Amelia Oakland, LLC
5821 Pinewood Road
Oakland, California 94611

Ms. Dilan Roe
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: 8410-30 Amelia Street – Acknowledgement Statement
Oakland, California
ACDEH Case No. RO00003240

Dear Ms. Roe:

Amelia Oakland, LLC, has retained the environmental consultant referenced on the attached report for the project referenced above. The attached report is being submitted on behalf of Amelia Oakland, LLC.

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the State Water Resources Control Board's GeoTracker website.

Sincerely,

Matthew Friedman
Amelia Oakland, LLC

October 4, 2017

Steve Wolmark
Amelia Oakland LLC
5821 Pinewood Road
Oakland CA 94611

Re: **Vapor Intrusion Assessment Report**
8410 – 8430 Amelia Street, Oakland, CA
GeoTracker Global ID T10000010203
ACDEH Site Cleanup Program RO0003240

Dear Mr. Wolmark:

PANGEA Environmental Services, Inc. (PANGEA) prepared this *Vapor Intrusion Assessment Report* for the subject property. This assessment was conducted to further evaluate potential vapor intrusion concerns and help facilitate development at the Site, as requested by Alameda County Department of Environmental Health (ACDEH) in a letter dated August 31, 2017

If you have any questions or comments, please call me at (510) 435-8664 or email briddell@pangeaenv.com.

Sincerely,
Pangea Environmental Services, Inc.

Bob Clark-Riddell, P.E.
Principal Engineer

Attachment: *Vapor Intrusion Assessment Report*

VAPOR INTRUSION ASSESSMENT REPORT

8410 – 8430 Amelia Street
Oakland, CA
ACDEH Case # RO0003240

October 4, 2017

Prepared for:

Steve Wolmark
Amelia Oakland LLC
5821 Pinewood Road
Oakland CA 94611

Prepared by:

PANGEA Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, California 94612

Written by:

Ron Scheele, P.G.
Principal Geologist

Bob Clark-Riddell, P.E.
Principal Engineer

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ATTACHMENTS

1.0 INTRODUCTION

PANGEA Environmental Services, Inc. (PANGEA) has prepared this *Vapor Intrusion Assessment Report* for the properties located at 8410-8430 Amelia Street in Oakland, California (Site). This assessment was conducted to further evaluate potential vapor intrusion concerns in conjunction with ongoing Site use and development of the property, as requested by Alameda County Department of Environmental Health (ACDEH) in a letter dated August 31, 2017 (Appendix A). The Site background, vapor intrusion assessment activities and results, and conclusions and recommendations are presented below.

1.1 Assessment Scope of Work

The assessment scope of work included sampling activities conducted in June, August, and September 2017. In June 2017, subslab gas and indoor air samples were collected in Buildings C, D and E in accordance with PANGEA's *Vapor Intrusion Assessment Work Plan - Buildings C, D and E* dated June 2, 2017. In August and September 2017, groundwater samples were collected across the Site and subslab gas and indoor air samples were collected in Buildings A and B North; this additional work scope was requested during a discussion with ACDEH on August 4, 2017 and summarized in an email dated August 11, 2017.

1.2 Site Development Phases

The property owner, Amelia Oakland LLC, has plans to improve all Site buildings (Buildings A, B, C, D and E) for industrial uses. Development of the Site is expected to be completed in three main phases moving from south to north across the Site: Development Phases I, II, and III). The first phase (Development Phase I) involves renovations and tenant improvements to Buildings C, D and E in the south part of the Site. Renovation and tenant improvements to Buildings C, D and E are almost complete and tenant occupancy is planned for the fourth quarter 2017. The second phase (Development Phase II) involves renovations and tenant improvements to Building B South. Renovation and tenant improvements to Buildings B South are underway and tenant occupancy is expected in the first half of 2018. The third phase of development (Development Phase III) will involve future renovations to Buildings A and B North which are currently occupied by a tenant known as NIMBY. Each of these development phases are noted are Figure 3 and other report figures.

2.0 SITE BACKGROUND

2.1 Site Description

The Site is located in a mixed use residential/industrial area of Oakland in Alameda County, California (Figure 1). The Site consists of three parcels which total approximately 3.5 acres in size includes five industrial buildings (Buildings A through E) as shown on Figure 3. All Site buildings have slab on grade construction, except for Building C which has a crawl space.

The Site is surrounded by commercial properties to the southwest and northwest and by residential properties to the northeast and southeast. Available data suggests the Site has been impacted by an offsite VOC plume originating northeast of the Site. Select VOC impact found onsite may be due to historical chemical use at the Site. The Site location is shown on Figure 1. An aerial photograph showing the Site and nearby environmental properties is shown on Figure 2. A detailed site map with buildings and other Site features are shown on Figure 3.

2.2 Regulatory Cases at Site

Regulatory oversight is currently provided by the ACDEH under case #RO0003240 which was setup in 2017 to facilitate Site cleanup and development plans for properties spanning 8410 through 8430 Amelia Street. Amelia Oakland, LLC entered into a voluntary remedial action agreement program (VRAP) with ACDEH in 2017. ACDEH is also providing oversight for under case #RO0002991 for the Acts Full Gospel Church & Industrial Properties associated with "8410 Amelia Street". A LUST case under the name Dreisbach Associates for 8410 Amelia Street was closed in January 2000 pertaining to former underground storage tanks (USTs) beneath Amelia Street (ACDEH case# RO000889).

2.3 Current and Historical Site Use

Building A and the northern portion of Building B (Building B North) are currently used by NIMBY Art Studio for light industrial use (8410 Amelia). A woodshop with machine tools is present in Building A, and artist workshops, storage containers and vehicles are present in Building B North. Prior to NIMBY, Shred Works occupied Building A and most of Building B.

The south portion of Building B (Building B South) is currently undergoing initial tenant improvements for a planned commercial kitchen and other use (8410A Amelia). The prior Building B South tenant, Wayt Technologies vacated the building in February 2017. Wayt Technologies conducted light industrial activities including plastic injection molding and used machine tools. Prior to Wayt Technologies, the southwest portion of Building B South was occupied by D&J International, Inc and consisted of an office area, a warehouse area, and restroom facilities. The warehouse contained boxes of plastic bags for sale, a plastic extruder, and bins of plastic materials. Paint manufacturing operations were conducted in northern half of Building B South in the 1950s and 1960s.

The southern portion of the property consists of Building C (8420A&B Amelia), Building D (8420C Amelia), and Building E (8430 Amelia). These three buildings are currently vacant and undergoing tenant improvements. Until February 2017, Building C was occupied by NIMBY; Building D was occupied by a motorhome, motorcycle, and storage materials; and Building E was occupied by V&U Towing who conducted vehicle maintenance. As noted in a 2008 Phase I ESA prepared by Basics Environmental, Building C was previously segregated into three office units and occupied by D&J International, Inc., Shred Works, and Act Church. Building D and E were previously occupied by Act Church.

2.4 Regional and Local Geology/Hydrogeology

Regional Geology: The Site is located in the East Bay Plain Area of the San Francisco Bay drainage basin. The flat, alluviated lowlands are bounded to the north by the San Pablo Bay, to the east by the Hayward Fault and the Coast Range foothills, and to the south and west by the San Francisco Bay. Older alluvium in the area consists of Pliocene and Pleistocene clay, silt, sand, and gravel. These sediments were derived mainly from the hills to the east, and represent successive coalescing alluvial fans.

The Site is located within an area that has been geologically mapped as interfluvial basin deposits. These deposits typically consist of unconsolidated, plastic, moderately to poorly sorted, silt and clay rich in organic material.

The Site is situated above the San Leandro Cone hydrogeologic sub-area. It is believed that the San Leandro Cone sub-area contains geological units correlative to the San Lorenzo and Niles Cone sub-areas. These sub-areas consist of various sand and gravel strata within older alluvium. Three shallow (to 400 feet below grade surface) aquifers have been identified for the Niles Cone sub-area: the Newark, Centerville, and Fremont aquifers. Well yields range from a few tens of gallons per minute to over one thousand gallons per minute.

Local Geology: Soils logged during previous site drilling consisted of stiff black plastic clay to an approximate depth of 10 to 12 feet below grade surface (ft bgs) and is occasionally underlain by a 2 to 7 ft layer of sandy silt. A silty sand or gravelly sand are typically encountered at approximately 11 to 14 ft bgs and extend to a total explored depth of 25 ft bgs. A sandy gravel is occasionally observed underlying the sand layer.

Local Hydrogeology: During drilling, groundwater was first encountered within a sandy layer at approximately 14 to 16 ft bgs. Groundwater was noted to rise within the borings to approximately 5 to 7 ft bgs after drilling indicating confined or semi-confined groundwater conditions. Previous groundwater gauging data from 1997 from former monitoring wells MW-1 through MW-4 showed groundwater flowing to the southwest with a gradient of 0.002 ft/ft.

2.5 Chemicals of Potential Concern

Based on Site assessment data, the following *primary* chemicals of potential concern (COPC) have been identified in select subsurface Site media above conservative RWQCB Tier 1 ESLs: tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride, carbon tetrachloride (CT), 1,4-dichlorobenzene (1,4-DCB), 1,1,2,2-tetrachlorethane (1,1,2,2-PCA), benzene and ethylbenzene. Other volatile organic compounds (VOCs) have been detected below Tier 1 ESLs including: 1,1-dichoroethene (1,1-DCE) (a degradation product of PCE and TCE), 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichoroethane (1,1-DCA, a degradation product of 1,1,1-TCA), methyl ethyl ketone (MEK), and methyl tertiary butyl ether (MTBE).

The following petroleum hydrocarbons have been detected: total petroleum hydrocarbons as gasoline (TPHg), TPH as bunker oil (TPHbo), benzene, toluene, ethylbenzene, and xylenes (BTEX). Elevated TPH as diesel

(TPHd) and TPH as motor oil (TPHmo) concentrations recently detected in shallow soil within an underground vault in Building B South apparently represent hydraulic fluid.

1,1,2,2-PCA is a chlorinated derivative of ethane, and has the highest solvent power of any chlorinated hydrocarbon. It was once widely used as a solvent and as an intermediate in the industrial production of PCE, TCE, and 1,2-DCE. However, 1,1,2,2-PCA is no longer used much in the United States due to concerns about its toxicity. 1,1,2,2-PCA is also used as a refrigerant under the name R-130.

The following compounds have been detected above indoor air ESLs: PCE, 1,4-DCB, carbon tetrachloride (CT), benzene and ethylbenzene. The presence of PCE in indoor air may be related to PCE found in the subsurface. Benzene, ethylbenzene, 1,4-DCB and CT are not found beneath the Site buildings, and are presumably associated with background ambient air or aboveground sources related to tenant activities.

2.6 Summary of Previous Site Investigations

The following provides a general overview of previous environmental investigations at the Site. Historical Site assessment data is summarized on Tables 1 through 3.

- **1988 to 2000, UST Removal, Assessment and Case Closure:** Following the 1988 removal of a fuel UST located within Amelia Street, assessment activities were conducted and included the installation of four monitoring wells MW-1 through MW-4. The UST environmental case was closed by ACDEH in January 2000.

- **February 29, 2008, Phase I Environmental Site Assessment, Basic Environmental:** A Phase I Environmental Site Assessment (ESA) identified Recognized Environmental Conditions (RECs) at the Site.

- **May 7, 2008, Limited Phase II Environmental Site Sampling Report, Basic Environmental:** A Limited Phase II assessment documented the presence of subsurface volatile organic compounds in soil and groundwater through the drilling and sampling of six borings.

- **October 12, 2011, Conduit Study and Work Plan, P&D Environmental (P&D):** A conduit study and additional subsurface assessment was completed including the sampling of subslab soil gas at select locations at the Site, primarily under Building B. A magnetometer survey associated with a former fuel dispenser pedestal and exploratory excavation in September 2011 identified a former gasoline UST on the east side of the property adjacent to G Street. The investigation also identified a trichloroethene (TCE) groundwater plume that extended beneath the east side of the Site from an offsite source. Further details of the offsite source are described below in Section 2.6. Based on the orientation of the TCE plume, the groundwater flow direction near the Site is to the southwest.

- **July 15, 2013, UST In-Place Closure Report, P&D**. During in-place UST closure activities in 2013, it was determined that the UST was oriented perpendicular to the orientation identified in the September 2011 investigation. The report recommended that no further action be performed based on the levels of petroleum hydrocarbons relative to the commercial/industrial land use and based on the limited extent of petroleum hydrocarbons in groundwater at the UST pit.

- **June 29, 2015, Subsurface Investigation Report, P&D:** Soil, groundwater and subslab gas was sampled within Building B. Elevated levels of PCE were detected in subslab gas.

- **August 10, 2017, Phase I Environmental Site Assessment, PANGEA:** A Phase I Environmental Site Assessment (ESA) recommended that the Site owner continue to address onsite contamination issues as directed by the local regulatory agencies until Case Closure is awarded for the open Cleanup Program/SLIC case. The ESA also recommended investigation to evaluate onsite conditions due to historical tenants/uses of concern that could have potentially contributed to volatile organic compound (VOC) subsurface contamination.

- **October 26, 2016, Site Assessment and Vapor Mitigation Test Report and Vapor Intrusion Assessment Workplan, PANGEA***:* In June 2016, Site assessment activities were performed to investigate subsurface and indoor air conditions related to chlorinated VOCs and further evaluate Site conditions identified in the Phase I ESA. This assessment involved sampling of soil, groundwater, and subslab gas in June 2016 to further evaluate existing conditions under Building B, and to assess subsurface conditions beneath other Site buildings. Indoor air sampling was conducted to evaluate potential vapor intrusion concerns. Two shallow soil vapor extraction wells were installed and vapor mitigation testing was conducted. Additional subslab and soil gas sampling was conducted in December 2016 to implement the initial work scope of the *Vapor Intrusion Assessment Workplan.* Investigation efforts focused on delineation and evaluation of PCE and TCE in subslab gas and the potential for vapor intrusion into Building B. No significant soil impact was identified at the Site. No PCE impact was detected in Site groundwater, but TCE concentrations exceeding Environmental Screening Levels (ESLs) established by the Regional Water Quality Control Board (RWQCB) were detected along the east side of the Site.

- **March 2017, Underground Vault Exploration:** In March 2017, PANGEA inspected subsurface conditions within an 'underground vault' located beneath the concrete floor in Building B South. This assessment was documented in the *Interim Remedial Action Plan* dated April 2, 2017. Soil boring P-3 was advanced to 3.5 ft bgs within the vault soil until refusal due to apparent wood fragments (possible wooden vault floor). Soil sampling encountered a brownish black, silty clay with wood fragments at 3 ft bgs. Soil from 3 ft bgs was analyzed for total petroleum hydrocarbons as gasoline, diesel and motor oil (TPHg/TPHd/TPHmo) by EPA Method 8015, VOCs by EPA Method 8260, and polychlorinated biphenyls (PCBs) by EPA Method 8082. TPH compounds were reported at the following

concentrations: 1.8 milligrams per kilogram (mg/kg) TPHg, 28,000 mg/kg TPHd, and 49,000 mg/kg TPHmo. From chromatogram evaluation, the laboratory suspects that the hydrocarbons quantified within the diesel and motor oil range represent *hydraulic fluid*. No PCBs or VOCs were detected except for naphthalene at 1.4 mg/kg.

- **April 3, 2017, Interim Remedial Action Plan (IRAP), PANGEA**: The IRAP proposed subsurface exploration of the suspected PCE source area that coincides with the sink and sewer piping within Building B South. The work scope also included installation of a vapor mitigation system (VMS) consisting of subslab ventilation, partial post-slab engineered vapor barrier, and soil gas barriers (trench plugs). Activities will be documented in a *IRAP Implementation Report*.

- **May 2017, Installation Soil Gas Barriers:** In May 2017, soil gas barriers (concrete trench plugs) were installed around sewer lines located in the alley way between Building B South and Buildings C, D, and E. The trench plugs were installed to mitigate potential VOC soil gas migration from Building B along the sewer lines running under Buildings C, D, and E. The soil gas barriers will be plotted on building plans to be provided to ACDEH by Amelia LLC.

2.7 Offsite and Upgradient VOC Sources

TCE in groundwater up to 220 µg/L has been documented northeast of Building B beneath the Tassafaronga Village public housing project. TCE plume map prepared by P&D Environmental is included in Appendix B. Based on the orientation of the TCE plume, the groundwater flow direction in the Site vicinity is to the southwest, towards the Site. The source of this TCE impact is unknown. Soil gas data for the Tassafaronga Village also showed no TCE concentrations above RWQCB ESLs. VOC data in groundwater and soil gas from Fugro West's 2008 Removal Action Workplan for the Tassafaronga Village is included in Appendix B. The highest TCE concentrations in groundwater from this offsite source are also illustrated on Figure 2.

