SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT

GREENPOINT LANDING - PARCEL G2
21 Commercial Street
Brooklyn, New York
OER Project Number # 14EH-N527K

Prepared For:

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

Langan Engineering, Environmental, Survey and Landscape Architecture, D.P.C. (Langan) prepared this Supplemental Remedial Investigation Report on behalf of Greenpoint Storage Terminal, LLC (GST) for Building G2 located at 21 Commercial Street, Brooklyn, New York (the site). This parcel will be one of the first portions of the Greenpoint Landing development project, which will eventually cover approximately 19 acres and is referred to herein as the "development property", to be constructed. The Project Number assigned by the New York City Office of Environmental Remediation (OER) is 14EH-N527K. An E-Designation for Hazardous Materials and Noise (E-138) was placed on the site by the New York City Department of City Planning (DCP) as part of the May 11, 2005 Greenpoint-Williamsburg Rezoning (CEQR 04DCP003K)[1].

The supplemental remedial investigation (RI) was completed in accordance with Langan's *Supplemental Remedial Investigation Work Plan for Building G2*, dated April 10, 2014, which was approved by the OER on April 10, 2014. The purpose of the supplemental remedial investigation program was to characterize soil vapor quality across site and add to the existing data set presented in previous studies, including Langan's *Remedial Investigation Report for Parcels E3, D1, D2, F, G and H*, dated May 2, 2014. This report includes a description of soil vapor sampling methodology, field observations, and a tabulated summary of laboratory analytical results. As requested by the OER, the report also includes the results of previous soil, groundwater and soil vapor testing programs performed on Parcel G2.

[1] Note that E-317 that applies to other portions of the development property does not apply to this site.

2.0 BACKGROUND

2.1 Site Description

The Site is located at 21 Commercial Street in the Greenpoint neighborhood of Brooklyn, New York. Parcel G2 encompasses an area of 20,894 square feet on Lot 60 (former p/o Lot 100) of Block 2472, an area of 700 square feet on Lot 50 (former p/o Lot 100) of Block 2472, and an area of 600 square feet on Lot 65 (former p/o Lot 100) of Block 2472. The total square footage of Parcel G2 is approximately 22,200 square feet. A site location map is presented as Figure 1. The Site is currently vacant and paved. The Site is bound by a vacant lot occasionally used by a film production vehicle and truck rental company to the north and east (Lot 65 of Block 2472 [Parcel G1], former p/o Lot 100), a vacant lot to the west (Lot 50 of Block 2472 [Parcel F], former p/o Lot 100), and Commercial Street to the south. An underground NYCDEP combined sewer overflow (CSO) pipe and outfall currently extend across Parcel G2 (the CSO pipe will be re-routed in July 2014). The elevation of Parcel G2 ranges from about el 9[2] near Commercial Street to about el. 11 near the East River. A site plan is presented as Figure 2.

2.2 Proposed Development

The proposed development on Parcel G2 includes the construction of a 6-story mixed-use residential and commercial slab-on-grade building with a footprint of 14,375 square feet. The building will consist of 93 affordable housing units and ground floor commercial space. The building will not include a cellar. The L-shaped building will surround an approximately 6,300-square-foot courtyard[3] with a mix of hardscape and landscaped area. A publicly-accessible sidewalk with a footprint of approximately 700 square feet will be constructed in connection with the new building on an egress easement on Parcel F. A publicly-accessible sidewalk with a footprint of approximately 600 square feet will be constructed in connection with the new building on an egress easement on Parcel G1. A future private asphalt driveway with a footprint of approximately 1,925 square feet will be constructed in connection with the new building on a portion of Parcel G1. See Figure 2 for the location of the proposed sidewalks and roadway and the adjoining parcels.

The proposed development will require excavating the 20,894-square-foot parcel to a depth of up to about 5 feet below site grade for the construction of foundation components and a

[2] Datum is Borough of Brooklyn Highway Datum (BBHD) which is 2.56 feet above mean sea level datum at Sandy Hook New Jersey as defined by the United States Geologic Survey (USGS NGVD 1929).
[3] The design of the courtyard is in the schematic design phase and is not finalized.

stormwater detention system. Deeper excavation to about 13 feet below site grade will be required in a limited area along the northern parcel boundary to accommodate deep grade beams and pile caps adjacent to where a tower will be built in the future. In addition, to facilitate the proposed development and prior to the start of general construction, the DEP CSO located within Parcel G will be relocated to a new location between Parcels F and G (see Figure 2).

3.0 SITE HISTORY

The site was historically used for industrial activities including the transfer and storage of lumber, coal, and construction materials and equipment. Coal and lumber storage were the primary uses for more than 100 years from the late 1800s until circa 1980. The lumber yard operations were phased out during the 1980s when the owner (Lumber Exchange Terminal, Inc.) began to lease the site to tenants to use for materials and heavy equipment storage. The site was leased to trucking companies for the transport of large materials and items. While leased to trucking/transport companies, the site was used for materials storage, truck parking, and basic auto repair (e.g. oil changing, truck washing, and tire changing).

4.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

4.1 Phase II Environmental Site Investigation (AKRF 2003)

AKRF, Inc. (AKRF) implemented a Phase II Environmental Site Investigation (ESI) and a supplemental Phase II ESI across the development property in 2001 and 2003, respectively. No soil borings or monitoring wells were advanced on Parcel G2 as part of the AKRF investigations; however, one soil boring (B14) was advanced on the larger Parcel G. Two soil samples were collected from B14 for laboratory analysis.

The results of AKRF's Phase II ESI are documented in a report titled "*Supplemental Subsurface (Phase II) Investigation Report – Greenpoint Lumber Yard, Brooklyn, New York*," dated April 2004, which can be found in Appendix A of the RIR. The soil analytical results from AKRF's supplemental Phase II ESI are provided in Figure 3. The results of the Phase II ESI specific to Parcel G are summarized below.

1. The stratigraphy comprises a surficial layer of historic fill material overlying native fine- to coarse-grained sandy soil and silty soil. The surficial historic fill material generally extends from ground surface to about 10 feet below grade surface (bgs) and is composed of varying amounts of sand, silt, and gravel, and slag, coal, and wood fragments.

2. At B14, no volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) exceeded their 6 NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives (SCOs). No polychlorinated biphenyls (PCBs) and pesticides were detected. In the surficial soil sample (0-2 feet bgs), five metals (barium, copper, lead, mercury, and zinc), typical constituents of historic fill material, exceeded their 6 NYCRR Part 375-6.8(a) Unrestricted Use SCOs. Barium exceeded its 6 NYCRR Part 375-6.8(b) Restricted Use Restricted-Residential Use SCO (400 milligrams per kilogram [mg/kg]) at a concentration of 518 mg/kg. Lead also exceeded its Restricted-Residential Use SCO (400 mg/kg) at a concentration of 1,870 mg/kg. No metals were detected above their respective Unrestricted Use SCOs in the deeper soil sample (13-15 feet bgs).

4.2 Area-Wide Remedial Investigation

Langan implemented a remedial investigation (RI) in 2013 for six development parcels (Parcels D1, D2, E3, F, G and H) in accordance with Langan's *Remedial Investigation Work Plan* (RIWP),

dated July 24, 2013, which was approved by the OER on August 7, 2013. The area-wide remedial investigation was performed in a two-phased approach starting with the Phase 1 RI (geophysical survey and a soil vapor sampling) and ending with the Phase 2 RI (soil and groundwater sampling).

The following scope of work was performed on Parcel G:

- Completion of a geophysical survey;
- Installation of 2 soil vapor sampling points (SV-8 and SV-10) and collection of 2 soil vapor samples for laboratory analysis. SV-8 was installed on Parcel G2 and SV-10 was installed on the larger Parcel G;
- Installation of 2 soil borings (SB-19 and SB-23) and collection of 4 soil samples for laboratory analysis. SB-19 and SB-23 were installed on the larger Parcel G;
- Installation of 2 monitoring wells (MW-19 and MW-23) and collection of 2 groundwater samples for laboratory analysis. MW-19 and MW-23 were installed on the larger Parcel G;
- No soil borings or monitoring wells were installed on Parcel G2.

The results of Langan's Area- Wide Phase 1 RI and Phase 2 RI are documented in the "*Remedial Investigation Report for Parcels D1, D2, E3, F, G and H of Greenpoint Landing, Brooklyn, New York*," dated May 2, 2014. The soil, groundwater, and soil vapor analytical results from Parcel G are presented in Figures 3, 4 and 5, respectively. The results of the RI specific to Parcel G (including Parcel G2) are summarized below.

1. The elevation of Parcel G2 ranges from about el. 9 near Commercial Street to about el 11 near the East River.

2. The geophysical survey did not identify subsurface anomalies with reflections or signatures consistent with underground storage tanks (USTs).

3. The stratigraphy underlying Parcel G and Parcel G2 consists of a surficial layer of historic fill material overlying native fine- to coarse-grained sandy soil and silty soil. The surficial historic fill material generally extends from ground surface to about 10 feet bgs and is composed of varying amounts of sand, silt, gravel, coal, coal ash, cinders, slag, and

brick, wood, concrete, and asphalt fragments. Depth to bedrock is expected to be more than 50 feet below existing site grades.

4. Groundwater elevation is about el 1.5 based on measurements recorded during the RI. Depth to groundwater is about 9 feet below existing grade. Groundwater elevation data across the development property indicate the direction of groundwater flow is to the west towards the East River.

5. At SB-19, no VOCs, PCBs, pesticides, or herbicides were detected in soil above their Unrestricted Use SCOs. Five SVOCs, all polycyclic aromatic hydrocarbons (PAHs), including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-c,d)pyrene, were detected above their Unrestricted Use SCOs in surface soil (0-2 feet bgs) only. Four PAHs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-c,d)pyrene, also exceeded their Restricted-Residential Use SCOs in surface soil only. Total SVOCs in surface soil were detected at a concentration of 14.49 mg/kg and at an estimated concentration of 0.665 mg/kg in subsurface soil. Four metals (arsenic, copper, lead and mercury) were detected above their Unrestricted Use SCOs in surface soil. Arsenic and lead also exceeded their Restricted-Residential Use SCOs (16 mg/kg and 400 mg/kg, respectively) in surface soil at concentrations of 25 mg/kg and 1,800 mg/kg, respectively. Lead and mercury were detected above their Unrestricted Use SCOs, but below their Restricted-Residential Use SCOs in subsurface soil (7-9 feet bgs). No other metals were detected above their Unrestricted Use SCOs in subsurface soil.

6. At SB-23, no VOCs, PCBs or herbicides were detected in soil above their Unrestricted Use SCOs. Four SVOCs, all PAHs, including benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-c,d)pyrene, were detected above their Unrestricted Use SCOs in surface soil (0-2 feet bgs). Three PAHs exceeded their Restricted-Residential Use SCOs in surface soil. Total SVOCs in surface soil were detected at a concentration of 12.27 mg/kg. Seven SVOCs, all PAHs, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene, were detected above their Unrestricted Use SCOs in subsurface soil (6.5-8.5 feet bgs). Five PAHs exceeded their Restricted-Residential Use SCOs in subsurface soil. Total SVOCs in subsurface soil were detected at a concentration of 42.38 mg/kg. One pesticide (4,4-DDD) was detected above its

Unrestricted Use SCO (0.0033 mg/kg), but below its Restricted-Residential Use SCO (13 mg/kg), in surface soil only. Five metals (arsenic, copper, lead, mercury, and zinc) were detected above their Unrestricted Use SCOs in surface and subsurface soil. Only one metal, mercury, also exceeded its Restricted-Residential Use SCO (0.81 mg/kg) in subsurface soil at a concentration of 1.4 mg/kg.

7. At MW-19, no VOCs, PCBs, pesticides, or herbicides were detected in groundwater. Four PAHs, including benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-c,d)pyrene, slightly exceeded their Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (SGVs) for Class GA waters. Five metals (iron, lead, magnesium, manganese, and sodium) were detected in total concentrations above their TOGS SGVs. Four metals (iron, magnesium, manganese, and sodium) were detected in dissolved concentrations above their TOGS SGVs.

8. At MW-23, no VOCs, PCBs, pesticides, and herbicides were detected in groundwater. Two PAHs, including benzo(a)pyrene and benzo(k)fluoranthene, slightly exceeded their TOGS SGVs. Five metals (iron, lead, magnesium, manganese, and sodium) were detected in total concentrations above their TOGS SGVs. Four metals (iron, magnesium, manganese, and sodium) were detected in dissolved concentrations above their TOGS SGVs.

9. No VOCs exceeded their New York State Department of Health (NYSDOH) Air Guidance Values (AGV) in soil vapor collected from SV-8 and SV-10.

4.3 Waste Characterization Investigation

A waste characterization investigation was completed for Parcel G2 in September 2013. The waste characterization investigation included soil and groundwater sampling. The purpose of the waste characterization investigation was:

- To perform in-situ characterization to avoid characterizing stockpiles of excavated soil;
- To provide sufficient information to help evaluate construction costs related to management and re-use or disposal of excess soil and groundwater during the planned redevelopment of Parcel G2; and
- To evaluate potential dewatering options (e.g. discharge to a NYCDEP sewer or the

East River).

Parcel G2 was divided into a grid consisting of six approximately 2,700-square-foot waste characterization cells. About 3,500 cubic yards of soil/fill material within the proposed excavation area (about 16,200 square feet) was characterized in-situ at a frequency of 1 sample for every 500 CY. Waste characterization cells were composed of shallow intervals representing approximately 0 to 5 feet bgs and approximately 500 CY of subsurface material, and one deep interval (in the southern portion of the proposed excavation) representing approximately 5 to 10 feet bgs and approximately 500 CY of subsurface material. Fourteen soil borings were completed within the proposed excavation area. Grab soil samples were analyzed for VOCs only by United States Environmental Protection Agency (USEPA) Method 8260C. Composite soil samples were analyzed for the following parameters:

- Semi-volatile organic compounds (SVOCs) (USEPA Method 8270D)
- Polychlorinated biphenyls (PCBs) (USEPA Method 8082A)
- Organochlorine pesticides (USEPA Method 8081B)
- Herbicides (USEPA Method 8151A)
- Target analyte list [TAL] metals (USEPA Method 6010C/7471B)
- Hexavalent chromium (USEPA Method 7196A)_
- Cyanide (USEPA Method 9010C/9012A)
- Toxicity characteristic leaching procedure [TCLP] Resource Conservation and Recovery Act (RCRA) 8 metals (USEPA Method 1311)
- Ignitability (USEPA Method 1030)
- Corrosivity (USEPA Method 9045D)
- Cyanide Reactivity (SW846 Chapter 7.3)
- Sulfide Reactivity (SW846 Chapter 7.3)
- Total petroleum hydrocarbons gasoline-range organics (TPH-GRO) (USEPA Method 8015C)
- Total petroleum hydrocarbons diesel-range organics (TPH-DRO) (USEPA Method 8015C)
- Paint filter (USEPA Method 9095A)

One groundwater sample was collected and analyzed for New York City Department of Environmental Protection (NYCDEP) sewer discharge parameters[4] and NYSDEC State Pollutant

[4] NYCDEP sewer discharge parameters include non-polar material, pH, temperature, flash point, cadmium, hexavalent chromium, copper ,lead, mercury, nickel, zinc, benzene, carbon tetrachloride,

Discharge Elimination System (SPDES) parameters[5] to evaluate potential dewatering options (e.g. discharge to a NYCDEP sewer or the East River). The locations of waste characterization borings and monitoring wells are depicted on Figure 6. The waste characterization analytical soil results are presented in Tables 1A, 1B, and 1C and Figure 7. The waste characterization analytical groundwater results are presented in Tables 2 and 3 and Figure 8. The sampling methodology, field observations and results of the waste characterization investigation are presented in Langan's *RIR for Parcels D1, D2, E3, F, G and H* and are also presented in a companion document titled *Waste Characterization Technical Letter Report for Building G2 to Greenpoint Landing Developers, LLC*, dated November 11, 2013, which can be found in Appendix B of the RIR.

A review of the analytical soil and groundwater results indicated:

- Seven VOCs, including 1,2,4-trimethylbenzene, 1,2-dichloroethane, acetone, benzene, ethylbenzene, toluene, and total xylenes, were detected above their Unrestricted Use SCOs in one shallow grab soil sample (0-0.5 feet bgs) from G2_SB-04C. None of the VOCs detected in this shallow grab soil sample exceeded their Restricted-Residential Use SCOs.
- Seven SVOCs, all PAHs, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene, exceeded their Unrestricted Use SCOs in five samples (G2_COMP-01_0-5, G2_COMP-02_0-5, G2_COMP-03_0-5, G2_COMP-05_0-5, and G2_COMP_06S_0-5). Six PAHs also exceeded their Restricted-Residential Use SCOs in G2_COMP-01_0-5, G2_COMP-02_0-5, G2_COMP-03_0-5, and G2_COMP_06S_0-5). Five PAHs also exceeded their Restricted-Residential Use SCOs in G2_COMP-05_0-5.
- Five PAHs, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-c,d)pyrene, exceeded their Unrestricted Use SCOs in G2_COMP_06D_5-10. Four PAHs also exceeded their Restricted-Residential Use SCOs.
- Two PAHs, including benzo(b)fluoranthene and indeno(1,2,3-c,d)pyrene, exceeded their Unrestricted Use SCOs and Restricted-Residential Use SCOs in G1_COMP-04_0-5.

chloroform, 1,4-dichlorobenzene, ethylbenzene, MTBE, naphthalene, phenol, tetrachloroethylene, toluene, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, total xylenes, total PCBs, total suspended solids, carbonaceous biochemical oxygen demand (CBOD), chloride, total nitrogen, and total solids.

[5] NYSDEC SPDES parameters include pH, temperature, oil and grease, total suspended solids, settable solids, BTEX, MTBE, halogenated VOCs, aromatic VOCs, nitrate and nitrite, and metals.

- Total SVOC concentrations ranged from 12.72 to 134.71 mg/kg.
- No PCBs were detected above their Unrestricted Use SCOs.
- No herbicides were detected.
- Two pesticides (4,4-DDD and 4,4-DDT) were detected above their Unrestricted Use SCOs, but below their Restricted-Residential Use SCOs, in G2_COMP-04_0-5. One pesticides (4,4-DDT) was detected above its Unrestricted Use SCO, but below its Restricted-Residential Use SCO, in G2_COMP-05_0-5.
- Seven metals (arsenic, trivalent chromium, copper, lead, mercury, nickel, and zinc) exceeded their Unrestricted Use SCOs in one or more composite soil samples. Four metals (arsenic, copper, lead, and mercury) also exceeded their Restricted-Residential Use SCOs in one or more composite samples. Based on the TCLP analytical results, metals were not found to exceed their maximum concentration for the toxicity characteristic.
- A review of the groundwater analytical results indicated no exceedances of the NYCDEP limitations for effluent to sanitary or combined sewers and only one exceedance (e.g., total lead) of the TOGS SGVs for Class I waters. Total lead exceeded its TOGS Class I SGV (8 µg/L) at a concentration of 16 µg/L.

5.0 SUPPLEMENTAL REMEDIAL INVESTIGATION

5.1 Soil Vapor Investigation – Sampling Methodology

Three soil vapor sampling points (SV-13, SV-14, and SV-15) were installed by AARCO Environmental Services Corp. (AARCO) of Lindenhurst, New York under the supervision of a Langan field engineer on April 22, 2014. A GPS hand-held unit was used to record the position of completed soil vapor sampling points. The soil vapor sampling locations are presented on Figure 9. In addition, one ambient air sample was collected and analyzed for quality assurance/quality control (QA/QC) purposes. A summary of the soil vapor and QA/QC samples is presented as Table 4.

The soil vapor sampling points were installed using a track-mounted Geoprobe™ 6620DT drill rig. Soil samples were collected continuously to boring completion depth in five-foot macrocore barrels with dedicated acetate liners. Extracted soil was classified, inspected for visual and olfactory evidence of contamination, and screened for VOCs with a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp. No soil samples were collected for laboratory analysis. The sampling points were completed at a depth comparable to the anticipated depth of foundation components (about 5 feet bgs). The sample collection points were comprised of a 6-inch stainless steel screened-probe and inert 1/4-inch by 3/8-inch Teflon-lined polyethylene tubing. The annulus (i.e., the sampling zone) around the probe was filled with No. 2 pure silica sand to about 6 inches above the top of the probe. A hydrated bentonite seal was installed above the sampling zone up to the ground surface. A screw protector cap was placed on the top end of the sample tubing to keep to tubing clean and dry.

Samples were collected in general accordance with the *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH October 2006). A minimum of three implant volumes (i.e., the volume of the sample probe and tubing) was purged from each sample port at a rate of less than 0.2 liters per minute using a RAE Systems MultiRAE® meter. The purged soil vapor was monitored for volatile organic compounds (VOCs) with the MultiRAE® during purging. A helium tracer gas was used in accordance with the NYSDOH protocols to serve as a QA/QC technique to document the integrity of each soil vapor sampling point seal before sampling was initiated. A plastic 5-gallon bucket and hydrated bentonite were used to keep the helium tracer gas in contract with the probe during the seal integrity test. A helium monitoring instrument was used to analyze a sample of soil vapor for the tracer gas before and after sampling. All soil vapor sampling point seals were determined to be adequate before and after

sampling.

Soil vapor samples were collected into laboratory-supplied batch-certified clean 2.7-liter Summa® canisters with calibrated flow controllers. The ambient air sample was collected into a laboratory-supplied batch-certified clean 6-liter Summa® canister with calibrated flow controllers for 120 minutes. A log sheet for each soil vapor sample was completed to record the following:

- Sample identification name;
- Date and time of sample collection;
- Sampling depth;
- Name of the field engineer responsible for sampling;
- Sampling methods and equipment;
- Soil vapor purge volumes;
- Volume of soil vapor extracted;
- Flow rate; and
- Vacuum of canisters before and after sample collection.

Boring logs for each soil vapor sampling point are provided as Appendix A. Soil vapor sampling log sheets are provided as Appendix B.

Soil vapor samples and QA/QC samples (ambient air sample) were submitted to a NYSDOH Environmental Laboratory Accreditation Program (ELAP)-certified laboratory (Alpha Analytical, Inc. of Westborough, MA [ELAP ID #11148]) via courier service under standard chain-of-custody protocol and analyzed for VOCs by the United States Environmental Protection Agency (USEPA) Method TO-15. The laboratory was instructed to report all analytical data as an Analytical Services Protocol (ASP) Category B data deliverable, or equivalent, and as an Electronic Data Deliverable (EDD) consistent with NYSDEC requirements.

5.2 Soil Vapor Investigation - Field Observations

The soil vapor sampling points were completed at a depth of 5 feet bgs within the surficial layer of historic fill material. The surficial historic fill material is composed of varying amounts of sand, gravel and brick, ceramic, and asphalt fragments. No visual, olfactory, or PID evidence of petroleum or other gross contamination was identified in the borings completed for the soil vapor program. No PID readings from subsurface stata above background levels (0.0 parts per

million [ppm]) were recorded.

5.3 Soil Vapor Investigation - Analytical Results

In total, three soil vapor samples and one QA/QC samples were collected and analyzed for VOCs. The analytical soil vapor results were tabulated and, as required by OER protocol, compared to the New York State Department of Health (NYSDOH) Air Guideline Values (AGVs). The analytical soil vapor and QA/QC results are presented in Table 5 and Figure 9. The laboratory analytical data reports (NYSDEC Analytical Services Protocol [ASP] Category B) are provided as Appendix C. A copy of Alpha's ELAP certification is provided as Appendix D.

A review of the supplemental soil vapor analytical results indicated one VOC, trichloroethylene (TCE), was detected slightly above its AGV (5 micrograms per cubic meter [µg/m^3]) at one sampling location (SV-15) at a concentration of 5.48 µg/m^3. No other VOCs were detected above their AGVs in any other soil vapor samples.

6.0 COMPREHENSIVE ANALYTICAL DATA REVIEW

6.1 Soil Vapor

A total of 4 soil vapor samples and one ambient air sample were collected and analyzed for TO-15 during two investigations (Phase 1 RI and Supplemental RI). TCE exceeded its AGVs in soil vapor at one sampling location (SV-15), which was collected during the Supplemental RI. This reported detection of TCE above its AGV can be attributed to the quality of surficial historic fill material at the sampling location. The boring log for SV-15 indicated historic fill material with ceramic fragments[6]. No other VOCs were detected above their AGVs in any other soil vapor samples. Previous environmental investigations (Langan's Waste Characterization of Parcel G2) did not identify any TCE in soil. Previous environmental investigations (Langan's RI) did not identify any TCE in groundwater in Parcel G.

6.2 Soil

A total of seven waste characterization soil samples (from 14 borings) were collected and analyzed as part of a waste characterization investigation. The analytical results are consistent with the historical site use and confirmed the presence of historic fill material at the site.

- The nature and highly localized distribution of VOCs does not suggest releases of petroleum or other hazardous substances occurred at the site.
- The PAHs in soil may be attributed to pyrogenic components (e.g., coal fragments, cinders, ash, or wood fragments) of the historic fill material noted in most of the borings or to petrogenic sources, including creosote (a coal tar derivative), which was historically used as a lumber preservative. The concentrations of PAHs in soil are regarded as background concentrations and considered as characteristic of properties in the urban environment.
- No PCBs were detected above their Unrestricted Use SCOs. No evidence of primary sources (e.g. transformers) and secondary sources (e.g. carrier fluids) were identified by previous environmental studies (AKRF's Phase I ESA), previous subsurface investigations (AKRF's Phase II ESI and Langan's RI), and this supplemental RI.
- Pesticides in soil are distributed randomly across the site and are limited to surficial soil. The presence of pesticides in surficial soil may be attributed to historical application of

[6] TCE is a common ingredient in paints, stains, varnishes and finishes (Toxicological Profile for Trichloroethylene by US Department of Health and Human Services [1997]).

pesticides, which are known to persist in the environment, or to historic fill material.

- No herbicides were detected above their Unrestricted Use SCOs.
- The suite of metals detected in soil above their Unrestricted Use and Restricted-Residential Use SCOs are characteristic of and attributed to historic fill material. No potential current or historical sources of metals related to industrial and/or commercial activity were identified by previous environmental studies. The concentrations of metals are regarded as background concentrations and considered characteristic of properties in the urban environment.

