE MADE TO ANY EXISTING WATERMAIN PRIOR TO DISINFECTION AND HEALTH DEPARTMENT APPROVAL OF COMPLETED WORKS. AFTER APPROVAL, REMAINING CONNECTIONS MAY BE MADE.

CORPORATION STOPS SHALL HAVE THREADS CONFORMING TO A.W.W.A. C--800--66 CORPORATION STOPS AND CURB STOPS SHALL CONFORM TO ASTM B--88--62 AND SHALL HAVE IRON PIPE THREADS COMPATIBLE TO THE PLUG AND CURB STOP.

BACTERIOLOGICAL SAMPLES SHALL BE TAKEN FROM SAMPLING POINTS LOCATED AT APPROXIMATELY 1000 FOOT INTERVALS AND AT THE END OF EACH SECTION.

POLYETHYLENE TUBE ENCASEMENT FOR DUCTILE IRON PIPE ONLY.

POLYETHYLENE ENCASEMENT SHALL CONFORM WITH THE APPLICABLE REQUIREMENTS OF THE AMERICAN NATIONAL STANDARD INSTITUTE FOR POLYETHYLENE ENCASEMENT FOR GRAY AND DUCTILE CAST IRON PIPING FOR WATER AND OTHER LIQUIDS. ANSI A--21.5--1972. A.W.W.A. C--105--72.

THE POLYETHYLENE MATERIAL SHALL MEET THE FOLLOWING STANDARD:
THICKNESS: 8 MILS (MINIMUM) -- CLASS "C"
PIGMENTATION: (1) NATURAL -- WHERE EXPOSURE TO ULTRAVIOLET LIGHT (SUNLIGHT FOR EXAMPLE) IS OF SHORT DURATION (LESS THAN 48 HOURS).

(2) BLACK -- 2.0% TO 2.5% WELL DISPERSED CARBON BLACK WITH STABILIZERS WHERE EXPOSURE TO ULTRAVIOLET LIGHT (SUNLIGHT) MAY BE PROLONGED (2--10 DAYS)

QUALITY: THE POLYETHYLENE MATERIAL SHALL BE OF VIRGIN POLYETHYLENE MATERIAL PRODUCED FROM DUPONT ALATHON RESIN OR U.S.I. PETROTHENE RESINS OR EQUAL

POLYETHYLENE MATERIAL SHALL BE IN THE EXTRUDED TUBE FORM IN EITHER PRECUT, INDIVIDUALLY PREPARED, SPECIFIED LENGTH (SUCH AS 20 FEET) OR IN UNCUT, CONTINUOUS LENGTHS FOLDED OR ROLLED IN CONVENIENT SIZED PACKAGES.

A LISTING OF THE MINIMUM FLATTENED POLYETHYLENE TUBE WIDTHS FOR USE WITH SPECIFIC PIPE SIZES AND JOINT TYPES ARE AS FOLLOWS:

NORMAL PIPE SIZES	PUSH--ON JOINT FLAT TUBE WIDTH	MECHANICAL JOINT FLAT TUBE WIDTH
4"	14"	16"
6"	17"	20"
8"	21"	24"
12"	29"	30"
16"	37"	37"
24"	53"	53"

IN ADDITION TO THE POLYETHYLENE MATERIAL, PLASTIC ADHESIVE TAPE WILL BE REQUIRED TO COMPLETE THE INSTALLATION. THE TAPE SHALL BE APPROXIMATELY 2" WIDE, PLASTIC BACKED ADHESIVE TAPE SUCH AS POLYKEN NO. 900 OR SCOTCHWRAP NO. 50.

ALL CLAMPING NUTS AND BOLTS SHALL BE HIGH STRENGTH, LOW ALLOY STEEL, FLUOROCARBON COATED OR TYPE 304 STAINLESS STEEL AS MANUFACTURED BY STANSCO INDUSTRIES INC. OR HOUSTON, TEXAS OR EQUAL.

THE DEPTH OF THE TRENCH SHALL BE SUFFICIENT TO ALLOW FIVE (5) FOOT COVER OVER THE TOP OF THE PIPE EIGHT (8) INCHES OR UNDER IN DIAMETER AND FOUR (4) FOOT COVER OVER THE TOP OF THE PIPE TWELVE (12) INCHES AND OVER IN DIAMETER AFTER ALL FINISH GRADING HAS BEEN COMPLETED, UNLESS OTHERWISE DIRECTED OR SPECIFIED BY THE ENGINEER.