PCE in groundwater has also been documented northeast of the Site (north and east of the TCE plume) and appears to be associated with environmental cases for the Former D. Metrino & Sons property and former Alita Brand Macaroni property identified on Figure 2. The PCE impact in groundwater does not appear to extend to the Site.

As shown on Figure 2, two other environmental cases (Former Elmhurst Anodizing and America Chrome) are located northwest and southeast of the Site. In addition, an archived USEPA Superfund case for the former Continental Plating Company was previously identified to be on the Tassafaronga Village property; further research indicates that the former plating company was most likely located four blocks southeast of the Site at 995 89th Avenue, Oakland.

In summary, the available data suggests that the Site has been impacted by an offsite TCE plume located east of the Site. Select VOC impact found onsite may also be due to historical chemical use at the Site.

3.0 VAPOR INTRUSION ASSESSMENT ACTIVITIES

Two phases of assessment activities were conducted in June and August/September 2017 to further evaluate the potential for vapor intrusion in onsite Buildings A, B North, C, D and E. No sampling was conducted in Building B South because future sampling is planned after implementation of the Interim Remedial Action Plan, which will involve installation of a subslab ventilation system and post-slab epoxy coating. The completed work scope involved the sampling of subslab gas, indoor air and groundwater, as described below.

3.1 Assessment Phases

In June 2017, assessment activities included the following:

- Collection of *eight* subslab gas samples from existing subslab probes located in and around southern Buildings C, D, and E; and,
- Collection of *three* 24-hour air samples from inside Building D, beneath Building C, and on the southwest property boundary (ambient air sample).

In August/September 2017, assessment activities included the following:

- Collection of *eighteen* subslab gas samples from existing probes located inside northern Buildings A and B North;
- Collection of *four* 24-hour air samples from inside Buildings A and B North, and on the northwest property boundary (ambient air sample); and,
- Collection of *ten* grab groundwater samples from soil borings drilled across the entire Site.

Collected sampled were analyzed for volatile organic compounds as clarified below.

3.2 Subslab Gas Sampling

On June 29 and 30, 2017, subslab gas samples were collected from eight existing subslab probes (SS-2P, SS-3P, SS-4P, SS-6P, SS-16P, SS-17P, SS-20P, and SS-21P). Six subslab gas samples were collected from probes located inside Building D and E. Two subslab gas samples were collected from probes located directly adjacent to Building C (SS-20P and SS-21P); Building C has an underlying crawl space which prevented the installation of a subslab gas probe. Note that two subslab gas probes located outside of Building D (SS-16P and SS-17P) were previously sampled in 2016 to assess conditions north of Building D. A shroud sample was collected during the sampling of subslab probe SS-6P as part of the leak detection procedures. Subslab gas sampling field forms are included in Appendix C.

On August 28 and 29, 2017, subslab gas samples were collected from eighteen existing subslab probes (SS1, SS-2, SS4, SS6, SS8 through SS12, SS-7P, SS8P, SS-9P, SS-11P through SS-15P). All subslab gas samples were collected from probes located inside Buildings A and B North. Note that ten subslab gas probes located outside of Building B *South* were previously sampled in 2013-2016 to assess conditions inside the building. A shroud sample was collected during the sampling of subslab probe SS4 as part of the leak detection procedures. Subslab gas sampling field forms are included in Appendix C.

All subslab gas samples were collected in general accordance with the DTSC's Advisory: Active Soil Gas Investigation dated July 2015 using laboratory-supplied manifolds and certified-clean Summa™ canisters. The Summa™ canisters were supplied with a vacuum of approximately 30 inches of mercury ("Hg). Prior to sample collection from the probes, a shut-in test was conducted on the Summa™ canisters and manifolds for a minimum of 5 minutes. A minimum of three casing volumes was purged from each probe using an air syringe at a flow rate between 100-200 milliliters per minute. Upon completion of purging of approximately three or more times the ambient volume of air in the probe, the sampling Summa™ canister was opened for sample collection. The pre-set valve regulated the vapor flow to approximately 150 milliliters of air per minute. Summa™ canisters were closed once the vacuum within the canisters decreased to approximately 5 inches of mercury vacuum.

To further evaluate potential leakage within the sampling system, a leak-check enclosure was placed over the sampling assembly, and isopropyl alcohol gas was introduced into the leak-check enclosure/shroud. A PID was used to monitor and maintain the concentration of isopropyl alcohol above 10% within the enclosure during sample collection. A shroud sample was collected during the sampling of probes SS-6P and SS4 to quantify the concentration of isopropyl alcohol (IPA) in the shroud. The samples were collected by placing an open Summa™ canister in the shroud during sampling.

Subslab gas samples were transported to ESC Lab Sciences (ESC) of Mount Juliet, Tennessee. All samples were transported following chain-of-custody protocol. Samples were analyzed for VOCs including IPA by EPA Method TO-15.

3.3 Indoor Air, Crawl Space and Ambient Air Sampling

On June 29 and 30, 2017, three air samples were collected including an indoor air sample (IA-4), crawl space sample (CS-1), and ambient air sample (AA-2). Indoor air sample IA-4 was collected from inside Building D, crawl space sample CS-1 was collected from the crawl space beneath Building C, and ambient air sample AA-2 was collected on the southwest property boundary, upwind of Buildings C, D and E. Due to low levels of VOCs (well below ESLs) in subslab gas samples previously collected beneath Building E, no indoor air samples were collected in Building E. Air sampling field forms are included in Appendix C.

On August 28 and 29, 2017, four air samples were collected including three indoor air samples (IA-5, IA-6, IA-7) and one ambient air sample (AA-3). Indoor air sample IA-5 was collected from inside Building A,

indoor air samples IA-6 and IA-7 were collected from inside Building B North, and ambient air (AA-3) sample was collected on the northwest property boundary, upwind of Buildings A and B North. Due to low levels of VOCs (well below ESLs) in subslab gas samples previously collected beneath Building E, no indoor air samples were collected in Building E. Air sampling field forms are included in Appendix C.

Samples were collected in general accordance with DTSC's October 2011 Vapor Intrusion Mitigation Advisory. Samples were collected in 6-liter SIM-certified Summa™ canisters with flow controllers calibrated for a 24-hour sample collection. The sample intake point was set to be in the breathing zone, approximately 5 ft above grade, for the indoor and ambient air samples. The sample intake point for the crawl space sample was set away from exterior walls or vents to prevent outside ambient air from being sampled. Summa™ canisters were closed approximately 24 hours after first being opened with between 5 and 8 "Hg of vacuum remaining.

Samples were transported to ESC following chain-of-custody protocol. Samples were analyzed for select compounds of concern by EPA Method TO-15 SIM.

3.4 Groundwater Sampling

On August 30 and September 1, 2017, grab groundwater sampling was conducted to assess VOCs in groundwater and particularly to delineate the extent of the dissolved-phase TCE plume beneath the Site. Grab groundwater samples were collected from ten soil borings (P-1 through P-10) drilled by Confluence Environmental, Inc. of Sacramento, California. Soil borings were drilled in accordance with ACPWA permit # W2017-0646 and a copy of the permit is provided in Appendix D. Soil boring logs are provided in Appendix E.

Groundwater was sampled by setting a 1-inch dimeter slotted PVC casing in the open boring and using a disposable bailer to collect a groundwater sample. Water was collected into 40 milliliter vials preserved with hydrochloric acid. The vials were stored on ice and transported to Curtis & Tompkins (C&T) following chain-of-custody protocol. Samples were analyzed for VOCs by EPA Method 8260B. The borings were destroyed by tremie grouting Portland cement under the supervision of an ACPWA inspector and per permit guidelines.

4.0 VAPOR INTRUSION ASSESSMENT RESULTS

4.1 Groundwater Assessment Results

Groundwater analytical results are presented on Figure 4 and summarized in Table 1. Laboratory analytical reports for these samples are included in Appendix F.

For the current assessment VOCs consisting of TCE, cis-1,2-DCE, and vinyl chloride were detected above Tier 1 ESLs in four of the ten borings (P-2, P-3, P-4 and P-7). These VOC detections above ESLs were located primarily on the north side of the Site beneath Buildings A and B. TCE concentrations in groundwater ranged from 0.79 to 55 µg/L, with the maximum concentration detected in boring P-4 located on the west side of

Building B North and adjacent the sanitary sewer. Cis-1,2-DCE concentrations ranged from 0.5 to 130 µg/L, with the maximum concentration detected in boring P-2 located within Building A. Vinyl chloride was detected at 1.8 µg/L in boring P-2 located within Building A, which is near the vinyl chloride impact found in sub-slab gas probe SS-11P. For the current assessment, groundwater was first encountered at approximately 15 to 16 ft bgs. Groundwater was noted to rise within the borings to approximately 6 to 7 ft bgs after drilling indicating confined or semi-confined groundwater conditions.

Historical TCE groundwater results are also summarized on Figure 4 and Table 1. PANGEA notes that select prior borings (SB-7, SB8 and SB30) in Building B encountered a possible perched groundwater at approximately 9.5 ft bgs, and no TCE (<0.5 ug/L) was detected in theses borings. This data suggests that TCE is primarily present in the lower semi-confined, water-bearing zone at 15 to 16 ft bgs. A low permeability clay layer overlies the water-bearing zone and prevents upward migration of TCE. As shown on Figure 4, the contoured TCE data shows the highest concentrations beneath Building B North. TCE data for boring SB6 from 2008 was not used in contouring since more recent sampling data from adjacent boring P-5 was available.

4.2 Assessment Results for Buildings C, D, E (Development Phase I)

Groundwater: As indicated above in Section 4.1, no groundwater impact was detected above ESLs in the south area of the Site beneath Buildings C, D, and E. As shown on Figure 4, TCE in groundwater was found to be *below* the new TCE non-carcinogenic Indoor Air Trigger Level of 140 µg/L and *below* the ESL of 5 µg/L.

Subslab Gas: VOCs including PCE, TCE, 1,1-DCE, 1,1-DCA, 1,1,1-TCA, chloroform, benzene, toluene, ethylbenzene, and xylenes were detected in various subslab samples. However, no compounds were detected above their respective commercial ESLs for subslab soil gas for Buildings C, D and E. PCE was detected in seven of the eight subslab gas samples, at a maximum concentration of 28.2 µg/m^3 in SS-6P. TCE was detected in three of the eight subslab gas samples, at a maximum concentration of 107 µg/m^3 in SS-3P. Benzene was detected in three of the eight subslab gas samples, at a maximum concentration of 18 µg/m^3 in SS-2P. None of the subslab gas sample results were near or exceeded the commercial ESLs for PCE, TCE and benzene of 2,100 µg/m^3, 3,000 µg/m^3 and 420 µg/m^3, respectively. No 1,4-DCB or carbon tetrachloride was detected in any of the subslab gas samples. Subslab gas analytical results are shown on Figure 5 and summarized in Table 2. The laboratory analytical report is presented in Appendix F.

Leak check compound isopropyl alcohol was detected at 94,700 µg/m^3 in the aboveground shroud sample from SS-6P. Isopropyl alcohol was detected in only one of the subslab gas samples at 34.6 µg/m^3 indicating that the sample results are indicative of subsurface conditions.

Indoor/Crawl Space Air: VOCs including PCE, carbon tetrachloride, benzene, toluene, ethylbenzene, and xylenes were detected in the indoor and/or crawl space air samples. However, no compounds were detected above their respective commercial ESLs for indoor air except for benzene and carbon tetrachloride. Benzene

was detected at a maximum concentration of 0.431 µg/m^3 in CS-1, just above its ESL of 0.42 µg/m^3, but below ambient air concentration of 0.597 µg/m^3 in sample AA-2. Carbon tetrachloride was detected at a maximum concentration of 0.447 µg/m^3 above its ESL of 0.29 µg/m^3, but similar to the ambient air concentration of 0.418 µg/m^3 in sample AA-2. PCE was detected in CS-1 at a concentration of 0.146 µg/m^3.

PCE, TCE, carbon tetrachloride and benzene were all detected in ambient air sample AA-2 collected upwind of the Buildings C, D and E. Benzene in ambient air was detected at 0.597 µg/m^3, above its commercial ESL and above the benzene concentration detected in the crawl space sample CS-1 from beneath Building C. Carbon tetrachloride in ambient air was detected at 0.418 µg/m^3 above its commercial ESL. No carbon tetrachloride has been detected in any subslab gas samples from Buildings C, D and E. Indoor air analytical results are shown on Figure 7 and summarized in Table 3. The laboratory analytical report is presented in Appendix F.

4.3 Assessment Results for Buildings B South (Development Phase II)

No sampling was conducted in Building B South as part of this work scope. However, extensive subslab gas sampling was previously conducted in 2013 and 2014, along with indoor air sampling in 2016. Previous subslab gas sampling identified a PCE plume near the middle of Building B, previously centered around the former sink and bathroom area. PANGEA recently coordinated implementation of the Interim Remedial Action Plan (IRAP) dated April 3, 2017. The IRAP implementation involved subsurface exploration of the suspected source area for PCE that coincides with the sink, bathroom and sewer piping for historical industrial site use within Building B South. The implementation also included installation of a vapor mitigation system (VMS) consisting of subslab ventilation piping and trench vapor barriers/plugs. An epoxy floor coating is planned for most or all of Building B South. While the IRAP planned the installation of a post-slab engineered vapor barrier, Amelia Oakland LLC has additional time to collect data to determine if this engineered vapor barrier is merited. Completed IRAP activities will be documented in a forthcoming IRAP Implementation Report. Future subslab gas and indoor air sampling assessment is planned as part of post-IRAP confirmation testing and evaluation of contingent chemical vapor barrier.

During the subject vapor intrusion assessment, PANGEA sampled probe SS9 within Building B North to evaluate conditions just north of the IRAP implementation area. As shown on Figure 4 and Table 2, recent sampling of probe SS9 found a PCE concentration of 217 µg/m^3, well below the commercial ESL of 2,100 µg/m^3 and approximately 90% lower than prior SS9 analytical results of 2,800 µg/m^3 from October 2013. This data suggests the IRAP excavation and mitigation activities has improved subsurface gas conditions. Figure 4 illustrates the historical PCE plume centered around probes SS3 and SS15 beneath the north side of Building B South. Future monitoring will evaluate VOC conditions following IRAP implementation in Building B South.

4.4 Assessment Results for Buildings A and B North (Development Phase III)

Groundwater: As indicated above in Section 4.1, groundwater impact was limited to the northern part of the Site beneath Buildings A and B. Specifically, a TCE groundwater plume was primarily delineated beneath

Buildings A and extending downgradient beneath Building B North. A maximum TCE concentration of 55 µg/L was detected in the grab groundwater sample from boring P-4, located adjacent the 8-inch diameter sanitary sewer (invert depth of 7.5 ft bgs at western boundary and 8.5 ft depth at eastern boundary and surrounded by low permeability clay). TCE levels were *below* the new TCE non-carcinogenic Indoor Air Trigger Level of 140 µg/L and *above* the ESL of 5 µg/L.

Subslab Gas: VOCs including PCE, TCE, cis-1,2-DCE, vinyl chloride, 1,1-DCE, 1,1,1-TCA, chloroform, methyl ethyl ketone, benzene, toluene, ethylbenzene, and xylenes were detected in various subslab samples. However, only PCE, TCE and vinyl chloride were detected above their respective residential ESLs for subslab soil gas. PCE was detected in fifteen of the eighteen subslab gas samples, at a maximum concentration of 217 µg/m^3 in SS9 located in Building B North. TCE was detected in ten of the eighteen subslab gas samples, at a maximum concentration of 5,470 µg/m^3 in SS-9P located in Building A. Vinyl chloride was detected in two of the eighteen subslab gas samples, at a maximum concentration of 2,290 µg/m^3 in SS-11P. Subslab gas sample results exceeded the commercial ESLs for PCE, TCE and benzene of 2,100 µg/m^3, 3,000 µg/m^3 and 160 µg/m^3, respectively. Although 1,4-DCB and carbon tetrachloride have been detected in indoor air from Buildings A and B North, 1,4-DCB and carbon tetrachloride were not detected in any of the subslab gas samples in Buildings A and B North. Subslab gas analytical results are shown on Figure 6 and summarized in Table 2. The laboratory analytical report is presented in Appendix F.