6.3 Groundwater

One groundwater sample was collected from Parcel G2 as part of the waste characterization study and two groundwater samples were collected from an area adjacent to the site on the larger Parcel G. The suite of SVOCs, primarily PAHs, found in groundwater are background concentrations attributed to historic fill material and are regarded as background concentrations and considered as characteristic of properties in the urban environment.

The metals (iron, magnesium, manganese, and sodium) frequently detected in groundwater above their TOGS SGVs are characteristic of brackish and naturally-occurring groundwater conditions. A comparison of the filtered and unfiltered metals detected in groundwater did not indicate a significant reduction in metals concentrations with the exception of lead. Lead was detected only in total concentrations slightly above its TOGS SGV in one groundwater sample; lead was not detected in dissolved concentrations above its TOGS SGV in the same sample. The presence of lead in groundwater is attributed to the presence of suspended solids derived from historic fill material, which was generally found to contain lead, and extends into the groundwater table. The total and dissolved concentrations of iron, magnesium, and managanese in groundwater can be attributed to the natural weathering of iron-, magnesium-, and manganese-bearing minerals in soil and sediment. Because the metals most frequently detected in groundwater above their TOGS SGVs are indicative of brackish (i.e., sodium) and naturally-occurring groundwater conditions and a comparison of the filtered and unfiltered metals detected in groundwater did not indicate a significant reduction in concentrations for these metals, the quality of groundwater with respect to metals is primarily influenced by its true natural and brackish condition, which demonstrates that groundwater at the site directly communicates with the estuarine waters of the East River and Newtown Creek.

7.0 CONCLUSIONS

7.1 Conclusions

Based on the previous analytical results, field observations, and supplemental soil vapor analytical data presented in this report, we conclude the following:

- No potential USTs were identified during the geophysical survey.
- The site stratigraphy consists of a surficial layer of historic fill material overlying native fine- to coarse-grained sandy soil and silty soil. The surficial historic fill material generally extends from ground surface to about 10 feet bgs and is composed of heterogeneous layers, each with varying amounts of sand, silt, gravel, coal, coal ash, fly ash, cinders, and brick, ceramic, concrete and asphalt fragments.
- No visual, olfactory, or PID evidence of petroleum or other gross contamination was identified.
- The analytical results are consistent with the property's historical light industrial use for the storage of coal/lumber and heavy equipment and machinery, confirm the presence of historic fill material[7], support and confirm the findings from previous environmental investigations across the site and development property, and are consistent with what one would expect to find on urban waterfront property in New York City.
- Although the site functioned as a lumber yard for almost a century, there was no indication in soil and groundwater that lumber treatment (e.g. creosote) occurred with any frequency (if at all) across the site. The presence of wood fragments in soil borings is the likely source of the inorganic (e.g. arsenic) constituents commonly used in wood finishing, treatment and preservative products, that were detected in soil and fill material in localized areas at the site.
- The nature and localized distribution of VOCs in soil does not suggest releases of petroleum or other hazardous substances occurred. No VOCs were detected in groundwater.

[7] As defined by NYS DEC's DER-10 Technical Guidance for Site Investigation and Remediation, Section 1.3 (b) 25: "Historic fill material" means non-indigenous or non-native material, historically deposited or disposed in the general area of, or on, a site to create useable land by filling water bodies, wetlands or topographic depressions, which is in no way connected with the subsequent operations at the location of the emplacement, and which was contaminated prior to emplacement. Historic fill may be solid waste including, but not limited to, coal ash, wood ash, municipal solid waste incinerator ash, construction and demolition debris, dredged sediments, railroad ballast, refuse and land clearing debris, which was used prior to October 10, 1962. [see 6 NYCRR 375-1.2(x)]

- The suite of PAHs found in soil and groundwater are background concentrations attributed to historic fill material and are considered characteristic of properties in the urban environment.
- No indication of primary (e.g., transformers) or secondary sources (e.g., carrier fluids) of PCBs was observed at the site. No PCBs were detected in soil above their Unrestricted Use SCOs. No PCBs were detected in groundwater.
- The suite of metals and their concentrations detected in soil are characteristic of and attributed to historic fill material. No potential current or historical sources of metals related to industrial and/or commercial activity were identified by previous environmental studies. The concentrations of metals in soil are background concentrations and considered characteristic of properties in the urban environment.
- The metals (iron, magnesium, manganese, and sodium) frequently detected in groundwater above their TOGS SGVs are characteristic of brackish and naturally-occurring groundwater conditions. The quality of groundwater with respect to metals is primarily influenced by its true natural and brackish condition, which demonstrates that groundwater directly communicates with the estuarine waters of the East River and Newtown Creek.
- TCE exceeded its AGV in soil vapor at one sampling location (SV-15). The reported detection of TCE above its AGV can be attributed to the quality of surficial historic fill material (i.e., ceramic fragments) at this sampling location. No other VOCs were detected above their AGVs in any other soil vapor samples. Previous environmental investigations (Langan's Waste Characterization of Parcel G2) did not identify any TCE in soil at the site. Previous environmental investigations (Langan's RI) did not identify any TCE in groundwater in Parcel G.

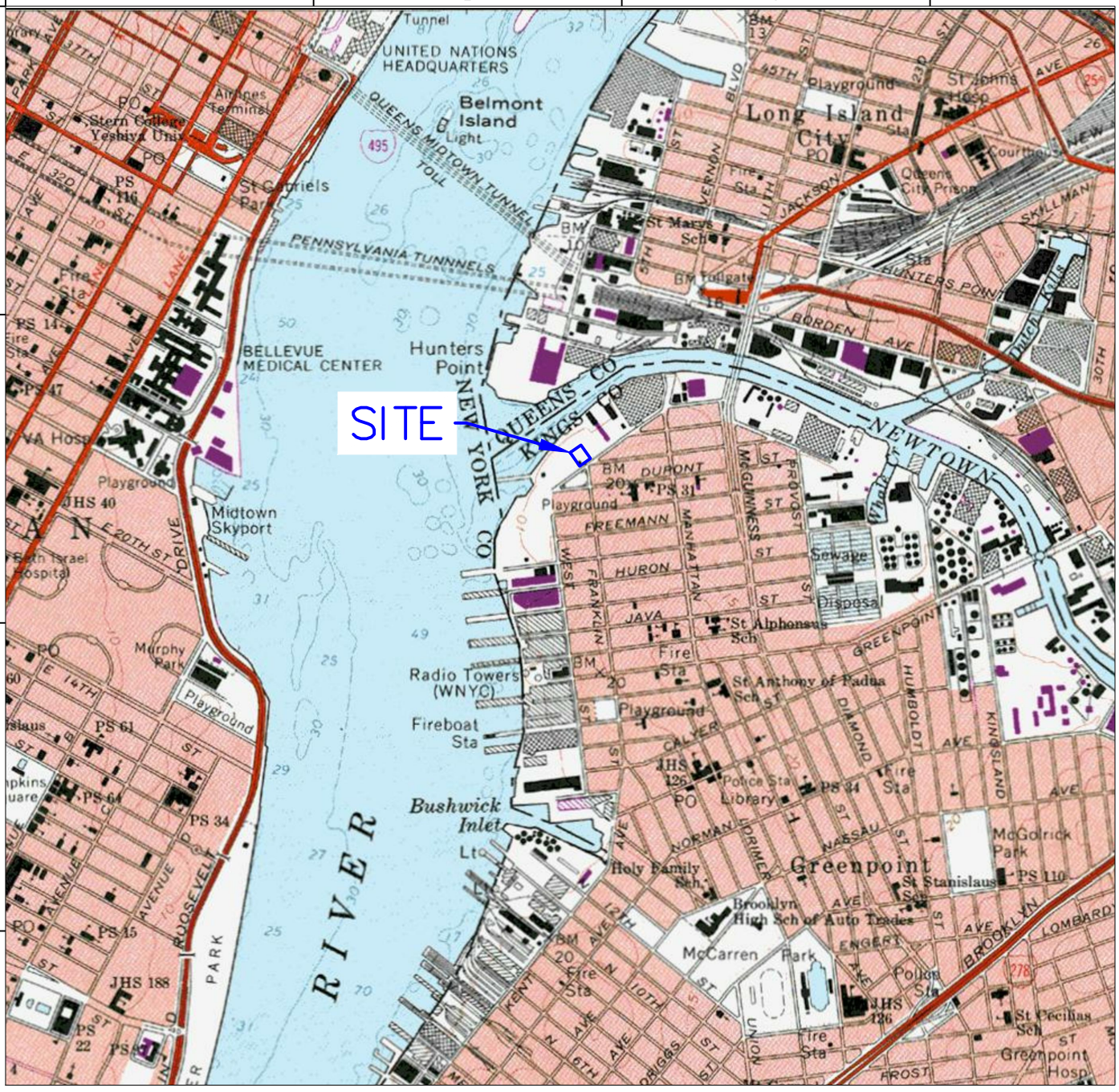
The supplemental RI and the results of previous environmental investigations provide sufficient information for establishing remedial action objectives, evaluating remedial action alternatives, and selecting a remedy that is protective of human health and the environment that is consistent with the proposed use of the site.

8.0 LIMITATIONS

This Supplemental Remedial Investigation Report for Parcel G2 was prepared expressly for Greenpoint Storage Terminal, LLC (GST) for the proposed development at Greenpoint Landing, Brooklyn, New York and for the objectives defined herein. Langan cannot assume responsibility for the use of this report for any property other than the specific site addressed in this report, or by any third party without specific written authorization from Langan.

The conclusions, opinions, and recommendations provided in this report are based on subsurface conditions ascertained from the analysis of a limited number of samples and from environmental reports prepared by other professionals. Recommendations provided are contingent upon one another and no recommendation should be followed independent of the others. Actual conditions encountered may differ substantially from those presented herein and should be brought to our attention whereby we may determine how such changes may affect our conclusions, opinions and recommendations.

FIGURES



LEGEND

APPROXIMATE SITE BOUNDARY

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

SOURCE: USGS TOPOGRAPHIC QUADRANGLE MAP, BROOKLYN, NY

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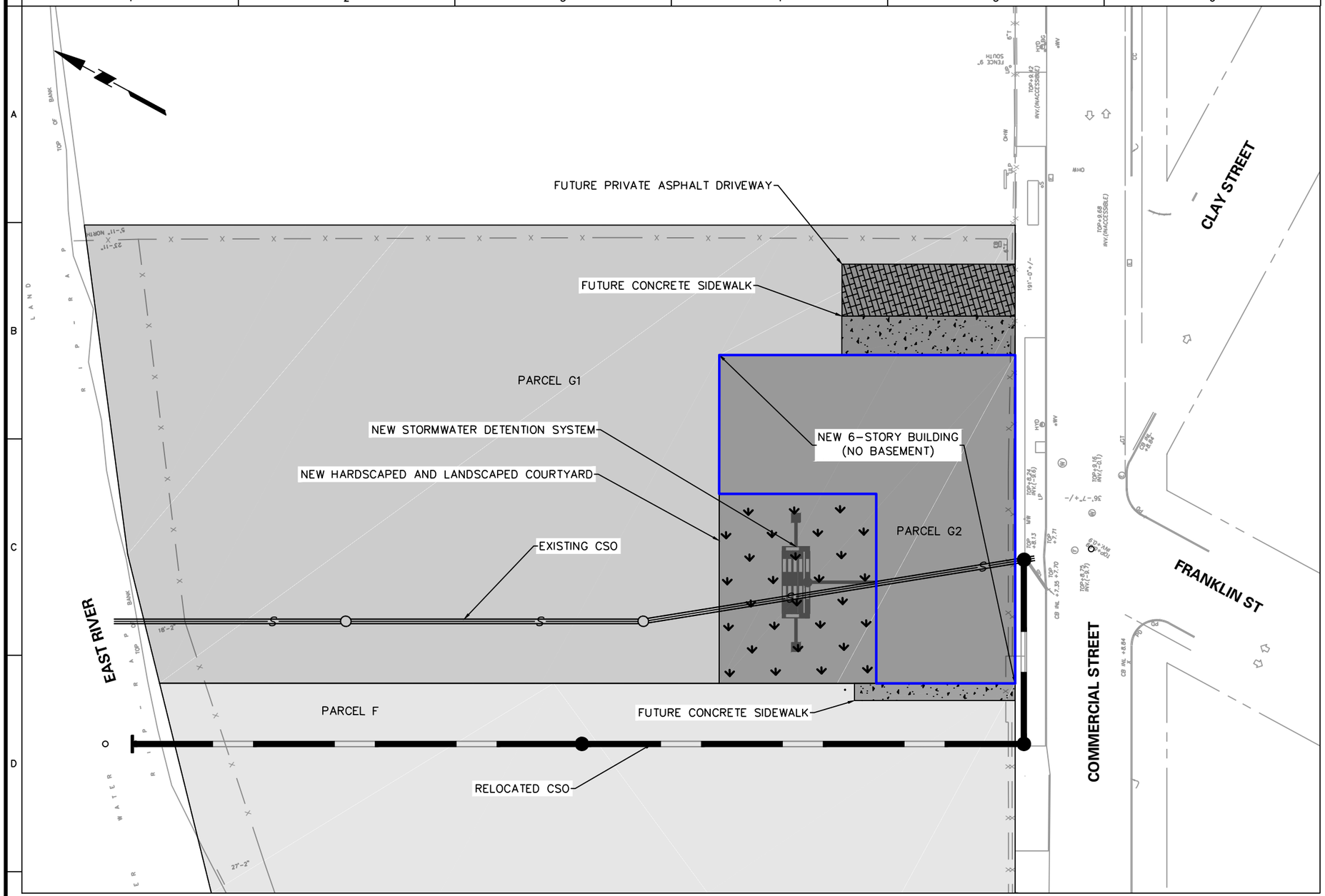
Project	GREENPOINT LANDING Block 2472, Lot 60 BROOKLYN KINGS NEW YORK
Drawing Title	SITE LOCATION MAP PARCEL G2
Project No.	170229002
Date	6/11/2014
Scale	NTS
Drawn By	GCW
Submission Date	6/11/2014
Drawing No.	1
Sheet	1 of 9

Filename: \\langan.com\data\NY\data0\170229001\Cadd Data - 170229001\SheetFiles\Environmental-Supplemental RI Reports\Supplemental RI Report - Building G2\Site Location Map - Building G2.dwg Date: 6/11/2014 Time: 12:21 User: gwyka Style Table: Langan.stb Layout: ANSIA-BP



LEGEND

- PARCEL G2 (LOT 60, P/O LOT 50, P/O LOT 65 OF BLOCK 2472)
- PARCEL G1 (LOT 65 OF BLOCK 2472)
- PARCEL F (LOT 50 OF BLOCK 2472)
- APPROXIMATE AREA OF NEW BUILDING FOOTPRINT (BUILDING G2)

GENERAL NOTES

1. BASE PLANS TAKEN FROM LANGAN DRAWINGS: UTILITY DRAWING "170229001-C-UI0101"AND SITE SURVEY "170229001-V-EX0101
2. NORTH ARROW SHOWS TRUE NORTH.
3. DATUM IS BOROUGH OF BROOKLYN HIGHWAY DATUM (BBHD), WHICH IS 2.56 FEET ABOVE MEAN SEA LEVEL DATUM AT SANDY HOOK, NEW JERSEY AS DEFINED BY THE UNITED STATES GEOLOGICAL SURVEY (USGS NGVD 1929).

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Collectively known as Langan

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Block 2472, Lot 60
BROOKLYN
KINGS NEW YORK

Drawing Title
SITE PLAN
PARCEL G2

Project No. 170229002	Drawing No. 2
Date 6/11/2014	
Scale 1" = 50'	
Drawn By GCW / Checked By MSR	
Submission Date 6/11/2014	Sheet 2 of 9

Filename: \\langan.com\data\NY\data0\170229001\Cadd Data - 170229001\SheetFiles\Environmental-Supplemental RI Reports\Supplemental RI Report - Building G2\Site Plan - Building G2.dwg Date: 6/11/2014 Time: 13:10 User: gwyka Style Table: Langan.stb
Layout: ANSIB-BL

SB-23			
Sample ID	**SB-23_0-2**		**SB-23_6.5-8.5**
Lab Sample ID	**L1404172-03**		**L1404172-04**
Sample Date	**2/26/2014**		**2/26/2014**
Sample Depth (ft)	**0 to 2**		**6.5 to 8.5**
VOCs (mg/kg)			
Total VOCs	ND		NE
SVOCs (mg/kg)			
Benzo(a)anthracene	NE		**3**
Benzo(a)pyrene	**1.1**		**2.8**
Benzo(b)fluoranthene	**1.3**		**3**
Benzo(k)fluoranthene	NE		**1.3**
Chrysene	**1.1**		**3.1**
Dibenzo(a,h)anthracene	NE		**0.46**
Indeno(1,2,3-cd)Pyrene	**0.79**		**1.7**
Total SVOCs	12.27	J	42.388 J
PCBs (mg/kg)			
Total PCBs	0.00978	J	ND
Pesticides (mg/kg)			
4,4'-DDD	**0.00775**		ND
Herbicides (mg/kg)			
2,4-D	ND		ND
Metals (mg/kg)			
Arsenic	**14**		**16**
Copper	**140**		**57**
Lead	**210**		**290**
Mercury	**0.31**		**1.4**
Zinc	**690**		**170**
General Chemistry (mg/kg)			
Total Cyanide	ND		ND

B14		
Sample ID	**B14 (2-3.5)**	**B14 (6-8)**
Lab Sample ID	**0306117-15**	**0306117-16**
Sample Date	**6/26/2003**	**6/26/2003**
Sample Depth (ft)	**2 to 3.5**	**6 to 8**
VOCs (mg/kg)		
Total VOCs	NE	ND
SVOCs (mg/kg)		
Total SVOCs	2.82	ND
PCBs (mg/kg)		
Total PCBs	ND	ND
Pesticides (mg/kg)		
Total Pesticides	ND	ND
Metals (mg/kg)		
Barium	**518**	NE
Copper	**71.7**	NE
Lead	**1870**	NE
Mercury	**0.422**	ND
Zinc	**586**	NE
General Chemistry (mg/kg)		
Cyanide	NA	NA

SB-19			
Sample ID	**SB-19_0-2**	**SB-19_7-9**	**SODUP02_7-9**
Lab Sample ID	**L1404172-01**	**L1404172-02**	**L1404172-07**
Sample Date	**2/26/2014**	**2/26/2014**	**2/26/2014**
Sample Depth (ft)	**0 to 2**	**7 to 9**	**7 to 9**
VOCs (mg/kg)			
Total VOCs	NE	NE	NE
SVOCs (mg/kg)			
Benzo(a)anthracene	**1.3**	NE	NE
Benzo(a)pyrene	**1.6**	NE	ND
Benzo(b)fluoranthene	**1.8**	NE	NE
Chrysene	**1.3**	NE	NE
Indeno(1,2,3-cd)Pyrene	**1.2**	NE	ND
Total SVOCs	14.497 J	0.665 J	0.371 J
PCBs (mg/kg)			
Total PCBs	ND	ND	ND
Pesticides (mg/kg)			
Total Pesticides	ND	ND	ND
Herbicides (mg/kg)			
2,4-D	ND	ND	ND
Metals (mg/kg)			
Arsenic	**25**	NE	NE
Copper	**80**	NE	NE
Lead	**1800**	**87**	**82**
Mercury	**0.4**	**0.28**	**0.42**
General Chemistry (mg/kg)			
Total Cyanide	ND	NE	ND

LEGEND

- PARCEL G2 (LOT 60, P/O LOT 50, P/O LOT 65 OF BLOCK 2472)
- PARCEL G1 (LOT 65 OF BLOCK 2472)
- PARCEL F (LOT 50 OF BLOCK 2472)
- APPROXIMATE AREA OF NEW BUILDING FOOTPRINT (BUILDING G2)
- B14 — SOIL BORING LOCATION AND ID (AKRF 2003)
- SB-23 — SOIL BORING LOCATION AND ID (LANGAN 2014)

GENERAL NOTES

1. BASE MAP SOURCE: LANGAN DRAWINGS SITE SURVEY "170229001-V-EX0101 AND CIVIL "170229001-C-SP0101-L&M."
2. SOIL BORING LOCATIONS WERE LOCATED BY GPS.
3. NORTH ARROWS SHOWS TRUE NORTH.
4. SOIL SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NYSDEC NYCRR PART 375-6.8(A,B) UNRESTRICTED USE AND RESTRICTED USE RESTRICTED-RESIDENTIAL SOIL CLEANUP OBJECTIVES (SCO) (TABLE 1).
5. ONLY ANALYTES WITH DETECTIONS ARE SHOWN. NYSDEC PART 375-6.8(A) UNRESTRICTED USE SCO EXCEEDANCES ARE SHADED AND BOLDED BLACK.
6. NYSDEC PART 375-6.8(B) RESTRICTED-RESIDENTIAL SCO EXCEEDANCES ARE SHADED AND BOLDED RED.
7. VOC – VOLATILE ORGANIC COMPOUND
8. SVOC – SEMIVOLATILE ORGANIC COMPOUND
9. PCB – POLYCHLORINATED BIPHENYL
10. mg/kg – MILLIGRAMS PER KILOGRAM
11. NA – NOT ANALYZED
12. NE – NO EXCEEDANCE OF CRITERIA
13. ND – NOT DETECTED
14. "~" – CRITERIA DOES NOT EXIST
15. J – THE ANALYTE WAS DETECTED ABOVE THE METHOD DETECTION LIMIT BUT BELOW THE REPORTING LIMIT; THEREFORE, THE RESULT ISAN ESTIMATED CONCENTRATION.

TABLE 1

Analyte	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted-Residential Use SCO
VOCs (mg/kg)		
SVOCs (mg/kg)		
Benzo(a)anthracene	1	1
Benzo(a)pyrene	1	1
Benzo(b)fluoranthene	1	1
Benzo(k)fluoranthene	0.8	3.9
Chrysene	1	3.9
Dibenzo(a,h)anthracene	0.33	0.33
Dibenzofuran	7	59
Indeno(1,2,3-c,d)pyrene	0.50	0.50
PCB (mg/kg)		
Total PCBs	0.1	1
Pesticides (mg/kg)		
4,4'-DDD	0.0033	13
Herbicides (mg/kg)		
2,4-D	~	~
Metals (mg/kg)		
Arsenic	13	16
Barium	350	400
Copper	50	270
Lead	63	400
Mercury	0.18	0.81
Zinc	109	10000
General Chemistry (mg/kg)		
Total Cyanide	27	27

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Project
GREENPOINT LANDING
Block 2472, Lot 60
BROOKLYN
KINGS NEW YORK

Drawing Title
PREVIOUS SOIL ANALYTICAL RESULTS
PARCEL G2

Project No. 170229002
Date 6/11/2014
Scale 1" = 50'
Drawn By GCW | Checked By MSR
Submission Date 6/11/2014

Drawing No. 3
Sheet 3 of 9

Filename: \\langan.com\data\NY\data0\170229001\Cadd Data - 170229001\SheetFiles\Environmental-Supplemental RI Reports\Supplemental RI Report - Building G2\Previous Soil Results Tag Map - Building G2 - 2.dwg Date: 6/11/2014 Time: 13:21 User: gwyka
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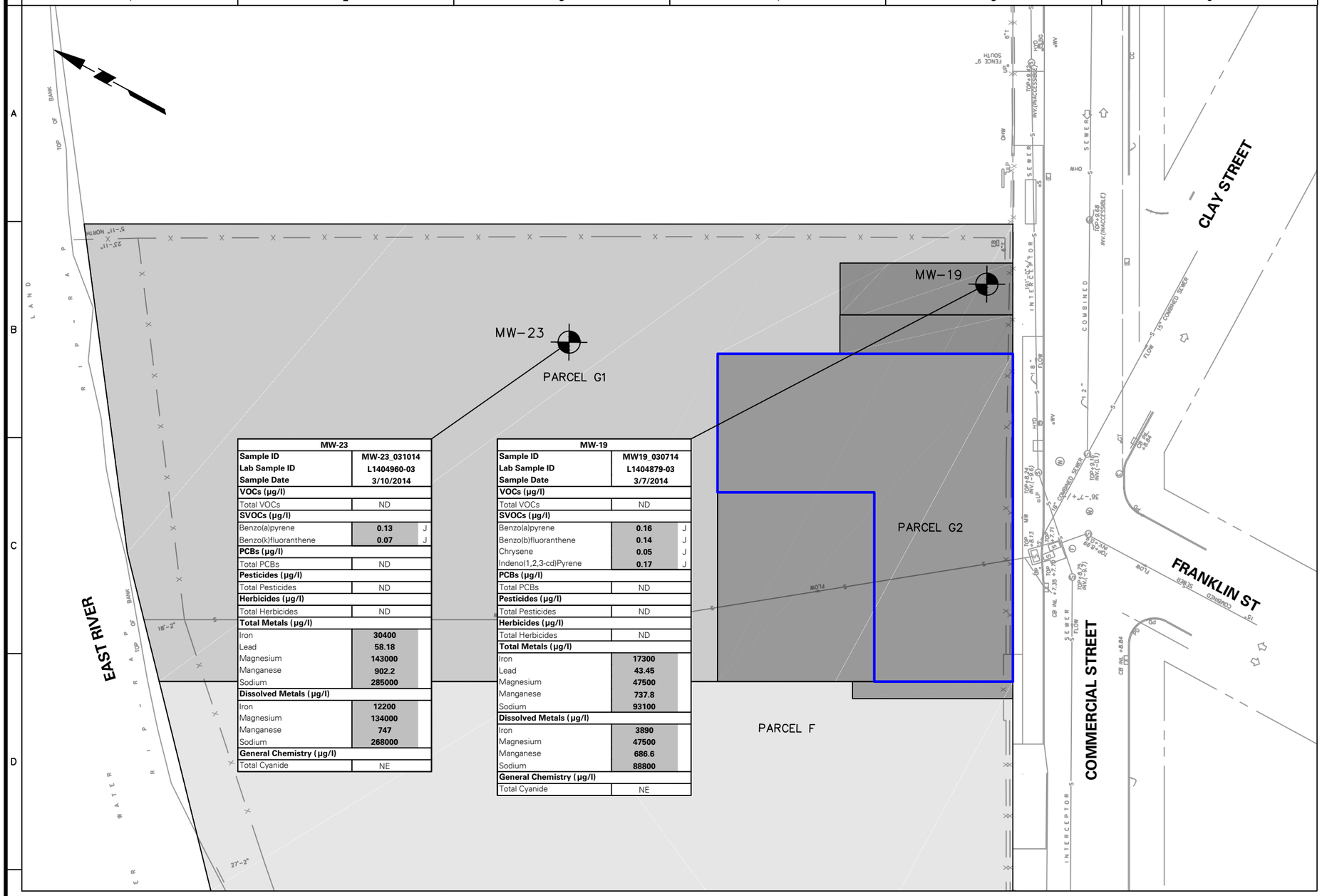