PRESSURE TEST:
THE HYDROSTATIC PRESSURE SHALL BE 150% OF THE STATIC PRESSURE, BASED ON THE ELEVATION OF THE LOWEST POINT IN THE LINE OR SECTION UNDER TEST AND CORRECTED TO THE ELEVATION OF THE TEST GAUGE.

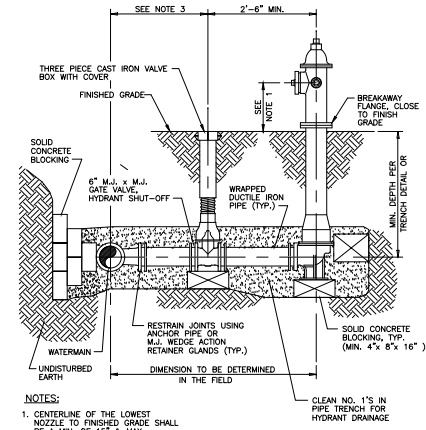
LEAKAGE TEST:
THE HYDROSTATIC PRESSURE SHALL BE 150% OF THE STATIC PRESSURE, BASED ON THE ELEVATION OF THE LOWEST POINT IN THE LINE OR SECTION UNDER TEST AND CORRECTED TO THE ELEVATION OF THE TEST GAUGE.

DISINFECTING WATER MAINS:
ALL WATER MAINS SHALL BE DISINFECTED ACCORDING TO SPECIFICATIONS AND THE APPROVAL OF THE ERIE COUNTY WATER AUTHORITY.

HYDRANTS

HYDRANTS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN STANDARD FOR DRY BARREL FIRE HYDRANTS AWWA C502--85 AND AS FOLLOWS:

1. TYPE -- BREAKAWAY" WITH "O" RING SEALS
2. VALVE OPENING -- 5--1/4"
3. INLET -- 6" MECHANICAL JOINT
4. NOZZLES -- ONE 4--1/2" PUMPER NOZZLE AND TWO 2 -- 1/2" HOSE NOZZLES. ALL WITH NATIONAL STANDARD THREADS.
5. BURY -- DESIGNED TO ALLOW 4--1/2" OF COVER ON THE BRANCH AND ALLOW 15 TO 18 INCHES BETWEEN THE CENTERLINE OF THE LOWEST NOZZLE AND THE SURFACE OF THE GROUND.
6. OPERATING NUT -- 1--1/2" SQUARE
7. DIRECTIONS OF OPENING -- LEFT
8. COLOR -- YELLOW
9. VALVE SHALL WITHSTAND PRESSURE AND CLOSE WITH PRESSURE
10. ALL WORKING PARTS ARE TO BE IN THE BONNET OF THE HYDRANT ABOVE THE NOZZLES, NOT IN THE WATERWAY.
11. VALVE OPENING USES THREE SIDES OF THE SIDE OF THE HYDRANT.
12. ALL HYDRANTS SHALL BE AS MANUFACTURED BY THE KENNEDY VALVE MFG. CO., OF THE FIGURE 01--A/GUARDIAN PATTERN, BY THE MUELLER CO., OF THE CENTURIAN PATTERN OR APPROVED EQUAL.



NOTES:

1. CENTERLINE OF THE LOWEST NOZZLE TO FINISHED GRADE SHALL BE A MIN. OF 15" & MAX. OF 18".
2. HYDRANT RISER SHALL BE INSTALLED PLUMB.
3. VALVE BOX SHALL NOT BE PLACED IN PAVEMENT.

SECTION

N.T.S.