Leak check compound IPA was measured at 75,800 µg/m^3 in the aboveground shroud sample from SS4. Except for sample SS20, only low levels of IPA were detected in various subslab gas samples ranging from 3.18 to 31.2 µg/m^3 indicating that the sample results are indicative of subsurface conditions. Sample SS20 has an IPA concentration of 14,300 µg/m^3 indicating that the sampling train for SS20 had an ambient air leak of above 15%. According to the *DTSC Advisory: Active Soil Gas Investigation* dated July 2015, a leak above 5% is unacceptable for quantitative leak testing by shrouding. This information suggests that the results for SS20 are likely not representative of soil gas conditions. The elevated IPA concentration in SS20 also caused the VOC laboratory reporting limits to be elevated making the results from SS20 less useful.

Indoor Air: VOCs including PCE, TCE, 1,4-DCB, carbon tetrachloride, chloroform, methyl ethyl ketone, benzene, toluene, ethylbenzene, and xylenes were detected in the indoor air samples. However, only 1,4-DCB, carbon tetrachloride, benzene and ethylbenzene were detected above their respective commercial ESLs for indoor air. 1,4-DCB was detected at a maximum concentration of 1.37 µg/m^3 in IA-5, just above its ESL of 1.1 µg/m^3. Carbon tetrachloride was detected at a maximum concentration of 1.4 µg/m^3 in IA-3 and IA-7, above its ESL of 0.29 µg/m^3. Benzene was detected at a maximum concentration of 3.4 µg/m^3 in IA-3, above its ESL of 0.42 µg/m^3. Ethylbenzene was detected at a maximum concentration of 9.81 µg/m^3 in IA-7, just above its ESL of 4.9 µg/m^3.

Carbon tetrachloride, benzene and ethylbenzene were detected in the ambient air sample AA-3 collected upwind of the Building A and B North. Benzene in ambient air was detected at 0.587 µg/m^3 above its

commercial ESL. Indoor air analytical results are shown on Figure 8 and summarized in Table 3. The laboratory analytical report is presented in Appendix F.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on current and previous assessment results, PANGEA offers the following conclusions and recommendations related to the South Area (Buildings C, D, E) and the North Area (Buildings A, B North and B South).

5.1 South Area - Building C, D and E (Development Phase I)

In the South and Development Phase I area, no VOCs are present in groundwater, subslab soil gas and indoor air above commercial ESLs in Buildings C, D and E, with one exception. Benzene was detected above the indoor air ESL in the crawl space beneath Building C; however, the air concentration of 0.431 µg/m^3 (crawl space sample CS-1) was lower than the concentration of 0.597 µg/m^3 measured in outdoor (ambient air AA-2). The benzene concentration in the crawl space indoor air was also less than the concentration measured in indoor ambient air based on the 20.9 µg/m^3 concentration measured in the shroud sample for probe SS-6P (The benzene concentration detected in sub-slab gas at SS-6P was 0.760 µg/m^3). This analytical data suggests that benzene levels in indoor air are comparable to background air quality. The epoxy coating installed on top of the concrete slabs in Buildings D and E helps provides mitigation of any potential vapor intrusion risk. The crawl space beneath Building C, along with the vapor barrier installed in Buildings D and E help to mitigate any potential risk of vapor intrusion for Buildings C, D and E, and ensures safe air quality for future tenants. Soil gas cut-off/trench plugs installed along the sanitary sewer piping entering Building C, D and E provide additional mitigation of potential VOC migration along subsurface sewer piping into these buildings.

Based on the low level of VOCs measured in groundwater, subslab gas, and indoor air, PANGEA recommends no further corrective action for the Development Phase I area encompassing Buildings C, D and E.

5.2 North Area – Building B South (Development Phase II)

For Building B South and Development Phase II area, VOCs have been detected in groundwater, subslab soil gas and indoor air above commercial ESLs. Prior data indicates TCE concentrations in subslab gas and indoor air were below ESLs.

While the TCE plume in groundwater partially extends beneath the Building B South, TCE concentrations in groundwater have been *below* the new TCE non-carcinogenic Indoor Air Trigger Level of 140 µg/L. From current and historical groundwater sampling, the maximum TCE concentrations beneath Building B South likely range from approximately 20 to 50 µg/L. An approximate 10 ft thick layer of high plasticity clay overlies the semi-confined water bearing zone and is likely limiting the upward vertical migration of TCE in soil gas.

Of primary concern is the PCE that was detected in subslab gas (SS3 and SS15) and indoor air (IA-2) above ESLs. During recent IRAP implementation, interim remedial excavation removed the suspected PCE source area near the former sink/bathrooms. The planned passive subslab venting system and a contingent engineered post-slab chemical vapor barrier will further mitigate vapor intrusion as required. Completed IRAP activities will be documented in a forthcoming *IRAP Implementation Report*. Future subslab gas and indoor air sampling assessment is planned as part of post-IRAP confirmation testing and evaluation of contingent chemical vapor barrier.

5.3 North Area – Building A and B North (Development Phase III)

Buildings A and B North are currently occupied by the NIMBY tenant. Development Phase III is tentatively scheduled for 2019 or later.

Building B North: VOCs are present in semi-confined groundwater and in indoor air above commercial ESLs, but all VOCs in subslab gas are below commercial ESLs in Building B North. TCE concentrations in groundwater beneath Building B North are *below* the TCE non-carcinogenic Indoor Air Trigger Level of 140 µg/L, and indoor air TCE concentrations have been well below the ESL of 3.0 $\mu g/m^3$. Recent sampling indicates that PCE in subslab gas (in SS9 in Building B North) has now decreased to below ESLs likely due to recent PCE source removal activities in neighboring Building B South. Low levels of carbon tetrachloride, benzene and ethylbenzene were detected above indoor air ESLs, but these compounds are likely related to background air quality and/or current tenant activities. While subslab gas and indoor air sampling data indicate that vapor intrusion mitigation measures are not merited, the following contingency measures will be considered in the future: expansion of the existing passive subslab ventilation system or installation of an engineered post-slab chemical vapor barrier (e.g., RetroCoat).

Building A: VOCs are present in groundwater, subslab gas and indoor air above commercial ESLs in Building A. TCE concentrations in groundwater beneath Building A are *below* the TCE non-carcinogenic Indoor Air Trigger Level of 140 µg/L, and indoor air TCE concentrations are *below* the ESL of 3.0 $\mu g/m^3$ and the Accelerated and Urgent Response Action Levels. However, TCE and vinyl chloride concentrations are *above* subslab gas ESLs (in probes SS-7P, SS-9P and/or SS-11P) and will likely warrant vapor mitigation measures. Low levels of 1,4-DCB, carbon tetrachloride, benzene and ethylbenzene were detected *above* indoor air ESLs, but are likely related to background air quality and/or currently tenant activities. Vapor intrusion mitigation measures under consideration for Building A include installation of a passive or active subslab venting system, soil vapor extraction, and a post-slab engineered chemical vapor barrier (e.g., RetroCoat).

6.0 REFERENCES

The regulatory record for this Site can be found on the State of California GeoTracker Website at http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000010203

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Figure
1

8410 Amelia Street
Oakland, California

PANGEA

Site Location Map

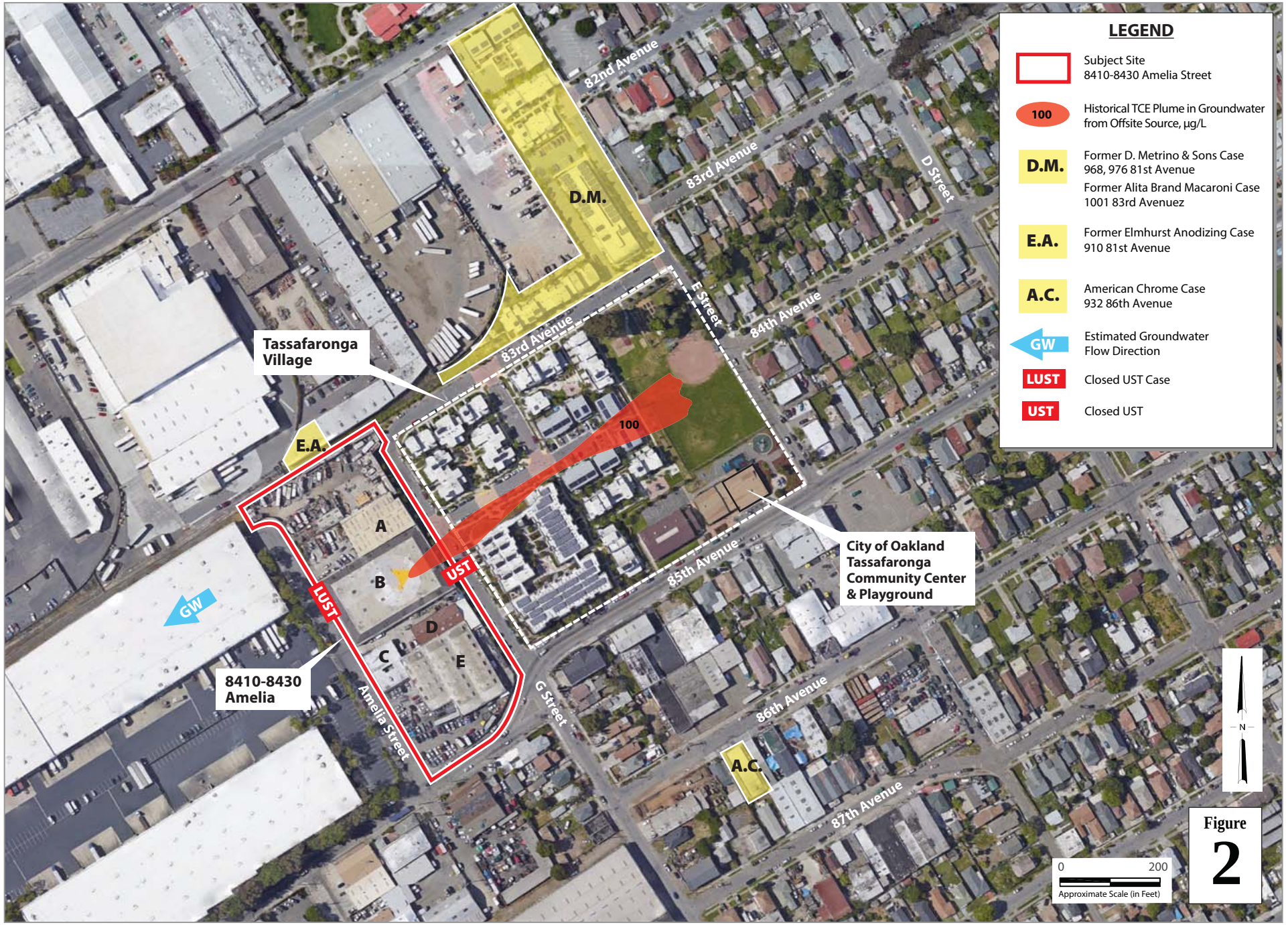

Figure 2

8410 Amelia Street
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Vicinity Map and Nearby Environmental Cases

LEGEND

- MW-1 — Destroyed Monitoring Well
- SS-1P — Destroyed Subslab Gas Probe
- SG-1 — Soil Gas Probe (Pangea, 2016)
- SS-1P — Subslab Gas Probe (Pangea, 2016)
- SS21 — Subslab Gas Probe (Others, 2013-2014)
- VE-1 — Shallow Vapor Extraction Well
- IA-1 — Indoor Air Sample
- AA-1 — Ambient Air Sample
- P-1 — Boring (Grab Groundwater)
- Development Phase I
- Development Phase II
- Development Phase III
- SS — SANITARY SEWER
- W — WATER
- E — ELECTRIC
- GAS — GAS
- OIL — PETROLEUM
- SD — SEWER / STORM DRAIN
- PIPE TERMINATED OR SIGNAL WAS LOST

Base Map From:
P& D Environment, Inc.
Basics Environmental, Inc., May 2008,
JR Associates, September 2011,
The Plumbing Ministry, October 2011,
P&D Environmental, Inc., October 2011

Figure 3

8410 Amelia Street
Oakland, California

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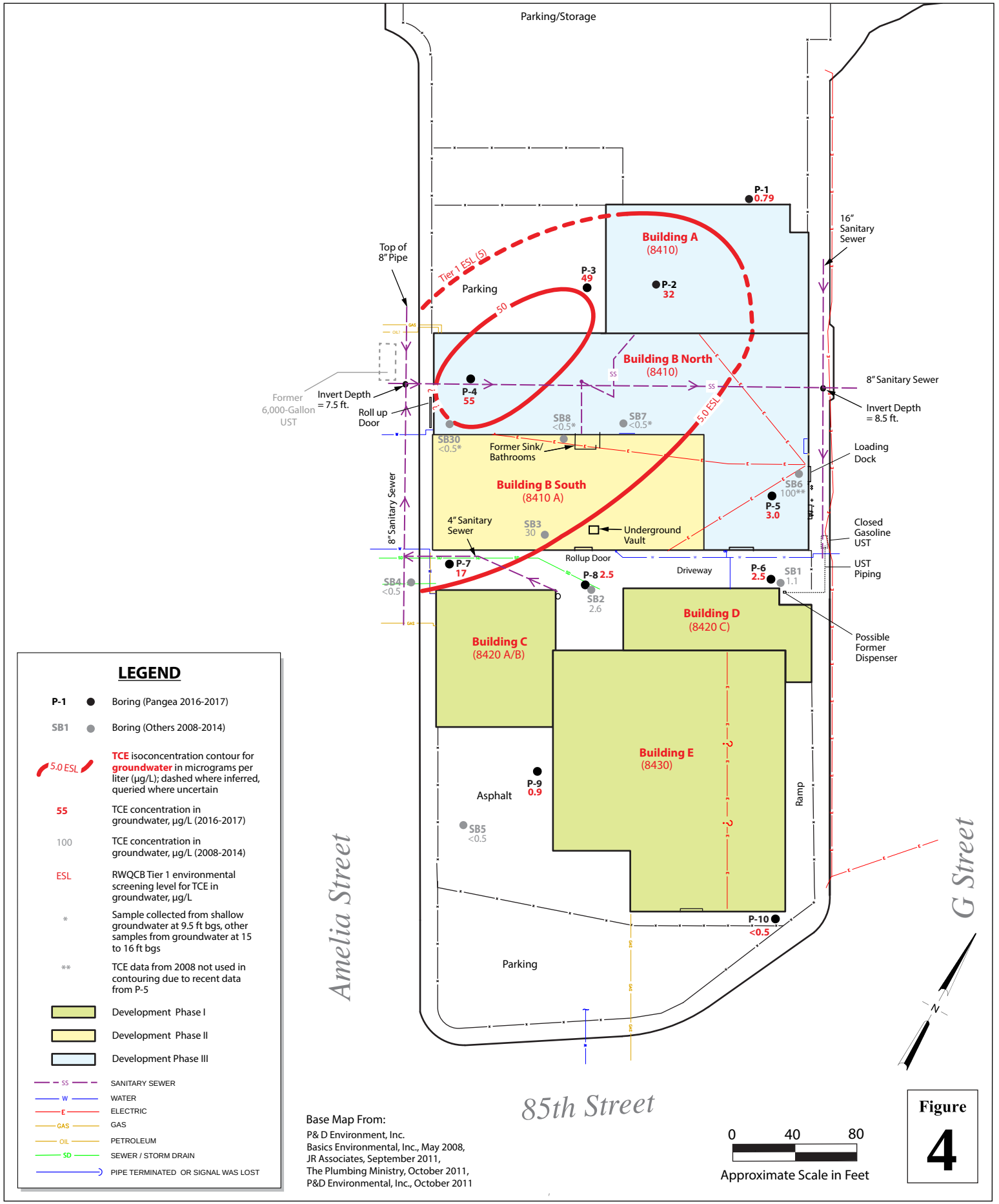
Site Map



LEGEND

- P-1 ● Boring (Pangea 2016-2017)
- SB1 ● Boring (Others 2008-2014)
- 5.0 ESL — **TCE** isoconcentration contour for **groundwater** in micrograms per liter (µg/L); dashed where inferred, queried where uncertain
- 55 — TCE concentration in groundwater, µg/L (2016-2017)
- 100 — TCE concentration in groundwater, µg/L (2008-2014)
- ESL — RWQCB Tier 1 environmental screening level for TCE in groundwater, µg/L
- * — Sample collected from shallow groundwater at 9.5 ft bgs, other samples from groundwater at 15 to 16 ft bgs
- ** — TCE data from 2008 not used in contouring due to recent data from P-5
- Development Phase I
- Development Phase II
- Development Phase III
- SS — SANITARY SEWER
- W — WATER
- E — ELECTRIC
- GAS — GAS
- OIL — PETROLEUM
- SD — SEWER / STORM DRAIN
- PIPE TERMINATED OR SIGNAL WAS LOST

Base Map From:
P& D Environment, Inc.
Basics Environmental, Inc., May 2008,
JR Associates, September 2011,
The Plumbing Ministry, October 2011,
P&D Environmental, Inc., October 2011