MW-23	
Sample ID	**MW-23_031014**
Lab Sample ID	**L1404960-03**
Sample Date	**3/10/2014**
VOCs (µg/l)	
Total VOCs	ND
SVOCs (µg/l)	
Benzo(a)pyrene	**0.13** J
Benzo(k)fluoranthene	**0.07** J
PCBs (µg/l)	
Total PCBs	ND
Pesticides (µg/l)	
Total Pesticides	ND
Herbicides (µg/l)	
Total Herbicides	ND
Total Metals (µg/l)	
Iron	**30400**
Lead	**58.18**
Magnesium	**143000**
Manganese	**902.2**
Sodium	**285000**
Dissolved Metals (µg/l)	
Iron	**12200**
Magnesium	**134000**
Manganese	**747**
Sodium	**268000**
General Chemistry (µg/l)	
Total Cyanide	NE

MW-19	
Sample ID	**MW19_030714**
Lab Sample ID	**L1404879-03**
Sample Date	**3/7/2014**
VOCs (µg/l)	
Total VOCs	ND
SVOCs (µg/l)	
Benzo(a)pyrene	**0.16** J
Benzo(b)fluoranthene	**0.14** J
Chrysene	**0.05** J
Indeno(1,2,3-cd)Pyrene	**0.17** J
PCBs (µg/l)	
Total PCBs	ND
Pesticides (µg/l)	
Total Pesticides	ND
Herbicides (µg/l)	
Total Herbicides	ND
Total Metals (µg/l)	
Iron	**17300**
Lead	**43.45**
Magnesium	**47500**
Manganese	**737.8**
Sodium	**93100**
Dissolved Metals (µg/l)	
Iron	**3890**
Magnesium	**47500**
Manganese	**686.6**
Sodium	**88800**
General Chemistry (µg/l)	
Total Cyanide	NE

LEGEND

- PARCEL G2 (LOT 60, P/O LOT 50, P/O LOT 65 OF BLOCK 2472)
- PARCEL G1 (LOT 65 OF BLOCK 2472)
- PARCEL F (LOT 50 OF BLOCK 2472)
- APPROXIMATE AREA OF NEW BUILDING FOOTPRINT (BUILDING G2)
- MW-19 — MONITORING WELL LOCATION AND ID (LANGAN 2014)

GENERAL NOTES

1. BASE MAP SOURCE: LANGAN DRAWINGS SITE SURVEY "170229001-V-EX0101" AND CIVIL "170229001-C-SP0101-L&M."
2. SAMPLING LOCATIONS WERE SURVEYED BY LANGAN
3. NORTH ARROW SHOWS TRUE NORTH.
4. GROUNDWATER SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TECHNICAL AND OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1 AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES FOR (SGVs) CLASS GA WATER-TABLE 1.
5. ONLY ANALYTES WITH DETECTIONS ARE SHOWN.
6. NYSDEC TOGS 1.1.1 SGVs EXCEEDANCES ARE HIGHLIGHTED AND BOLDED.
7. VOC – VOLATILE ORGANIC COMPOUND
8. SVOC – SEMIVOLATILE ORGANIC COMPOUND
9. PCB – POLYCHLORINATED BIPHENYL
10. (µg/l) – MICROGRAM PER LITER
11. NE – NO EXCEEDANCE OF CRITERIA
12. ND – NOT DETECTED
13. "~" – CRITERIA DOES NOT EXIST
14. J – THE ANALYTE WAS DETECTED ABOVE THE METHOD DETECTION LIMIT BUT BELOW THE REPORTING LIMIT; THEREFORE, THE RESULT IS AN ESTIMATED CONCENTRATION.

TABLE 1

Analyte	NYSDEC TOGS Standards and Guidance Values - GA
VOCs (µg/l)	
SVOCs (µg/l)	
Benzo(a)pyrene	0
Benzo(b)fluoranthene	0.002
Benzo(k)fluoranthene	0.002
Chrysene	0.002
Indeno(1,2,3-cd)Pyrene	0.002
PCB (µg/l)	
Total PCBs	0.09
Pesticides (µg/l)	
Total Pesticides	~
Herbicides (µg/l)	
Total Herbicides	~
Total Metals (µg/l)	
Iron	300
Lead	25
Magnesium	35000
Manganese	300
Sodium	20000
Dissolved Metals (µg/l)	
Iron	300
Magnesium	35000
Manganese	300
Sodium	20000
General Chemistry (µg/l)	
Total Cyanide	200

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Project
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Block 2472, Lot 60
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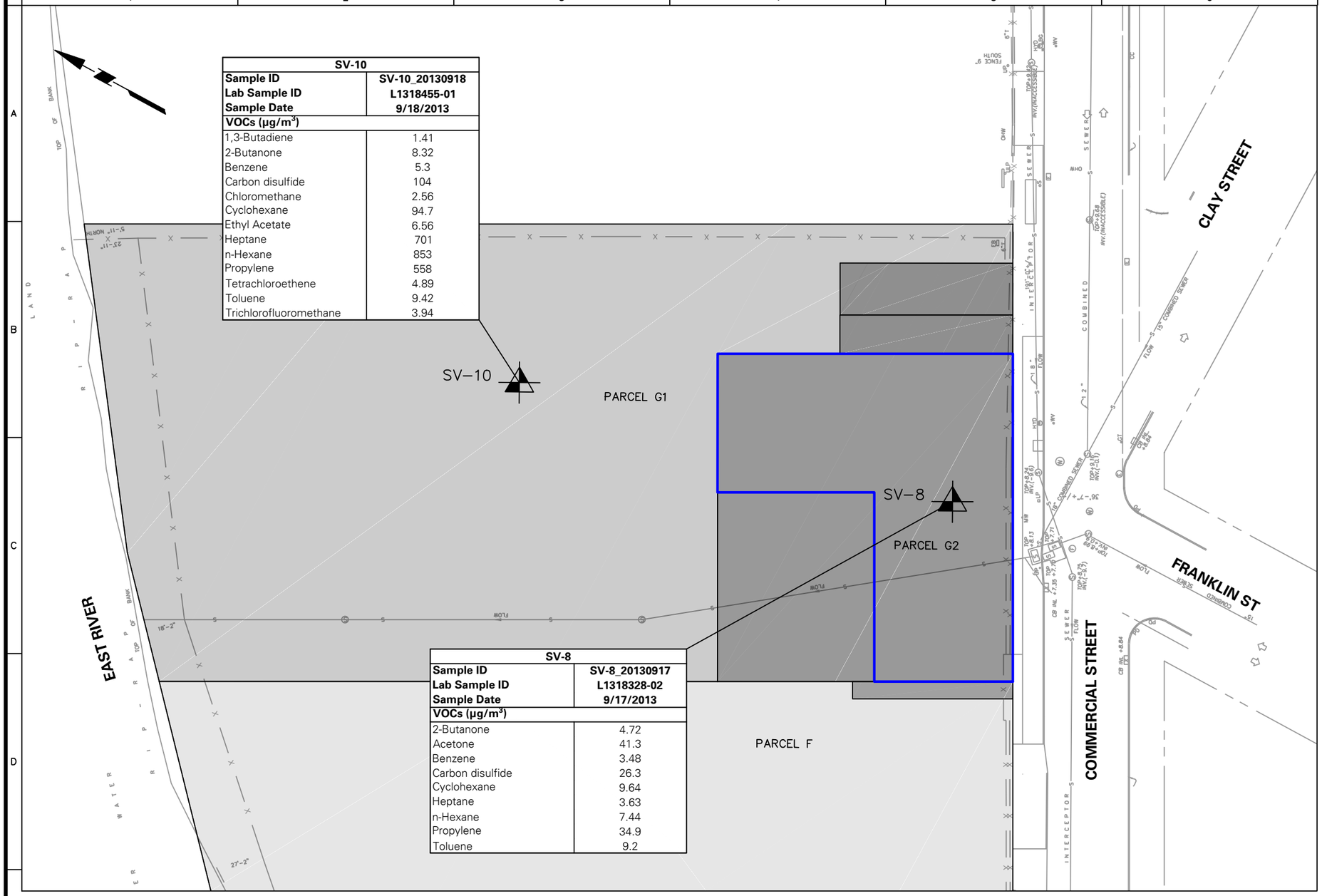
KINGS NEW YORK

Drawing Title
PREVIOUS GROUNDWATER ANALYTICAL RESULTS
PARCEL G2

Project No. 170229002	Drawing No. 4
Date 6/11/2014	
Scale 1" = 50'	
Drawn By GCW / Checked By MSR	
Submission Date 6/11/2014	Sheet 4 of 9

Filename: \\langan.com\data\NY\data0\170229001\Cadd Data - 170229001\SheetFiles\Environmental-Supplemental RI Reports\Supplemental RI Report - Building G2\Previous Groundwater Results Tag Map - Building G2 - 2.dwg Date: 6/11/2014 Time: 13:21 User: gwyka Style Table: Langan.stb Layout: ANSIB-BL



LEGEND

- PARCEL G2 (LOT 60, P/O LOT 50, P/O LOT 65 OF BLOCK 2472)
- PARCEL G1 (LOT 65 OF BLOCK 2472)
- PARCEL F (LOT 50 OF BLOCK 2472)
- APPROXIMATE AREA OF NEW BUILDING FOOTPRINT (BUILDING G2)
- SV-8 — SOIL VAPOR SAMPLING LOCATION AND ID (LANGAN 2013)

GENERAL NOTES

1. BASE MAP SOURCE: DRAWING "130215_FULL-SITE-OPEN-SPACE" PROVIDED BY HANDEL ARCHITECTS, LLP.
2. SAMPLING LOCATIONS WERE SURVEYED BY LANGAN.
3. NORTH ARROW SHOWS TRUE NORTH
4. SOIL VAPOR SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH) AIR GUIDANCE VALUE (AGV).
5. ALL DETECTIONS ARE SHOWN ON THE FIGURE.
6. SOIL VAPOR RESULTS DID NOT EXCEED NYSDOH AGVs.
7. VOCs = VOLATILE ORGANIC COMPOUNDS
8. $\mu g/m^3$ = MICROGRAMS PER CUBIC METER
9. DATUM IS BOROUGH OF BROOKLYN HIGHWAY DATUM (BBHD), WHICH IS 2.56 FEET ABOVE MEAN SEA LEVEL DATUM AT SANDY HOOK, NEW JERSEY AS DEFINED BY THE UNITED STATES GEOLOGICAL SURVEY (USGS NGVD 1929).

TABLE 1

Compound name	NYSDOH AGV
VOCs (µg/m³)	
1,3-Butadiene	~
2-Butanone	~
Acetone	~
Benzene	~
Carbon disulfide	~
Chloromethane	~
Cyclohexane	~
Ethyl Acetate	~
Heptane	~
n-Hexane	~
Tetrachloroethene	30
Toluene	~
Trichloroethene	5
Trichlorofluoromethane	~

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Project
GREENPOINT LANDING
Block 2472, Lot 60
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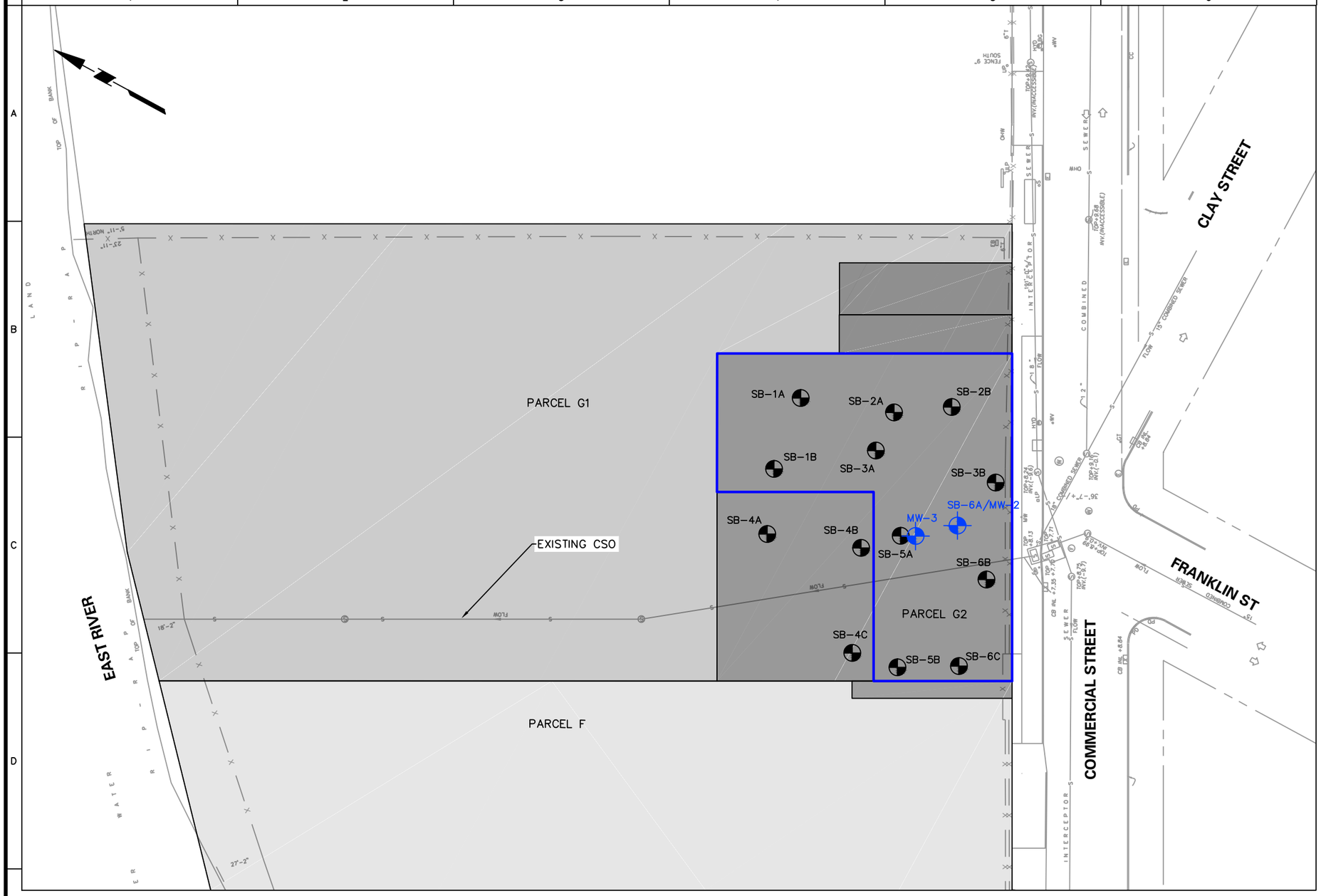
KINGS NEW YORK

Drawing Title
PREVIOUS SOIL VAPOR ANALYTICAL RESULTS
PARCEL G2

Project No. 170229002	Drawing No. 5
Date 6/11/2014	
Scale 1" = 50'	
Drawn By GCW / Checked By MSR	
Submission Date 6/11/2014	Sheet 5 of 9

Filename: \\langan.com\data\NY\data0\170229001\Cadd Data - 170229001\SheetFiles\Environmental-Supplemental RI Reports\Supplemental RI Report - Building G2\Previous Soil Vapor Results Tag Map - Building G2 - 2.dwg Date: 6/11/2014 Time: 13:19 User: gwyka Style Table: Langan.stb Layout: ANSIB-BL



LEGEND

- PARCEL G2 (LOT 60, P/O LOT 50, P/O LOT 65 OF BLOCK 2472)
- PARCEL G1 (LOT 65 OF BLOCK 2472)
- PARCEL F (LOT 50 OF BLOCK 2472)
- APPROXIMATE AREA OF NEW BUILDING FOOTPRINT (BUILDING G2)
- SB-1A — SOIL BORING LOCATION AND ID (LANGAN 2013)
- MW-3 — MONITORING WELL LOCATION AND ID

GENERAL NOTES

1. BASE PLANS TAKEN FROM LANGAN DRAWINGS: UTILITY DRAWING "170229001-C-UI0101"AND SITE SURVEY "170229001-V-EX0101
2. NORTH ARROW SHOWS TRUE NORTH.
3. SOIL BORING LOCATIONS WERE LOCATED BY GPS.
4. SOIL BORINGS AND MONITORING WELLS WERE COMPLETED BY LANGAN IN SEPTEMBER 2013 AS PART OF WASTE CHARACTERIZATION INVESTIGATION OF PARCEL G2.
5. WASTE CHARACTERIZATION SAMPLING FOR BUILDING G2 CONSISTED OF SHALLOW APPROX. 500-CY CELLS FROM 0 TO 5 FEET BELOW GRADE SURFACE AND ONE DEEP APPROX. 500-CY CELL FROM 5 TO 10 FEET BELOW GRADE SURFACE.
6. MW-2 WAS INSTALLED WITHIN THE FOOTPRINT OF BUILDING G2. A GROUNDWATER SAMPLE WAS COLLECTED FROM MW-3, A WELL FOUND AT THE SITE, BECAUSE MW-2 WAS DEEMED NOT VIABLE. THE GROUNDWATER SAMPLE WAS COLLECTED USING USEPA LOW FLOW SAMPLING METHODS AND ANALYZED FOR NYCDEP AND NYSDEC SPDES PARAMETERS.
7. DATUM IS BOROUGH OF BROOKLYN HIGHWAY DATUM (BBHD), WHICH IS 2.56 FEET ABOVE MEAN SEA LEVEL DATUM AT SANDY HOOK, NEW JERSEY AS DEFINED BY THE UNITED STATES GEOLOGICAL SURVEY (USGS NGVD 1929).

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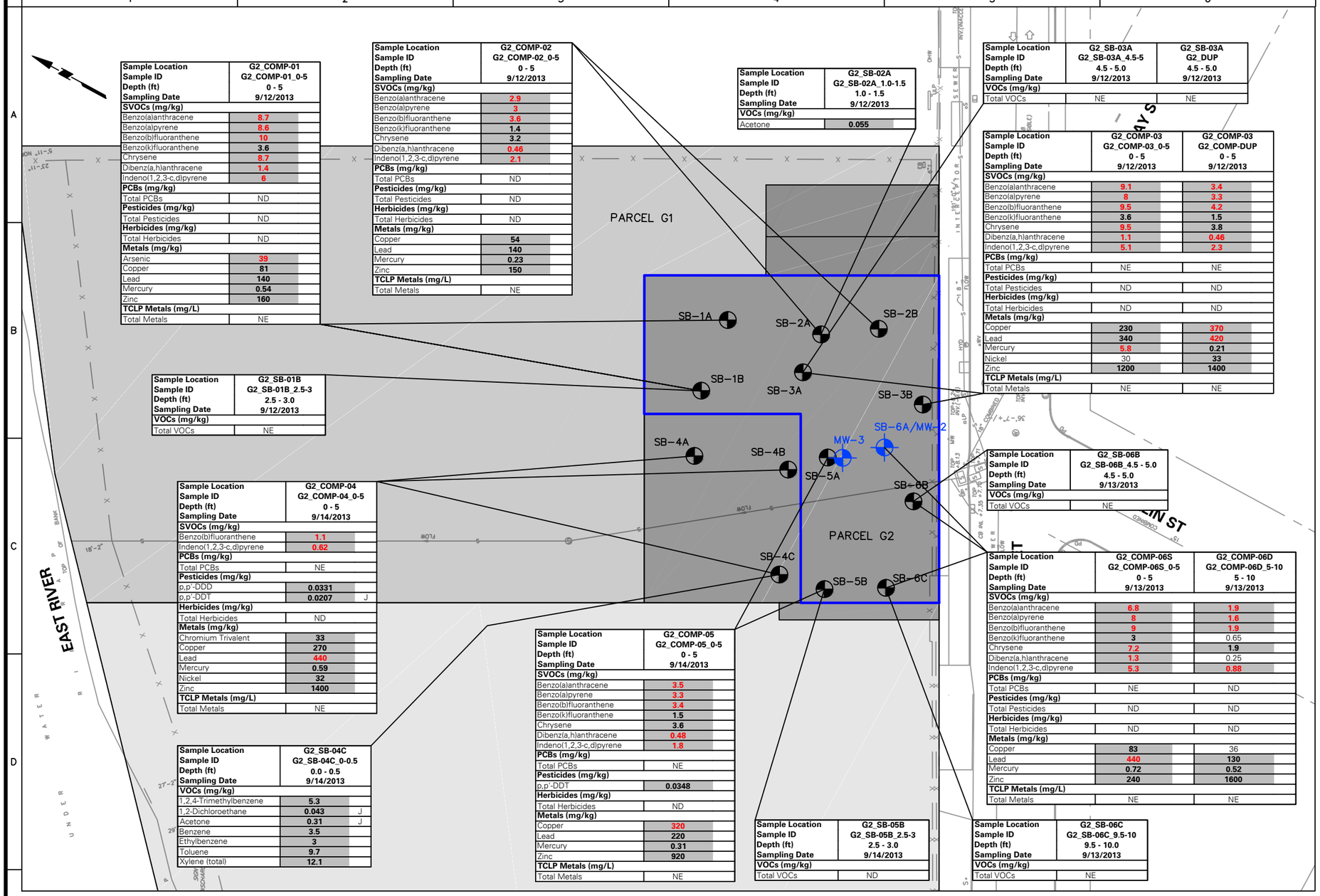
Langan International LLC
Collectively known as Langan

Project
GREENPOINT LANDING
Block 2472, Lot 60
BROOKLYN
KINGS NEW YORK

Drawing Title
WASTE CHARACTERIZATION BORING LOCATION PLAN
PARCEL G2

Project No. 170229002	Drawing No. 6
Date 6/11/2014	
Scale 1" = 50'	
Drawn By GCW / Checked By MSR	
Submission Date 6/11/2014	Sheet 6 of 9

Filename: \\langan.com\data\NY\data0\170229001\Cadd Data - 170229001\SheetFiles\Environmental-Supplemental RI Reports\Supplemental RI Report - Building G2\WC Boring Location Plan - Building G2.dwg Date: 6/11/2014 Time: 13:17 User: gwyka Style Table: Langan.stb Layout: ANSIB-BL



Sample Location	G2_COMP-01
Sample ID	G2_COMP-01_0-5
Depth (ft)	0 - 5
Sampling Date	9/12/2013
SVOCs (mg/kg)	
Benzo(a)anthracene	8.7
Benzo(a)pyrene	8.6
Benzo(b)fluoranthene	10
Benzo(k)fluoranthene	3.6
Chrysene	8.7
Dibenz(a,h)anthracene	1.4
Indeno(1,2,3-c,d)pyrene	6
PCBs (mg/kg)	
Total PCBs	ND
Pesticides (mg/kg)	
Total Pesticides	ND
Herbicides (mg/kg)	
Total Herbicides	ND
Metals (mg/kg)	
Arsenic	39
Copper	81
Lead	140
Mercury	0.54
Zinc	160
TCLP Metals (mg/L)	
Total Metals	NE

Sample Location	G2_COMP-02
Sample ID	G2_COMP-02_0-5
Depth (ft)	0 - 5
Sampling Date	9/12/2013
SVOCs (mg/kg)	
Benzo(a)anthracene	2.9
Benzo(a)pyrene	3
Benzo(b)fluoranthene	3.6
Benzo(k)fluoranthene	1.4
Chrysene	3.2
Dibenz(a,h)anthracene	0.46
Indeno(1,2,3-c,d)pyrene	2.1
PCBs (mg/kg)	
Total PCBs	ND
Pesticides (mg/kg)	
Total Pesticides	ND
Herbicides (mg/kg)	
Total Herbicides	ND
Metals (mg/kg)	
Copper	54
Lead	140
Mercury	0.23
Zinc	150
TCLP Metals (mg/L)	
Total Metals	NE

Sample Location	G2_SB-02A
Sample ID	G2_SB-02A_1.0-1.5
Depth (ft)	1.0 - 1.5
Sampling Date	9/12/2013
VOCs (mg/kg)	
Acetone	0.055

Sample Location	G2_SB-03A	G2_SB-03A
Sample ID	G2_SB-03A_4.5-5	G2_DUP
Depth (ft)	4.5 - 5.0	4.5 - 5.0
Sampling Date	9/12/2013	9/12/2013
VOCs (mg/kg)		
Total VOCs	NE	NE

Sample Location	G2_COMP-03	G2_COMP-03
Sample ID	G2_COMP-03_0-5	G2_COMP-DUP
Depth (ft)	0 - 5	0 - 5
Sampling Date	9/12/2013	9/12/2013
SVOCs (mg/kg)		
Benzo(a)anthracene	9.1	3.4
Benzo(a)pyrene	8	3.3
Benzo(b)fluoranthene	9.5	4.2
Benzo(k)fluoranthene	3.6	1.5
Chrysene	9.5	3.8
Dibenz(a,h)anthracene	1.1	0.46
Indeno(1,2,3-c,d)pyrene	5.1	2.3
PCBs (mg/kg)		
Total PCBs	NE	NE
Pesticides (mg/kg)		
Total Pesticides	ND	ND
Herbicides (mg/kg)		
Total Herbicides	ND	ND
Metals (mg/kg)		
Copper	230	370
Lead	340	420
Mercury	5.8	0.21
Nickel	30	33
Zinc	1200	1400
TCLP Metals (mg/L)		
Total Metals	NE	NE

Sample Location	G2_SB-01B
Sample ID	G2_SB-01B_2.5-3
Depth (ft)	2.5 - 3.0
Sampling Date	9/12/2013
VOCs (mg/kg)	
Total VOCs	NE