STANDARD DETAIL
FIRE HYDRANT
INSTALLATION

Figure 4.10
Landgrading

ADAPTED FROM DETAILS PROVIDED BY: USDA -- NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

LANDGRADING DETAIL

Table 4.5
Recreation Turfgrass Seed Mixture

Site - Use	Species (% by weight)	lbs/1,000 ft² (PLS)	lbs/acre (PLS)
Sunny Sites (well, moderately well, and somewhat poorly drained soils)	*Athletic fields and similar areas*		
	80% Hard fescue	2.4-3.2	105-138
	20% Perennial ryegrass	0.6-0.8	25-35
		3.0-4.0	130-175
	OR, for southern and eastern, NY 50% Hard fescue	1.5-2.0	65-88
	50% perennial ryegrass	1.5-2.0	65-87
		3.0-4.0	130-175
	OR, 100% Creeping Red Fescue	3.4-4.6	150-200
	General recreation areas and lawns (Medium to high maintenance)		
	45% Creeping red fescue	2.0-2.6	85-114
	20% Perennial ryegrass	0.6-0.8	26-35
	15% Fine fescue	0.4-0.6	18-26
		3.0-4.0	130-175
	OR, 100% Creeping red fescue	3.4-4.6	150-200
Sunny Droughty Sites (general recreation areas and lawns, low maintenance) (somewhat excessively to excessively drained soils, excluding Long Island)	45% Fine fescue	2.6-3.3	114-145
	15% Perennial ryegrass	0.6-0.7	26-33
	25% Creeping red fescue	0.8-1.0	35-44
		4.0-5.0	175-220
	OR, 100% Creeping red fescue	3.4-4.6	150-200
Shady Dry Sites (well to somewhat poorly drained soils)	45% fine fescue	2.6-3.3	114-145
	15% perennial ryegrass	0.6-0.7	26-33
	20% Creeping red fescue	0.8-1.0	35-44
	OR	4.0-5.0	174-220
	40% blend of shade-tolerant Coral rye	2.4-3.2	105-138
	20% perennial ryegrass	0.6-0.8	25-35
	OR	3.0-4.0	130-175
	100% Creeping red fescue	3.4-4.6	150-200
Shady Wet Sites (somewhat poor to poorly drained soils)	70% Creeping red fescue	1.8-2.3	80-95
	30% blend of shade-tolerant Hard fescue	0.6-0.7	25-30
	OR	2.3-3.0	85-130
	100% Chewings fescue	3.4-4.6	150-200

For varieties suitable for specific locations, contact Cornell Cooperative Extension Turf Specialist.
Reference: Thom, M.C., N.W. Hummel, and A.M. Petrovic. Cornell Extension Pub. Info. Bulletin 185 Revised. TurfaLawn Establishment and Maintenance. 1994.

7. Fertilizing -- First Year

Apply fertilizer as indicated by the soil test three to four weeks after germination (spring seedings). If test results have not been obtained, apply 1 pound nitrogen/1,000 square feet using a complete fertilizer with a 2-1-1 or 4-1-3 ratio. Summer and early fall seedings, apply as above unless air temperatures are above 85°F for an extended period. Wait for cooler temperatures to fertilize. Late fall/ winter seedings, fertilize in spring.

8. Restrict Use

New seedlings should be protected from use for one full year or a spring and fall growth cycle where possible to allow development of a dense sod with good root structure.

MAINTAINING GRASSES

1. Maintain a pH of 6.0 - 7.0.
2. Fertilize in late May to early June as follows with 5-5-10 analysis fertilizer at the rate of 5 lbs./1,000 sq. ft., and repeat in late August if soil density is not adequate. Avoid fertilizing when heat is greater than 85°F. Top dress weak sod annually in the spring, but at least once every 2 to 3 years. **Fertilize in accordance with soil test analysis**, after determining adequate topsoil depth exists.
3. Aerate compacted or heavily used areas, like athletic fields, annually as soon as soil moisture conditions permit. Aerate area six to eight times using a spoon or hollow tine type aerator. Do not use solid spike equipment.
4. Reseed bare and thin areas annually with original seed mix.

Figure 4.11
Landgrading - Construction Specifications

CONSTRUCTION SPECIFICATIONS

1. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.
2. ALL SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
3. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNT NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS.
4. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
5. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF FOUR INCHES PRIOR TO PLACEMENT OF TOPSOIL.
6. ALL FILL SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
7. ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
8. EXCEPT FOR APPROVED LANDFILLS, FILL MATERIAL SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FROZEN OR OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
9. FROZEN MATERIALS OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED IN FILLS.
10. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
11. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
12. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
13. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.
14. STOCKPILES, BORROW AREAS AND SPOIL AREAS SHALL BE SHOWN ON THE PLANS AND SHALL BE SUBJECT TO THE PROVISIONS OF THIS STANDARD AND SPECIFICATION.