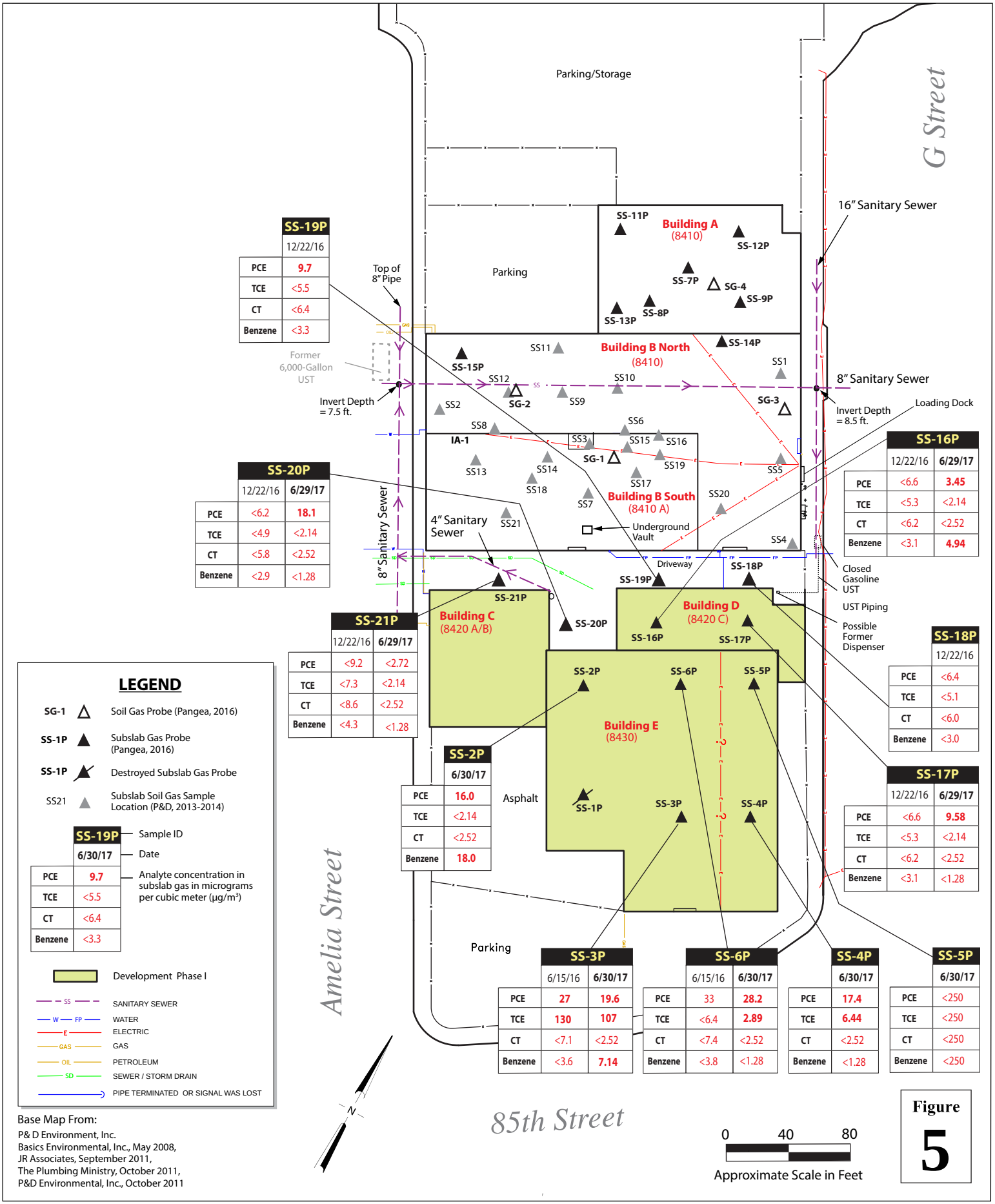
0 40 80
Approximate Scale in Feet

Figure 4

8410 Amelia Street
Oakland, California

PANGEA

TCE in Groundwater,
Aug/Sept 2017



Base Map From:
P& D Environment, Inc.
Basics Environmental, Inc., May 2008,
JR Associates, September 2011,
The Plumbing Ministry, October 2011,
P&D Environmental, Inc., October 2011

Figure 5

8410 Amelia Street
Oakland, California

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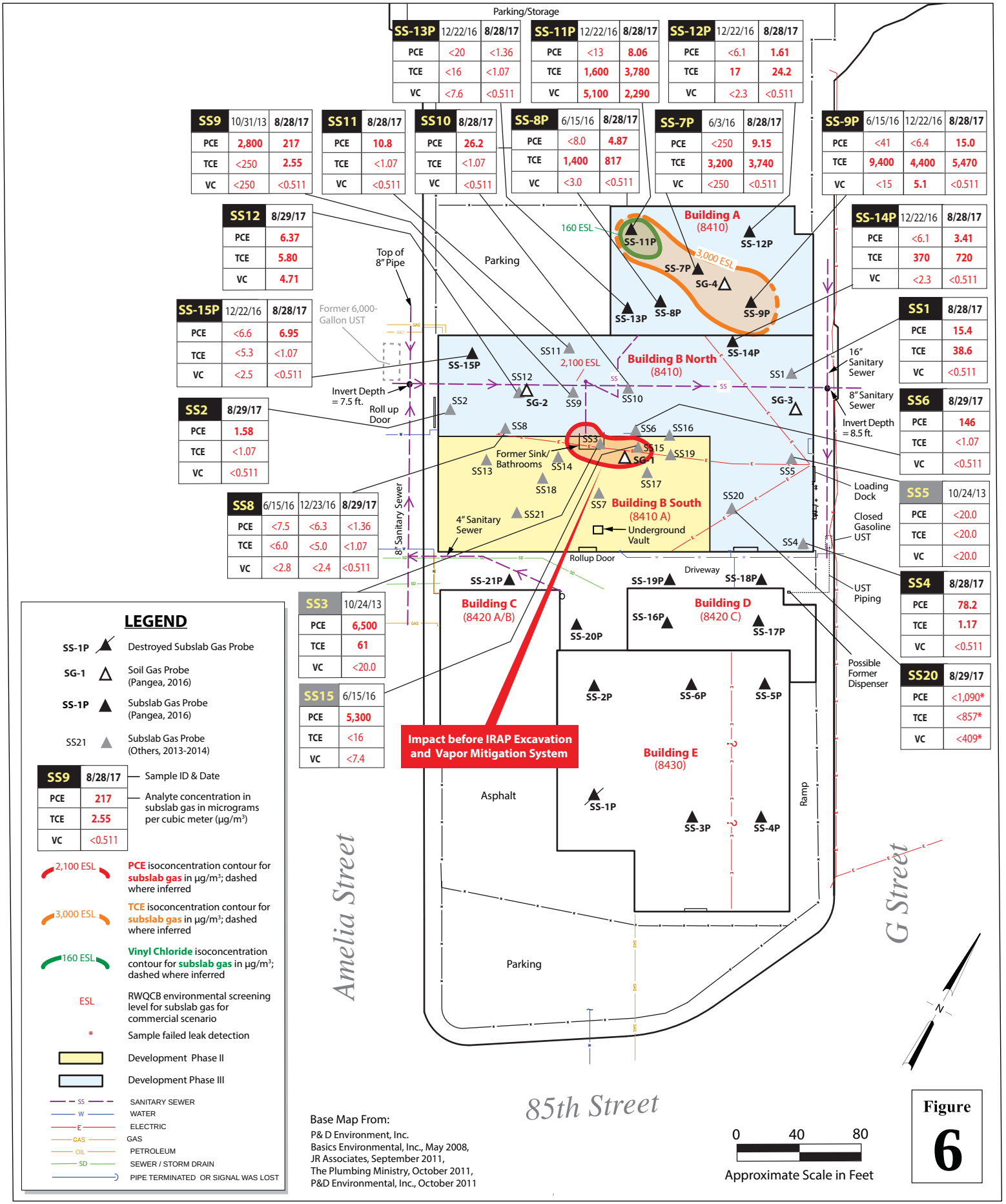
VOCs in Subslab Gas, South Area (Buildings C, D, E)



8410 Amelia Street
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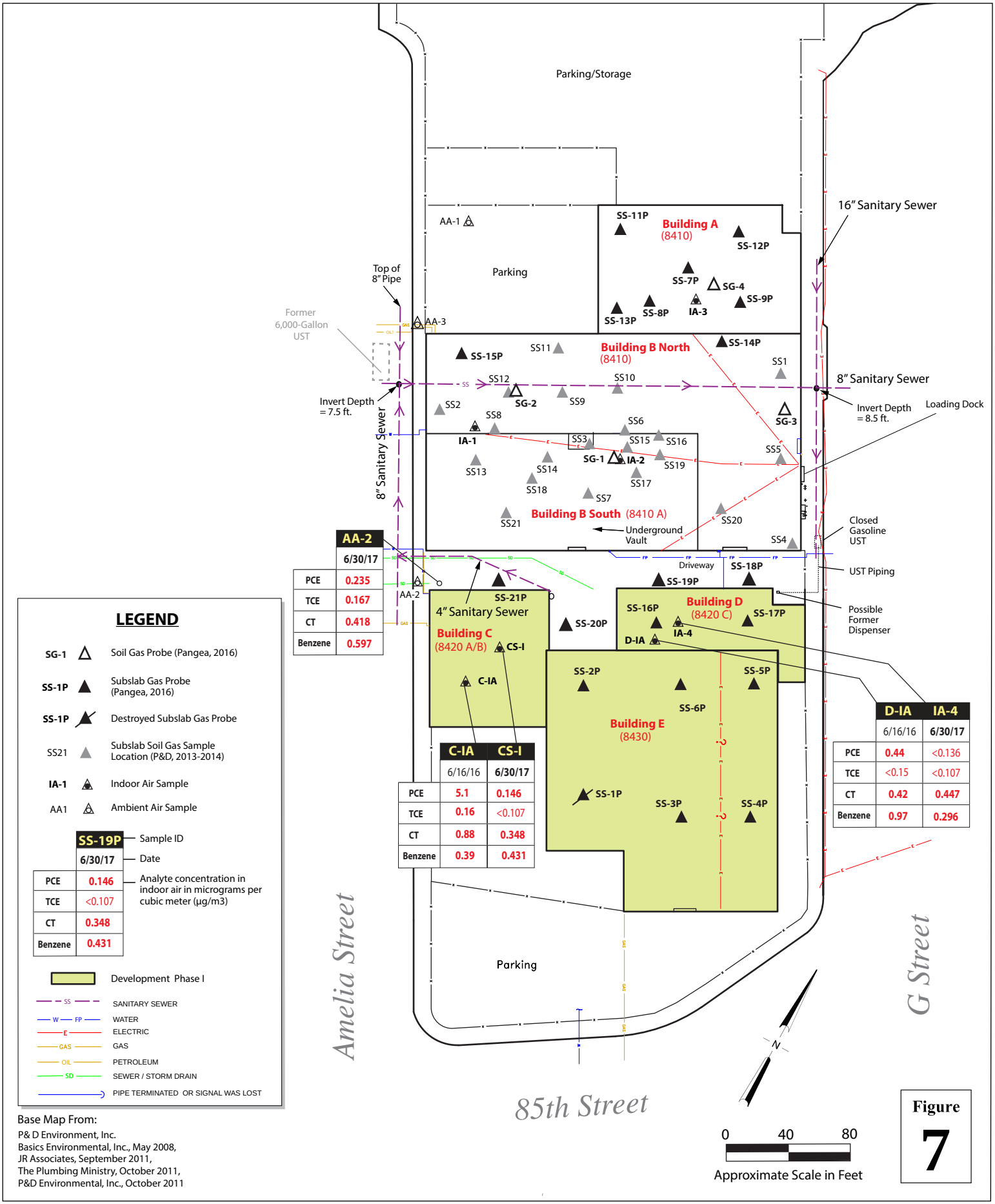
VOCs in Subslab Gas, North Area (Buildings A and B)



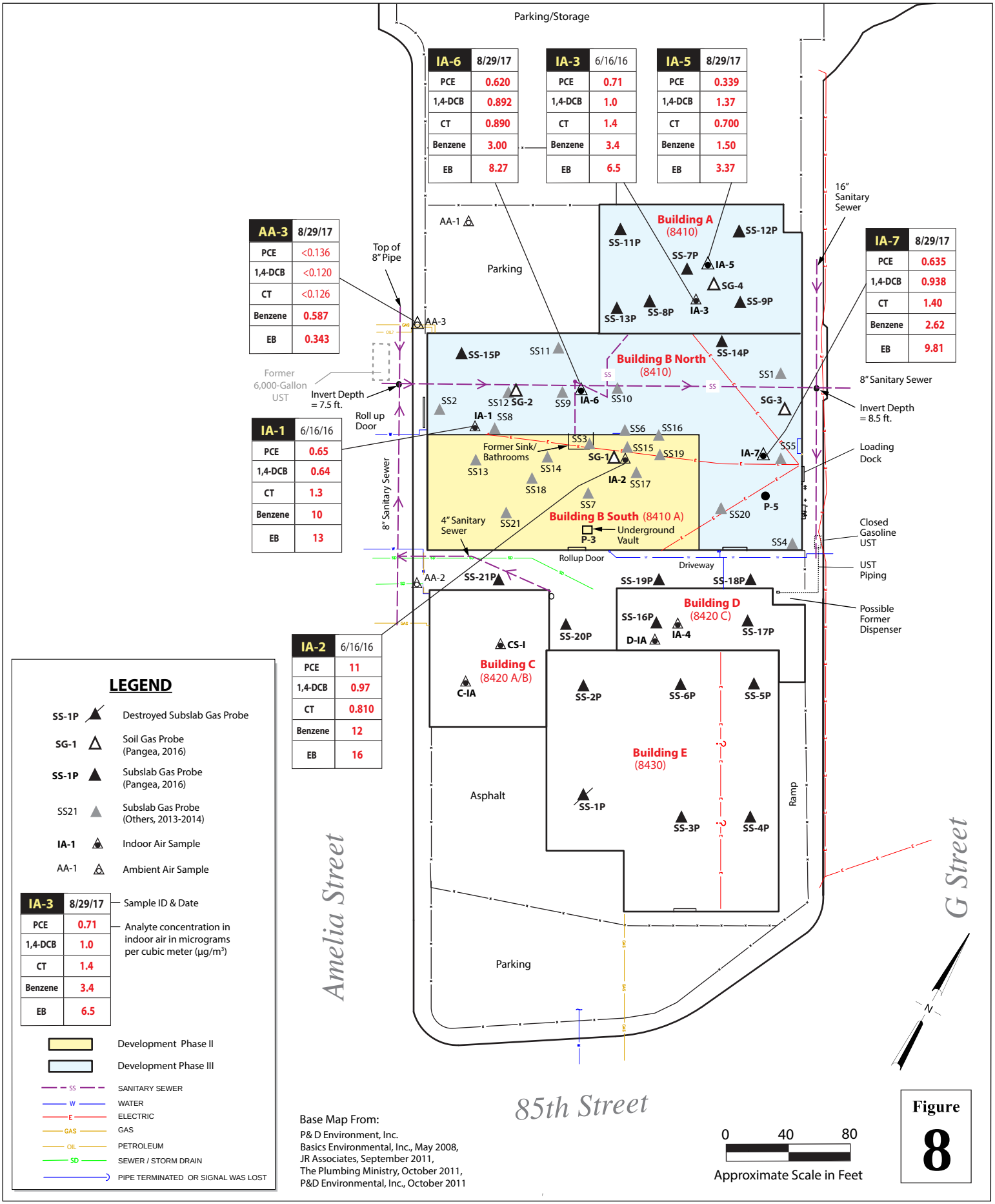
Base Map From:
P& D Environment, Inc.
Basics Environmental, Inc., May 2008,
JR Associates, September 2011,
The Plumbing Ministry, October 2011,
P&D Environmental, Inc., October 2011

Figure 7

8410 Amelia Street
Oakland, California

PANGEA

VOCs in Indoor Air,
South Area (Buildings C, D, E)



8410 Amelia Street
Oakland, California

PANGEA

VOCs in Indoor Air, North Area ((Buildings A and B))