Sample Location	G2_SB-06B
Sample ID	G2_SB-06B_4.5 - 5.0
Depth (ft)	4.5 - 5.0
Sampling Date	9/13/2013
VOCs (mg/kg)	
Total VOCs	NE

Sample Location	G2_COMP-04	
Sample ID	G2_COMP-04_0-5	
Depth (ft)	0 - 5	
Sampling Date	9/14/2013	
SVOCs (mg/kg)		
Benzo(b)fluoranthene	1.1	
Indeno(1,2,3-c,d)pyrene	0.62	
PCBs (mg/kg)		
Total PCBs	NE	
Pesticides (mg/kg)		
p,p'-DDD	0.0331	
p,p'-DDT	0.0207	J
Herbicides (mg/kg)		
Total Herbicides	ND	
Metals (mg/kg)		
Chromium Trivalent	33	
Copper	270	
Lead	440	
Mercury	0.59	
Nickel	32	
Zinc	1400	
TCLP Metals (mg/L)		
Total Metals	NE	

Sample Location	G2_COMP-05
Sample ID	G2_COMP-05_0-5
Depth (ft)	0 - 5
Sampling Date	9/14/2013
SVOCs (mg/kg)	
Benzo(a)anthracene	3.5
Benzo(a)pyrene	3.3
Benzo(b)fluoranthene	3.4
Benzo(k)fluoranthene	1.5
Chrysene	3.6
Dibenz(a,h)anthracene	0.48
Indeno(1,2,3-c,d)pyrene	1.8
PCBs (mg/kg)	
Total PCBs	NE
Pesticides (mg/kg)	
p,p'-DDT	0.0348
Herbicides (mg/kg)	
Total Herbicides	ND
Metals (mg/kg)	
Copper	320
Lead	220
Mercury	0.31
Zinc	920
TCLP Metals (mg/L)	
Total Metals	NE

Sample Location	G2_COMP-06S	G2_COMP-06D
Sample ID	G2_COMP-06S_0-5	G2_COMP-06D_5-10
Depth (ft)	0 - 5	5 - 10
Sampling Date	9/13/2013	9/13/2013
SVOCs (mg/kg)		
Benzo(a)anthracene	6.8	1.9
Benzo(a)pyrene	8	1.6
Benzo(b)fluoranthene	9	1.9
Benzo(k)fluoranthene	3	0.65
Chrysene	7.2	1.9
Dibenz(a,h)anthracene	1.3	0.25
Indeno(1,2,3-c,d)pyrene	5.3	0.88
PCBs (mg/kg)		
Total PCBs	NE	ND
Pesticides (mg/kg)		
Total Pesticides	ND	ND
Herbicides (mg/kg)		
Total Herbicides	ND	ND
Metals (mg/kg)		
Copper	83	36
Lead	440	130
Mercury	0.72	0.52
Zinc	240	1600
TCLP Metals (mg/L)		
Total Metals	NE	NE

Sample Location	G2_SB-04C
Sample ID	G2_SB-04C_0-0.5
Depth (ft)	0.0 - 0.5
Sampling Date	9/14/2013
VOCs (mg/kg)	
1,2,4-Trimethylbenzene	5.3
1,2-Dichloroethane	0.043 J
Acetone	0.31 J
Benzene	3.5
Ethylbenzene	3
Toluene	9.7
Xylene (total)	12.1

Sample Location	G2_SB-05B
Sample ID	G2_SB-05B_2.5-3
Depth (ft)	2.5 - 3.0
Sampling Date	9/14/2013
VOCs (mg/kg)	
Total VOCs	ND

Sample Location	G2_SB-06C
Sample ID	G2_SB-06C_9.5-10
Depth (ft)	9.5 - 10.0
Sampling Date	9/13/2013
VOCs (mg/kg)	
Total VOCs	NE

LEGEND

- PARCEL G2 (LOT 60, P/O LOT 50, P/O LOT 65 OF BLOCK 2472)
- PARCEL G1 (LOT 65 OF BLOCK 2472)
- PARCEL F (LOT 50 OF BLOCK 2472)
- APPROXIMATE AREA OF NEW BUILDING FOOTPRINT (BUILDING G2)
- SB-1A — SOIL BORING LOCATION AND ID (LANGAN 2013)
- MW-3 — MONITORING WELL LOCATION AND ID

GENERAL NOTES

1. BASE MAP SOURCE: LANGAN DRAWINGS SITE SURVEY "170229001-V-EX0101 AND CIVIL "170229001-C-SP0101-L&M."
2. SOIL BORING LOCATIONS WERE LOCATED BY GPS.
3. NORTH ARROWS SHOWS TRUE NORTH.
4. SOIL SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NYSDEC NYCRR PART 375-6.8(A,B) UNRESTRICTED USE AND RESTRICTED USE RESTRICTED-RESIDENTIAL SOIL CLEANUP OBJECTIVES (SCO) (TABLE 1).
5. ONLY ANALYTES WITH DETECTIONS ARE SHOWN. NYSDEC PART 375-6.8(A) UNRESTRICTED USE SCO EXCEEDANCES ARE SHADED AND BOLDED BLACK.
6. NYSDEC PART 375-6.8(B) RESTRICTED-RESIDENTIAL SCO EXCEEDANCES ARE SHADED AND BOLDED RED.
7. VOC – VOLATILE ORGANIC COMPOUND
8. SVOC – SEMIVOLATILE ORGANIC COMPOUND
9. PCB – POLYCHLORINATED BIPHENYL
10. mg/kg – MILLIGRAMS PER KILOGRAM
11. NA – NOT ANALYZED
12. NE – NO EXCEEDANCE OF CRITERIA
13. ND – NOT DETECTED
14. "~" – CRITERIA DOES NOT EXIST
15. J – THE ANALYTE WAS DETECTED ABOVE THE METHOD DETECTION LIMIT BUT BELOW THE REPORTING LIMIT; THEREFORE, THE RESULT IS AN ESTIMATED CONCENTRATION.
16. RCRA CHARACTERISTICS AND TOTAL PETROLEUM HYDROCARBON (TPH) GASOLINE RANGE ORGANICS (GRO) AND DIESEL RANGE ORGANICS (DRO) RESULTS ARE NOT SHOWN ON THIS FIGURE.

TABLE 1	NYSDEC PART 375 UNRESTRICTED SCO	NYSDEC PART 375 RESTRICTED RESIDENTIAL SCO
VOCs (mg/kg)		
1,2,4-Trimethylbenzene	3.6	52
1,2-Dichloroethane	0.02	3.1
Acetone	0.05	100
Benzene	0.06	4.8
Ethylbenzene	1	41
Toluene	0.7	100
Xylene (total)	0.26	100
SVOCs (mg/kg)		
Benzo(a)anthracene	1	1
Benzo(a)pyrene	1	1
Benzo(b)fluoranthene	1	1
Benzo(k)fluoranthene	0.8	3.9
Chrysene	1	3.9
Dibenz(a,h)anthracene	0.33	0.33
Indeno(1,2,3-c,d)pyrene	0.5	0.5
Pesticides (mg/kg)		
p,p'-DDD	0.0033	13
p,p'-DDT	0.0033	7.9
Metals (mg/kg)		
Arsenic	13	16
Chromium Trivalent	30	180
Copper	50	270
Lead	63	400
Mercury	0.18	2.8
Nickel	30	310
Zinc	109	10000

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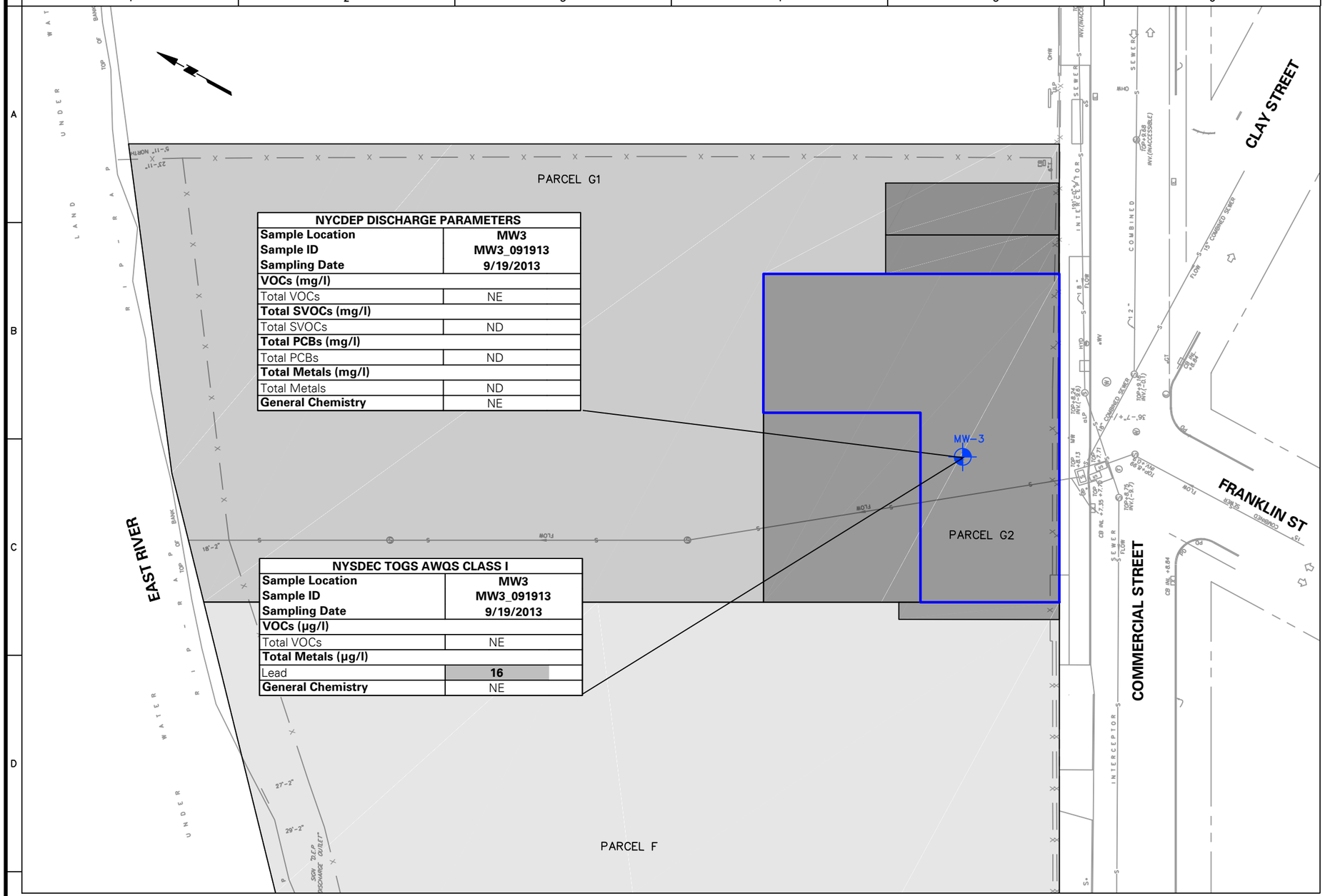
Project
GREENPOINT LANDING
Block 2472, Lot 60
BROOKLYN
KINGS NEW YORK

Drawing Title
WASTE CHARACTERIZATION SOIL SAMPLING RESULTS
PARCEL G2

Project No. 170229002
Date 6/11/2014
Scale 1" = 50'
Drawn By GCW | Checked By MSR
Submission Date 6/11/2014
Drawing No. 7
Sheet 7 of 9

Filename: \\langan.com\data\NY\data0\170229001\Cadd Data - 170229001\SheetFiles\Environmental-Supplemental RI Reports\Supplemental RI Report - Building G2\WC Tag Map - Building G2.dwg Date: 6/11/2014 Time: 14:05 User: gwyka Style Table: Langan.stb Layout: ANSIB-BL



NYCDEP DISCHARGE PARAMETERS	
Sample Location	**MW3**
Sample ID	**MW3_091913**
Sampling Date	**9/19/2013**
VOCs (mg/l)	
Total VOCs	NE
Total SVOCs (mg/l)	
Total SVOCs	ND
Total PCBs (mg/l)	
Total PCBs	ND
Total Metals (mg/l)	
Total Metals	ND
General Chemistry	NE

NYSDEC TOGS AWQS CLASS I	
Sample Location	**MW3**
Sample ID	**MW3_091913**
Sampling Date	**9/19/2013**
VOCs (µg/l)	
Total VOCs	NE
Total Metals (µg/l)	
Lead	**16**
General Chemistry	NE

LEGEND

- PARCEL G2 (LOT 60, P/O LOT 50, P/O LOT 65 OF BLOCK 2472)
- PARCEL G1 (LOT 65 OF BLOCK 2472)
- PARCEL F (LOT 50 OF BLOCK 2472)
- APPROXIMATE AREA OF NEW BUILDING FOOTPRINT (BUILDING G2)
- MW-3 — MONITORING WELL LOCATION AND ID

GENERAL NOTES

1. BASE MAP SOURCE: LANGAN DRAWINGS SITE SURVEY "170229001-V-EX0101 AND CIVIL "170229001-C-SP0101-L&M."
2. MONITORING WELL LOCATION WAS LOCATED BY GPS.
3. NORTH ARROWS SHOWS TRUE NORTH.
4. GROUNDWATER SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NYCDEP) LIMITATIONS FOR EFFLUENT TO SANITARY OR COMBINED SEWERS AND THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TECHNICAL AND OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1 AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES (SGV) CLASS I (TABLE 1).
5. ONLY ANALYTES WITH DETECTIONS ARE SHOWN.
6. NYSDEC TOGS 1.1.1 AMBIENT WATER QUALITY SGV CLASS I EXCEEDANCES ARE SHADED AND BOLDED BLACK
7. THERE WERE NO REPORTED EXCEEDANCES OF NYCDEP LIMITATIONS FOR EFFLUENT TO SANITARY OR COMBINED SEWERS.
8. VOC – VOLATILE ORGANIC COMPOUND
9. SVOC – SEMIVOLATILE ORGANIC COMPOUND
10. PCB – POLYCHLORINATED BIPHENYL
11. µg/l – MICROGRAM PER LITER
12. mg/l – MILLIGRAM PER LITER
13. NA – NOT ANALYZED
14. NE – NO EXCEEDANCE OF CRITERIA
15. ND – NOT DETECTED

TABLE 1	
NYSDEC TOGS AWQS CLASS I	
Total Metals (µg/l)	
Lead	8

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Block 2472, Lot 60
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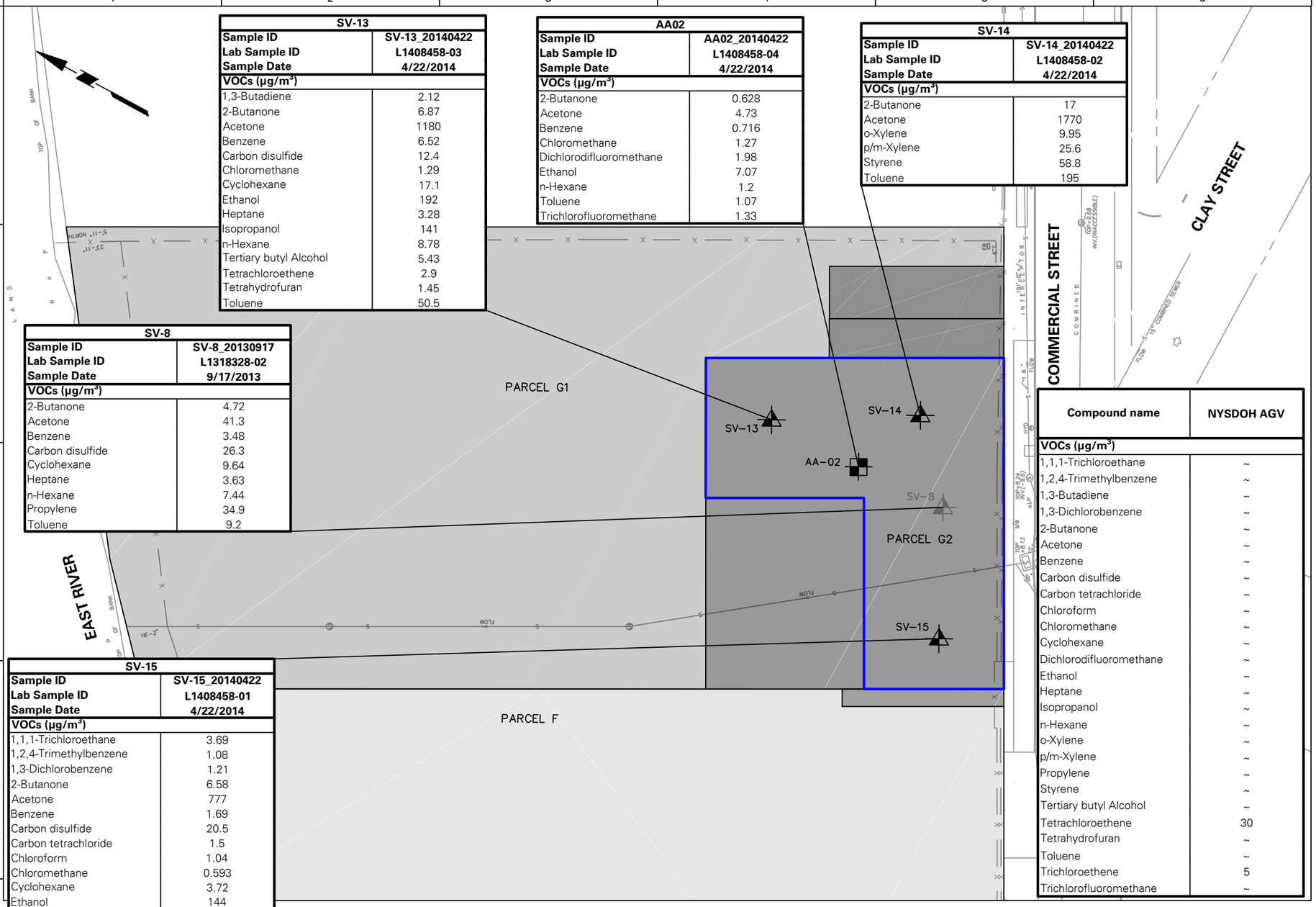
Drawing Title
WASTE CHARACTERIZATION GROUNDWATER SAMPLING RESULTS
PARCEL G2

Project No. 170229002	Drawing No. 8
Date 6/11/2014	
Scale 1" = 50'	
Drawn By GCW / Checked By MSR	
Submission Date 6/11/2014	Sheet 8 of 9

Filename: \\langan.com\data\NY\data0\170229001\Cadd Data - 170229001\SheetFiles\Environmental-Supplemental RI Reports\Supplemental RI Report - Building G2\WC Groundwater Tag Map - Building G2.dwg Date: 6/11/2014 Time: 16:23 User: gwyka Style Table: Langan.stb Layout: ANSIB-BL



SV-13	
Sample ID	**SV-13_20140422**
Lab Sample ID	**L1408458-03**
Sample Date	**4/22/2014**
VOCs (µg/m³)	
1,3-Butadiene	2.12
2-Butanone	6.87
Acetone	1180
Benzene	6.52
Carbon disulfide	12.4
Chloromethane	1.29
Cyclohexane	17.1
Ethanol	192
Heptane	3.28
Isopropanol	141
n-Hexane	8.78
Tertiary butyl Alcohol	5.43
Tetrachloroethene	2.9
Tetrahydrofuran	1.45
Toluene	50.5

AA02	
Sample ID	**AA02_20140422**
Lab Sample ID	**L1408458-04**
Sample Date	**4/22/2014**
VOCs (µg/m³)	
2-Butanone	0.628
Acetone	4.73
Benzene	0.716
Chloromethane	1.27
Dichlorodifluoromethane	1.98
Ethanol	7.07
n-Hexane	1.2
Toluene	1.07
Trichlorofluoromethane	1.33

SV-14	
Sample ID	**SV-14_20140422**
Lab Sample ID	**L1408458-02**
Sample Date	**4/22/2014**
VOCs (µg/m³)	
2-Butanone	17
Acetone	1770
o-Xylene	9.95
p/m-Xylene	25.6
Styrene	58.8
Toluene	195

SV-8	
Sample ID	**SV-8_20130917**
Lab Sample ID	**L1318328-02**
Sample Date	**9/17/2013**
VOCs (µg/m³)	
2-Butanone	4.72
Acetone	41.3
Benzene	3.48
Carbon disulfide	26.3
Cyclohexane	9.64
Heptane	3.63
n-Hexane	7.44
Propylene	34.9
Toluene	9.2

SV-15	
Sample ID	**SV-15_20140422**
Lab Sample ID	**L1408458-01**
Sample Date	**4/22/2014**
VOCs (µg/m³)	
1,1,1-Trichloroethane	3.69
1,2,4-Trimethylbenzene	1.08
1,3-Dichlorobenzene	1.21
2-Butanone	6.58
Acetone	777
Benzene	1.69
Carbon disulfide	20.5
Carbon tetrachloride	1.5
Chloroform	1.04
Chloromethane	0.593
Cyclohexane	3.72
Ethanol	144
Heptane	2.01
Isopropanol	131
n-Hexane	3.18
p/m-Xylene	2.24
Styrene	1.74
Tertiary butyl Alcohol	3.61
Tetrachloroethene	2.64
Tetrahydrofuran	1.29
Toluene	52.8
Trichloroethene	**5.48**

Compound name	NYSDOH AGV
VOCs (µg/m³)	
1,1,1-Trichloroethane	~
1,2,4-Trimethylbenzene	~
1,3-Butadiene	~
1,3-Dichlorobenzene	~
2-Butanone	~
Acetone	~
Benzene	~
Carbon disulfide	~
Carbon tetrachloride	~
Chloroform	~
Chloromethane	~
Cyclohexane	~
Dichlorodifluoromethane	~
Ethanol	~
Heptane	~
Isopropanol	~
n-Hexane	~
o-Xylene	~
p/m-Xylene	~
Propylene	~
Styrene	~
Tertiary butyl Alcohol	~
Tetrachloroethene	30
Tetrahydrofuran	~
Toluene	~
Trichloroethene	5
Trichlorofluoromethane	~

LEGEND

- PARCEL G2 (LOT 60, P/O LOT 50, P/O LOT 65 OF BLOCK 2472)
- PARCEL G1 (LOT 65 OF BLOCK 2472)
- PARCEL F (LOT 50 OF BLOCK 2472)
- APPROXIMATE AREA OF NEW BUILDING FOOTPRINT (BUILDING G2)
- SV–8 — SOIL VAPOR SAMPLING LOCATION AND ID (LANGAN 2013)
- SV–13 — SOIL VAPOR SAMPLING LOCATION AND ID (SUPPLEMENTAL RI)
- AA–02 — AMBIENT AIR SAMPLING LOCATION AND ID (SUPPLEMENTAL RI)

GENERAL NOTES

1. BASE PLANS TAKEN FROM LANGAN DRAWINGS: UTILITY DRAWING "170229001–C–UI0101"AND SITE SURVEY "170229001–V–EX0101
2. NORTH ARROW SHOWS TRUE NORTH.
3. SAMPLING LOCATIONS ARE WERE LOCATED BY GPS.
4. SOIL VAPOR SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH) AIR GUIDANCE VALUE (AGV). SEE REFERENCE TABLE.
5. ALL DETECTIONS ARE SHOWN ON THE FIGURE.
6. NYSDOH AGV EXCEEDANCES ARE SHADED AND BOLDED.
7. VOCs = VOLATILE ORGANIC COMPOUNDS
8. µg/m³ = MICROGRAMS PER CUBIC METER
9. ONE AMBIENT AIR SAMPLE: AA02–20140422 WAS COLLECTED; THE RESULTS DO NOT EXCEED THE NYSDOH AGV CRITERIA.
10. DATUM IS BOROUGH OF BROOKLYN HIGHWAY DATUM (BBHD), WHICH IS 2.56 FEET ABOVE MEAN SEA LEVEL DATUM AT SANDY HOOK, NEW JERSEY AS DEFINED BY THE UNITED STATES GEOLOGICAL SURVEY (USGS NGVD 1929).