ADAPTED FROM DETAILS PROVIDED BY: USDA -- NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

LANDGRADING SPECIFICATIONS

STANDARD AND SPECIFICATIONS FOR RECREATION AREA SEEDING

Definition & Scope

Establishing **permanent** grasses, legumes, vines, shrubs, trees, or other plants, of adequately reducing runoff velocity and retaining eroded sands, in response to acts for recreation. To increase the attractiveness and usefulness of recreation areas and to protect the soil and plant resources.

Conditions Where Practice Applies

On any area planned for recreation use, lawns, and areas that will be maintained in a closely mowed condition.

Specifications

ESTABLISHING GRASSES (Turfgrass)

The following applies for playgrounds, parks, athletic fields, camping areas, picnic areas, passive recreation areas such as lawns, and similar areas:

1. Time of Planting.

Fall planting is preferred. Seed after August 15. In the spring, plant until May 15.

If winding is done between May 15 and August 15, irrigation may be necessary to ensure a successful seeding.

2. Site Preparation

A. Install needed water and erosion control measures and bring area to be seeded to desired grades. A minimum of 4 in. topsoil is required.

B. Prepare seedbed by loosening soil to a depth of 4-6 inches and incorporating required lime per Soil Restoration Standard.

C. See Standard and Specification of Topsoiling.

3. Liming

Lime to a pH of 6.5. See Lime Application Standard.

4. **Fertilize as per soil test** or, if soil is not tested before results of a soil test can be obtained to determine fertilizer needs, apply commercial fertilizer at 9?0 pounds of 5-10-10 or equivalent per acre (20 lbs/1,000 sq. ft.). See Fertilizer Application Standard.

5. Incorporate lime and fertilizer in top 2-4 inches of subsoil.

6. Smooth. Remove rocks, foreign matter, and stones over 1 inch or diameter, from the surface. Firm the seedbed.

7. Planting.

Use a cultipacker type seeder if possible. Seed to a depth of 1/8 to 1/4 inch. If seed is to be broadcast, cultipack or roll after seeding. If hydroseeded, lime and fertilizer may be applied through the seeder, and rolling is not practical.

8. Mulching.

Mulch all seedings in accordance with Standard and Specifications for Mulching. Small grains straw is the best material.

9. Seed Mixtures

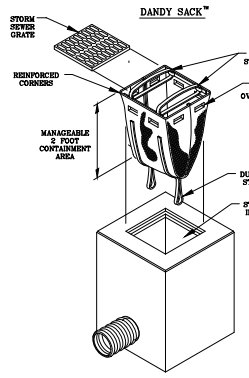
Select seed mixture for site conditions and intended use from Table 4.5.

Turf-type tall fescues have replaced the old KY-31 tall fescues. New varieties have finer leaves and are the most resistant grass to foot traffic. Do not mix it with fine textured grasses such as bluegrass and red fescue.

Common ryegrass shd widely. Which are relatively short lived species, provide quick green cover. Improved, fine, cultivars of perennial ryegrass provide excellent quality turf, but continue to look some bunchiness

Common white clover can be added to mixtures at the rate of 1-2 lbs/acre to help maintain green color during the dry summer period; however, they will not withstand heavy traffic. Avoid using weed-containing mixtures (lowers annual bluegrass which may be easily stopped in

STANDARD AND SPECIFICATIONS FOR GEOTEXTILE FILT



DANDY SACK™
SPECIFICATIONS

NOTE: THE DANDY SACK™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS

REGULAR FLOW DANDY SACK™ (BLACK)

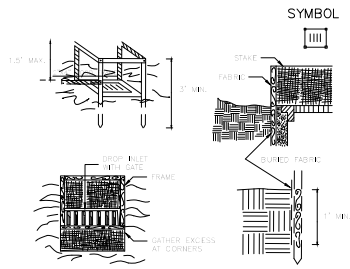
Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.78 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4632	%	20 x 15
Puncture Strength	ASTM D 4833	kN (lbs)	0.67 (150)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	2606 (350)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.73 (165)
UV Resistance	ASTM D 4355	%	85
Apparent Opening Size	ASTM D 4751	Mm. (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m²(gal/min/ft²)	2852 (70)
Permittivity	ASTM D 4491	Sec-1	0.90