Pangea

Table 1. Groundwater Analytical Data - 8410 Amelia Street, Oakland, California

Sample Location / ID	Sample Date	Depth to Groundwater (ft)	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,1-DCE	1,1-DCA	1,1,1-TCA	1,1,2,2-PCA	Chloroform	Methyl Ethyl Ketone	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	Other VOCs
			µg/L																		
GW Tier 1 ESL:			**3.0**	**5.0**	**6.0**	**10**	**0.061**	**3.2**	**5.0**	**62**	**1.0**	**2.3**	**5,600**	**100**	**1.0**	**40**	**13**	**20**	**5.0**	**0.17**	**varies**
VI ESL - Shallow GW, Residential (≤ 10 ft):			3.0	5.6	110	42,000	0.061	170	20	4,900	NE	2.3	4,300,000	NE	1.1	3,600	13	1,300	1,200	20	varies
VI ESL - Shallow GW, Commercial (≤ 10 ft):			26	49	950	350,000	0.53	1,400	180	42,000	NE	2.0	36,000,000	NE	9.7	30,000	110	11,000	11,000	170	varies
LTCP Criteria:			--	--	--	--	--	--	--	--	--	--	--	--	3,000	--	--	--	1,000	--	varies
Indoor Air Sampling Trigger Level			--	140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Building A																					
P-1-W	6/17/2016	15	<0.5	**0.79**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.5	<0.5	<0.5	<0.5	**0.83**	<0.50	ND
P-2-W	6/20/2016	17	<0.5	**32**	**130**	**3.9**	**1.8**	<0.5	**0.78**	<0.5	<0.5	<0.50	<2.0	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	ND
P-3-W	8/31/2017	16	<0.5	**49**	**11**	**1.2**	<0.5	**0.6**	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	**1.0**	<2.0	ND
Building B North																					
SB6-W	4/24/2008	15	<2.5	**100**	**4.3**	<0.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<50	<0.5	<0.5	<0.5	<2.5	<2.5	--	ND
SB7-W	11/5/2013	9.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<2.0	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	**a**
SB30-W	3/7/2014	9.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<2.0	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	ND
P-4-W	8/31/2017	16	<0.5	**55**	**28**	**2.3**	<0.5	**1.2**	**0.7**	**1.0**	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	**0.7**	<2.0	ND
P-5-W	8/31/2017	16	**0.5**	**3.0**	**0.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	**1.3**	**15**	**b**
Building B South																					
SB3-W	4/24/2008	15	<0.5	**30**	**1.3**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<50	<0.5	<0.5	<0.5	<0.5	**1.4**	**---**	ND
SB8-W	11/25/2013	9.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	ND
P-7-W	9/1/2017	16	<0.5	**17**	**0.7**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	**0.6**	<0.5	**0.7**	**1.0**	<2.0	**c**
Buildings C																					
SB4-W	4/24/2008	16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<50	<0.5	<0.5	<0.5	<0.5	**2.9**	**--**	ND
P-8-W	8/31/2017	16	<0.5	**2.5**	**0.6**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	**2.5**	<2.0	ND
Building D																					
SB1-W	4/24/2008	14	<0.5	**1.1**	**1.3**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<50	<0.5	<0.5	<0.5	<0.5	**2.2**	**--**	ND
SB2-W	4/24/2008	15	<0.5	**2.6**	**0.68**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<50	<0.5	<0.5	<0.5	<0.5	**2.9**	**--**	ND
P-6-W	8/31/2017	16	<0.5	**2.5**	**0.7**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	**2.2**	<2.0	ND

Table 1. Groundwater Analytical Data - 8410 Amelia Street, Oakland, California

Sample Location / ID	Sample Date	Depth to Groundwater (ft)	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,1-DCE	1,1-DCA	1,1,1-TCA	1,1,2,2-PCA	Chloroform	Methyl Ethyl Ketone	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	Other VOCs
			µg/L																		
GW Tier 1 ESL:			**3.0**	**5.0**	**6.0**	**10**	**0.061**	**3.2**	**5.0**	**62**	**1.0**	**2.3**	**5,600**	**100**	**1.0**	**40**	**13**	**20**	**5.0**	**0.17**	**varies**
VI ESL - Shallow GW, Residential (≤ 10 ft):			3.0	5.6	110	42,000	0.061	170	20	4,900	NE	2.3	4,300,000	NE	1.1	3,600	13	1,300	1,200	20	varies
VI ESL - Shallow GW, Commercial (≤ 10 ft):			26	49	950	350,000	0.53	1,400	180	42,000	NE	2.0	36,000,000	NE	9.7	30,000	110	11,000	11,000	170	varies
LTCP Criteria:			--	--	--	--	--	--	--	--	--	--	--	--	3,000	--	--	--	1,000	--	varies
Indoor Air Sampling Trigger Level			--	140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Building E																					
SB5-W	4/24/2008	14	<0.5	<0.5	<0.5	<0.5	<0.5	**1.4**	**0.68**	**1.0**	<0.5	<0.5	2.0	<50	<0.5	<0.5	<0.5	<0.5	**1.4**	**--**	ND
P-9-W	9/1/2017	15	<0.5	**0.9**	<0.5	<0.5	<0.5	**0.7**	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	**2.0**	<2.0	ND
P-10-W	9/1/2017	16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	ND
Historical Monitoring Wells																					
MW-1	7/28/1988	--	--	--	--	--	--	--	--	--	--	--	--	ND	**0.6**	ND	ND	ND	--	--	--
	11/28/1988	--	--	--	--	--	--	--	--	--	--	--	--	**130**	**8.2**	**0.6**	ND	**5.0**	--	--	--
	2/16/1989	--	--	--	--	--	--	--	--	--	--	--	--	**120**	**3.2**	ND	**2.4**	**17.0**	--	--	**--**
	5/26/1989	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	**0.5**	**0.6**	--	--	**--**
	7/20/1989	--	--	--	--	--	--	--	--	--	--	--	--	**180**	**7.2**	ND	ND	**5.7**	--	--	--
	10/27/1989	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
	12/8/1993	6.84	--	--	--	--	--	--	--	--	--	--	--	**200**	**52**	ND	ND	ND	--	--	--
	3/18/1994	6.62	--	--	--	--	--	--	--	--	--	--	--	**1,100**	**430**	**9.3**	**17.0**	**18.0**	--	--	**--**
	6/30/1994	6.93	--	--	--	--	--	--	--	--	--	--	--	**800**	**160**	**4.0**	**29.0**	**27.0**	--	--	**--**
	10/3/1994	6.97	--	--	--	--	--	--	--	--	--	--	--	**1,400**	**430**	**4.0**	**34.0**	**14.0**	--	--	**--**
	3/11/1996	5.53	--	--	--	--	--	--	--	--	--	--	--	**1,400**	**360**	**4.1**	**12.0**	**2.1**	--	--	**--**
	9/18/1996	6.77	--	--	--	--	--	--	--	--	--	--	--	**540**	**220**	**1.0**	**3.5**	ND	**14.0**	--	**--**
	4/2/1997	6.28	--	--	--	--	--	--	--	--	--	--	--	**2,400**	**960**	**10**	**7**	ND	**60**	--	**--**
MW-2	12/8/1993	7.13	--	--	--	--	--	--	--	--	--	--	--	**8,500**	**2,100**	**660**	**400**	**780**	--	--	**--**
	3/18/1994	6.83	--	--	--	--	--	--	--	--	--	--	--	**700**	**160**	**40**	**71**	**68**	--	--	**--**
	6/30/1994	7.02	--	--	--	--	--	--	--	--	--	--	--	**1,700**	**340**	**78**	**110**	**150**	--	--	**--**
	10/3/1994	7.18	--	--	--	--	--	--	--	--	--	--	--	**3,900**	**1,100**	**190**	**290**	**330**	--	--	**--**
	3/11/1996	5.78	--	--	--	--	--	--	--	--	--	--	--	**1,800**	**200**	**93**	**110**	**230**	--	--	**--**
	9/18/1996	6.96	--	--	--	--	--	--	--	--	--	--	--	**2,900**	**410**	**11**	**310**	**87**	**57**	--	**--**
	4/2/1997	6.51	--	--	--	--	--	--	--	--	--	--	--	**340**	**62**	**9**	**21**	**33**	**14**	--	**--**
MW-3	12/8/1993	7.12	--	--	--	--	--	--	--	--	--	--	--	ND	**3.0**	**1.6**	**1.6**	**3.9**	--	--	**--**
	3/18/1994	6.77	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
	6/30/1994	7.03	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
	10/3/1994	7.11	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
	3/11/1996	5.68	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--

Pangea

Table 1. Groundwater Analytical Data - 8410 Amelia Street, Oakland, California

Sample Location / ID	Sample Date	Depth to Groundwater (ft)	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,1-DCE	1,1-DCA	1,1,1-TCA	1,1,2,2-PCA	Chloroform	Methyl Ethyl Ketone	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	Other VOCs
			µg/L																		
	GW Tier 1 ESL:		**3.0**	**5.0**	**6.0**	**10**	**0.061**	**3.2**	**5.0**	**62**	**1.0**	**2.3**	**5,600**	**100**	**1.0**	**40**	**13**	**20**	**5.0**	**0.17**	**varies**
	VI ESL - Shallow GW, Residential (≤ 10 ft):		3.0	5.6	110	42,000	0.061	170	20	4,900	NE	2.3	4,300,000	NE	1.1	3,600	13	1,300	1,200	20	varies
	VI ESL - Shallow GW, Commercial (≤ 10 ft):		26	49	950	350,000	0.53	1,400	180	42,000	NE	2.0	36,000,000	NE	9.7	30,000	110	11,000	11,000	170	varies
	LTCP Criteria:		--	--	--	--	--	--	--	--	--	--	--	--	3,000	--	--	--	1,000	--	varies
	Indoor Air Sampling Trigger Level		--	140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/11/1996	7.26	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
	9/18/1996	8.44	--	--	--	--	--	--	--	--	--	--	--	ND	**1.7**	ND	**1.4**	ND	ND	--	**--**
	12/17/1996	7.20	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	ND	--	--
	4/2/1997	7.99	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	ND	--	--

Notes:

VOCs by USEPA Method 8260.

MTBE, Benzene, Toluene, Ethylbenzene, and Xylenes by USEPA Method 8021 or 8260.

PCE = Tetrachloroethene

TCE = Trichloroethene

DCE = Dichloroethene

1,1,2,2-PCA = 1,1,2,2-Tetrachloroethane

DCA = Dichloroethane

1,1,1-TCA = 1,1,1-Trichloroethane

TPHg = total petroleum hydrocarbons as gasoline

MTBE = Methyl tert-butyl ether

µg/L = micrograms per liter

Bold values indicate compound detections

Highlighted gray compounds indicate concentrations exceed Tier 1 ESL

Green values indicate TCE concentrations detected above Indoor Air Sampling Trigger Level

< n = Compound not detected at or above the laboratory method detection limit of n

NE = ESL not established

ND = not detected

-- = Not analyzed

ESL = Environmental Screening Level established by San Francisco Bay Regional Water Quality Control Board, Interim Final February 2016 (Revision 3).

IA Sampling Trigger Level = Indoor Air Sampling Trigger Level is equivalent to the ESL for groundwater, under commercial/industrial scenario with shallow groundwater, non carcinogenic chemcial

a = One or more of the following compounds were detected below their respective ESL if one exists (sec-Butyl benzene, tert-Butyl benzene, carbon disulfide, isopropylbenzene, n-Propyl benzene, Propylbenzene, 1,3,5-Trimethylbenzene, 1,2,4-Trimethylbenzene).

a=sec-Butyl benzene (0.66), tert-Butyl benzene (1.4), carbon disulfide (4.3), isopropylbenzene (0.64), and n-Propyl benzene (0.80)

b=sec-Butyl benzene (0.8), Propylbenzene (0.6), Naphthalene (15)

c=1, 3, 5-Trimethylbenzene (0.5), 1, 2, 4-Trimethylbenzene (2.6)

Pangea

Table 2. Subslab Gas and Soil Gas Analytical Data - 8410 Amelia Street, Oakland, California

Sample Location / ID	Date	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	1,1-DCE	1,1-DCA	1,1,1-TCA	1,4-DCB	Carbon Tetrachloride	1,1,2,2-PCA	Chloroform	MEK	Benzene	Ethylbenzene	Toluene	Total Xylenes	Other VOCs	IPA (Leak Detectant)	Notes
		µg/m³																		
Soil Vapor ESL, Commercial Land Use:		**2,100**	**3,000**	**35,000**	**160**	**310,000**	**7,700**	**4,400,000**	**1,100**	**290**	**210**	**530**	**22,000,000**	**420**	**4,900**	**1,300,000**	**440,000**	**varies**	**NE**	
Indoor Air Sampling Trigger Level		**--**	**8,000**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**NE**	
Building A																				
subslab probes																				
SS-7P	6/3/2016	<250	**3,200**	<250	<250	<250	<250	<250	<250	--	**1,100**	<250	--	--	<250	<250	<250	a	--	
	8/28/2017	**9.15**	**3,740**	**5.15**	<0.511	<0.793	<0.802	<1.09	<1.20	<1.26	<1.37	**5.39**	<3.69	**1.16**	<0.867	**1.39**	**1.74**	a	**3.74**	
SS-8P	6/15/2016	<8.0	**1,400**	**6**	<3.0	<4.7	<4.8	<6.4	<7.1	<7.4	<8.1	**20**	<14	<3.8	<5.1	**6.9**	<5.1	a	--	
	8/28/2017	**4.87**	**817**	**2.15**	<0.511	<0.793	<0.802	<1.09	<1.20	<1.26	<1.37	**11.2**	<3.69	**0.917**	**2.21**	**5.24**	**11.01**	a	<3.07	
SS-9P	6/15/2016	<41	**9,400**	**110**	<15	<24	<24	<33	<36	<38	<42	**51**	<71	<19	<26	<23	<26	a	--	
	12/22/2016	<6.4	**4,400**	**62**	**5.1**	<3.7	<3.8	<5.1	<5.7	<5.9	<6.5	**19**	<2.8	<3.0	<4.1	<3.5	<8.2	a	<9.2	
	8/28/2017	**15.0**	**5,470**	**114**	<0.511	<0.793	<0.802	<1.09	<1.20	<1.26	<1.37	**53.4**	<3.69	**0.985**	**6.02**	**3.27**	**9.74**	a	<3.07	
SS-11P	12/22/2016	<13	**1,600**	**92**	**5,100**	<7.3	<7.5	<10	<11	<12	<13	<9.0	<5.5	<5.9	<8.0	<7.0	<16.0	a	<18	
	8/28/2017	**8.06**	**3,780**	**77.3**	**2,290**	**6.20**	<0.802	<1.09	<1.20	<1.26	<1.37	<0.973	<3.69	**3.44**	**1.85**	**6.54**	**8.75**	a	<3.07	
SS-12P	12/22/2016	<6.1	**17**	<3.5	<2.3	<3.5	<3.6	<4.9	<5.4	<5.6	<6.1	<4.4	<2.6	<2.9	<3.9	<3.4	<7.8	a	**9.3**	
	8/28/2017	**1.61**	**24.2**	<0.793	<0.511	<0.793	<0.802	**2.99**	<1.20	<1.26	<1.37	<0.973	<3.69	<0.639	<0.867	**0.841**	<2.60	a	**7.18**	
SS-13P	12/22/2016	<20	<16	<12	<7.6	<12	<12	<16	<28	<19	<20	<15	<8.8	<9.5	<13	<11	<26	a	<29	
	8/28/2017	<1.36	<1.07	<0.793	<0.511	<0.793	<0.802	<1.09	<1.20	<1.26	<1.37	<0.973	<3.69	<0.639	<0.867	**1.74**	**1.98**	a	<3.07	
soil gas well																				
SG-4	12/23/2016	<39	<31	**100**	**520**	<23	<23	<31	<35	<36	<40	<28	<17	**36**	<25	**97**	**35**	a	<57	
Building B North																				
subslab probes																				
SS1	10/24/2013	<20	**30**	<20	<20	<20	<20	<20	<20	--	<20	<20	--	--	<20	<20	<20	---	---	
	8/28/2017	**15.4**	**38.6**	<0.793	<0.511	<0.793	<0.802	<1.09	<1.20	<1.26	<1.37	<0.973	<3.69	<0.639	**1.61**	**6.09**	**7.85**	a	**5.51**	
SS2	10/24/2013	<20	<20	<20	<20	<20	<20	<20	<20.0	--	<20	<20	--	--	<20	<20	<20	---	---	
	8/29/2017	**1.58**	<1.07	<0.793	<0.511	<0.793	<0.802	<1.09	<1.20	<1.26	<1.37	<0.973	<3.69	<0.639	**5.42**	**3.04**	**10.02**	a	**4.73**	
SS4	10/24/2013	**52.5**	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	--	<20.0	<20.0	--	--	<20.0	<20.0	<20.0	---	---	
	8/29/2017	**78.2**	**1.17**	<0.793	<0.511	<0.793	<0.802	**1.79**	<1.20	<1.26	<1.37	<0.973	<3.69	**0.989**	<0.867	**1.72**	**3.32**	a	**3.18**	
SS5	10/24/2013	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	--	<20.0	<20.0	<20.0	<20.0	---	---	
SS6	10/31/2013	**300**	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	<250	<250	<250	<250	#	---	
	8/29/2017	**146**	<1.07	<0.793	<0.511	<0.793	<0.802	**3.04**	<1.20	<1.26	<1.37	<0.973	**5.94**	**0.760**	<0.867	**1.64**	**2.27**	a	<3.07	
SS8	10/31/2013	<250	<250	<250	<250	<250	<250	<250	<250	--	<250	<250	<1,000	--	<250	<250	<250	---	---	
	2/27/2014	**8,900**	**1,700**	**280**	<250	<250	<250	<250	<250	--	<250	<250	<1,000	--	<250	<250	<250	---	---	
	6/15/2016	<7.5	<6.0	<4.4	<2.8	<4.4	<4.5	<6.0	<6.7	<7.0	<7.6	<5.4	<13	<3.5	<4.8	<4.2	<4.8	a	--	
	12/23/2016	<6.3	<5.0	<3.7	<2.4	<3.7	<3.7	<5.0	<5.6	<5.8	<6.4	<4.5	<2.7	<3.0	<4.0	<3.5	<8.0	a	<9.1	
	8/29/2017	<1.36	<1.07	<0.793	<0.511	<0.793	<0.802	<1.09	<1.20	<1.26	<1.37	**2.16**	<3.69	<0.639	<0.867	**1.96**	**2.33**	a	**6.86**	