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Drawing Title
SOIL VAPOR ANALYTICAL RESULTS
PARCEL G2

Project No. 170229002	Drawing No. 9
Date 6/11/2014	
Scale 1" = 50'	
Drawn By GCW / Checked By MSR	
Submission Date 6/11/2014	Sheet 9 of 9

Filename: \\langan.com\data\NY\data0\170229001\Cadd Data - 170229001\SheetFiles\Environmental-Supplemental RI Reports\Supplemental RI Report - Building G2\SV Sampling Tag Map - Building G2.dwg Date: 6/11/2014 Time: 13:22 User: gwyka Style Table: Langan.stb Layout: ANSIB-BL

TABLES

Table 1A
Grab Soil Sample Results - VOCs
Supplemental Remedial Investigation Report

Parcel G2
Greenpoint Landing
Brooklyn, New York
Langan Project No. 170229002

Sample Location			G2_SB-01B			G2_SB-02A			G2_SB-03A						G2_SB-04C			G2_SB-05B			G2_SB-06B			G2_SB-06C		
Client Sample ID			G2_SB-01B_2.5-3			G2_SB-02A_1.0-1.5			G2_SB-03A_4.5-5			G2_DUP			G2_SB-04C_0-0.5			G2_SB-05B_2.5-3			G2_SB-06B_4.5-5			G2_SB-06C_9.5-10		
Lab Sample ID			L1318009-01			L1318001-01			L1318001-03			L1318001-05			L1318168-01			L1318168-02			L1318162-06			L1318162-07		
Sample Date			09/12/2013			09/12/2013			09/12/2013			09/12/2013			09/14/2013			09/14/2013			09/13/2013			09/13/2013		
Sample Depth (feet bgs)	NYSDEC PART 375 UNRESTRICTED SCO	NYSDEC PART 375 RESTRICTED RESIDENTIAL SCO	2.5 to 3			1 to 1.5			4.5 to 5			4.5 to 5			0 to 0.5			2.5 to 3			4.5 to 5			9.5 to 10		
Volatile Organic Compounds (mg/kg)			Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF
1,2,3-Trichloropropane	~	~	0.014	U	1	0.0093	U	1	0.0098	U	1	0.01	U	1	0.045	J	1	0.0093	U	1	0.011	U	1	0.01	U	1
1,2,4,5-Tetramethylbenzene	~	~	0.0057	U	1	0.0037	U	1	0.0039	U	1	0.0041	U	1	2.6		1	0.0037	U	1	0.0043	U	1	0.0041	U	1
1,2,4-Trimethylbenzene	3.6	52	0.0071	U	1	0.0046	U	1	0.0049	U	1	0.0051	U	1	**5.3**		1	0.0046	U	1	0.0054	U	1	0.0051	U	1
1,2-Dichloroethane	0.02	3.1	0.0014	U	1	0.00093	U	1	0.00098	U	1	0.001	U	1	**0.043**	J	1	0.00093	U	1	0.0011	U	1	0.001	U	1
1,3,5-Trimethylbenzene (Mesitylene)	8.4	52	0.0071	U	1	0.0046	U	1	0.0049	U	1	0.0051	U	1	1.2		1	0.0046	U	1	0.0054	U	1	0.0051	U	1
1,4-Dichlorobenzene	1.8	13	0.0071	U	1	0.0046	U	1	0.0049	U	1	0.0051	U	1	0.03	J	1	0.0046	U	1	0.0054	U	1	0.0051	U	1
1,4-Diethyl Benzene	~	~	0.0057	U	1	0.0037	U	1	0.0039	U	1	0.0041	U	1	2.3		1	0.0037	U	1	0.0043	U	1	0.0041	U	1
4-Ethyltoluene	~	~	0.0057	U	1	0.0037	U	1	0.0039	U	1	0.0041	U	1	4.6		1	0.0037	U	1	0.0043	U	1	0.0041	U	1
Acetone	0.05	100	0.007	J	1	**0.055**		1	0.0091	J	1	0.016		1	**0.31**	J	1	0.0093	U	1	0.0088	J	1	0.0043	J	1
Benzene	0.06	4.8	0.0014	U	1	0.00093	U	1	0.00098	U	1	0.001	U	1	**3.5**		1	0.00093	U	1	0.0011	U	1	0.001	U	1
Bromomethane	~	~	0.0028	U	1	0.00085	J	1	0.00033	J	1	0.00097	J	1	0.17	U	1	0.0018	U	1	0.0021	U	1	0.002	U	1
Carbon Disulfide	~	~	0.014	U	1	0.0093	U	1	0.0098	U	1	0.01	U	1	0.87	U	1	0.0093	U	1	0.011	U	1	0.01	U	1
Chloromethane	~	~	0.0071	U	1	0.0046	U	1	0.0049	U	1	0.0051	U	1	0.44	U	1	0.0046	U	1	0.0054	U	1	0.0051	U	1
Cymene	~	~	0.0014	U	1	0.00093	U	1	0.00098	U	1	0.001	U	1	0.1		1	0.00093	U	1	0.0011	U	1	0.001	U	1
Diethyl Ether (Ethyl Ether)	~	~	0.0071	U	1	0.00033	J	1	0.0049	U	1	0.0051	U	1	0.44	U	1	0.0046	U	1	0.0054	U	1	0.0051	U	1
Ethylbenzene	1	41	0.0014	U	1	0.00093	U	1	0.00098	U	1	0.001	U	1	**3**		1	0.00093	U	1	0.0011	U	1	0.001	U	1
Isopropylbenzene (Cumene)	~	~	0.0014	U	1	0.00093	U	1	0.00098	U	1	0.001	U	1	0.25		1	0.00093	U	1	0.0011	U	1	0.001	U	1
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0012	J	1	0.007	J	1	0.0014	J	1	0.0022	J	1	*0.87*	U	1	0.0093	U	1	0.0018	J	1	0.01	U	1
Methylcyclohexane	~	~	0.0057	U	1	0.0037	U	1	0.0039	U	1	0.0041	U	1	1		1	0.0037	U	1	0.0043	U	1	0.0041	U	1
Methylene Chloride	0.05	100	0.014	U	1	0.004	J	1	0.0098	U	1	0.004	J	1	*0.87*	U	1	0.0093	U	1	0.011	U	1	0.01	U	1
m/p-Xylene	~	~	0.0028	U	1	0.0018	U	1	0.002	U	1	0.002	U	1	9.9		1	0.0018	U	1	0.0021	U	1	0.002	U	1
Naphthalene	12	100	0.0071	U	1	0.0046	U	1	0.0015	J	1	0.021		1	2.3		1	0.0046	U	1	0.0054	U	1	0.0051	U	1
N-Butylbenzene	12	100	0.0014	U	1	0.00093	U	1	0.00098	U	1	0.001	U	1	0.48		1	0.00093	U	1	0.0011	U	1	0.001	U	1
N-Propylbenzene	3.9	100	0.0014	U	1	0.00093	U	1	0.00098	U	1	0.001	U	1	1.2		1	0.00093	U	1	0.0011	U	1	0.001	U	1
o-Xylene (1,2-Dimethylbenzene)	~	~	0.0028	U	1	0.0018	U	1	0.002	U	1	0.002	U	1	2.2		1	0.0018	U	1	0.0021	U	1	0.002	U	1
Sec-Butylbenzene	11	100	0.0014	U	1	0.00093	U	1	0.00098	U	1	0.001	U	1	0.13		1	0.00093	U	1	0.0011	U	1	0.001	U	1
Toluene	0.7	100	0.00045	J	1	0.0014	U	1	0.00017	J	1	0.0015	U	1	**9.7**		1	0.0014	U	1	0.00032	J	1	0.00031	J	1
Xylene (total)	0.26	100	ND		1	ND		1	ND		1	ND		1	**12.1**		1	ND		1	ND		1	ND		1

Notes:

1. Grab soil sample results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Restricted-Residential Soil Cleanup Objectives (SCO).
2. Only compounds with detections are shown in the table.
3. NYSDEC Part 375 Unrectricted Use SCO exceedances are shaded and bolded.
4. There are no reported NYSDEC Part 375 Restricted Use Restricted-Residential SCO exceedances.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use and Restricted Use Restricted-Residential SCO standards are italicized.
6. mg/kg = milligrams per kilogram
7. ~ = Criteria does not exist.
8. ND= Not Detected
9. DF - Dilution factor

Qualifiers:

J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of RL; the value shown in the table is the RL.

Table 1B
Composite Soil Sample Results - SVOCs, PCBs, Pest, Herb, Metals, Non-Metals, TPH
Supplemental Remedial Investigation Report

Parcel G2
Greenpoint Landing
Brooklyn, New York
Langan Project No. 170229002

Sample Location	NYSDEC PART 375 UNRESTRICTED SCO	NYSDEC PART 375 RESTRICTED RESIDENTIAL SCO	G2_COMP-01			G2_COMP-02			G2_COMP-03			G2_COMP-03			G2_COMP-04			G2_COMP-05			G2_COMP-06S			G2_COMP-06D		
Client Sample ID			G2_COMP-01_0-5			G2_COMP-02_0-5			G2_COMP-03_0-5			G2_COMP-DUP			G2_COMP-04_0-5			G2_COMP-05_0-5			G2_COMP-06S_0-5			G2_COMP-06D_5-10		
Lab Sample ID			L1318009-02			L1318001-02			L1318001-04			L1318001-06			L1318168-04			L1318168-05			L1318162-08			L1318162-09		
Sample Date			09/12/2013			09/12/2013			09/12/2013			09/12/2013			09/14/2013			09/14/2013			09/13/2013			09/13/2013		
Sample Depth (feet bgs)			0 to 5			0 to 5			0 to 5			0 to 5			0 to 5			0 to 5			0 to 5			5 to 10		
SVOC (mg/kg)			Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF
2-Methylnaphthalene	~	~	0.49	J	4	0.31		1	0.45	J	4	0.24	J	2	0.37	J	2	0.43	J	4	0.34	J	2	0.11	J	1
3-Methylphenol	0.33	100	*1*	U	4	0.26	U	1	*1*	U	4	*0.52*	U	2	*0.52*	U	2	*1.1*	U	4	*0.54*	U	2	0.3	U	1
Acenaphthene	20	100	1.3		4	0.64		1	3.4		4	0.73		2	0.12	J	2	0.82		4	0.76		2	0.43		1
Acenaphthylene	100	100	0.58		4	0.18		1	0.43	J	4	0.22	J	2	0.12	J	2	0.31	J	4	1		2	0.068	J	1
Anthracene	100	100	3.8		4	1.3		1	5.1		4	1.5		2	0.34		2	2		4	2.5		2	0.93		1
Benzaldehyde	~	~	0.96	U	4	0.24	U	1	0.96	U	4	0.48	U	2	0.48	U	2	1	U	4	0.5	U	2	0.23	J	1
Benzo(a)anthracene	1	1	**8.7**		4	**2.9**		1	**9.1**		4	**3.4**		2	0.83		2	**3.5**		4	**6.8**		2	**1.9**		1
Benzo(a)pyrene	1	1	**8.6**		4	**3**		1	**8**		4	**3.3**		2	0.83		2	**3.3**		4	**8**		2	**1.6**		1
Benzo(b)fluoranthene	1	1	**10**		4	**3.6**		1	**9.5**		4	**4.2**		2	**1.1**		2	**3.4**		4	**9**		2	**1.9**		1
Benzo(g,h,i)perylene	100	100	5.4		4	2		1	4.4		4	2.1		2	0.62		2	1.8		4	5		2	0.78		1
Benzo(k)fluoranthene	0.8	3.9	**3.6**		4	**1.4**		1	**3.6**		4	**1.5**		2	0.42		2	**1.5**		4	**3**		2	0.65		1
Benzoic Acid	~	~	1.5	J	4	0.59	U	1	2.4	U	4	1.2	U	2	1.2	U	2	2.5	U	4	1.2	U	2	0.67	U	1
Benzyl Butyl Phthalate	~	~	0.73	U	4	0.18	U	1	0.73	U	4	0.36	U	2	0.36	U	2	0.77	U	4	0.18	J	2	0.21	U	1
Biphenyl (Diphenyl)	~	~	0.24	J	4	0.094	J	1	1.6	U	4	0.82	U	2	0.83	U	2	1.8	U	4	0.13	J	2	0.47	U	1
Bis(2-Ethylhexyl) Phthalate	~	~	0.73	U	4	0.16	J	1	0.36	J	4	0.42		2	0.15	J	2	0.21	J	4	0.38	U	2	0.21	U	1
Carbazole	~	~	1		4	0.7		1	2.1		4	0.69		2	0.12	J	2	0.34	J	4	1.1		2	0.37		1
Chrysene	1	3.9	**8.7**		4	**3.2**		1	**9.5**		4	**3.8**		2	0.96		2	**3.6**		4	**7.2**		2	**1.9**		1
Dibenz(a,h)anthracene	0.33	0.33	**1.4**		4	**0.46**		1	**1.1**		4	**0.46**		2	0.17	J	2	**0.48**		4	**1.3**		2	0.25		1
Dibenzofuran	7	59	1.4		4	0.53		1	2.3		4	0.54		2	0.17	J	2	0.32	J	4	0.75		2	0.32		1
Di-n-butylphthalate	~	~	0.73	U	4	0.18	U	1	0.73	U	4	0.36	U	2	0.36	U	2	0.77	U	4	0.38	U	2	0.21	U	1
Fluoranthene	100	100	18		4	6.5		1	23		4	8.6		2	1.8		2	6.9		4	12		2	4.4		1
Fluorene	30	100	1.6		4	0.61		1	3.6		4	0.72		2	0.24	J	2	0.87		4	0.9		2	0.51		1
Indeno(1,2,3-c,d)pyrene	0.5	0.5	**6**		4	**2.1**		1	**5.1**		4	**2.3**		2	**0.62**		2	**1.8**		4	**5.3**		2	**0.88**		1
Naphthalene	12	100	0.97		4	0.61		1	0.67	J	4	0.42		2	0.54		2	0.46	J	4	0.9		2	0.2	J	1
Phenanthrene	100	100	12		4	5.8		1	24		4	7		2	1.5		2	7.1		4	8.9		2	4.2		1
Pyrene	100	100	16		4	6		1	19		4	7.6		2	1.7		2	7.4		4	11		2	3.8		1
Total SVOCs	~	~	111.28	J	4	42.094	J	1	134.71	J	4	49.74	J	2	12.72	J	2	46.54	J	4	86.06	J	2	25.428	J	1
PCB (mg/kg)			Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF
Aroclor 1260	~	~	0.0356	U	1	0.0366	U	1	0.0172	J	1	0.00936	J	1	0.0492		1	0.0265	J	1	0.0119	J	1	0.041	U	1
Aroclor 1254	~	~	0.0356	U	1	0.0366	U	1	0.0231	J	1	0.0193	J	1	0.0318	J	1	0.0376	U	1	0.0378	U	1	0.041	U	1
Total PCBs	0.1	1	ND		1	ND		1	0.0403	J	1	0.02866	J	1	0.081	J	1	0.0265	J	1	0.0119	J	1	ND		1
Pesticides (mg/kg)			Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF
p,p'-DDD	0.0033	13	*0.0168*	U	10	*0.00848*	U	5	*0.00864*	U	5	*0.00853*	U	5	**0.0331**		10	*0.0179*	U	10	*0.0182*	U	10	*0.00969*	U	5
p,p'-DDT	0.0033	7.9	*0.0315*	U	10	*0.0159*	U	5	*0.0162*	U	5	*0.016*	U	5	**0.0207**	J	10	**0.0348**		10	*0.0342*	U	10	*0.0182*	U	5
Herbicides (mg/kg)			Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF
Total Herbicides	~	~	ND		1	ND		1	ND		1	ND		1	ND		1	ND		1	ND		1	ND		1
Metals (mg/kg)			Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF
Aluminum	~	~	6700		2	5500		2	6400		2	7000		2	7200		2	6800		2	4700		2	9300		2
Antimony	~	~	1.7	J	2	0.99	J	2	2.1	J	2	2.5	J	2	4.4	U	2	4.5	U	2	4.3	U	2	4.9	U	2
Arsenic	13	16	**39**		2	9.2		2	10		2	9.8		2	10		2	9.4		2	12		2	6.6		2
Barium	350	400	86		2	78		2	140		2	190		2	280		2	190		2	130		2	53		2
Beryllium	7.2	72	0.41	J	2	0.32	J	2	0.99		2	1.2		2	1.5		2	0.98		2	0.38	J	2	0.47	J	2
Cadmium	2.5	4.3	0.74	J	2	0.75	J	2	0.99		2	1		2	1.4		2	1.1		2	0.9		2	1.9		2
Calcium	~	~	21000		2	43000		2	63000		2	50000		2	46000		2	23000		2	8800		2	1800		2
Chromium Trivalent	30	180	16		1	11		1	19		1	28		1	**33**		1	22		1	11		1	13		1
Chromium Hexavalent	1	110	0.42	J	1	0.74	J	1	0.72	J	1	0.35	J	1	0.89	U	1	0.93	U	1	0.92	U	1	1	U	1
Chromium, Total	~	~	16		2	12		2	20		2	28		2	33		2	22		2	11		2	13		2
Cobalt	~	~	10		2	5.2		2	16		2	18		2	14		2	14		2	4.9		2	8.3		2
Copper	50	270	**81**		2	**54**		2	**230**		2	**370**		2	**270**		2	**320**		2	**83**		2	36		2
Iron	~	~	20000		2	15000		2	20000		2	23000		2	21000		2	20000		2	17000		2	18000		2
Lead	63	400	**140**		2	**140**		2	**340**		2	**420**		2	**440**		2	**220**		2	**440**		2	**130**		2
Magnesium	~	~	2800		2	23000		2	29000		2	20000		2	12000		2	5200		2	1500		2	2400		2
Manganese	1600	2000	180		2	250		2	360		2	370		2	320		2	350		2	180		2	370		2
Mercury	0.18	2.8	**0.54**		1	**0.23**		1	**5.8**		3	**0.21**		1	**0.59**		1	**0.31**		1	**0.72**		1	**0.52**		1
Nickel	30	310	23		2	13		2	30		2	**33**		2	**32**		2	28		2	11		2	15		2
Potassium	~	~	990		2	620		2	730		2	850		2	850		2	1200		2	560		2	580		2
Selenium	3.9	180	1.4	J	2	1.7	U	2	1.7	U	2	1.7	U	2	1.3	J	2	0.44	J	2	0.88	J	2	2	U	2
Silver	2	180	0.84	U	2	0.87	U	2	0.87	U	2	0.24	J	2	0.87	U	2	0.9	U	2	0.87	U	2	0.98	U	2
Sodium	~	~	180		2	410		2	320		2	380		2	330		2	330		2	140	J	2	100	J	2
Vanadium	~	~	20		2	14		2	17		2	19		2	21		2	26		2	16		2	18		2
Zinc	109	10000	**160**		2	**150**		2	**1200**		2	**1400**		2	**1400**		2	**920**		2	**240**		2	**1600**		2
Petroleum Hydrocarbons (mg/kg)			Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF
Gasoline Range Organics	~	~	2	J	1	1.4	J	1	1.1	J	1	1.1	J	1	6.1		1	5.4		1	0.76	J	1	1.4	J	1
Total Petroleum Hydrocarbons	~	~	653		2	154		1	1660		5	719		2	537		5	1060		5	661		2	139		1
Other			Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF
Cyanide	27	27	1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1	1.2	U	1

Notes:
1. Grab soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Restricted-Residential Soil Cleanup Objectives (SCO).
2. Only compounds with detections are shown in the table.
3. NYSDEC Part 375 Unrectricted Use SCO exceedances are shaded and bolded.
4. NYSDEC Part 375 Restricted Use Restricted-Residential SCO exceedances are bolded and in red.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use and Restricted Use Restricted-Residential SCO standards are italicized.
6. mg/kg = milligrams per kilogram
7. ~ = Criteria does not exist.
8. DF = Dilution Factor
9. ND = Not Detected

Qualifiers (Q):
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 1C
Composite Soil Sample Results - TCLP Metals, RCRA Characteristics, Paint Filter
Supplemental Remedial Investigation Report

Parcel G2
Greenpoint Landing
Brooklyn, New York
Langan Project No. 170229002

Sample Location		G2_COMP-01			G2_COMP-02			G2_COMP-03			G2_COMP-03			G2_COMP-04			G2_COMP-05			G2_COMP-06S			G2_COMP-06D		
Client Sample ID		G2_COMP-01_0-5			G2_COMP-02_0-5			G2_COMP-03_0-5			G2_COMP-DUP			G2_COMP-04_0-5			G2_COMP-05_0-5			G2_COMP-06S_0-5			G2_COMP-06D_5-10		
Lab Sample ID		L1318009-02			L1318001-02			L1318001-04			L1318001-06			L1318168-04			L1318168-05			L1318162-08			L1318162-09		
Sample Date		09/12/2013			09/12/2013			09/12/2013			09/12/2013			09/14/2013			09/14/2013			09/13/2013			09/13/2013		
Sample Depth (feet bgs)		0 to 5			0 to 5			0 to 5			0 to 5			0 to 5			0 to 5			0 to 5			5 to 10		
TCLP Metals (mg/l)	**USEPA RCRA TCLP**	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF
Arsenic	5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
Barium	100	0.21	J	1	0.34	J	1	0.31	J	1	0.33	J	1	0.41	J	1	0.44	J	1	0.37	J	1	0.4	J	1
Cadmium	1	0.1	U	1	0.1	U	1	0.1	U	1	0.1	U	1	0.01	J	1	0.1	U	1	0.1	U	1	0.01	J	1
Chromium, Total	5	0.2	U	1	0.2	U	1	0.2	U	1	0.2	U	1	0.2	U	1	0.2	U	1	0.2	U	1	0.2	U	1
Lead	5	0.35	J	1	0.15	J	1	0.08	J	1	0.17	J	1	0.27	J	1	0.06	J	1	0.72		1	2.2		1
Mercury	0.2	0.001	U	1	0.001	U	1	0.001	U	1	0.001	U	1	0.001	U	1	0.001	U	1	0.001	U	1	0.001	U	1
Selenium	1	0.5	U	1	0.5	U	1	0.5	U	1	0.5	U	1	0.5	U	1	0.03	J	1	0.5	U	1	0.5	U	1
Silver	5	0.1	U	1	0.1	U	1	0.1	U	1	0.1	U	1	0.1	U	1	0.1	U	1	0.1	U	1	0.1	U	1
RCRA Characteristics		Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF
pH (pH units)	<2 or >12.5	8.2		1	7.8		1	8.6		1	8.5		1	9.1		1	8.3		1	9		1	7.6		1
Reactive Cyanide (mg/kg)	250	10	U	1	10	U	1	10	U	1	10	U	1	10	U	1	10	U	1	10	U	1	10	U	1
Ignitability	I/NI	NI			NI			NI			NI			NI			NI			NI			NI		
Sulfide Reactive (mg/kg)	500	10	U	1	10	U	1	10	U	1	10	U	1	10	U	1	10	U	1	10	U	1	10	U	1
Miscellaneous		Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF	Result	Q	DF
Paint Filter (Negative/Positive)	~	Negative		1	NA			NA			NA			NA			NA			NA			NA		

Notes:

1. Composite soil sample analytical results are compared to 40 CFR 261 Subpart C and Table 1 of 40 CFR 261.24 - Maximum Concentration of Contaminants for the Toxicity Characteristic.
2. Only compounds with detections are shown in table.
3. Composite sample results did not exceed applicable comparison criteria.
4. mg/l = milligrams per liter
5. mg/kg = milligrams per kilogram
6. ~ = Criteria does not exist.
7. NA = Not Analyzed
8. I/NI = Ignitable/ Not Ignitable

Qualifiers:

J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of RL; the value shown in the table is the RL.

Table 2
Groundwater Sample Results
NYSDEC TOGS AWQS - Class I

Parcel G2
Greenpoint Landing
Brooklyn, New York
Langan Project No. 170229002

Location	NYSDEC TOGS AWQS	MW3		
Client Sample ID	Class I	MW3_091913		
Lab Sample ID		L1318578-01		
Sampling Date		9/19/2013		
VOC (µg/l)		Result	Q	DF
1,1,1-Trichloroethane	~	2	U	1
1,1,2,2-Tetrachloroethane	~	1	U	1
1,1,2-Trichloroethane	~	1.5	U	1
1,1-Dichloroethane	~	1.5	U	1
1,1-Dichloroethene	~	1	U	1
1,2-Dichlorobenzene	~	5	U	1
1,2-Dichloroethane	~	1.5	U	1
1,2-Dichloropropane	~	3.5	U	1
1,3-Dichlorobenzene	~	5	U	1
1,4-Dichlorobenzene	~	5	U	1
2-Chloroethylvinyl ether	~	10	U	1
Benzene	10	1	U	1
Bromodichloromethane	~	1	U	1
Bromoform	~	1	U	1
Bromomethane	~	2.5	J	1
Carbon tetrachloride	~	1	U	1
Chlorobenzene	5	3.5	U	1
Chloroethane	~	2	U	1
Chloroform	~	1.5	U	1
Chloromethane	~	5	U	1
cis-1,2-Dichloroethene	~	1	U	1
cis-1,3-Dichloropropene	~	1.5	U	1
Dibromochloromethane	~	1	U	1
Ethylbenzene	4.5	1	U	1
Methyl tert butyl Ether	~	10	U	1
Methylene chloride	200	5	U	1
o-xylene	~	1	U	1
p/m-Xylene	~	2	U	1
Tetrachloroethene	1	*1.5*	U	1
Toluene	92	1	U	1
trans-1,2-Dichloroethene	~	1.5	U	1
trans-1,3-Dichloropropene	~	1.5	U	1
Trichloroethene	40	1	U	1
Trichlorofluoromethane	~	5	U	1
Vinyl chloride	~	2	U	1
Xylene (Total)	19	2	U	1
Total Metals (µg/l)		Result	Q	DF
Antimony	~	50	U	1
Arsenic	36	5	U	1
Beryllium	~	5	U	1
Cadmium	7.7	5	U	1
Chromium	~	3.3	J	1
Copper	5.6	5	J	1
Lead	8	**16**		1
Mercury	0.0026	*0.2*	U	1
Nickel	8.2	6	J	1
Selenium, Total	~	10	U	1
Silver, Total	~	7	U	1
Thallium, Total	~	20	U	1
Zinc, Total	66	24	J	1
General Chemistry		Result	Q	DF
Nitrogen, Nitrate/Nitrite (µg/l)	20000	40	J	1
Oil & Grease, Hem-Grav (µg/l)	~	4000	U	1
pH (SU)	~	7.2		1
Solids, Total Suspended (µg/l)	~	100000		1
Solids, Total Settleable (ml/l)	~	0.1	<	1

Notes Qualifiers (Q):

1. Groundwater samples analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (SGV) Class I.
2. NYSDEC TOGS Standards and Guidance Values-Class I exceedances are shaded and bolded.
3. VOC = Volatile Organic Compounds
4. µg/l - micrograms per liter
5. ml/l = milliliters per liter
6. ~ = Criteria does not exist.
7. DF = Dilution Factor
8. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
9. J = Detected above the Method Detection Limit but below the Reporting Limit; therefore, result is an estimated concentration.
10. Reporting limits above regulatory criteria are italicized.
11. SU - Standard units

Table 3
Groundwater Sample Results
NYCDEP Discharge Parameters

Parcel G2
Greenpoint Landing
Brooklyn, New York
Langan Project No. 170229002

Location Client Sample ID Lab Sample ID Sampling Date	NYCDEP Discharge Parameters	MW3 MW3_091913 L1318577-01 9/19/2013		
VOC (mg/l)		Result	Q	DF
Chloroform	~	0.0015	U	1
1,1,1-Trichloroethane	~	0.002	U	1
1,4-Dichlorobenzene	~	0.005	U	1
Benzene	0.134	0.001	U	1
Carbon tetrachloride	~	0.001	U	1
Ethylbenzene	0.38	0.001	U	1
Methyl tert butyl ether	0.05	0.0071	J	1
o-Xylene	~	0.001	U	1
p/m-Xylene	~	0.002	U	1
Tetrachloroethene	0.02	0.0015	U	1
Toluene	0.074	0.001	U	1
Xylene (Total)	0.074	0.002	U	1
SVOC (mg/l)		Result	Q	DF
1,2,4-Trichlorobenzene	~	0.005	U	1
Naphthalene	0.047	0.005	U	1
Phenol	~	0.007	U	1
PCB (mg/l)		Result	Q	DF
Total PCBs	0.001	ND		1
Total Metals (mg/l)		Result	Q	DF
Cadmium	2	0.005	U	1
Copper	5	0.007	J	1
Chromium, Hexavalent	5	0.001	J	1
Lead	2	0.014		1
Mercury	0.05	0.0002	U	1
Nickel	3	0.005	J	1
Zinc	5	0.016	J	1
General Chemistry		Result	Q	DF
Chloride (mg/l)	~	81		1
Flash Point (degree F)	<140	150	>	1
Nitrogen, Nitrate/Nitrite (mg/l)	~	0.036	J	1
Nitrogen, Total Kjeldahl (mg/l)	~	12.8		1
Non-Polar Material by EPA 1664 (mg/l)	50	4	U	1
pH (SU's)	5-11	7		1
CBOD, 5 day (mg/l)	~	2	U	1
Total Nitrogen (mg/l)	~	13		1
Total Solids (mg/l)	~	1500		1
Total Suspended Solids (mg/l)	350	54		1