HI-FLOW DANDY SACK™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (360) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 x 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	2027 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) x 0.55 (75)
UV Resistance	ASTM D 4355	%	70
Apparent Opening Size	ASTM D 4751	Mm. (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m²(gal/min/ft²)	5857 (145)
Permittivity	ASTM D 4491	Sec-1	2.1

*Note: All Dandy Socks™ can be ordered with our optional oil absorbent pillows

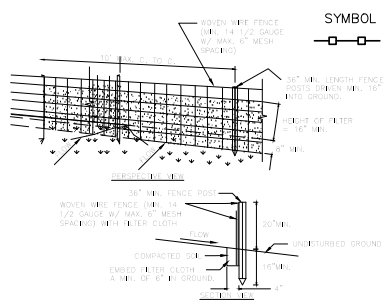
INLET SEDIMENT CONTROL DEVICE
DANDY SACK OR EQUAL



CONSTRUCTION SPECIFICATIONS

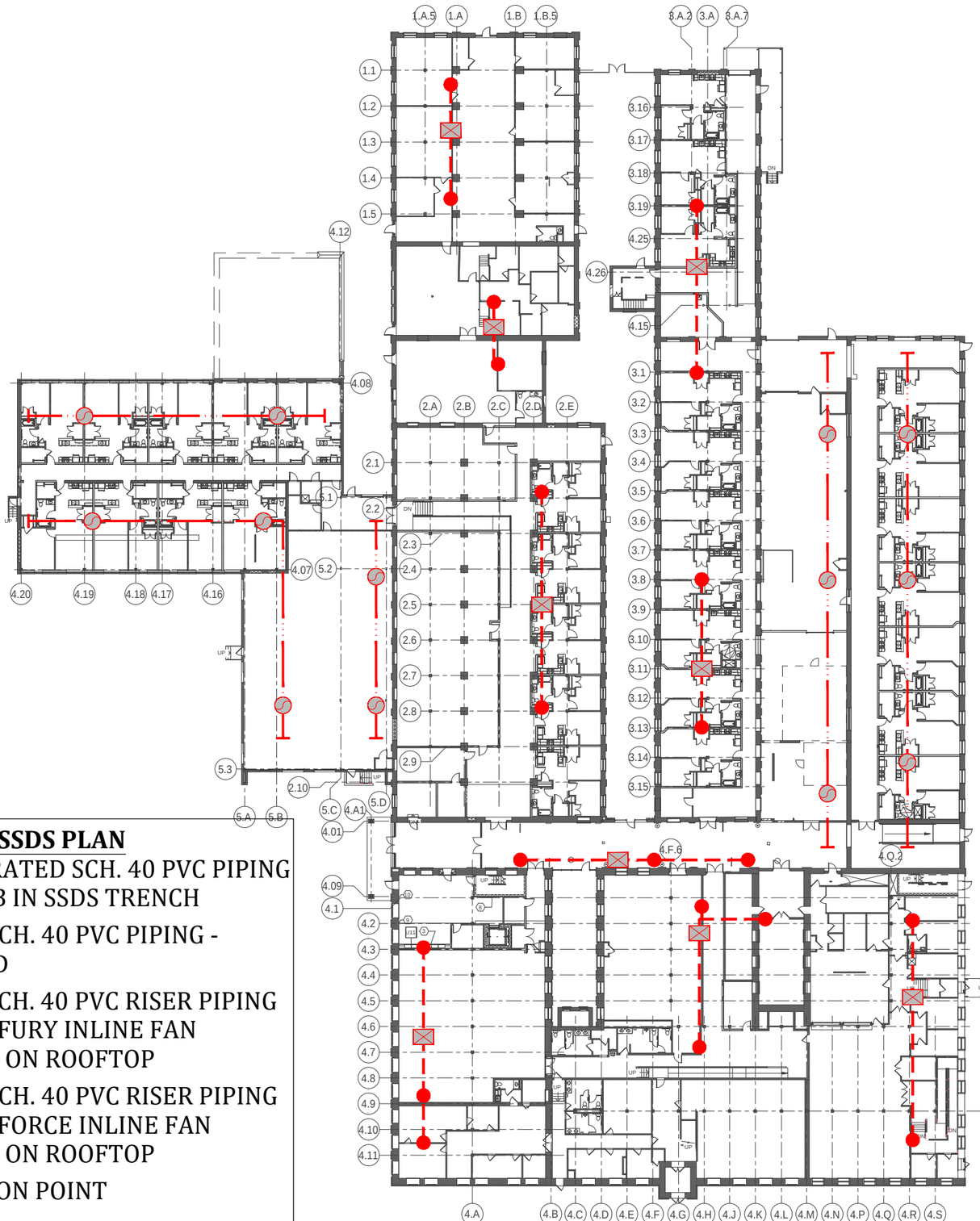
1. FILTER FABRIC SHALL HAVE AN EOS OF 40–85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY. MAXIMUN DRAINAGE AREA 1 ACRE
7. INSPECT THE FABRIC BARRIER AFTER EACH RAIN EVENT AND MAKE REPAIRS AS NEEDED. REMOVE SEDIMENT FROM THE POOL AREA AS NECESSARY WITH CARE NOT TO UNDEROUT OR DAMAGE THE FILTER FABRIC.