Table 2. Subslab Gas and Soil Gas Analytical Data - 8410 Amelia Street, Oakland, California

Sample Location / ID	Date	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	1,1-DCE	1,1-DCA	1,1,1-TCA	1,4-DCB	Carbon Tetrachloride	1,1,2,2-PCA	Chloroform	MEK	Benzene	Ethylbenzene	Toluene	Total Xylenes	Other VOCs	IPA (Leak Detectant)	Notes
		µg/m³																		
Soil Vapor ESL, Commercial Land Use:		**2,100**	**3,000**	**35,000**	**160**	**310,000**	**7,700**	**4,400,000**	**1,100**	**290**	**210**	**530**	**22,000,000**	**420**	**4,900**	**1,300,000**	**440,000**	**varies**	**NE**	
SS9	10/31/2013	**2,800**	<250	<250	<250	<250	<250	<250	<250	--	<250	<250	<1,000	--	<250	<250	<250	---	---	
	8/28/2017	**217**	**2.55**	<0.793	<0.511	<0.793	<0.802	**8.88**	<1.20	<1.26	<1.37	<0.973	<3.69	**0.695**	**3.71**	**3.74**	**8.39**	a	**13.3**	
SS10	11/25/2013	<250	<250	<250	<250	<250	<250	<250	<250	--	<250	<250	<1,000	--	<250	<250	<250	---	---	
	8/28/2017	**26.2**	<1.07	<0.793	<0.511	<0.793	<0.802	**1.94**	<1.20	<1.26	<1.37	<0.973	<3.69	<0.639	<0.867	**1.96**	**2.21**	a	<3.07	
SS11	11/25/2013	<250	<250	<250	<250	<250	<250	<250	<250	--	<250	<250	<1,000	--	<250	<250	<250	---	---	
	8/29/2017	**10.8**	<1.07	<0.793	<0.511	<0.793	<0.802	**6.48**	<1.20	<1.26	<1.37	<0.973	<3.69	<0.639	<0.867	**1.67**	**2.16**	a	**31.2**	
SS12	11/25/2013	<250	<250	<250	<250	<250	<250	<250	<250	--	<250	<250	<1,000	--	<250	<250	<250	---	---	
	8/29/2017	**6.37**	**5.80**	<0.793	**4.71**	<0.793	<0.802	<1.09	<1.20	<1.26	<1.37	<0.973	<3.69	<0.639	**0.920**	**2.76**	**4.00**	a	<3.07	
SS20	3/12/2014	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	--	<250	<250	<250	#	---	
	8/29/2017	<1,090	<857	<634	<409	<634	<641	<870	<962	<1,010	<1,100	<779	<2,950	<511	**766**	**1,770**	**6,310**	a	**14,300**	Leak Detected
SS-14P	12/22/2016	<6.1	**370**	<3.5	<2.3	<3.5	<3.6	<4.9	<5.4	<5.6	<6.1	<4.4	<2.6	<2.9	<3.9	<3.4	<7.8	a	<8.8	
	8/28/2017	**3.41**	**720**	**3.04**	<0.511	<0.793	<0.802	<1.09	<1.20	<1.26	<1.37	**1.34**	<3.69	**0.708**	**1.01**	**2.84**	**3.60**	a	<3.07	
SS-15P	12/22/2016	<6.6	<5.3	<3.9	<2.5	<3.9	<4.0	<5.3	<5.9	<6.2	<6.7	<4.8	<2.9	<3.1	<4.3	<3.7	<8.6	a	**9.9**	
	8/28/2017	**6.95**	<1.07	<0.793	<0.511	<0.793	<0.802	<1.09	<1.20	<1.26	<1.37	<0.973	<3.69	<0.639	**5.13**	**5.61**	**13**	a	<3.07	
soil gas wells																				
SG-2	12/23/2016	<39	<31	<23	<15	<23	<23	<32	<35	<36	<40	<28	<17	**73**	<25	**110**	**51**	a	<57	
SG-3	12/23/2016	<6.2	<4.9	**6.7**	**5.3**	<3.6	<3.7	<5.0	<5.5	<5.8	<6.3	**5.1**	**9.7**	**56**	**15**	**120**	**68**	a	**27**	
Building B South																				
SS3	10/24/2013	**6,500**	**61**	<20.0	<20.0	<20.0	<20.0	**38**	<20.0	<20.0	<20.0	<20.0	--	<20.0	<20.0	<20.0	<20.0	---	<200	
SS7	10/31/2013	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	<250	<250	<250	<250	---	---	
	2/26/2014	**330**	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	<250	<250	<250	<250	---	---	
SS13	3/4/2014	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	<250	<250	<250	<250	---	---	
SS14	3/4/2014	**1,400**	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	<250	<250	<250	<250	---	---	
SS15	3/4/2014	**4,000**	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	<250	<250	<250	<250	---	---	
	6/15/2016	**5,300**	<16	<12	<7.4	<12	<12	<16	<17	<18	<20	<14	<34	<9.3	<13	<11	<13	---	<28	
SS16	3/6/2014	**380**	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	<250	<250	<250	<250	#	---	
SS17	3/6/2014	**1,400**	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	<250	<250	<250	<250	---	---	

Table 2. Subslab Gas and Soil Gas Analytical Data - 8410 Amelia Street, Oakland, California

Sample Location / ID	Date	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	1,1-DCE	1,1-DCA	1,1,1-TCA	1,4-DCB	Carbon Tetrachloride	1,1,2,2-PCA	Chloroform	MEK	Benzene	Ethylbenzene	Toluene	Total Xylenes	Other VOCs	IPA (Leak Detectant)	Notes
		µg/m³																		
Soil Vapor ESL, Commercial Land Use:		**2,100**	**3,000**	**35,000**	**160**	**310,000**	**7,700**	**4,400,000**	**1,100**	**290**	**210**	**530**	**22,000,000**	**420**	**4,900**	**1,300,000**	**440,000**	**varies**	**NE**	
SS18	3/6/2014	**710**	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	<250	<250	<250	<250	---	---	
SS19	3/12/2014	**760**	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	<250	<250	<250	<250	---	---	
SS21	3/12/2014	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<1,000	<250	<250	<250	<250	---	---	
soil gas wells																				
SG-1	12/22/2016	**26**	**140**	**62**	**4.3**	**8.3**	<3.8	<5.1	<5.6	<5.9	<6.4	**12**	**21**	**29**	**6.0**	**74**	**28**	a	<9.2	
Building C Area																				
subslab probes																				
SS-20P	12/22/2016	<6.2	<4.9	<3.6	<2.4	<3.6	<3.7	<5.0	<5.5	<5.8	<6.3	<4.5	<2.7	<2.9	<4.0	<3.5	<8.0	a	**1,500**	
	6/29/2017	**18.1**	<2.14	<1.59	<1.02	<1.59	<1.60	**2.75**	<2.40	<2.52	<2.75	<1.95	<7.37	<1.28	<1.73	<1.51	<5.20	a	<6.15	
SS-21P	12/22/2016	<9.2	<7.3	<5.4	<3.5	<5.4	<5.5	<7.4	<8.2	<8.6	<9.3	<6.6	<4.0	<4.3	<5.9	<5.1	<11.8	a	**130**	
	6/29/2017	<2.72	<2.14	<1.59	<1.02	<1.59	<1.60	<2.18	<2.40	<2.52	<2.75	<1.95	<7.37	<1.28	<1.73	**10.7**	**5.88**	a	**34.6**	
Building D Area																				
subslab probes																				
SS-16P	12/22/2016	<6.6	<5.3	<3.9	<2.5	<3.9	<4.0	<5.3	<5.9	<6.2	<6.7	<4.8	<2.9	<3.1	<4.3	<3.7	<8.6	a	<9.6	
	6/29/2017	**3.45**	<2.14	<1.59	<1.02	<1.59	<1.60	**2.98**	<2.40	<2.52	<2.75	<1.95	<7.37	**4.94**	<1.73	**6.70**	**7.09**	a	<6.15	
SS-17P	12/22/2016	<6.6	<5.3	<3.9	<2.5	<3.9	<4.0	<5.3	<5.9	<6.2	<6.7	<4.8	<2.9	<3.1	<4.3	<3.7	<8.6	a	<9.6	
	6/29/2017	**9.58**	<2.14	<1.59	<1.02	<1.59	<1.60	**2.24**	<2.40	<2.52	<2.75	<1.95	<7.37	<1.28	<1.73	<1.51	<5.20	a	<6.15	
SS-18P	12/22/2016	<6.4	<5.1	<3.8	<2.4	<3.8	<3.8	<5.2	<5.7	<6.0	<6.5	<4.6	<2.8	<3.0	<4.1	<3.6	<8.2	a	**21**	
SS-19P	12/22/2016	**9.7**	<5.5	<4.1	<2.6	<4.1	<4.1	<5.6	<6.2	<6.4	<7.0	<5.0	<3.0	<3.3	<4.5	<3.9	<9.0	a	<10	
Building E																				
subslab probes																				
SS-2P	6/30/2017	**16.0**	<2.14	<1.59	<1.02	<1.59	<1.60	**5.14**	<2.40	<2.52	<2.75	<1.95	<7.37	**18.0**	**2.38**	**17.8**	**9.05**	a	<6.15	
SS-3P	6/15/2016	**27**	**130**	<4.5	<2.9	**230**	**12**	**880**	<6.8	<7.1	<7.8	**5.7**	<13	<3.6	<4.9	<4.3	<4.9	--	--	
	6/30/2017	**19.6**	**107**	<1.59	<1.02	**191**	**11.8**	**910**	<2.40	<2.52	<2.75	**5.55**	<7.37	**7.14**	<1.73	**7.76**	<5.20	a	<6.15	
SS-4P	6/30/2017	**17.4**	**6.44**	<1.59	<1.02	**1.87**	<1.60	**39.8**	<2.40	<2.52	<2.75	<1.95	<7.37	<1.28	<1.73	<1.51	<5.20	a	<6.15	
SS-5P	6/3/2016	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	--	<250	<250	<250	<250	--	--	
SS-6P	6/3/2016	<250	<250	<250	<250	<250	<250	**550**	<250	<250	<250	<250	--	<250	<250	<250	<250	--	--	
	6/15/2016	**33**	<6.4	<4.7	<3.0	<4.7	<4.8	**490**	<7.1	<7.4	<8.1	<5.8	<14	<3.8	<5.1	<4.5	<5.1	a	--	
	6/30/2017	**28.2**	**2.89**	<1.59	<1.02	<1.59	<1.60	**532**	<2.40	<2.52	<2.75	<1.95	<7.37	<1.28	**18.5**	**2.38**	**175**	a	<6.15	

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Table 2. Subslab Gas and Soil Gas Analytical Data - 8410 Amelia Street, Oakland, California

Sample Location / ID	Date	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	1,1-DCE	1,1-DCA	1,1,1-TCA	1,4-DCB	Carbon Tetrachloride	1,1,2,2-PCA	Chloroform	MEK	Benzene	Ethylbenzene	Toluene	Total Xylenes	Other VOCs	IPA (Leak Detectant)	Notes
		µg/m^3																		
Soil Vapor ESL, Commercial Land Use:		**2,100**	**3,000**	**35,000**	**160**	**310,000**	**7,700**	**4,400,000**	**1,100**	**290**	**210**	**530**	**22,000,000**	**420**	**4,900**	**1,300,000**	**440,000**	**varies**	**NE**	
Shroud Samples																				
Shroud (SG-3)	12/23/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**360,000**	
Shroud (SS-6P)	6/30/2017	<2.72	<2.14	<1.59	<1.02	<1.59	<1.60	<2.18	<2.40	<2.52	<2.75	<1.95	<7.37	**20.9**	**4.28**	**36.3**	**16.1**	a	**94,700**	
Shroud (SS4)	8/29/2017	<1.36	<1.07	<0.793	<0.511	<0.793	<0.802	<1.09	<1.20	<1.26	<1.37	<0.973	<3.69	**0.954**	**1.25**	**7.63**	**5.78**	a	**75,800**	

Notes:

Samples analyzed for VOCs by EPA Method TO-15 or EPA Method 8260 (Basic Target List).

µg/m3 = micrograms per cubic meter

Bold values indicate compound detections

Highlighted gray compounds indicate compound detections or compound reporting limits above listed ESLs.

Green values indicate TCE concentrations detected above IA Sampling Trigger Level

< n = Compound not detected at or above the laboratory method detection limit of n

NE = ESL not established

-- = Not analyzed

* = other compounds detected at low concentrations. See Laboratory report for details.

= Tertiary Butyl Alcohol (TBA) detected at 9,100 in SS-6, 32,000 in SS-16, and 6,700 in SS-20.

ESL = Environmental Screening Level, from California Regional Water Quality Control Board - San Francisco Bay Region, Interim Revised February 2016 (Revision 3).

VOCs = Volatile Organic Compounds

PCE = Tetrachloroethene

TCE = Trichloroethene

DCE = Dichloroethene

1,1,2,2-PCA = 1,1,2,2-Tetrachloroethane

MEK = Methyl Ethyl Ketone

IPA = Isopropyl Alcohol

a = One or more of the following compounds were detected below their respective ESL if one exists (Acetone, n-Butyl benzene, sec-Butyl benzene, 1,3-Butadiene, Carbon Disulfide, Chloromethane, 2-Chlorotoluene, 4-Chlorotoluene, Cyclohexane, Dichlorodifluoromethane, trans-1,2-Dichloroethene, 1,4-Dioxane, 4-Ethyltoluene, Ethanol, Ethyl Acetate, Freon 12, Heptane, n-Hexane, Methylene Chloride, Methyl Methacrylate, Naphthalene, Propene, Tetrahydrofuran, 4-Isopropyl toluene, 1,2,3-Trichloropropane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, 2,2,4-Trimethylpentane, Trichlorofluoromethane, Trichloroethylene, 1,2,4-Trimethylbenzene, 2,2,4-Trimethylpentane).