Notes and Qualifiers (Q):

1. Groundwater analytical results are compared to the New York City Department of Environmental Protection (NYCDEP) Limitations for Efluent to Sanitary or Combined Sewers.
2. There are no reported exceedances of NYCDEP criteria.
3. VOC = Volatile Organic Compounds
4. SVOC = Semi-Volatile Organic Compounds
5. PCB = Polychlorinated Biphenyls
7. mg/l = milligrams per liter
8. "-" = Criteria does not exist.
9. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of RL; the value shown in the table is the RL.
10. J = Detected above the Method Detection Limit but below the Reporting Limit; therefore, result is an estimated concentration.
11. DF = Dilution factor

Table 4
Soil Vapor Program Samples
Supplemental Remedial Investigation

Parcel G2
Greenpoint Landing
Brooklyn, New York
Langan Project No. 170229002

Sample Number	Sample Name	Sample Type	Sample Location	Analysis
1	SV-13_20140421	Soil Vapor	SV-13	TO-15 VOCs
2	SV-14_20140422	Soil Vapor	SV-14	TO-15 VOCs
3	SV-15_20140423	Soil Vapor	SV-15	TO-15 VOCs
4	AA02_20140421	Ambient Air	AA02	TO-15 VOCs

Notes:
1. VOCs = Volatile Organic Compounds

Table 5
Soil Vapor Sample Results
Supplemental Remedial Investigation Report

Parcel G2
Greenpoint Landing
Brooklyn, New York
Langan Project No. 170229002

Location Client Sample ID Lab Sample ID Sampling Date	NYSDOH AGV	SV-13 SV-13_20140422 L1408458-03 4/22/2014		SV-14 SV-14_20140422 L1408458-02 4/22/2014		SV-15 SV-15_20140422 L1408458-01 4/22/2014		AA02 AA02_20140422 L1408458-04 4/22/2014	
VOCs (µg/m³)									
1,1,1-Trichloroethane	~	2.18	U	10.9	U	3.69		1.09	U
1,2,4-Trimethylbenzene	~	1.97	U	9.83	U	1.08		0.983	U
1,3-Butadiene	~	2.12		4.42	U	0.442	U	0.442	U
1,3-Dichlorobenzene	~	2.4	U	12	U	1.21		1.2	U
2-Butanone	~	6.87		17		6.58		0.628	
Acetone	~	1180		1770		777		4.73	
Benzene	~	6.52		6.39	U	1.69		0.716	
Carbon disulfide	~	12.4		6.23	U	20.5		0.623	U
Carbon tetrachloride	~	2.52	U	12.6	U	1.5		1.26	U
Chloroform	~	1.95	U	9.77	U	1.04		0.977	U
Chloromethane	~	1.29		4.13	U	0.593		1.27	
Cyclohexane	~	17.1		6.88	U	3.72		0.688	U
Dichlorodifluoromethane	~	1.98	U	9.89	U	0.989	U	1.98	
Ethanol	~	192		47.1	U	144		7.07	
Heptane	~	3.28		8.2	U	2.01		0.82	U
Isopropanol	~	141		12.3	U	131		1.23	U
n-Hexane	~	8.78		7.05	U	3.18		1.2	
o-Xylene	~	1.74	U	9.95		0.869	U	0.869	U
p/m-Xylene	~	3.47	U	25.6		2.24		1.74	U
Styrene	~	1.7	U	58.8		1.74		0.852	U
Tertiary butyl Alcohol	~	5.43		15.2	U	3.61		1.52	U
Tetrachloroethene	30	2.9		13.6	U	2.64		1.36	U
Tetrahydrofuran	~	1.45		5.9	U	1.29		0.59	U
Toluene	~	50.5		195		52.8		1.07	
Trichloroethene	5	2.15	U	*10.7*	U	**5.48**		1.07	U
Trichlorofluoromethane	~	2.25	U	11.2	U	1.12	U	1.33	

Notes:
1. Soil vapor and ambient air samples analytical results are compared to the New York State Department of Health (NYSDOH) Air Guideline Values (AGVs).
2. Only compounds with detections are shown in the table.
3. NYSDOH AGV exceedances are highligted and bolded.
4. Reporting Limits (RL) above the NYSDOH AGV standards are italicized.
5. VOCs = Volatile Organic Compounds
6. µg/m³ = micrograms per cubic meter
7. ~ = This indicates that no AGV exists for this compound

Qualifiers:
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of RL; the value shown in the table is the RL.

APPENDIX A

SOIL BORING LOGS

LANGAN

Log of Boring **SV-13** Sheet 1 of 1

Project: Greenpoint Landing	Project No.: 170229002
Location: Brooklyn, NY	Elevation and Datum: 10.51 BBHD
Drilling Company: AARCO Environmental Services	Date Started: 4/21/14 / Date Finished: 4/21/14
Drilling Equipment: Geoprobe 6610 DT Rig	Completion Depth: 5 ft / Rock Depth: -
Size and Type of Bit: 2.5" Direct Push	Number of Samples: Disturbed / Undisturbed / Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ - / Completion ▼ / 24 HR. ▼
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Jon Sepe
Sampler: 5' Acetate Sleeve	Inspecting Engineer: Sean Harrison
Sampler Hammer: - / Weight (lbs): - / Drop (in)	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+10.5		0						
	+10.3	0-3" ASPHALT							
		3-48" Black-brown fine to coarse SAND, some gravel, some asphalt fragments, loose, dry, well graded (FILL)	1					0.0	
								0.0	
			2	1	5' Acetate Sleeve	48/60		0.0	
			3					0.0	Installed SV probe @ 5 ft bgs
								0.0	
			4						
	+5.5		5						End of Boring @ 5 ft bgs
			6						
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

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Log of Boring **SV-14** Sheet 1 of 1

Project: Greenpoint Landing	Project No.: 170229002
Location: Brooklyn, NY	Elevation and Datum: 10.92 BBHD
Drilling Company: AARCO Environmental Services	Date Started: 4/21/14 / Date Finished: 4/21/14
Drilling Equipment: Geoprobe 6610 DT Rig	Completion Depth: 5 ft / Rock Depth: -
Size and Type of Bit: 2.5" Direct Push	Number of Samples: Disturbed / Undisturbed / Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ - / Completion ▼ / 24 HR. ▼
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Jon Sepe
Sampler: 5' Acetate Sleeve	Inspecting Engineer: Sean Harrison
Sampler Hammer: - / Weight (lbs): - / Drop (in)	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+10.9		0						
	+10.7	0-3" ASPHALT							
		3-38" Black-brown fine to coarse SAND, some brick, some asphalt fragments, trace gravel, trace ceramic fragments, loose, dry, well graded (FILL)	1					0.0	
			2	1	5' Acetate Sleeve	38/60		0.0	
			3					0.0	
			4					0.0	Installed SV probe @ 5 ft bgs
	+5.9		5						End of Boring @ 5 ft bgs
			6						
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

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Log of Boring **SV-15** Sheet 1 of 1

Project: Greenpoint Landing	Project No.: 170229002
Location: Brooklyn, NY	Elevation and Datum: 10.04 BBHD
Drilling Company: AARCO Environmental Services	Date Started: 4/21/14 / Date Finished: 4/21/14
Drilling Equipment: Geoprobe 6610 DT Rig	Completion Depth: 5 ft / Rock Depth: -
Size and Type of Bit: 2.5" Direct Push	Number of Samples: Disturbed / Undisturbed / Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ - / Completion ▼ / 24 HR. ▼
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Jon Sepe
Sampler: 5' Acetate Sleeve	Inspecting Engineer: Sean Harrison
Sampler Hammer: - / Weight (lbs): - / Drop (in)	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+10.0		0						
	+9.8	0-3" ASPHALT							
		3-39" Black-frown fine to coarse SAND, some brick, some asphalt fragments, some ceramic fragments (white in color), loose, dry, well graded (FILL)	1	1	5' Acetate Sleeve	39/60		0.0	
			2					0.0	
			3					0.0	Installed SV probe @ 5 ft bgs
			4					0.0	
	+5.0		5						End of Boring @ 5 ft bgs
			6						
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

APPENDIX B

SOIL VAPOR SAMPLING LOGS

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-13

PROJECT:	Greenpoint Landing	**PROJECT NO.:**	170229002
LOCATION:	Brooklyn, New York	**SURFACE ELEVATION AND DATUM:**	Approx. 10.51 BBHD
DRILLING FIRM OR LANGAN INSTALLER:	AARCO Environmental Services	**INSTALLATION DATE STARTED:** / **DATE FINISHED:**	4/21/2014 / 4/21/2014
INSTALLATION FOREMAN:	Jon Sepe	**SAMPLE DATE STARTED:** / **DATE FINISHED:**	4/22/2014 / 4/22/2014
INSTALLATION EQUIPMENT:	Geoprobe 6610 DT Rig	**TYPE OF SAMPLING DEVICE:**	Summa Canister (2.7 liter)
INSPECTOR:	Sean Harrison	**SAMPLER:**	Sean Harrison
POTENTIAL SAMPLE INTERFERENCES:	None	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):**	Partly Cloudy, Mid 50-60°s, Wind: W 5-10 mph, Pressure: 29.78 in

METHOD OF INSTALLATION AND PURGING:

Probe, filter pack and seal installed in open borehole advanced with Geoprobe 6610 DT Rig and purged with Multi RAE (0.2 L/min); integrity of seal was checked via a helium gas tracer test.

TUBING TYPE/DIAMETER:	1/4'' ID x 3/8'' OD	**TYPE OF MATERIAL ABOVE SEAL:**	No.2 Sand and Cement/Bentonite
IMPLANT SCREEN TYPE/LENGTH/DIAMETER:	6'' Stainless Steel SV Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):**	Bentonite
BOREHOLE DIAMETER:	2.5"	**FILTER PACK MATERIAL (Sand or Glass Beads):**	No. 2 Sand

PURGE VOLUME (L):	0.2 liter
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.1
HELIUM TEST IN BUCKET(%):	27.8%
HELIUM TEST IN TUBE (PPM):	Before Sample: 0.0 After Sample: 0.0
SAMPLE START DATE/TIME:	8:11
SAMPLE STOP DATE/TIME:	10:11
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.0225
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	-
CAN SERIAL NUMBER:	535
REGULATOR SERIAL NUMBER:	100
CAN START VACUUM PRESS. (" HG):	-30.09
CAN STOP VACUUM PRESS. (" HG):	-3.94

SAMPLE LOCATION SKETCH

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
SURFACE / SURFACE	0'0	0-3 in bgs Cement/Bentonite 3-12 in bgs No. 2 Sand
Top of Seal	1'	1-4 ft bgs Bentonite Seal
Top of Pack	4'	4-5 ft bgs No. 2 Sand
	5' bgs	

NOTES

Installed SV probe @ 5' bgs

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-14

PROJECT:	Greenpoint Landing	**PROJECT NO.:**	170229002
LOCATION:	Brooklyn, New York	**SURFACE ELEVATION AND DATUM:**	Approx. 10.92 BBHD
DRILLING FIRM OR LANGAN INSTALLER:	AARCO Environmental Services	**INSTALLATION DATE STARTED:** / **DATE FINISHED:**	4/21/2014 / 4/21/2014
INSTALLATION FOREMAN:	Jon Sepe	**SAMPLE DATE STARTED:** / **DATE FINISHED:**	4/22/2014 / 4/22/2014
INSTALLATION EQUIPMENT:	Geoprobe 6610 DT Rig	**TYPE OF SAMPLING DEVICE:**	Summa Canister (2.7 liter)
INSPECTOR:	Sean Harrison	**SAMPLER:**	Sean Harrison
POTENTIAL SAMPLE INTERFERENCES:	None	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):**	Partly Cloudy, Mid 50-60°s, Wind: W 5-10 mph, Pressure: 29.78 in

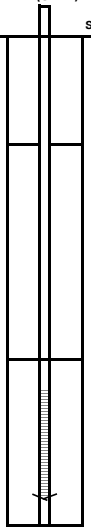
METHOD OF INSTALLATION AND PURGING:

Probe, filter pack and seal installed in open borehole advanced with Geoprobe 6610 DT Rig and purged with Multi RAE (0.2 L/min); integrity of seal was checked via a helium gas tracer test.

TUBING TYPE/DIAMETER:	1/4'' ID x 3/8'' OD	**TYPE OF MATERIAL ABOVE SEAL:**	No.2 Sand and Cement/Bentonite
IMPLANT SCREEN TYPE/LENGTH/DIAMETER:	6'' Stainless Steel SV Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):**	Bentonite
BOREHOLE DIAMETER:	2.5"	**FILTER PACK MATERIAL (Sand or Glass Beads):**	No. 2 Sand

PURGE VOLUME (L):	0.2 liter
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.2
HELIUM TEST IN BUCKET(%):	23.4%
HELIUM TEST IN TUBE (PPM):	Before Sample: 0.0 After Sample: 0.0
SAMPLE START DATE/TIME:	7:58
SAMPLE STOP DATE/TIME:	9:58
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.0225
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	-
CAN SERIAL NUMBER:	147
REGULATOR SERIAL NUMBER:	68
CAN START VACUUM PRESS. (" HG):	-28.7
CAN STOP VACUUM PRESS. (" HG):	-5.16

SAMPLE LOCATION SKETCH



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
	0'0	0-3 in bgs Cement/Bentonite
		3-12 in bgs No. 2 Sand
Top of Seal	1'	
		1-4 ft bgs Bentonite Seal
Top of Pack	4'	
		4-5 ft bgs No. 2 Sand
	5' bgs	

NOTES

Installed SV probe @ 5' bgs

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-15

PROJECT:	Greenpoint Landing	**PROJECT NO.:**	170229002
LOCATION:	Brooklyn, New York	**SURFACE ELEVATION AND DATUM:**	Approx. 10.04 BBHD
DRILLING FIRM OR LANGAN INSTALLER:	AARCO Environmental Services	**INSTALLATION DATE STARTED:** / **DATE FINISHED:**	4/21/2014 / 4/21/2014
INSTALLATION FOREMAN:	Jon Sepe	**SAMPLE DATE STARTED:** / **DATE FINISHED:**	4/22/2014 / 4/22/2014
INSTALLATION EQUIPMENT:	Geoprobe 6610 DT Rig	**TYPE OF SAMPLING DEVICE:**	Summa Canister (2.7 liter)
INSPECTOR:	Sean Harrison	**SAMPLER:**	Sean Harrison
POTENTIAL SAMPLE INTERFERENCES:	None	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):**	Partly Cloudy, Mid 50-60°s, Wind: W 5-10 mph, Pressure: 29.78 in

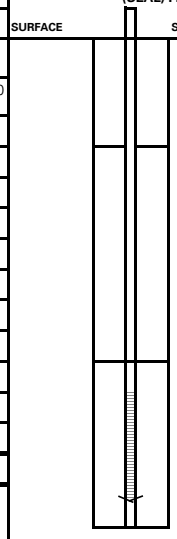
METHOD OF INSTALLATION AND PURGING:

Probe, filter pack and seal installed in open borehole advanced with Geoprobe 6610 DT Rig and purged with Multi RAE (0.2 L/min); integrity of seal was checked via a helium gas tracer test.

TUBING TYPE/DIAMETER:	1/4'' ID x 3/8'' OD	**TYPE OF MATERIAL ABOVE SEAL:**	No.2 Sand and Cement/Bentonite
IMPLANT SCREEN TYPE/LENGTH/DIAMETER:	6'' Stainless Steel SV Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):**	Bentonite
BOREHOLE DIAMETER:	2.5"	**FILTER PACK MATERIAL (Sand or Glass Beads):**	No. 2 Sand

PURGE VOLUME (L):	0.2 liter
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.2
HELIUM TEST IN BUCKET(%):	25.1%
HELIUM TEST IN TUBE (PPM):	Before Sample: 0.0 After Sample: 0.0
SAMPLE START DATE/TIME:	7:47
SAMPLE STOP DATE/TIME:	9:36
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.0248
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	-
CAN SERIAL NUMBER:	1734
REGULATOR SERIAL NUMBER:	146
CAN START VACUUM PRESS. (" HG):	-28.89
CAN STOP VACUUM PRESS. (" HG):	-2.56

SAMPLE LOCATION SKETCH



DEPTH (FEET FROM SURFACE)	NOTES
0'0	0-3 in bgs Cement/Bentonite
	3-12 in bgs No. 2 Sand
1'	
	1-4 ft bgs Bentonite Seal
4'	
	4-5 ft bgs No. 2 Sand
5' bgs	

NOTES

Installed SV probe @ 5' bgs

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

Supplemental Remedial Investigation
Soil Vapor Sampling Log

Building G2
Greenpoint Landing
Brooklyn, New York
Langan Project No. 170229002

Sample ID	Date	Weather	Pre-Purge PID Reading - Sample Tubing (ppm)	Post-Purge Helium Reading Bucket (%)	Post-Purge Helium Reading - Sample Tubing (ppm)	Post-Purge PID Reading - Sample Tubing (ppm)	Summa Canister No.	Regulator No.	Start Time	Summa Canister Start Pressure	Stop Time	Summa Canister Stop Pressure	Post-Sampling Helium Reading Bucket (%)	Post-Sampling Helium Reading - Sample Tubing (ppm)	Post-Sampling PID Reading - Sample Tubing (ppm)
SV-13_20140422	4/22/2014	Partly Cloudy, Mid 50-60°s, Pressure: 29.78 in	0.1	27.80%	0	0.0	535	100	8:11	-30.09	10:11	-3.94	21.20%	0	0.0
SV-14_20140422	4/22/2014	Partly Cloudy, Mid 50-60°, Pressure: 29.78 in	0.2	23.40%	0	0.0	147	68	7:58	-28.7	9:58	-5.16	24.50%	0	0.0
SV-15_20140422	4/22/2014	Partly Cloudy, Mid 50-60°, Pressure: 29.78 in	0.2	25.10%	0	0.0	1734	146	7:47	-28.89	9:36	-2.56	21.30%	0	0.0
AA02_20140422	4/22/2014	Partly Cloudy, Mid 50-60°, Pressure: 29.78 in	-	-	-	-	968	5	8:18	-29.06	10:18	-2.80	-	-	-

Notes:
1. AA01_20140421 and AA02_20140422 were collected 3 feet above ground in the approximate breathing zone.

APPENDIX C

LABORATORY ANALYTICAL DATA REPORTS – SOIL VAPOR

ANALYTICAL REPORT

Lab Number:	L1408458
Client:	Langan Engineering & Environmental 21 Penn Plaza 360 W. 31st Street, 8th Floor New York, NY 10001-2727
ATTN:	Greg Wyka
Phone:	(212) 479-5476
Project Name:	GREENPOINT LANDING
Project Number:	170229002
Report Date:	04/29/14

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: GREENPOINT LANDING
Project Number: 170229002

Lab Number: L1408458
Report Date: 04/29/14

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1408458-01	SV-15_20140422	BROOKLYN, NEW YORK	04/22/14 09:36
L1408458-02	SV-14_20140422	BROOKLYN, NEW YORK	04/22/14 09:58
L1408458-03	SV-13_20140422	BROOKLYN, NEW YORK	04/22/14 10:11
L1408458-04	AA02_20140422	BROOKLYN, NEW YORK	04/22/14 10:18

Project Name: GREENPOINT LANDING
Project Number: 170229002

Lab Number: L1408458
Report Date: 04/29/14

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	GREENPOINT LANDING	**Lab Number:**	L1408458
Project Number:	170229002	**Report Date:**	04/29/14

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on April 21, 2014. The canister certification results are provided as an addendum.

Sample L1408458-02 has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

Sample L1408458-03 has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

Sample L1408458-04 results for Acetone should be considered estimated due to co-elution with a non-target peak.

The WG685206-3 LCS recovery for Vinyl Acetate (135%) is above the upper 130% acceptance limit. The response for this compound was elevated however it was not detected in any of the associated samples therefore no further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson

Title: Technical Director/Representative Date: 04/29/14

AIR

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-01
Client ID: SV-15_20140422
Sample Location: BROOKLYN, NEW YORK
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 04/26/14 02:57
Analyst: RY

Date Collected: 04/22/14 09:36
Date Received: 04/22/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	0.287	0.200	--	0.593	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	76.4	2.50	--	144	4.71	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	327	1.00	--	777	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	53.2	0.500	--	131	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	1.19	0.500	--	3.61	1.52	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	6.59	0.200	--	20.5	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	2.23	0.200	--	6.58	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-01
Client ID: SV-15_20140422
Sample Location: BROOKLYN, NEW YORK
Date Collected: 04/22/14 09:36
Date Received: 04/22/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chloroform	0.212	0.200	--	1.04	0.977	--		1
Tetrahydrofuran	0.437	0.200	--	1.29	0.590	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.901	0.200	--	3.18	0.705	--		1
1,1,1-Trichloroethane	0.677	0.200	--	3.69	1.09	--		1
Benzene	0.529	0.200	--	1.69	0.639	--		1
Carbon tetrachloride	0.239	0.200	--	1.50	1.26	--		1
Cyclohexane	1.08	0.200	--	3.72	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	1.02	0.200	--	5.48	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.491	0.200	--	2.01	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	14.0	0.200	--	52.8	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	0.390	0.200	--	2.64	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	0.516	0.400	--	2.24	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	0.408	0.200	--	1.74	0.852	--		1

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-01
Client ID: SV-15_20140422
Sample Location: BROOKLYN, NEW YORK
Date Collected: 04/22/14 09:36
Date Received: 04/22/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	0.219	0.200	--	1.08	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	0.202	0.200	--	1.21	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	88		60-140
Bromochloromethane	84		60-140
chlorobenzene-d5	97		60-140

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-02 D
Client ID: SV-14_20140422
Sample Location: BROOKLYN, NEW YORK
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 04/26/14 03:29
Analyst: RY

Date Collected: 04/22/14 09:58
Date Received: 04/22/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	ND	2.00	--	ND	9.89	--		10
Chloromethane	ND	2.00	--	ND	4.13	--		10
Freon-114	ND	2.00	--	ND	14.0	--		10
Vinyl chloride	ND	2.00	--	ND	5.11	--		10
1,3-Butadiene	ND	2.00	--	ND	4.42	--		10
Bromomethane	ND	2.00	--	ND	7.77	--		10
Chloroethane	ND	2.00	--	ND	5.28	--		10
Ethanol	ND	25.0	--	ND	47.1	--		10
Vinyl bromide	ND	2.00	--	ND	8.74	--		10
Acetone	744	10.0	--	1770	23.8	--		10
Trichlorofluoromethane	ND	2.00	--	ND	11.2	--		10
Isopropanol	ND	5.00	--	ND	12.3	--		10
1,1-Dichloroethene	ND	2.00	--	ND	7.93	--		10
Tertiary butyl Alcohol	ND	5.00	--	ND	15.2	--		10
Methylene chloride	ND	10.0	--	ND	34.7	--		10
3-Chloropropene	ND	2.00	--	ND	6.26	--		10
Carbon disulfide	ND	2.00	--	ND	6.23	--		10
Freon-113	ND	2.00	--	ND	15.3	--		10
trans-1,2-Dichloroethene	ND	2.00	--	ND	7.93	--		10
1,1-Dichloroethane	ND	2.00	--	ND	8.09	--		10
Methyl tert butyl ether	ND	2.00	--	ND	7.21	--		10
2-Butanone	5.75	2.00	--	17.0	5.90	--		10
cis-1,2-Dichloroethene	ND	2.00	--	ND	7.93	--		10
Ethyl Acetate	ND	5.00	--	ND	18.0	--		10

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-02 D
Client ID: SV-14_20140422
Sample Location: BROOKLYN, NEW YORK
Date Collected: 04/22/14 09:58
Date Received: 04/22/14
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chloroform	ND	2.00	--	ND	9.77	--		10
Tetrahydrofuran	ND	2.00	--	ND	5.90	--		10
1,2-Dichloroethane	ND	2.00	--	ND	8.09	--		10
n-Hexane	ND	2.00	--	ND	7.05	--		10
1,1,1-Trichloroethane	ND	2.00	--	ND	10.9	--		10
Benzene	ND	2.00	--	ND	6.39	--		10
Carbon tetrachloride	ND	2.00	--	ND	12.6	--		10
Cyclohexane	ND	2.00	--	ND	6.88	--		10
1,2-Dichloropropane	ND	2.00	--	ND	9.24	--		10
Bromodichloromethane	ND	2.00	--	ND	13.4	--		10
1,4-Dioxane	ND	2.00	--	ND	7.21	--		10
Trichloroethene	ND	2.00	--	ND	10.7	--		10
2,2,4-Trimethylpentane	ND	2.00	--	ND	9.34	--		10
Heptane	ND	2.00	--	ND	8.20	--		10
cis-1,3-Dichloropropene	ND	2.00	--	ND	9.08	--		10
4-Methyl-2-pentanone	ND	2.00	--	ND	8.20	--		10
trans-1,3-Dichloropropene	ND	2.00	--	ND	9.08	--		10
1,1,2-Trichloroethane	ND	2.00	--	ND	10.9	--		10
Toluene	51.8	2.00	--	195	7.54	--		10
2-Hexanone	ND	2.00	--	ND	8.20	--		10
Dibromochloromethane	ND	2.00	--	ND	17.0	--		10
1,2-Dibromoethane	ND	2.00	--	ND	15.4	--		10
Tetrachloroethene	ND	2.00	--	ND	13.6	--		10
Chlorobenzene	ND	2.00	--	ND	9.21	--		10
Ethylbenzene	ND	2.00	--	ND	8.69	--		10
p/m-Xylene	5.90	4.00	--	25.6	17.4	--		10
Bromoform	ND	2.00	--	ND	20.7	--		10
Styrene	13.8	2.00	--	58.8	8.52	--		10