FILTER FABRIC DROP INLET PROTECTION



APPENDIX L

SSDS DESIGN



LEGEND - SSDS PLAN

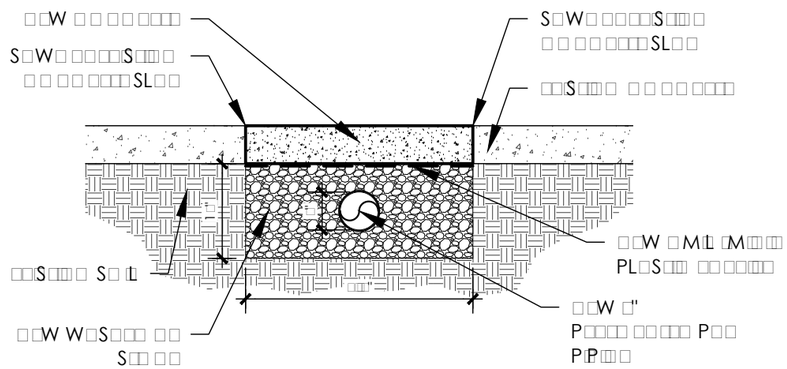
- 4" PERFORATED SCH. 40 PVC PIPING - SUB-SLAB IN SSDS TRENCH
- 4" SOLID SCH. 40 PVC PIPING - OVERHEAD
- 6" SOLID SCH. 40 PVC RISER PIPING TO FESTA FURY INLINE FAN MOUNTED ON ROOFTOP
- 4" SOLID SCH. 40 PVC RISER PIPING TO FESTA FORCE INLINE FAN MOUNTED ON ROOFTOP
- EXTRACTION POINT