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Table 3. Air Analytical Data - 8410 Amelia Street, Oakland, California

Sample Location / ID	Sample Date	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	1,1-DCE	1,1-DCA	1,1,1-TCA	1,4-DCB	Carbon Tetrachloride	1,1,2,2-PCA	Chloroform	Methyl Ethyl Ketone	Benzene	Ethylbenzene	Toluene	Total Xylenes	Other VOCs	Notes
		µg/m³																	
Indoor Air ESL, Commercial Land Use:		**2.1**	**3.0**	**35**	**0.16**	**310**	**7.7**	**4,400**	**1.1**	**0.29**	**0.21**	**0.53**	**22,000**	**0.42**	**4.9**	**1,300**	**440**	**varies**	
Accelerated Response AL	Indoor Air - 8 Hour	--	**8.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Indoor Air - 10 Hour	--	**7.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Urgent Response AL	Indoor Air - 8 Hour	--	**24**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Indoor Air - 10 Hour	--	**21**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Building A																			
IA-3	6/16/2016	**0.71**	<0.17	<0.12	<0.040	<0.062	<0.13	<0.17	**1.0**	**1.4**	<0.21	<0.15	**11**	**3.4**	**6.5**	**63**	**32.1**	a	
IA-5	8/29/2017	**0.339**	**0.173**	<0.0793	<0.0511	<0.0793	<0.0802	<0.109	**1.37**	**0.700**	<0.137	<0.0973	--	**1.50**	**3.37**	**16.5**	**15.3**	a	
Building B North																			
IA-1	6/16/2016	**0.65**	<0.18	<0.13	<0.043	<0.067	<0.14	<0.18	**0.64**	**1.3**	<0.23	**0.18**	**13**	**10**	**13**	**110**	**66**	a	
IA-6	8/29/2017	**0.620**	<0.107	<0.0793	<0.0511	<0.0793	<0.0802	<0.109	**0.892**	**0.890**	<0.137	<0.0973	--	**3.00**	**8.27**	**78.3**	**37.0**	a	
IA-7	8/29/2017	**0.635**	<0.107	<0.0793	<0.0511	<0.0793	<0.0802	<0.109	**0.938**	**1.40**	<0.137	<0.0973	--	**2.62**	**9.81**	**92.3**	**44.6**	a	
Building B South																			
IA-2	6/16/2016	**11**	**0.43**	**0.35**	<0.048	<0.074	<0.15	<0.20	**0.97**	**0.810**	<0.26	<0.18	**8.4**	**12**	**16**	**100**	**79**	a	
Building C																			
C-IA	6/16/2016	**5.1**	**0.16**	<0.12	<0.038	<0.059	<0.12	<0.16	<0.18	**0.88**	--	**0.36**	**7.2**	**0.39**	<0.13	**16**	**7.0**	a	
CS-1 (Crawl Space)	6/30/2017	**0.146**	<0.107	<0.0793	<0.0511	<0.0793	<0.0802	<0.109	--	**0.348**	--	**--**	--	**0.431**	**1.46**	**17.6**	**18.3**	---	
Building D																			
D-IA	6/16/2016	**0.44**	<0.15	<0.11	<0.035	<0.055	<0.11	<0.15	<0.16	**0.42**	<0.19	<0.13	**2.2**	**0.97**	**1.4**	**18**	**7.1**	a	
IA-4	6/30/2017	<0.136	<0.107	<0.0793	<0.0511	<0.0793	<0.0802	<0.109	--	**0.447**	--	--	--	**0.296**	**0.305**	**1.59**	<2.6	---	
Ambient Air																			
AA-1	6/16/2016	<0.23	<0.18	<0.13	<0.043	<0.066	<0.14	<0.18	<0.20	**1.1**	<0.23	<0.16	<0.25	<0.27	**0.21**	**1.1**	**1.01**	a	
AA-2	6/30/2017	**0.235**	**0.167**	<0.0793	<0.0511	<0.0793	<0.0802	<0.109	<0.120	**0.418**	<0.137	<0.0973	--	**0.597**	**2.65**	--	--	a	
AA-3	8/29/2017	<0.136	<0.107	<0.0793	<0.0511	<0.0793	<0.0802	<0.109	<0.120	<0.126	<0.137	<0.0973	--	**0.587**	**0.343**	**1.83**	<2.60	a	

Notes:

Samples analyzed for VOCs by EPA Method TO-15.

µg/m3 = micrograms per cubic meter

ESL = Environmental Screening Level, from California Regional Water Quality Control Board - San Francisco Bay Region, Interim Revised February 2016 (Revision 3).

AL = Action Level

Bold values indicate compound detections

Highlighted gray compounds indicate concentrations detected above listed ESLs.

Highlighted cyan values indicate TCE concentrations above accelerated response action level.

Highlighted bright pink values indicate TCE concentrations above urgent response action level.

< n = Compound not detected at or above the laboratory method detection limit of n

* = other compounds detected at low concentrations. See Laboratory report for details.

-- = Not Analyzed

VOCs = Volatile Organic Compounds

PCE = Tetrachloroethene

TCA = Trichloroethane

TCE = Trichloroethene

DCE = Dichloroethene

DCA = Dichloroethane

DCB = Dichlorobenzene

a = One or more of the following compounds were detected below their respective ESL if one exists (Acetone, Chloromethane, Cyclohexane, 1,2-Dichloroethane, 1,4-Dichlorobenzene, Ethanol, 4-Ethyltoluene, Freon 11, Freon 12, Heptane, Hexane, Methylene Chloride, Methyl tert-butyl ether, 4-Methyl-2-pentanone, 2-Propanol, Propylbenzene, Styrene, 1,2,4-Trimethylbenzene, 2,2,4-Trimethylpentane, 1,2,3-Trimethylbenzene, Vinyl Acetate).

Appendix A

Agency Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
Rebecca Gebhart, Interim Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
LOCAL OVERSIGHT PROGRAM (LOP)
For Hazardous Materials Releases
1131 HARBOR BAY PARKWAY, SUITE 250
ALAMEDA, CA 94502
(510) 567-6700
FAX (510) 337-9335

August 31, 2017

Mr. Steve Wolmark
Amelia Oakland LLC
5821 Pinewood Road
Oakland, CA 94611
(Sent via E-mail to: swolmark@murrayhillpartners.com)

Subject: Site Cleanup Program Case No. RO0003240 and GeoTracker Global ID T10000010203, Amelia Street Redevelopment, 8410 Amelia Street, Oakland, CA 94621

Dear Mr. Wolmark:

Thank you for attending the meeting held at Alameda County Department of Environmental Health's (ACDEH) offices on August 4, 2017. The purpose of the meeting was to discuss the case status and identify the next steps to simultaneously facilitate site redevelopment and progress the case to closure. ACDEH staff has reviewed the case file including the following documents prepared and submitted on your behalf by Pangea Environmental Services, Inc. (Pangea):

- *Interim Remedial Action Plan* (IRAP) dated April 3, 2017
- *Interim Remedial Action Plan Addendum* (IRAP Addendum) dated May 8, 2017
- *Vapor Intrusion Assessment Work Plan – Buildings C, D, & E* (Work Plan) dated June 2, 2017
- E-mail from Pangea to ACDEH dated August 11, 2017
- *Figure 1, Proposed Sampling Locations* e-mailed to ACDEH August 11, 2017

The IRAP, Addendum, and Work Plan were submitted in response to a meeting with you and Pangea representatives on March 1, 2017 and April 20, 2017. Thank you for submitting the documents.

The site, comprised of five buildings designated A, B, C, D, and E, is used for commercial/industrial purposes. Chemicals of potential concern (COPCs) identified at the site include trichloroethene (TCE), tetrachloroethene (PCE), carbon tetrachloride, 1,1,2,2-tetrachloroethane (1,1,2,2-TCA), benzene, and ethylbenzene. Historical uses of the five buildings appear to have contributed to the presence of COPCs in indoor air (IA), subslab (SS), soil, and groundwater, and the site appears to be downgradient of a TCE groundwater plume possibly originating from the K & L Plating Company located at 989 89th Avenue, Oakland. Risk of vapor intrusion to indoor air (VI/IA) is currently under investigation in the five site buildings with two goals:

1. Either remediate the risk of VI/IA to current and future occupants through removal action; and/or
2. Implement engineering controls to mitigate the risk of VI/IA to current and future occupants if remediation is not possible due to existing infrastructure.

Engineering controls under evaluation include the application of epoxy or RetroCoat, installation of a subslab ventilation system, and installation of trench plugs. At this juncture, ACDEH requests that you address the Technical Comments below and submit the requested documents according to the dates provided in the Technical Report Schedule.

TECHNICAL COMMENTS:

1. **Table Preparation and Revision:** Please prepare three tables as listed below. Please use the Excel spreadsheets sent under separate cover as templates.

    a. Table 1 Building - Tenant Information;
    b. Table 2 CPOC Concentration by Building;
    c. Table 3 CPOCs by Building and by Media.

    Please revise the Analytical Data Tables (Tables 1, 2, and 3) presented in the IRAP to show in bold font the reporting limits (RL) when they exceed the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Environmental Screening Levels (ESLs). Please submit the three new tables and the revised IRAP Analytical Data Tables (Tables 1, 2, and 3) in the Soil and Groundwater Investigation Report by the date provided below in the Technical Report Schedule.

2. **Additional Site Investigation:** Please collect grab groundwater, sub slab, indoor air, and outdoor air (ambient air) samples in accordance with the scope of work provided in Pangea's e-mail correspondence dated August 11, 2017 (Attachment A). If the TCE concentrations on groundwater or sub slab samples exceed the SFRWQCB's Trigger Levels and/or Indoor Air concentrations exceed the Accelerated Response Action Levels (ARALs) or Urgent Response Action Levels (URALs) you must immediately notify ACDEH and propose Indoor Air sample collection.

3. **Proposed or Installed Tenant Improvements and Mitigation Measures:** Please submit a report documenting all proposed or installed tenant improvements and mitigation measures for each of the buildings. The report must include a complete building permit plan set submitted to and approved by the City of Oakland Planning Department with the addition of utilities, trench dams, and configuration of tenant spaces for the buildings.

4. **Electronic Submittal of Information (ESI) Compliance:** A review of the case file and the State's GeoTracker database indicates that the site is not in compliance with California Code of Regulations, Title 23, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1, stating that beginning September 1, 2001, all analytical data, including monitoring well samples, submitted in a report to a regulatory agency as part of the UST or LUST program, must be transmitted electronically to the SWRCB GeoTracker system via the internet. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs, including the Site Cleanup Program (SCP) cases. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites was required in GeoTracker. At present missing data and documents include, but may not be limited to:

    - analytical data for soil, water and vapor samples collected for the purpose of subsurface investigation or remediation, including influent/effluent water samples from remediation systems (EDF files);
    - complete copies of reports, in pdf format, including the signed transmittal letter and professional certification (GEO_REPORT files);
    - depth-to-water information for permanent sampling points whenever the data is collected, even if the well is not sampled during the sampling event (GEO_WELL files);

- stand alone site maps displaying tank locations, streets bordering the facility, and sampling locations for all soil, water and vapor samples (GEO_MAP files);
- stand alone boring logs with depth to the screened interval and the length of screened interval for any permanent monitoring well installed (GEO_BORE files);

Please upload the missing documents and soil and groundwater analytical data to GeoTracker. See Attachment 1 and the State's GeoTracker website for further details. ACDEH requests e-mail notification of, and a list of, the documents uploaded to Geotracker. Please upload all submittals to GeoTracker and to ACDEH's ftp website by the date specified below.

TECHNICAL REPORT SCHEDULE

Please note that, as your Caseworker, all correspondence should be e-mailed to: karel.detterman@acgov.org

Please submit an Investigation Report documenting the results of the groundwater subslab, indoor air, and outdoor (ambient) air sampling discussed in Technical Comment 2. Please include the tables discussed in Technical Comment 1 in the Report.

Please upload technical reports to the ACDEH ftp site (Attention: Karel Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **September 29, 2017 –** Soil and Groundwater Investigation Report
  File to be named: RO3240_SWI_R_yyyy-mm-dd
- **September 29, 2017 –** Notification of Upload of Electronic Data Submittals to Geotracker
  E-mail notification to: karel.detterman@acgov.org
- **October 15, 2017 –** Tenant Improvement and Mitigation As-Builts
  File to be named: RO3240_DEV_MIT_yyyy-mm-dd

Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm.

Thank you for your cooperation. Should you have any questions or concerns regarding this correspondence or your case, please send me an e-mail message at karel.detterman@acgov.org or call me at (510) 567-6708.

Sincerely,

Karel Detterman, PG
Senior Geologist

Enclosures: Attachment 1 - Responsible Party(ies) Legal Requirements/Obligations
ACDEH Electronic Report Upload (ftp) Instructions

Attachment A - E-mail from Pangea to ACDEH dated August 11, 2017

cc: Matthew Friedman, Murry Hill Partners, LLC, (Sent via E-mail to: matthew@mifriedman.com)

Bob Clark-Riddell, Pangea Environmental Services Inc., 1710 Franklin St., Suite 200, Oakland, CA 94612, (Sent via E-mail to: briddell@pangeaenv.com)

Dilan Roe, ACDEH, (Sent via E-mail to: dilan.roe@acgov.org)
Karel Detterman, ACDEH, (Sent via E-mail to: karel.detterman@acgov.org)
Paresh Khatri, ACDEH, (Sent via E-mail to: paresh.khatri@acgov.org)
GeoTracker, eFile

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

Alameda County Department of Environmental Health's (ACDEH) Environmental Cleanup Oversight Programs, Local Oversight Program (LOP) and Site Cleanup Program (SCP) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program File Transfer Protocol (FTP) site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to SCP sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/) for more information on these requirements.

ACKNOWLEDGEMENT STATEMENT

All work plans, technical reports, or technical documents submitted to ACDEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6731, 6735, and 7835) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately licensed or certified professional. For your submittal to be considered a valid technical report, you are to present site-specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this case meet this requirement. Additional information is available on the Board of Professional Engineers, Land Surveyors, and Geologists website at: http://www.bpelsg.ca.gov/laws/index.shtml.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, late reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	**REVISION DATE:** December 1, 2016
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010; May 15, 2014, November 29, 2016
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SCP) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org.
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Open File Explorer using the Windows  key + E keyboard shortcut.
      i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) On the address bar, type in ftp://alcoftp1.acgov.org.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive)
   d) Click Log On.
   e) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   f) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

ATTACHMENT A

Detterman, Karel, Env. Health

From: Roe, Dilan, Env. Health
Sent: Wednesday, August 16, 2017 4:49 PM
To: Detterman, Karel, Env. Health
Subject: FW: RO3240_8410 Amelia Street_Urgent Update

Importance: High

Dilan Roe, PE, C73703
Chief – Land Water Division
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA
510.567.6767; Ext. 36767
QIC: 30440
dilan.roe@acgov.org

From: Bob Clark-Riddell [mailto:briddell@pangeaenv.com]
Sent: Friday, August 11, 2017 5:32 PM
To: Roe, Dilan, Env. Health <Dilan.Roe@acgov.org>
Cc: Steve Wolmark (swolmark@murrayhillpartners.com) <swolmark@murrayhillpartners.com>; 'Matthew Friedman' <matthew@mifriedman.com>
Subject: FW: RO3240_8410 Amelia Street_Urgent Update
Importance: High

Hello Dilan,

This email provides a project update following our August 4 meeting. As requested during our August 4 meeting, this email also notifies you of the owners' intent to proceed with some site work as clarified below.

ASSESSMENT UPDATE – The assessment work scoped discussed at our meeting is scheduled for later this month. The sampling locations are shown on the attached figure. This includes 8 groundwater sampling locations, subslab gas sampling of 19 existing probes in Building A and B North, and indoor air sampling at 3 locations (near existing subslab gas probes for slab attenuation evaluation), and one ambient air.

FLOORING FOR BUILDINGS D & E – The owners plan to install the epoxy moisture vapor barrier **next week**. Due to the construction schedule, they do not want to wait one month for grab groundwater sampling results. They understand from our meeting, that if grab groundwater results (now or in the future) exceed TCE trigger levels, then periodic indoor air sampling will be required. Per our meeting, one initial indoor air sampling event will be conducted following the moisture vapor barrier installation to evaluate indoor air quality after the floor slab work in Buildings D & E.

Note: The owners explored the option to substitute RetroCoat for the planned epoxy flooring, but the timing and additional cost were not acceptable. While the planned moisture vapor barrier (three coats of epoxy, about 40-50 mil total thickness) will provide some vapor intrusion mitigation, the owners understand this is not a chemical vapor barrier as deemed acceptable by ACDEH. They are coordinating use of RetroCoat or an ACDEH approved chemical vapor barrier for Building B South soon (and Building A and B North in the future).

Owner will also provide As-Built drawings showing surveyed location of all trench plugs.

Bob Clark-Riddell, P.E.
Pangea Environmental Services, Inc.