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-02 D
Client ID: SV-14_20140422
Sample Location: BROOKLYN, NEW YORK
Date Collected: 04/22/14 09:58
Date Received: 04/22/14
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,1,2,2-Tetrachloroethane	ND	2.00	--	ND	13.7	--		10
o-Xylene	2.29	2.00	--	9.95	8.69	--		10
4-Ethyltoluene	ND	2.00	--	ND	9.83	--		10
1,3,5-Trimethylbenzene	ND	2.00	--	ND	9.83	--		10
1,2,4-Trimethylbenzene	ND	2.00	--	ND	9.83	--		10
Benzyl chloride	ND	2.00	--	ND	10.4	--		10
1,3-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,4-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,2-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,2,4-Trichlorobenzene	ND	2.00	--	ND	14.8	--		10
Hexachlorobutadiene	ND	2.00	--	ND	21.3	--		10

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	95		60-140
Bromochloromethane	93		60-140
chlorobenzene-d5	97		60-140

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-03 D
Client ID: SV-13_20140422
Sample Location: BROOKLYN, NEW YORK
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 04/26/14 04:01
Analyst: RY

Date Collected: 04/22/14 10:11
Date Received: 04/22/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	ND	0.400	--	ND	1.98	--		2
Chloromethane	0.626	0.400	--	1.29	0.826	--		2
Freon-114	ND	0.400	--	ND	2.80	--		2
Vinyl chloride	ND	0.400	--	ND	1.02	--		2
1,3-Butadiene	0.958	0.400	--	2.12	0.885	--		2
Bromomethane	ND	0.400	--	ND	1.55	--		2
Chloroethane	ND	0.400	--	ND	1.06	--		2
Ethanol	102	5.00	--	192	9.42	--		2
Vinyl bromide	ND	0.400	--	ND	1.75	--		2
Acetone	498	2.00	--	1180	4.75	--		2
Trichlorofluoromethane	ND	0.400	--	ND	2.25	--		2
Isopropanol	57.4	1.00	--	141	2.46	--		2
1,1-Dichloroethene	ND	0.400	--	ND	1.59	--		2
Tertiary butyl Alcohol	1.79	1.00	--	5.43	3.03	--		2
Methylene chloride	ND	2.00	--	ND	6.95	--		2
3-Chloropropene	ND	0.400	--	ND	1.25	--		2
Carbon disulfide	3.99	0.400	--	12.4	1.25	--		2
Freon-113	ND	0.400	--	ND	3.07	--		2
trans-1,2-Dichloroethene	ND	0.400	--	ND	1.59	--		2
1,1-Dichloroethane	ND	0.400	--	ND	1.62	--		2
Methyl tert butyl ether	ND	0.400	--	ND	1.44	--		2
2-Butanone	2.33	0.400	--	6.87	1.18	--		2
cis-1,2-Dichloroethene	ND	0.400	--	ND	1.59	--		2
Ethyl Acetate	ND	1.00	--	ND	3.60	--		2

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-03 D
Client ID: SV-13_20140422
Sample Location: BROOKLYN, NEW YORK
Date Collected: 04/22/14 10:11
Date Received: 04/22/14
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chloroform	ND	0.400	--	ND	1.95	--		2
Tetrahydrofuran	0.492	0.400	--	1.45	1.18	--		2
1,2-Dichloroethane	ND	0.400	--	ND	1.62	--		2
n-Hexane	2.49	0.400	--	8.78	1.41	--		2
1,1,1-Trichloroethane	ND	0.400	--	ND	2.18	--		2
Benzene	2.04	0.400	--	6.52	1.28	--		2
Carbon tetrachloride	ND	0.400	--	ND	2.52	--		2
Cyclohexane	4.96	0.400	--	17.1	1.38	--		2
1,2-Dichloropropane	ND	0.400	--	ND	1.85	--		2
Bromodichloromethane	ND	0.400	--	ND	2.68	--		2
1,4-Dioxane	ND	0.400	--	ND	1.44	--		2
Trichloroethene	ND	0.400	--	ND	2.15	--		2
2,2,4-Trimethylpentane	ND	0.400	--	ND	1.87	--		2
Heptane	0.800	0.400	--	3.28	1.64	--		2
cis-1,3-Dichloropropene	ND	0.400	--	ND	1.82	--		2
4-Methyl-2-pentanone	ND	0.400	--	ND	1.64	--		2
trans-1,3-Dichloropropene	ND	0.400	--	ND	1.82	--		2
1,1,2-Trichloroethane	ND	0.400	--	ND	2.18	--		2
Toluene	13.4	0.400	--	50.5	1.51	--		2
2-Hexanone	ND	0.400	--	ND	1.64	--		2
Dibromochloromethane	ND	0.400	--	ND	3.41	--		2
1,2-Dibromoethane	ND	0.400	--	ND	3.07	--		2
Tetrachloroethene	0.428	0.400	--	2.90	2.71	--		2
Chlorobenzene	ND	0.400	--	ND	1.84	--		2
Ethylbenzene	ND	0.400	--	ND	1.74	--		2
p/m-Xylene	ND	0.800	--	ND	3.47	--		2
Bromoform	ND	0.400	--	ND	4.14	--		2
Styrene	ND	0.400	--	ND	1.70	--		2

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-03 D
Client ID: SV-13_20140422
Sample Location: BROOKLYN, NEW YORK
Date Collected: 04/22/14 10:11
Date Received: 04/22/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,1,2,2-Tetrachloroethane	ND	0.400	--	ND	2.75	--		2
o-Xylene	ND	0.400	--	ND	1.74	--		2
4-Ethyltoluene	ND	0.400	--	ND	1.97	--		2
1,3,5-Trimethylbenzene	ND	0.400	--	ND	1.97	--		2
1,2,4-Trimethylbenzene	ND	0.400	--	ND	1.97	--		2
Benzyl chloride	ND	0.400	--	ND	2.07	--		2
1,3-Dichlorobenzene	ND	0.400	--	ND	2.40	--		2
1,4-Dichlorobenzene	ND	0.400	--	ND	2.40	--		2
1,2-Dichlorobenzene	ND	0.400	--	ND	2.40	--		2
1,2,4-Trichlorobenzene	ND	0.400	--	ND	2.97	--		2
Hexachlorobutadiene	ND	0.400	--	ND	4.27	--		2

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	95		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	95		60-140

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-04
Client ID: AA02_20140422
Sample Location: BROOKLYN, NEW YORK
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 04/25/14 18:29
Analyst: RY

Date Collected: 04/22/14 10:18
Date Received: 04/22/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.401	0.200	--	1.98	0.989	--		1
Chloromethane	0.617	0.200	--	1.27	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	3.75	2.50	--	7.07	4.71	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	1.99	1.00	--	4.73	2.38	--		1
Trichlorofluoromethane	0.236	0.200	--	1.33	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.213	0.200	--	0.628	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-04
Client ID: AA02_20140422
Sample Location: BROOKLYN, NEW YORK
Date Collected: 04/22/14 10:18
Date Received: 04/22/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.340	0.200	--	1.20	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.224	0.200	--	0.716	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.284	0.200	--	1.07	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

SAMPLE RESULTS

Lab ID: L1408458-04
Client ID: AA02_20140422
Sample Location: BROOKLYN, NEW YORK
Date Collected: 04/22/14 10:18
Date Received: 04/22/14
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	92		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	94		60-140

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 04/25/14 14:04

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-04 Batch: WG685206-4								
Propylene	ND	0.500	--	ND	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 04/25/14 14:04

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-04 Batch: WG685206-4								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1

Project Name: GREENPOINT LANDING
Project Number: 170229002
Lab Number: L1408458
Report Date: 04/29/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 04/25/14 14:04

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-04 Batch: WG685206-4								
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Lab Control Sample Analysis

Batch Quality Control

Project Name: GREENPOINT LANDING

Project Number: 170229002

Lab Number: L1408458

Report Date: 04/29/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 Batch: WG685206-3								
Chlorodifluoromethane	105		-		70-130	-		
Propylene	111		-		70-130	-		
Propane	85		-		70-130	-		
Dichlorodifluoromethane	116		-		70-130	-		
Chloromethane	121		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	124		-		70-130	-		
Methanol	99		-		70-130	-		
Vinyl chloride	130		-		70-130	-		
1,3-Butadiene	123		-		70-130	-		
Butane	110		-		70-130	-		
Bromomethane	124		-		70-130	-		
Chloroethane	122		-		70-130	-		
Ethyl Alcohol	107		-		70-130	-		
Dichlorofluoromethane	117		-		70-130	-		
Vinyl bromide	119		-		70-130	-		
Acrolein	109		-		70-130	-		
Acetone	120		-		70-130	-		
Acetonitrile	112		-		70-130	-		
Trichlorofluoromethane	126		-		70-130	-		
iso-Propyl Alcohol	118		-		70-130	-		
Acrylonitrile	106		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: GREENPOINT LANDING

Project Number: 170229002

Lab Number: L1408458

Report Date: 04/29/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 Batch: WG685206-3								
Pentane	104		-		70-130	-		
Ethyl ether	93		-		70-130	-		
1,1-Dichloroethene	118		-		70-130	-		
tert-Butyl Alcohol	111		-		70-130	-		
Methylene chloride	112		-		70-130	-		
3-Chloropropene	109		-		70-130	-		
Carbon disulfide	104		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	118		-		70-130	-		
trans-1,2-Dichloroethene	105		-		70-130	-		
1,1-Dichloroethane	116		-		70-130	-		
Methyl tert butyl ether	101		-		70-130	-		
Vinyl acetate	**135**	Q	-		70-130	-		
2-Butanone	101		-		70-130	-		
cis-1,2-Dichloroethene	125		-		70-130	-		
Ethyl Acetate	120		-		70-130	-		
Chloroform	121		-		70-130	-		
Tetrahydrofuran	101		-		70-130	-		
2,2-Dichloropropane	100		-		70-130	-		
1,2-Dichloroethane	121		-		70-130	-		
n-Hexane	91		-		70-130	-		
Isopropyl Ether	85		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: GREENPOINT LANDING

Project Number: 170229002

Lab Number: L1408458

Report Date: 04/29/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 Batch: WG685206-3								
Ethyl-Tert-Butyl-Ether	90		-		70-130	-		
1,1,1-Trichloroethane	101		-		70-130	-		
1,1-Dichloropropene	94		-		70-130	-		
Benzene	99		-		70-130	-		
Carbon tetrachloride	102		-		70-130	-		
Cyclohexane	94		-		70-130	-		
Tertiary-Amyl Methyl Ether	87		-		70-130	-		
Dibromomethane	97		-		70-130	-		
1,2-Dichloropropane	102		-		70-130	-		
Bromodichloromethane	97		-		70-130	-		
1,4-Dioxane	96		-		70-130	-		
Trichloroethene	104		-		70-130	-		
2,2,4-Trimethylpentane	98		-		70-130	-		
Methyl methacrylate	96		-		70-130	-		
Heptane	88		-		70-130	-		
cis-1,3-Dichloropropene	103		-		70-130	-		
4-Methyl-2-pentanone	94		-		70-130	-		
trans-1,3-Dichloropropene	88		-		70-130	-		
1,1,2-Trichloroethane	105		-		70-130	-		
Toluene	97		-		70-130	-		
1,3-Dichloropropane	91		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: GREENPOINT LANDING

Project Number: 170229002

Lab Number: L1408458

Report Date: 04/29/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 Batch: WG685206-3								
2-Hexanone	96		-		70-130	-		
Dibromochloromethane	90		-		70-130	-		
1,2-Dibromoethane	98		-		70-130	-		
Butyl Acetate	92		-		70-130	-		
Octane	87		-		70-130	-		
Tetrachloroethene	101		-		70-130	-		
1,1,1,2-Tetrachloroethane	93		-		70-130	-		
Chlorobenzene	104		-		70-130	-		
Ethylbenzene	99		-		70-130	-		
p/m-Xylene	100		-		70-130	-		
Bromoform	85		-		70-130	-		
Styrene	99		-		70-130	-		
1,1,2,2-Tetrachloroethane	107		-		70-130	-		
o-Xylene	103		-		70-130	-		
1,2,3-Trichloropropane	92		-		70-130	-		
Nonane (C9)	87		-		70-130	-		
Isopropylbenzene	97		-		70-130	-		
Bromobenzene	90		-		70-130	-		
o-Chlorotoluene	96		-		70-130	-		
n-Propylbenzene	97		-		70-130	-		
p-Chlorotoluene	94		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: GREENPOINT LANDING

Project Number: 170229002

Lab Number: L1408458

Report Date: 04/29/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 Batch: WG685206-3								
4-Ethyltoluene	91		-		70-130	-		
1,3,5-Trimethylbenzene	100		-		70-130	-		
tert-Butylbenzene	97		-		70-130	-		
1,2,4-Trimethylbenzene	105		-		70-130	-		
Decane (C10)	96		-		70-130	-		
Benzyl chloride	74		-		70-130	-		
1,3-Dichlorobenzene	107		-		70-130	-		
1,4-Dichlorobenzene	107		-		70-130	-		
sec-Butylbenzene	97		-		70-130	-		
p-Isopropyltoluene	89		-		70-130	-		
1,2-Dichlorobenzene	106		-		70-130	-		
n-Butylbenzene	100		-		70-130	-		
1,2-Dibromo-3-chloropropane	93		-		70-130	-		
Undecane	103		-		70-130	-		
Dodecane (C12)	117		-		70-130	-		
1,2,4-Trichlorobenzene	115		-		70-130	-		
Naphthalene	103		-		70-130	-		
1,2,3-Trichlorobenzene	103		-		70-130	-		
Hexachlorobutadiene	117		-		70-130	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: GREENPOINT LANDING
Project Number: 170229002

Lab Number: L1408458
Report Date: 04/29/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG685206-5 QC Sample: L1408400-01 Client ID: DUP Sample						
Dichlorodifluoromethane	ND	ND	ppbV	NC		25
Chloromethane	ND	ND	ppbV	NC		25
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethyl Alcohol	ND	ND	ppbV	NC		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	284	281	ppbV	1		25
Trichlorofluoromethane	ND	ND	ppbV	NC		25
iso-Propyl Alcohol	ND	ND	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
tert-Butyl Alcohol	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: GREENPOINT LANDING
Project Number: 170229002

Lab Number: L1408458
Report Date: 04/29/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG685206-5 QC Sample: L1408400-01 Client ID: DUP Sample					
1,1-Dichloroethane	ND	ND	ppbV	NC	25
Methyl tert butyl ether	ND	ND	ppbV	NC	25
2-Butanone	3.58	3.28	ppbV	9	25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC	25
Ethyl Acetate	ND	ND	ppbV	NC	25
Chloroform	ND	ND	ppbV	NC	25
Tetrahydrofuran	ND	ND	ppbV	NC	25
1,2-Dichloroethane	ND	ND	ppbV	NC	25
n-Hexane	843	854	ppbV	1	25
1,1,1-Trichloroethane	ND	ND	ppbV	NC	25
Benzene	ND	ND	ppbV	NC	25
Carbon tetrachloride	ND	ND	ppbV	NC	25
Cyclohexane	2.06	2.16	ppbV	5	25
1,2-Dichloropropane	ND	ND	ppbV	NC	25
Bromodichloromethane	ND	ND	ppbV	NC	25
1,4-Dioxane	ND	ND	ppbV	NC	25
Trichloroethene	ND	ND	ppbV	NC	25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC	25
Heptane	13.6	13.4	ppbV	1	25

Lab Duplicate Analysis
Batch Quality Control

Project Name: GREENPOINT LANDING
Project Number: 170229002

Lab Number: L1408458
Report Date: 04/29/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG685206-5 QC Sample: L1408400-01 Client ID: DUP Sample					
cis-1,3-Dichloropropene	ND	ND	ppbV	NC	25
4-Methyl-2-pentanone	ND	ND	ppbV	NC	25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC	25
1,1,2-Trichloroethane	ND	ND	ppbV	NC	25
Toluene	64.1	62.9	ppbV	2	25
2-Hexanone	ND	ND	ppbV	NC	25
Dibromochloromethane	ND	ND	ppbV	NC	25
1,2-Dibromoethane	ND	ND	ppbV	NC	25
Tetrachloroethene	ND	ND	ppbV	NC	25
Chlorobenzene	ND	ND	ppbV	NC	25
Ethylbenzene	2.18	2.17	ppbV	0	25
p/m-Xylene	7.49	7.39	ppbV	1	25
Bromoform	ND	ND	ppbV	NC	25
Styrene	8.84	8.66	ppbV	2	25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC	25
o-Xylene	2.71	2.50	ppbV	8	25
4-Ethyltoluene	ND	ND	ppbV	NC	25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC	25
1,2,4-Trimethylbenzene	ND	ND	ppbV	NC	25

Lab Duplicate Analysis
Batch Quality Control

Project Name: GREENPOINT LANDING
Project Number: 170229002

Lab Number: L1408458
Report Date: 04/29/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG685206-5 QC Sample: L1408400-01 Client ID: DUP Sample					
Benzyl chloride	ND	ND	ppbV	NC	25
1,3-Dichlorobenzene	ND	ND	ppbV	NC	25
1,4-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC	25
Hexachlorobutadiene	ND	ND	ppbV	NC	25

Project Name: GREENPOINT LANDING

Lab Number: L1408458

Project Number: 170229002

Report Date: 04/29/14

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1408458-01	SV-15_20140422	0146	#20 SV	04/21/14	101440		-	-	-	Pass	18.0	21	15
L1408458-01	SV-15_20140422	1734	2.7L Can	04/21/14	101440	L1407664-01	Pass	-29.3	-2.0	-	-	-	-
L1408458-02	SV-14_20140422	0068	#20 AMB	04/21/14	101440		-	-	-	Pass	17.6	18	2
L1408458-02	SV-14_20140422	147	2.7L Can	04/21/14	101440	L1407664-01	Pass	-29.9	-4.2	-	-	-	-
L1408458-03	SV-13_20140422	0100	#20 AMB	04/21/14	101440		-	-	-	Pass	18.0	20	11
L1408458-03	SV-13_20140422	535	2.7L Can	04/21/14	101440	L1407664-01	Pass	-29.8	-2.9	-	-	-	-
L1408458-04	AA02_20140422	0005	#30 AMB	04/21/14	101440		-	-	-	Pass	40	43	7
L1408458-04	AA02_20140422	968	6.0L Can	04/21/14	101440	L1407664-03	Pass	-29.9	-2.6	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-01
Client ID: CAN 1804 SHELF 15
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 04/16/14 06:53
Analyst: RY

Date Collected: 04/11/14 17:17
Date Received: 04/12/14
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.200	--	ND	0.434	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-01
Client ID: CAN 1804 SHELF 15
Sample Location:
Date Collected: 04/11/14 17:17
Date Received: 04/12/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-01
Client ID: CAN 1804 SHELF 15
Sample Location:
Date Collected: 04/11/14 17:17
Date Received: 04/12/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-01
Client ID: CAN 1804 SHELF 15
Sample Location:
Date Collected: 04/11/14 17:17
Date Received: 04/12/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

	Results	**Qualifier**	**Units**	**RDL**	**Dilution Factor**
Tentatively Identified Compounds					
No Tentatively Identified Compounds					

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-01
Client ID: CAN 1804 SHELF 15
Sample Location:
Date Collected: 04/11/14 17:17
Date Received: 04/12/14
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	93		60-140
Bromochloromethane	98		60-140
chlorobenzene-d5	91		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-01
Client ID: CAN 1804 SHELF 15
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 04/16/14 06:53
Analyst: RY

Date Collected: 04/11/14 17:17
Date Received: 04/12/14
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.050	--	ND	0.247	--		1
Chloromethane	ND	0.500	--	ND	1.03	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.020	--	ND	0.053	--		1
Acetone	ND	2.00	--	ND	4.75	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.020	--	ND	0.072	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-01
Client ID: CAN 1804 SHELF 15
Sample Location:
Date Collected: 04/11/14 17:17
Date Received: 04/12/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.020	--	ND	0.092	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.500	--	ND	2.46	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.500	--	ND	2.74	--		1
p-Isopropyltoluene	ND	0.500	--	ND	2.74	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-01
Client ID: CAN 1804 SHELF 15
Sample Location:
Date Collected: 04/11/14 17:17
Date Received: 04/12/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
n-Butylbenzene	ND	0.500	--	ND	2.74	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	94		60-140
bromochloromethane	98		60-140
chlorobenzene-d5	106		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-03
Client ID: CAN 1533 SHELF 52
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 04/16/14 08:01
Analyst: RY

Date Collected: 04/11/14 17:40
Date Received: 04/12/14
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	9.03	5.00	--	11.8	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.200	--	ND	0.434	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-03
Client ID: CAN 1533 SHELF 52
Sample Location:
Date Collected: 04/11/14 17:40
Date Received: 04/12/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-03
Client ID: CAN 1533 SHELF 52
Sample Location:
Date Collected: 04/11/14 17:40
Date Received: 04/12/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-03
Client ID: CAN 1533 SHELF 52
Sample Location:
Date Collected: 04/11/14 17:40
Date Received: 04/12/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

	Results	**Qualifier**	**Units**	**RDL**	**Dilution Factor**
Tentatively Identified Compounds					
Silanol, Trimethyl-	1.0	NJ	ppbV		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-03
Client ID: CAN 1533 SHELF 52
Sample Location:
Date Collected: 04/11/14 17:40
Date Received: 04/12/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	79		60-140
Bromochloromethane	89		60-140
chlorobenzene-d5	69		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-03
Client ID: CAN 1533 SHELF 52
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 04/16/14 08:01
Analyst: RY

Date Collected: 04/11/14 17:40
Date Received: 04/12/14
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.050	--	ND	0.247	--		1
Chloromethane	ND	0.500	--	ND	1.03	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.020	--	ND	0.053	--		1
Acetone	ND	2.00	--	ND	4.75	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.020	--	ND	0.072	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-03
Client ID: CAN 1533 SHELF 52
Sample Location:
Date Collected: 04/11/14 17:40
Date Received: 04/12/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.020	--	ND	0.092	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.500	--	ND	2.46	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.500	--	ND	2.74	--		1
p-Isopropyltoluene	ND	0.500	--	ND	2.74	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1407664
Report Date: 04/29/14

Air Canister Certification Results

Lab ID: L1407664-03
Client ID: CAN 1533 SHELF 52
Sample Location:
Date Collected: 04/11/14 17:40
Date Received: 04/12/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
n-Butylbenzene	ND	0.500	--	ND	2.74	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	79		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	81		60-140

Project Name: GREENPOINT LANDING
Project Number: 170229002

Lab Number: L1408458
Report Date: 04/29/14

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information **Custody Seal**
Cooler
N/A Present/Intact

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1408458-01A	Canister - 2.7 Liter	N/A	N/A		Y	Present/Intact	TO15-LL(30)
L1408458-02A	Canister - 2.7 Liter	N/A	N/A		Y	Present/Intact	TO15-LL(30)
L1408458-03A	Canister - 2.7 Liter	N/A	N/A		Y	Present/Intact	TO15-LL(30)
L1408458-04A	Canister - 6 Liter	N/A	N/A		Y	Present/Intact	TO15-LL(30)

*Values in parentheses indicate holding time in days

Project Name:	GREENPOINT LANDING	**Lab Number:**	L1408458
Project Number:	170229002	**Report Date:**	04/29/14

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI - Not Ignitable.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

Report Format: Data Usability Report

Project Name:	GREENPOINT LANDING	**Lab Number:**	L1408458
Project Number:	170229002	**Report Date:**	04/29/14

Data Qualifiers

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

Last revised April 15, 2014

The following analytes are not included in our NELAP Scope of Accreditation:

Westborough Facility
EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (ME(((, Tert-butyl alcohol, 2-He(anone, Tetrahydro(uran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIB(((, Carbon disul(ide, Diethyl ether.
EPA 8260C: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide(, Methyl methacrylate, Azobenzene.
EPA 8330A/B: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.
EPA 8270D: 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 625: 4-Chloroaniline, 4-Methylphenol.
SM4500: Soil: Total Phosphorus, T(N, NO2, NO3.
EPA 9071: Total Petroleum Hydrocarbons, Oil (Grease.

Mansfield Facility
EPA 8270D: Biphenyl.
EPA 2540D: TSS
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water
EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl(**EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na(**EPA 245.1:** Mercury(
EPA 300.0: Nitrate-N, Fluoride, Sul(ate(**EPA 353.2**: Nitrate-N, Nitrite-N(**SM4500NO3-F**: Nitrate-N, Nitrite-N(**SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water
EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,(n(
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,(,Se,Ag,Na,Sr,Ti,Tl,V,(n(
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons (Aromatics,
EPA 608: Chlordane, To(aphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosul(an I, Endosul(an II, Endosul(an sul(ate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epo(ide, PCBs
EPA 625: SVOC (Acid/Base/Neutral E(tractables(, **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

For a complete listing o(analytes and methods, please contact your Alpha Pro(ect Manager.