LEGEND - SITE PLAN

BUILDING HARDSCAPE GREEN SPACE



SITE PLAN



TRENCH DETAIL

N

ENVIROSAFE Inspections & Consulting

BE3CORP BRIDGES ENGINEERING IN ENVIRONMENT & ENERGY

Figure 1
SSDS Plan

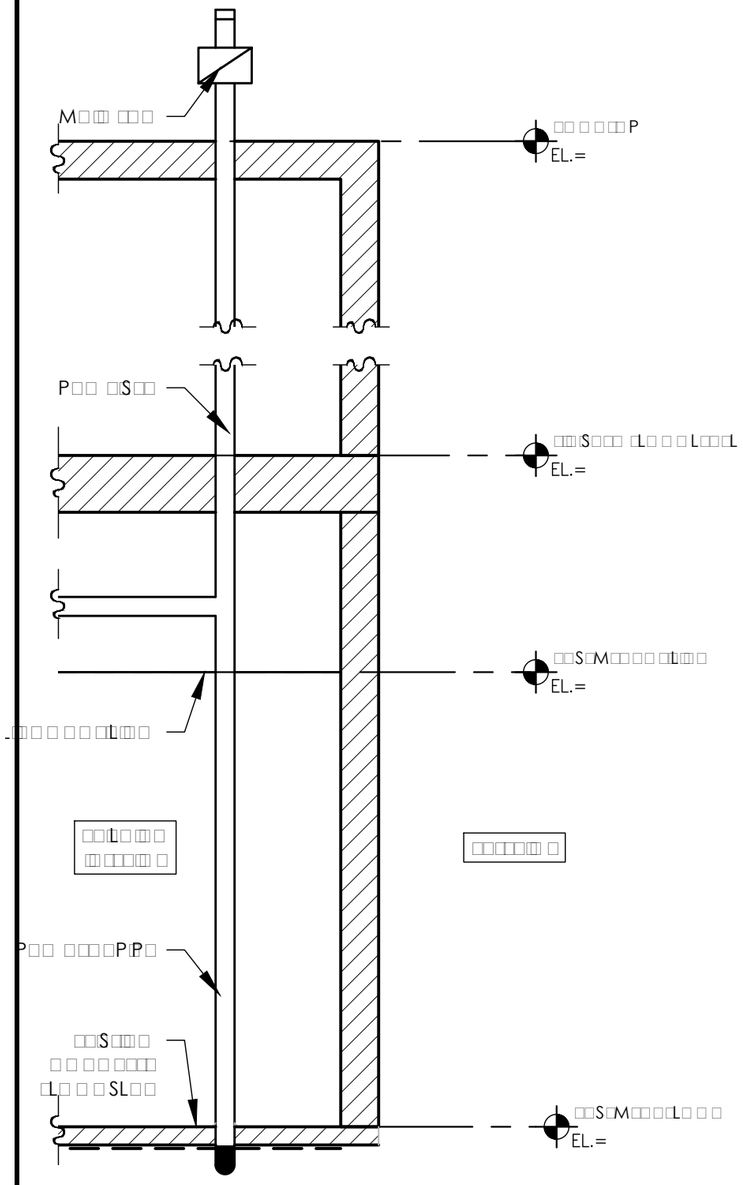
Gateway Lofts Apartments
31 Water Street
Jamestown, New York 14701

Revisions

06-25-2020 | SCALE: N/A | SHEET 1 OF 2

FAN NOTES:

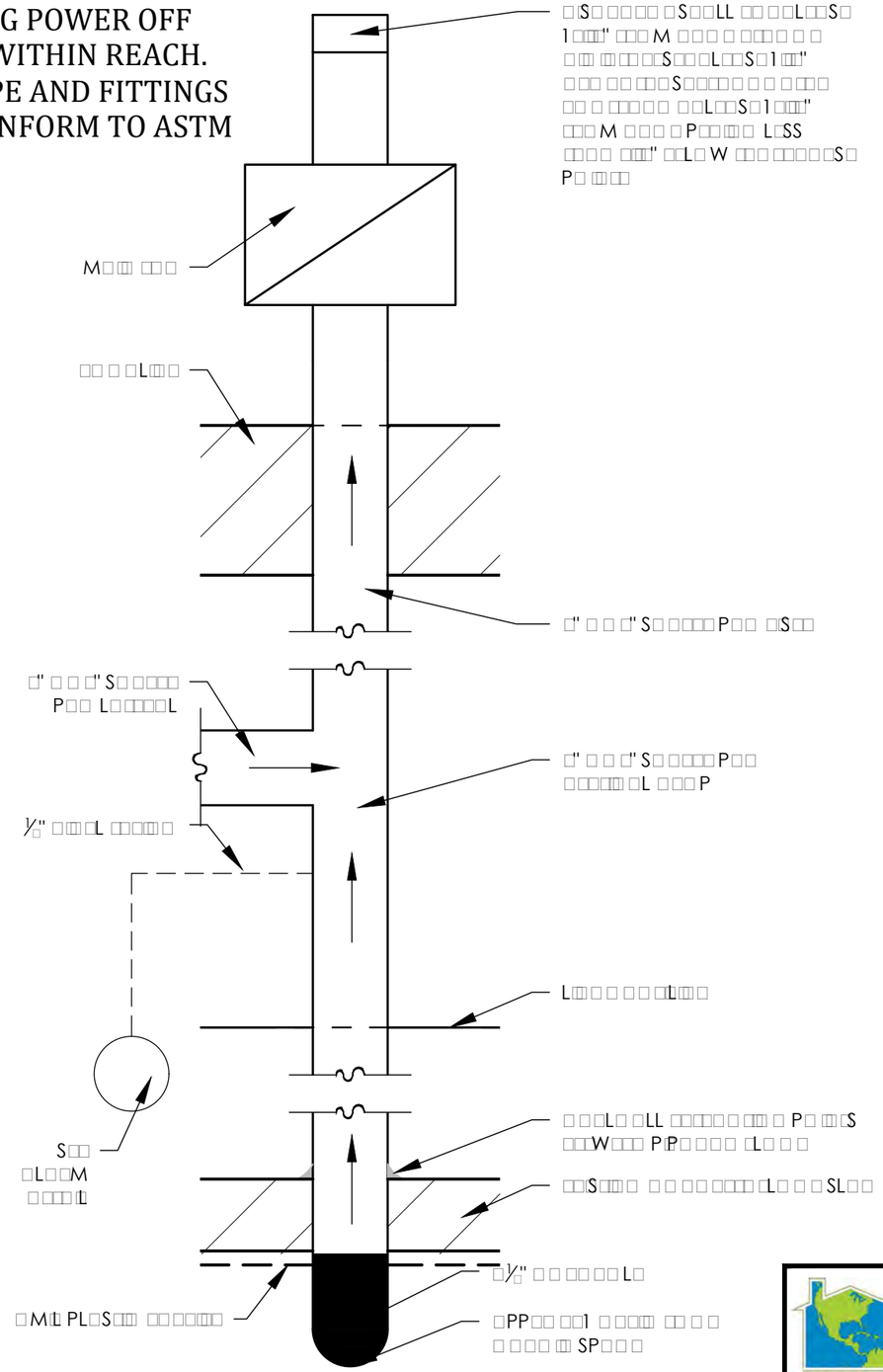
1) SSDS INSTALLED WITHIN EACH BUILDING WILL BE CLEARLY LABELED.
2) CRACKS IN THE EXISTING CONCRETE SLAB WILL BE SEALED TO MAXIMIZE EFFECTIVENESS OF SSDS.



FAN PROFILE

VENT NOTES:

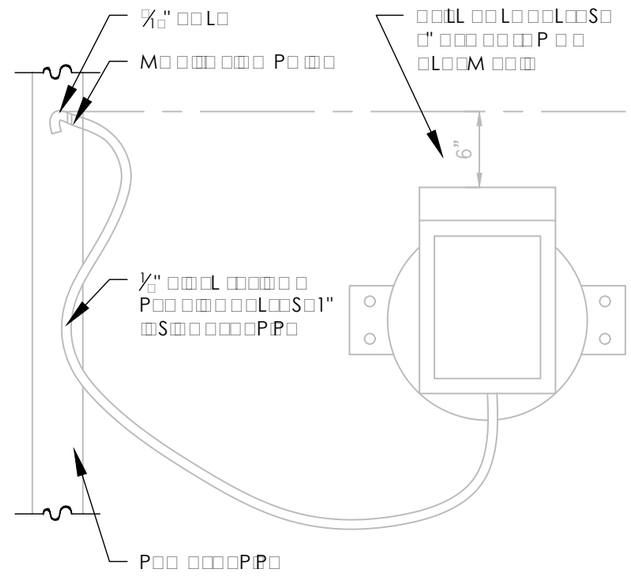
1) INSTALL ELECTRICAL, INCLUDING POWER OFF SWITCH, WITHIN REACH.
2) PVC PIPE AND FITTINGS SHALL CONFORM TO ASTM D3034.



TYPICAL VENT DETAIL

ALARM NOTES:

1) PRESSURE SET POINT: -0.25 INCH WC.
2) PROVIDE ALARM COMPANY LABEL AND CONTACT INFORMATION.
3) LOCATE DEVICE WHERE IT CAN BE SEEN AND HEARD.
4) CONNECT DEVICE TO A SEPARATE CIRCUIT FROM THE FAN SO THAT IT WILL ACTIVATE IF POWER TO THE FAN IS INTERRUPTED.
5) ALARM WILL SOUND WHEN PRESSURE WITHIN THE VENT PIPE DROPS BELOW THE SET POINT.



ALARM DETAIL

	06-25-2020	SCALE: N/A	SHEET 2 OF 2

Figure 2
System Details

Gateway Lofts Apartments
31 Water Street
Jamestown, New York 14701

Revisions