AIR ANALYSIS

PAGE 1 OF 1

CHAIN OF CUSTODY

ALPHA ANALYTICAL
320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 4/22/14

ALPHA Job #: L1408458

Client Information

Client: Langan Engineering
Address: 21 Penn Plaza, 360 W. 31st Street
New York, New York
Phone: 212.479.5400
Fax: 212.479.5444
Email: gwyka@langan.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Greenpoint Landing
Project Location: Brooklyn, New York
Project #: 170229002
Project Manager: Greg Wyka
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: 4/29/2014 Time:

Report Information - Data Deliverables

☐ FAX
☒ ADEx
Criteria Checker: _____
(Default based on Regulatory Criteria Indicated)
Other Formats: _____
☒ EMAIL (standard pdf report)
☒ Additional Deliverables: ASP Cat B Deliverables
Report to: (if different than Project Manager)

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Criteria
NYSDOH	AGVS	

Other Project Specific Requirements/Comments:

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	ANALYSIS: TO-14A by TO-15	TO-15	TO-15 SIM	APH	FIXED GASES	TO-13A	TO-4 / TO-10	Sample Comments (i.e. PID)
08458.01	SV-15_20140422	4/22/14	07:47	09:36	-28.89	-2.56	SV	SH	2.7L	1734	0146		X						
02	SV-14_20140422		07:58	09:58	-28.70	-5.16	SV	SH	2.7L	147	0068		X						
03	SV-13_20140422		08:11	10:11	-30.09	-3.94	SV	SH	2.7L	535	0100		X						
04	AA02_20140422		08:18	10:18	-29.06	-2.80	AA	SH	6L	968	0005		X						

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Relinquished By:	Date/Time	Received By:	Date/Time:
[signature]	4/22/2014 15:10	[signature]	4/22/14 15:10
Dave Langan ALL	4/22/14 1925	Tom Town	4-22-14 1925
Tom Town	4-22-14	[signature]	4/22/14

Form No: 101-02 (19-Jun-09)

APPENDIX D

ANALYTICAL LABORATORY CERTIFICATION

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2015
Issued April 01, 2014

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER WAKEFIELD
ALPHA ANALYTICAL
8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No: 11148

Is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Drinking Water Bacteriology	
Coliform, Total / E. coli (Qualitative)	SM 18-22 9223B (-97) (Colilert)
Standard Plate Count	SM 18-22 9215B (-00)
Drinking Water Metals I	
Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4
Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Drinking Water Metals II	
Aluminum, Total	EPA 200.7 Rev. 4.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.7 Rev. 4.4

Drinking Water Metals II	
Beryllium, Total	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4
Drinking Water Metals III	
Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4
Drinking Water Miscellaneous	
Organic Carbon, Total	SM 19-22 5310C (-00)
Perchlorate	EPA 332.0 Rev. 1
Turbidity	SM 18-22 2130 B (-01)
	EPA 180.1 Rev. 2.0
Drinking Water Non-Metals	
Alkalinity	SM 18-22 2320B (-97)
Calcium Hardness	EPA 200.7 Rev. 4.4
Chloride	EPA 300.0 Rev. 2.1
Color	SM 18-22 2120B (-01)
Cyanide	SM 18-22 4500-CN E (-99)
Fluoride, Total	EPA 300.0 Rev. 2.1
	SM 18-22 4500-F C (-97)
Nitrate (as N)	SM 18-22 4500-NO3 F (-00)
Nitrite (as N)	SM 18-22 4500-NO3 F (-00)
Solids, Total Dissolved	SM 18-22 2540C (-97)

Serial No.: 50510

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No: 11148

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All approved analytes are listed below:

Drinking Water Non-Metals	
Specific Conductance	SM 18-22 2510B (-97)
Sulfate (as SO4)	EPA 300.0 Rev. 2.1
Drinking Water Trihalomethanes	
Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2
Total Trihalomethanes	EPA 524.2
Fuel Additives	
Methyl tert-butyl ether	EPA 524.2
Naphthalene	EPA 524.2
Microextractibles	
1,2-Dibromo-3-chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Volatile Aromatics	
1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2

Volatile Aromatics	
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2
tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2
Volatile Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2

Serial No.: 50510

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WADSWORTH CENTER

Expires 12:01 AM April 01, 2015
Issued April 01, 2014

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MR. CHRISTOPHER WAKEFIELD
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8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No. 11148

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Volatile Halocarbons	
1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

Serial No.: 50510

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2015
Issued April 01, 2014

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ALPHA ANALYTICAL
8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No: 11148

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260C
	EPA 624
Acrylonitrile	EPA 8260C
	EPA 624
Ethyl methacrylate	EPA 8260C
Amines	
1,2-Diphenylhydrazine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 625
	EPA 8270D
Pyridine	EPA 625
	EPA 8270D
Bacteriology	
Coliform, Fecal	SM 9221C,E-06
	SM 9222D-97,-11
Coliform, Total	SM 9221B-06
	SM 9222B-97,-11
Standard Plate Count	SM 18-21 9215B
Benzidines	
3,3'-Dichlorobenzidine	EPA 625
Benzidines	
3,3'-Dichlorobenzidine	EPA 8270D
Benzidine	EPA 625
	EPA 8270D
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081B
	EPA 608
4,4'-DDE	EPA 8081B
	EPA 608
4,4'-DDT	EPA 8081B
	EPA 608
Aldrin	EPA 8081B
	EPA 608
alpha-BHC	EPA 8081B
	EPA 608
alpha-Chlordane	EPA 8081B
beta-BHC	EPA 8081B
	EPA 608
Chlordane Total	EPA 8081B
	EPA 608
delta-BHC	EPA 8081B
	EPA 608
Dieldrin	EPA 8081B
	EPA 608
Endosulfan I	EPA 8081B
	EPA 608

Serial No.: 50511

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2015
Issued April 01, 2014

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER WAKEFIELD
ALPHA ANALYTICAL
8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No: 11148

Is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Chlorinated Hydrocarbon Pesticides	
Endosulfan II	EPA 8081B
	EPA 608
Endosulfan sulfate	EPA 8081B
	EPA 608
Endrin	EPA 8081B
	EPA 608
Endrin aldehyde	EPA 8081B
	EPA 608
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
	EPA 608
Heptachlor epoxide	EPA 8081B
	EPA 608
Lindane	EPA 8081B
	EPA 608
Methoxychlor	EPA 8081B
	EPA 608
Toxaphene	EPA 8081B
	EPA 608
Chlorinated Hydrocarbons	
1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 625
	EPA 8270D

Chlorinated Hydrocarbons	
2-Chloronaphthalene	EPA 625
	EPA 8270D
Hexachlorobenzene	EPA 625
	EPA 8270D
Hexachlorobutadiene	EPA 625
	EPA 8270D
Hexachlorocyclopentadiene	EPA 625
	EPA 8270D
Hexachloroethane	EPA 625
	EPA 8270D
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dalapon	EPA 8151A
Dinoseb	EPA 8151A
Demand	
Biochemical Oxygen Demand	SM 5210B-01,-11
Carbonaceous BOD	SM 5210B-01,-11
Chemical Oxygen Demand	EPA 410.4 Rev. 2.0
	SM 5220D-97,-11
Fuel Oxygenates	
Di-isopropyl ether	EPA 8260C
Ethanol	EPA 8260C

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2015
Issued April 01, 2014

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER WAKEFIELD
ALPHA ANALYTICAL
8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No: 11148

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Fuel Oxygenates	
Methyl tert-butyl ether	EPA 8260C
tert-amyl methyl ether (TAME)	EPA 8260C
tert-butyl alcohol	EPA 8260C
tert-butyl ethyl ether (ETBE)	EPA 8260C
Haloethers	
4-Bromophenylphenyl ether	EPA 625
	EPA 8270D
4-Chlorophenylphenyl ether	EPA 625
	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 625
	EPA 8270D
Bis(2-chloroethyl)ether	EPA 625
	EPA 8270D
Bis(2-chloroisopropyl) ether	EPA 625
	EPA 8270D
Low Level Polynuclear Aromatics	
Acenaphthene Low Level	EPA 8270D SIM
Acenaphthylene Low Level	EPA 8270D SIM
Anthracene Low Level	EPA 8270D SIM
Benzo(a)anthracene Low Level	EPA 8270D SIM
Benzo(a)pyrene Low Level	EPA 8270D SIM
Benzo(b)fluoranthene Low Level	EPA 8270D SIM
Benzo(g,h,i)perylene Low Level	EPA 8270D SIM
Benzo(k)fluoranthene Low Level	EPA 8270D SIM
Chrysene Low Level	EPA 8270D SIM
Low Level Polynuclear Aromatics	
Dibenzo(a,h)anthracene Low Level	EPA 8270D SIM
Fluoranthene Low Level	EPA 8270D SIM
Fluorene Low Level	EPA 8270D SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D SIM
Naphthalene Low Level	EPA 8270D SIM
Phenanthrene Low Level	EPA 8270D SIM
Pyrene Low Level	EPA 8270D SIM
Mineral	
Acidity	SM 2310B-97,-11
Alkalinity	SM 2320B-97,-11
Chloride	EPA 300.0 Rev. 2.1
	SM 4500-Cl- E-97,-11
Fluoride, Total	EPA 300.0 Rev. 2.1
	SM 4500-F C-97,-11
Hardness, Total	EPA 200.7 Rev. 4.4
	SM 2340B-97,-11
Sulfate (as SO4)	EPA 300.0 Rev. 2.1
	SM 4500-SO4 E-97,-11
Nitroaromatics and Isophorone	
1,3-Dinitrobenzene	EPA 8270D
2,4-Dinitrotoluene	EPA 625
	EPA 8270D
2,6-Dinitrotoluene	EPA 625
	EPA 8270D
Isophorone	EPA 625

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All approved analytes are listed below:

Nitroaromatics and Isophorone	
Isophorone	EPA 8270D
Nitrobenzene	EPA 625
	EPA 8270D
Nitrosoamines	
N-Nitrosodimethylamine	EPA 625
	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 625
	EPA 8270D
N-Nitrosodiphenylamine	EPA 625
	EPA 8270D
Nutrient	
Ammonia (as N)	SM 4500-NH3 H-97,-11
	EPA 350.1 Rev. 2.0
Kjeldahl Nitrogen, Total	EPA 351.1 Rev. 1978
	LACHAT 10-107-06-2
Nitrate (as N)	EPA 353.2 Rev. 2.0
	EPA 300.0 Rev. 2.1
	SM 4500-NO3 F-00,-11
Nitrite (as N)	EPA 353.2 Rev. 2.0
	SM 4500-NO3 F-00,-11
	SM 4500-NO2 B-00,-11
Orthophosphate (as P)	SM 4500-P E-99,-11
Phosphorus, Total	SM 4500-P E-99,-11

Organophosphate Pesticides	
Atrazine	EPA 8270D
Parathion ethyl	EPA 8270D
Thionazin	EPA 8270D
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015C
Gasoline Range Organics	EPA 8015C
Phthalate Esters	
Benzyl butyl phthalate	EPA 625
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625
	EPA 8270D
Diethyl phthalate	EPA 625
	EPA 8270D
Dimethyl phthalate	EPA 625
	EPA 8270D
Di-n-butyl phthalate	EPA 625
	EPA 8270D
Di-n-octyl phthalate	EPA 625
	EPA 8270D
Polychlorinated Biphenyls	
PCB-1016	EPA 8082A
	EPA 608
PCB-1221	EPA 8082A
	EPA 608

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Polychlorinated Biphenyls		**Polynuclear Aromatics**	
PCB-1232	EPA 8082A EPA 608	Benzo(ghi)perylene	EPA 625 EPA 8270D
PCB-1242	EPA 8082A EPA 608	Benzo(k)fluoranthene	EPA 625 EPA 8270D
PCB-1248	EPA 8082A EPA 608	Chrysene	EPA 625 EPA 8270D
PCB-1254	EPA 8082A EPA 608	Dibenzo(a,h)anthracene	EPA 625 EPA 8270D
PCB-1260	EPA 8082A EPA 608	Fluoranthene	EPA 625 EPA 8270D
PCB-1262	EPA 8082A	Fluorene	EPA 625 EPA 8270D
PCB-1268	EPA 8082A	Indeno(1,2,3-cd)pyrene	EPA 625 EPA 8270D
Polynuclear Aromatics		Naphthalene	EPA 625 EPA 8270D
Acenaphthene	EPA 625 EPA 8270D	Phenanthrene	EPA 625 EPA 8270D
Acenaphthylene	EPA 625 EPA 8270D	Pyrene	EPA 625 EPA 8270D
Anthracene	EPA 625 EPA 8270D	**Priority Pollutant Phenols**	
Benzo(a)anthracene	EPA 625 EPA 8270D	2,3,4,6 Tetrachlorophenol	EPA 8270D
Benzo(a)pyrene	EPA 625 EPA 8270D	2,4,5-Trichlorophenol	EPA 625 EPA 8270D
Benzo(b)fluoranthene	EPA 625 EPA 8270D	2,4,6-Trichlorophenol	EPA 625

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Priority Pollutant Phenols	
2,4,6-Trichlorophenol	EPA 8270D
2,4-Dichlorophenol	EPA 625
	EPA 8270D
2,4-Dimethylphenol	EPA 625
	EPA 8270D
2,4-Dinitrophenol	EPA 625
	EPA 8270D
2-Chlorophenol	EPA 625
	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 625
	EPA 8270D
2-Methylphenol	EPA 625
	EPA 8270D
2-Nitrophenol	EPA 625
	EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 625
	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 625
	EPA 8270D
Pentachlorophenol	EPA 625
	EPA 8270D
Phenol	EPA 625
	EPA 8270D

Residue	
Solids, Total	SM 2540 B-97,-11
Solids, Total Dissolved	SM 2540 C-97,-11
Solids, Total Suspended	SM 2540 D-97,-11
Semi-Volatile Organics	
1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
Acetophenone	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Volatile Aromatics	
1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
	EPA 624
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
	EPA 624
1,4-Dichlorobenzene	EPA 8260C
	EPA 624

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Volatile Aromatics		**Volatile Halocarbons**	
2-Chlorotoluene	EPA 8260C	1,1,1-Trichloroethane	EPA 8260C
4-Chlorotoluene	EPA 8260C		EPA 624
Benzene	EPA 8260C	1,1,2,2-Tetrachloroethane	EPA 8260C
	EPA 624		EPA 624
Chlorobenzene	EPA 8260C	1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
	EPA 624	1,1,2-Trichloroethane	EPA 8260C
Ethyl benzene	EPA 8260C		EPA 624
	EPA 624	1,1-Dichloroethane	EPA 8260C
Isopropylbenzene	EPA 8260C		EPA 624
m/p-Xylenes	EPA 8260C	1,1-Dichloroethene	EPA 8260C
Naphthalene, Volatile	EPA 8260C		EPA 624
n-Butylbenzene	EPA 8260C	1,1-Dichloropropene	EPA 8260C
n-Propylbenzene	EPA 8260C	1,2,3-Trichloropropane	EPA 8260C
o-Xylene	EPA 8260C	1,2-Dibromo-3-chloropropane	EPA 8260C
p-Isopropyltoluene (P-Cymene)	EPA 8260C		EPA 8011
sec-Butylbenzene	EPA 8260C	1,2-Dibromoethane	EPA 8260C
Styrene	EPA 8260C		EPA 8011
	EPA 624	1,2-Dichloroethane	EPA 8260C
tert-Butylbenzene	EPA 8260C		EPA 624
Toluene	EPA 8260C	1,2-Dichloropropane	EPA 8260C
	EPA 624		EPA 624
Total Xylenes	EPA 8260C	1,3-Dichloropropane	EPA 8260C
	EPA 624	2,2-Dichloropropane	EPA 8260C
Volatile Halocarbons		2-Chloroethylvinyl ether	EPA 8260C
1,1,1,2-Tetrachloroethane	EPA 8260C		EPA 624
		Bromochloromethane	EPA 8260C

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Volatile Halocarbons	
Bromodichloromethane	EPA 8260C
	EPA 624
Bromoform	EPA 8260C
	EPA 624
Bromomethane	EPA 8260C
	EPA 624
Carbon tetrachloride	EPA 8260C
	EPA 624
Chloroethane	EPA 8260C
	EPA 624
Chloroform	EPA 8260C
	EPA 624
Chloromethane	EPA 8260C
	EPA 624
cis-1,2-Dichloroethene	EPA 8260C
	EPA 624
cis-1,3-Dichloropropene	EPA 8260C
	EPA 624
Dibromochloromethane	EPA 8260C
	EPA 624
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
	EPA 624
Hexachlorobutadiene, Volatile	EPA 8260C
Methylene chloride	EPA 8260C
	EPA 624

Volatile Halocarbons	
Tetrachloroethene	EPA 8260C
	EPA 624
trans-1,2-Dichloroethene	EPA 8260C
	EPA 624
trans-1,3-Dichloropropene	EPA 8260C
	EPA 624
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
	EPA 624
Trichlorofluoromethane	EPA 8260C
	EPA 624
Vinyl chloride	EPA 8260C
	EPA 624
Volatiles Organics	
1,4-Dioxane	EPA 8260C
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
n-Butanol	EPA 8260C

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ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Volatiles Organics	
Vinyl acetate	EPA 8260C
Wastewater Metals I	
Barium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Calcium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A
Chromium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A
Lead, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Wastewater Metals I	
Lead, Total	EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Magnesium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A
Manganese, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Potassium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A
Silver, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Sodium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A

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Wastewater Metals II	
Aluminum, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Antimony, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Arsenic, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Chromium VI	EPA 7196A
Mercury, Total	EPA 245.1 Rev. 3.0 EPA 7470A
Selenium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Vanadium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A
Wastewater Metals II	
Vanadium, Total	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Wastewater Metals III	
Cobalt, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Molybdenum, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.7 Rev. 4.4 EPA 6010C EPA 6020A EPA 200.8 Rev. 5.4
Tin, Total	EPA 200.7 Rev. 4.4 EPA 6010C
Titanium, Total	EPA 200.7 Rev. 4.4
Wastewater Miscellaneous	
Boron, Total	EPA 200.7 Rev. 4.4 EPA 6010C
Bromide	EPA 300.0 Rev. 2.1

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Wastewater Miscellaneous

Color	SM 2120B-01,-11
Cyanide, Total	SM 4500-CN E-99,-11
Formaldehyde	EPA 8315A
Oil and Grease Total Recoverable (HEM	EPA 1664A
	EPA 1664B
Organic Carbon, Total	SM 5310C-00,-11
Phenols	EPA 420.1 Rev. 1978
Silica, Dissolved	EPA 200.7 Rev. 4.4
Specific Conductance	EPA 120.1 Rev. 1982
	SM 2510B-97,-11
Sulfide (as S)	SM 4500-S2- D-00,-11
Surfactant (MBAS)	SM 5540C-00,-11
Total Petroleum Hydrocarbons	EPA 1664A
	EPA 1664B
Turbidity	SM 2130 B-01,-11
	EPA 180.1 Rev. 2.0

Sample Preparation Methods

	EPA 5030C
	SM 4500-CN B or C-99,-11
	EPA 9030B
	EPA 3005A
	EPA 3510C
	SM 4500-NH3 B-97,-11
	EPA 9010C

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All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260C
Acrylonitrile	EPA 8260C
Ethyl methacrylate	EPA 8260C
Amines	
1,2-Diphenylhydrazine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 8270D
Benzidines	
3,3'-Dichlorobenzidine	EPA 8270D
Benzidine	EPA 8270D
Characteristic Testing	
Corrosivity	EPA 9040C
	EPA 9045D
Ignitability	EPA 1030
	EPA 1010A
Synthetic Precipitation Leaching Proc.	EPA 1312
TCLP	EPA 1311
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B

Chlorinated Hydrocarbon Pesticides	
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
Atrazine	EPA 8270D
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
delta-BHC	EPA 8081B
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin aldehyde	EPA 8081B
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Toxaphene	EPA 8081B
Chlorinated Hydrocarbons	
1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 8270D

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2015
Issued April 01, 2014

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER WAKEFIELD
ALPHA ANALYTICAL
8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No: 11148

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:

Chlorinated Hydrocarbons	
2-Chloronaphthalene	EPA 8270D
Hexachlorobenzene	EPA 8270D
Hexachlorobutadiene	EPA 8270D
Hexachlorocyclopentadiene	EPA 8270D
Hexachloroethane	EPA 8270D
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8151A
Haloethers	
4-Bromophenylphenyl ether	EPA 8270D
4-Chlorophenylphenyl ether	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 8270D
Bis(2-chloroethyl)ether	EPA 8270D
Bis(2-chloroisopropyl) ether	EPA 8270D
Low Level Polynuclear Aromatic Hydrocarbons	
Acenaphthene Low Level	EPA 8270D SIM
Acenaphthylene Low Level	EPA 8270D SIM
Anthracene Low Level	EPA 8270D SIM
Benzo(a)anthracene Low Level	EPA 8270D SIM
Benzo(a)pyrene Low Level	EPA 8270D SIM

Low Level Polynuclear Aromatic Hydrocarbons	
Benzo(b)fluoranthene Low Level	EPA 8270D SIM
Benzo(g,h,i)perylene Low Level	EPA 8270D SIM
Benzo(k)fluoranthene Low Level	EPA 8270D SIM
Chrysene Low Level	EPA 8270D SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270D SIM
Fluoranthene Low Level	EPA 8270D SIM
Fluorene Low Level	EPA 8270D SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D SIM
Naphthalene Low Level	EPA 8270D SIM
Phenanthrene Low Level	EPA 8270D SIM
Pyrene Low Level	EPA 8270D SIM
Metals I	
Barium, Total	EPA 6010C EPA 6020A
Cadmium, Total	EPA 6010C EPA 6020A
Calcium, Total	EPA 6010C EPA 6020A
Chromium, Total	EPA 6010C EPA 6020A
Copper, Total	EPA 6010C EPA 6020A
Iron, Total	EPA 6010C EPA 6020A
Lead, Total	EPA 6010C

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Metals I	
Lead, Total	EPA 6020A
Magnesium, Total	EPA 6010C
	EPA 6020A
Manganese, Total	EPA 6010C
	EPA 6020A
Nickel, Total	EPA 6010C
	EPA 6020A
Potassium, Total	EPA 6010C
	EPA 6020A
Silver, Total	EPA 6010C
	EPA 6020A
Sodium, Total	EPA 6010C
	EPA 6020A
Metals II	
Aluminum, Total	EPA 6010C
	EPA 6020A
Antimony, Total	EPA 6010C
	EPA 6020A
Arsenic, Total	EPA 6010C
	EPA 6020A
Beryllium, Total	EPA 6010C
	EPA 6020A
Chromium VI	EPA 7196A
Mercury, Total	EPA 7471B
Selenium, Total	EPA 6010C

Metals II	
Selenium, Total	EPA 6020A
Vanadium, Total	EPA 6010C
	EPA 6020A
Zinc, Total	EPA 6010C
	EPA 6020A
Metals III	
Cobalt, Total	EPA 6010C
	EPA 6020A
Molybdenum, Total	EPA 6010C
	EPA 6020A
Thallium, Total	EPA 6010C
	EPA 6020A
Tin, Total	EPA 6010C
Minerals	
Chloride	EPA 9251
Sulfate (as SO4)	EPA 9038
Miscellaneous	
Boron, Total	EPA 6010C
Cyanide, Total	EPA 9014
	EPA 9012B
Phenols	EPA 9065
Specific Conductance	EPA 9050A
Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 8270D

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Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 8330A
2,6-Dinitrotoluene	EPA 8270D
Isophorone	EPA 8270D
Nitrobenzene	EPA 8270D
Pyridine	EPA 8270D
Nitrosoamines	
N-Nitrosodimethylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 8270D
N-Nitrosodiphenylamine	EPA 8270D
Organophosphate Pesticides	
Parathion ethyl	EPA 8270D
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015C
Gasoline Range Organics	EPA 8015C
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 8270D
Diethyl phthalate	EPA 8270D
Dimethyl phthalate	EPA 8270D
Di-n-butyl phthalate	EPA 8270D
Di-n-octyl phthalate	EPA 8270D
Polychlorinated Biphenyls	
PCB-1016	EPA 8082A

Polychlorinated Biphenyls	
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
PCB-1268	EPA 8082A
Polynuclear Aromatic Hydrocarbons	
Acenaphthene	EPA 8270D
Acenaphthylene	EPA 8270D
Anthracene	EPA 8270D
Benzo(a)anthracene	EPA 8270D
Benzo(a)pyrene	EPA 8270D
Benzo(b)fluoranthene	EPA 8270D
Benzo(ghi)perylene	EPA 8270D
Benzo(k)fluoranthene	EPA 8270D
Chrysene	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270D
Fluoranthene	EPA 8270D
Fluorene	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270D
Naphthalene	EPA 8270D
Phenanthrene	EPA 8270D
Pyrene	EPA 8270D

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Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 8270D
2,4-Dichlorophenol	EPA 8270D
2,4-Dimethylphenol	EPA 8270D
2,4-Dinitrophenol	EPA 8270D
2-Chlorophenol	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 8270D
2-Methylphenol	EPA 8270D
2-Nitrophenol	EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 8270D
Pentachlorophenol	EPA 8270D
Phenol	EPA 8270D
Semi-Volatile Organics	
1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
Acetophenone	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Semi-Volatile Organics	
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Volatile Aromatics	
1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
1,4-Dichlorobenzene	EPA 8260C
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
Ethyl benzene	EPA 8260C
Isopropylbenzene	EPA 8260C
m/p-Xylenes	EPA 8260C
Naphthalene, Volatile	EPA 8260C
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C

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Volatile Aromatics	
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
Total Xylenes	EPA 8260C
Volatile Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
1,1,2,2-Tetrachloroethane	EPA 8260C
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
1,1,2-Trichloroethane	EPA 8260C
1,1-Dichloroethane	EPA 8260C
1,1-Dichloroethene	EPA 8260C
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
1,2-Dichloropropane	EPA 8260C
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C
Bromoform	EPA 8260C
Bromomethane	EPA 8260C
Carbon tetrachloride	EPA 8260C

Volatile Halocarbons	
Chloroethane	EPA 8260C
Chloroform	EPA 8260C
Chloromethane	EPA 8260C
cis-1,2-Dichloroethene	EPA 8260C
cis-1,3-Dichloropropene	EPA 8260C
Dibromochloromethane	EPA 8260C
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
Hexachlorobutadiene, Volatile	EPA 8260C
Methylene chloride	EPA 8260C
Tetrachloroethene	EPA 8260C
trans-1,2-Dichloroethene	EPA 8260C
trans-1,3-Dichloropropene	EPA 8260C
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
Trichlorofluoromethane	EPA 8260C
Vinyl chloride	EPA 8260C
Volatile Organics	
1,4-Dioxane	EPA 8260C
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C

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Volatile Organics	
Di-ethyl ether	EPA 8260C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
Methyl tert-butyl ether	EPA 8260C
n-Butanol	EPA 8260C
tert-butyl alcohol	EPA 8260C
Vinyl acetate	EPA 8260C
Sample Preparation Methods	
	EPA 5035A-L
	EPA 5035A-H
	EPA 3580A
	EPA 9030B
	EPA 3005A
	EPA 3050B
	EPA 3540C
	EPA 3546
	EPA 9010C

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