Appendix B

Historical Data Related to Offsite Source

PCE in GW

Figure
Site Vicinity Map Showing PCE in Groundwater
8410 Amelia Street
Oakland, California

N

Base Map From:
Google Earth October 2, 2009

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

0 350 700
Approximate Scale In Feet

TCE in Gw

AMELIA ST

CITY OF OAKLAND TASSAFARONGA COMMUNITY CENTER

PLAYGROUNDS

AFFORDABLE HOUSING PROJECT

TAX CREDIT PROJECT W/HOUSING ABOVE

Figure
Site Vicinity Map Detail Showing TCE in Groundwater
8410 Amelia Street
Oakland, California

N

Base Map From:
Google Earth October 2, 2009

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

0 175 350
Approximate Scale In Feet

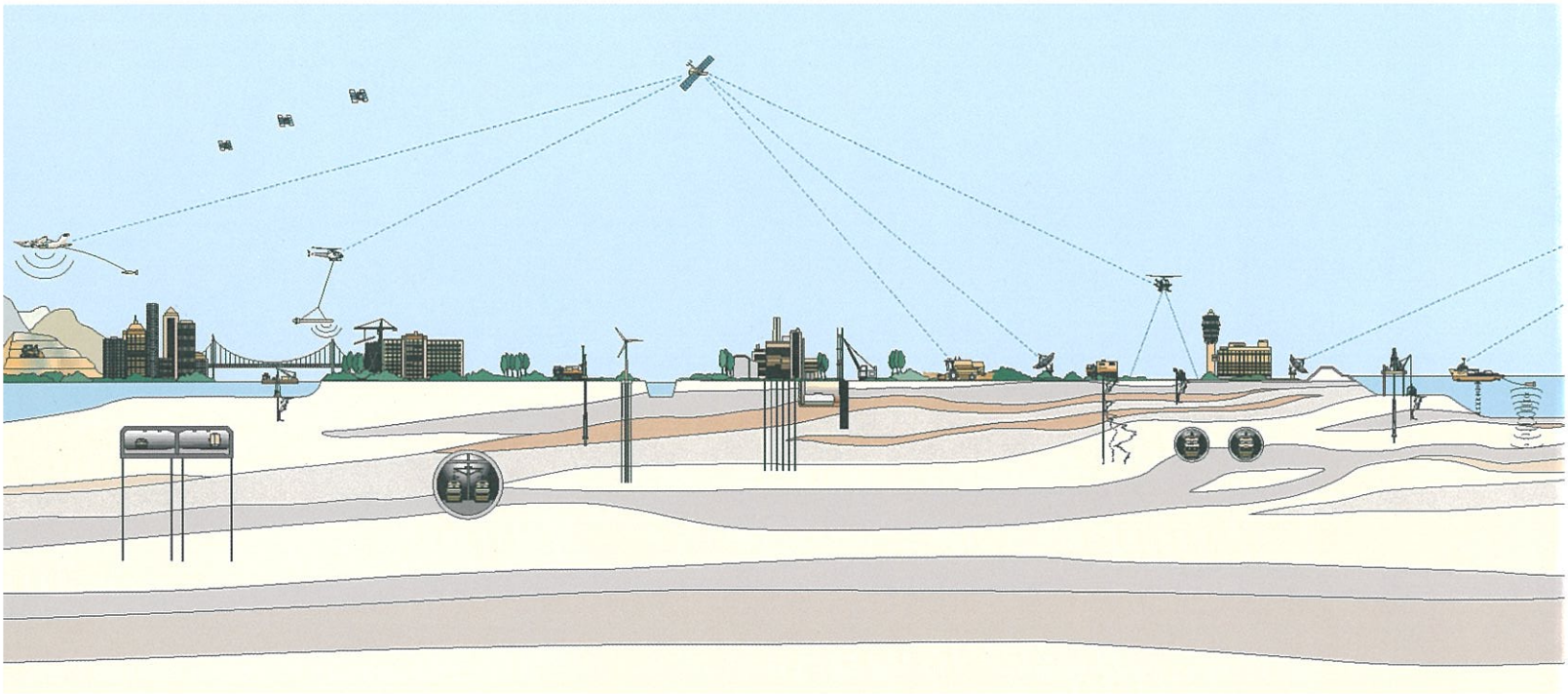
FUGRO WEST, INC.

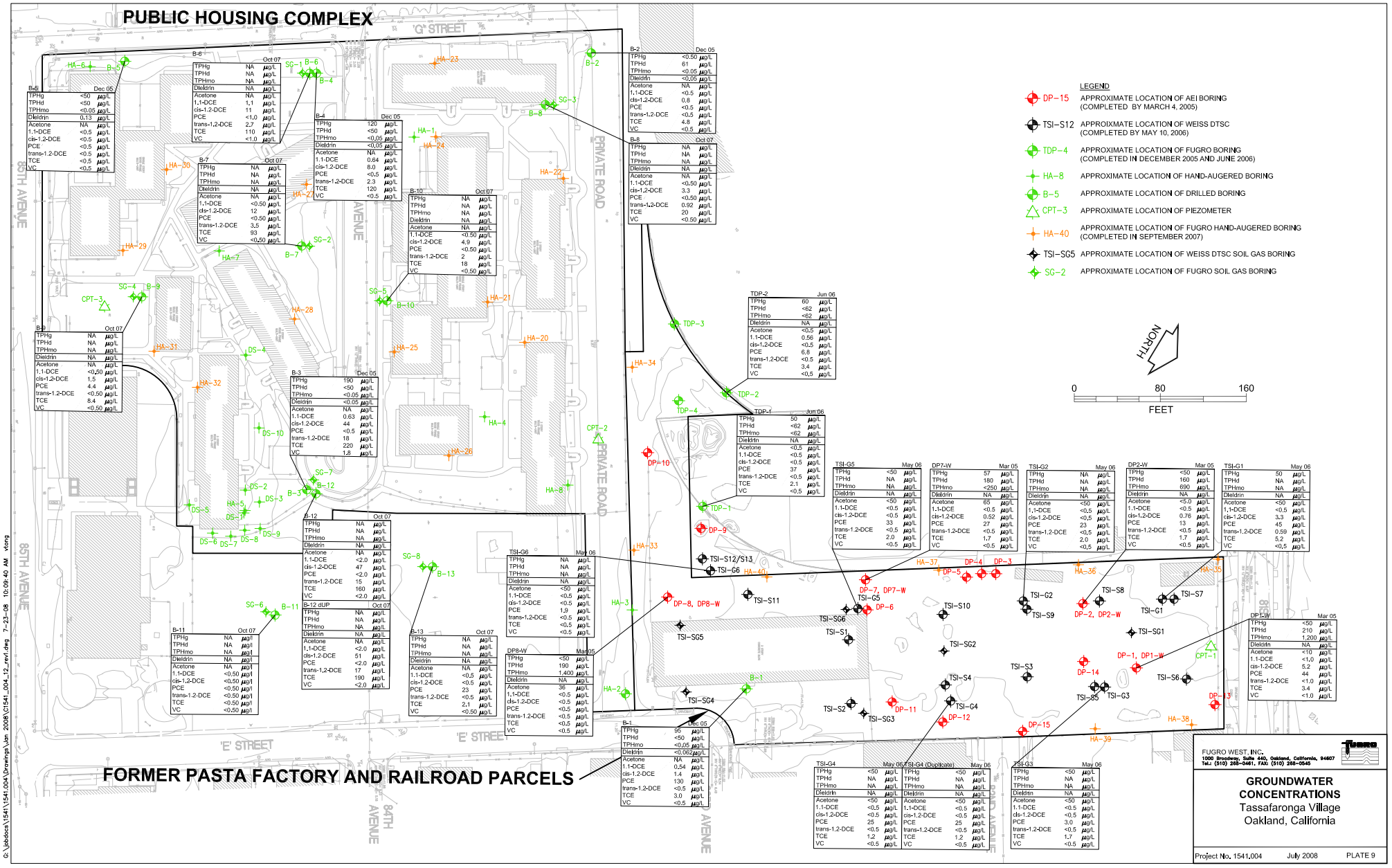
FINAL
REMOVAL ACTION WORKPLAN
TASSAFARONGA VILLAGE
OAKLAND, CALIFORNIA

Prepared for:
OAKLAND HOUSING AUTHORITY

September 2008

Prepared by:
Fugro West, Inc.
1000 Broadway, Suite 440
Oakland, California 94607
Fugro Project No. 1541.004




PUBLIC HOUSING COMPLEX
FORMER PASTA FACTORY AND RAILROAD PARCELS
'G' STREET
'E' STREET
85TH AVENUE
84TH AVENUE
PRIVATE ROAD
LEGEND
DP-15 APPROXIMATE LOCATION OF AEI BORING (COMPLETED BY MARCH 4, 2005)
TSI-S12 APPROIXMATE LOCATION OF WEISS DTSC (COMPLETED BY MAY 10, 2006)
TDP-4 APPROXIMATE LOCATION OF FUGRO BORING (COMPLETED IN DECEMBER 2005 AND JUNE 2006)
HA-8 APPROXIMATE LOCATION OF HAND-AUGERED BORING
B-5 APPROXIMATE LOCATION OF DRILLED BORING
CPT-3 APPROXIMATE LOCATION OF PIEZOMETER
HA-40 APPROXIMATE LOCATION OF FUGRO HAND-AUGERED BORING (COMPLETED IN SEPTEMBER 2007)
TSI-SG5 APPROXIMATE LOCATION OF WEISS DTSC SOIL GAS BORING
SG-2 APPROXIMATE LOCATION OF FUGRO SOIL GAS BORING
NORTH
0
80
160
FEET
B-6 Oct 07
TPHg NA µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone NA µg/L
1,1-DCE 1,1 µg/L
cis-1,2-DCE 11 µg/L
PCE <1,0 µg/L
trans-1,2-DCE 2,7 µg/L
TCE 110 µg/L
VC <1,0 µg/L
B-5 Dec 05
TPHg <50 µg/L
TPHd <50 µg/L
TPHmo <0,05 µg/L
Dieldrin 0,13 µg/L
Acetone NA µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE <0,5 µg/L
PCE <0,5 µg/L
trans-1,2-DCE <0,5 µg/L
TCE <0,5 µg/L
VC <0,5 µg/L
B-4 Dec 05
TPHg 120 µg/L
TPHd <50 µg/L
TPHmo <0,05 µg/L
Dieldrin <0,05 µg/L
Acetone NA µg/L
1,1-DCE 0,64 µg/L
cis-1,2-DCE 8,0 µg/L
PCE <0,5 µg/L
trans-1,2-DCE 2,3 µg/L
TCE 120 µg/L
VC <0,5 µg/L
B-7 Oct 07
TPHg NA µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone NA µg/L
1,1-DCE <0,50 µg/L
cis-1,2-DCE 12 µg/L
PCE <0,50 µg/L
trans-1,2-DCE 3,5 µg/L
TCE 93 µg/L
VC <0,50 µg/L
B-10 Oct 07
TPHg NA µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone NA µg/L
1,1-DCE <0,50 µg/L
cis-1,2-DCE 4,9 µg/L
PCE <0,50 µg/L
trans-1,2-DCE 2 µg/L
TCE 18 µg/L
VC <0,50 µg/L
B-2 Dec 05
TPHg <0,50 µg/L
TPHd 61 µg/L
TPHmo <0,05 µg/L
Dieldrin <0,05 µg/L
Acetone NA µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE 0,8 µg/L
PCE <0,5 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 4,8 µg/L
VC <0,5 µg/L
B-8 Oct 07
TPHg NA µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone NA µg/L
1,1-DCE <0,50 µg/L
cis-1,2-DCE 3,3 µg/L
PCE <0,50 µg/L
trans-1,2-DCE 0,92 µg/L
TCE 20 µg/L
VC <0,50 µg/L
B-9 Oct 07
TPHg NA µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone NA µg/L
1,1-DCE <0,50 µg/L
cis-1,2-DCE 1,5 µg/L
PCE 4,4 µg/L
trans-1,2-DCE <0,50 µg/L
TCE 8,4 µg/L
VC <0,50 µg/L
B-3 Dec 05
TPHg 190 µg/L
TPHd <50 µg/L
TPHmo <0,05 µg/L
Dieldrin <0,05 µg/L
Acetone NA µg/L
1,1-DCE 0,63 µg/L
cis-1,2-DCE 44 µg/L
PCE <0,5 µg/L
trans-1,2-DCE 18 µg/L
TCE 220 µg/L
VC 1,8 µg/L
B-12 Oct 07
TPHg NA µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone NA µg/L
1,1-DCE <2,0 µg/L
cis-1,2-DCE 47 µg/L
PCE <2,0 µg/L
trans-1,2-DCE 15 µg/L
TCE 160 µg/L
VC <2,0 µg/L
B-12 dUP Oct 07
TPHg NA µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone NA µg/L
1,1-DCE <2,0 µg/L
cis-1,2-DCE 51 µg/L
PCE <2,0 µg/L
trans-1,2-DCE 17 µg/L
TCE 190 µg/L
VC <2,0 µg/L
B-11 Oct 07
TPHg NA µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone NA µg/L
1,1-DCE <0,50 µg/L
cis-1,2-DCE <0,50 µg/L
PCE <0,50 µg/L
trans-1,2-DCE <0,50 µg/L
TCE <0,50 µg/L
VC <0,50 µg/L
B-13 Oct 07
TPHg NA µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone NA µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE <0,5 µg/L
PCE <0,5 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 2,1 µg/L
VC <0,50 µg/L
TSI-G6 May 06
TPHg NA µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone <50 µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE <0,5 µg/L
PCE 1,9 µg/L
trans-1,2-DCE <0,5 µg/L
TCE <0,5 µg/L
VC <0,5 µg/L
DP8-W Mar 05
TPHg <50 µg/L
TPHd 190 µg/L
TPHmo 1,400 µg/L
Dieldrin NA µg/L
Acetone 36 µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE <0,5 µg/L
PCE <0,5 µg/L
trans-1,2-DCE <0,5 µg/L
TCE <0,5 µg/L
VC <0,5 µg/L
B-1 Dec 05
TPHg 96 µg/L
TPHd <50 µg/L
TPHmo <0,05 µg/L
Dieldrin <0,062 µg/L
Acetone NA µg/L
1,1-DCE 0,54 µg/L
cis-1,2-DCE 1,4 µg/L
PCE 130 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 3,0 µg/L
VC <0,5 µg/L
TDP-2 Jun 06
TPHg 60 µg/L
TPHd <62 µg/L
TPHmo <62 µg/L
Dieldrin NA µg/L
Acetone <0,5 µg/L
1,1-DCE 0,56 µg/L
cis-1,2-DCE <0,5 µg/L
PCE 6,8 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 3,4 µg/L
VC <0,5 µg/L
TDP-1 Jun 06
TPHg 50 µg/L
TPHd <62 µg/L
TPHmo <62 µg/L
Dieldrin NA µg/L
Acetone <0,5 µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE <0,5 µg/L
PCE 37 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 2,1 µg/L
VC <0,5 µg/L
TSI-G5 May 06
TPHg <50 µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone <50 µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE <0,5 µg/L
PCE 33 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 2,0 µg/L
VC <0,5 µg/L
DP7-W Mar 05
TPHg 57 µg/L
TPHd 180 µg/L
TPHmo <250 µg/L
Dieldrin NA µg/L
Acetone 65 µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE 0,52 µg/L
PCE 27 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 1,7 µg/L
VC <0,5 µg/L
TSI-G2 May 06
TPHg NA µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone <50 µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE <0,5 µg/L
PCE 23 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 2,0 µg/L
VC <0,5 µg/L
DP2-W Mar 05
TPHg <50 µg/L
TPHd 160 µg/L
TPHmo 690 µg/L
Dieldrin NA µg/L
Acetone <5,0 µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE 0,78 µg/L
PCE 13 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 1,7 µg/L
VC <0,5 µg/L
TSI-G1 May 06
TPHg 50 µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone <50 µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE 3,3 µg/L
PCE 45 µg/L
trans-1,2-DCE 0,59 µg/L
TCE 5,2 µg/L
VC <0,5 µg/L
DP1-W Mar 05
TPHg <50 µg/L
TPHd 210 µg/L
TPHmo 1,200 µg/L
Dieldrin NA µg/L
Acetone <10 µg/L
1,1-DCE <1,0 µg/L
cis-1,2-DCE 5,2 µg/L
PCE 44 µg/L
trans-1,2-DCE <1,0 µg/L
TCE 3,4 µg/L
VC <1,0 µg/L
TSI-G4 May 06
TPHg <50 µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone <50 µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE <0,5 µg/L
PCE 25 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 1,2 µg/L
VC <0,5 µg/L
TSI-G4 (Duplicate) May 06
TPHg <50 µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone <50 µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE <0,5 µg/L
PCE 25 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 1,2 µg/L
VC <0,5 µg/L
TSI-G3 May 06
TPHg <50 µg/L
TPHd NA µg/L
TPHmo NA µg/L
Dieldrin NA µg/L
Acetone <50 µg/L
1,1-DCE <0,5 µg/L
cis-1,2-DCE <0,5 µg/L
PCE 3,0 µg/L
trans-1,2-DCE <0,5 µg/L
TCE 1,7 µg/L
VC <0,5 µg/L
FUGRO WEST, INC.
1000 Broadway, Suite 440, Oakland, California, 94607
Tel.: (510) 268-0461, FAX: (510) 268-0545
GROUNDWATER CONCENTRATIONS
Tassafaronga Village
Oakland, California
Project No. 1541.004
July 2008
PLATE 9
G:\jobdocs\1541\1541.004\Drawings\Jan 2008\C1541_004_12_rev1.dwg 7-23-08 10:09:40 AM vtong

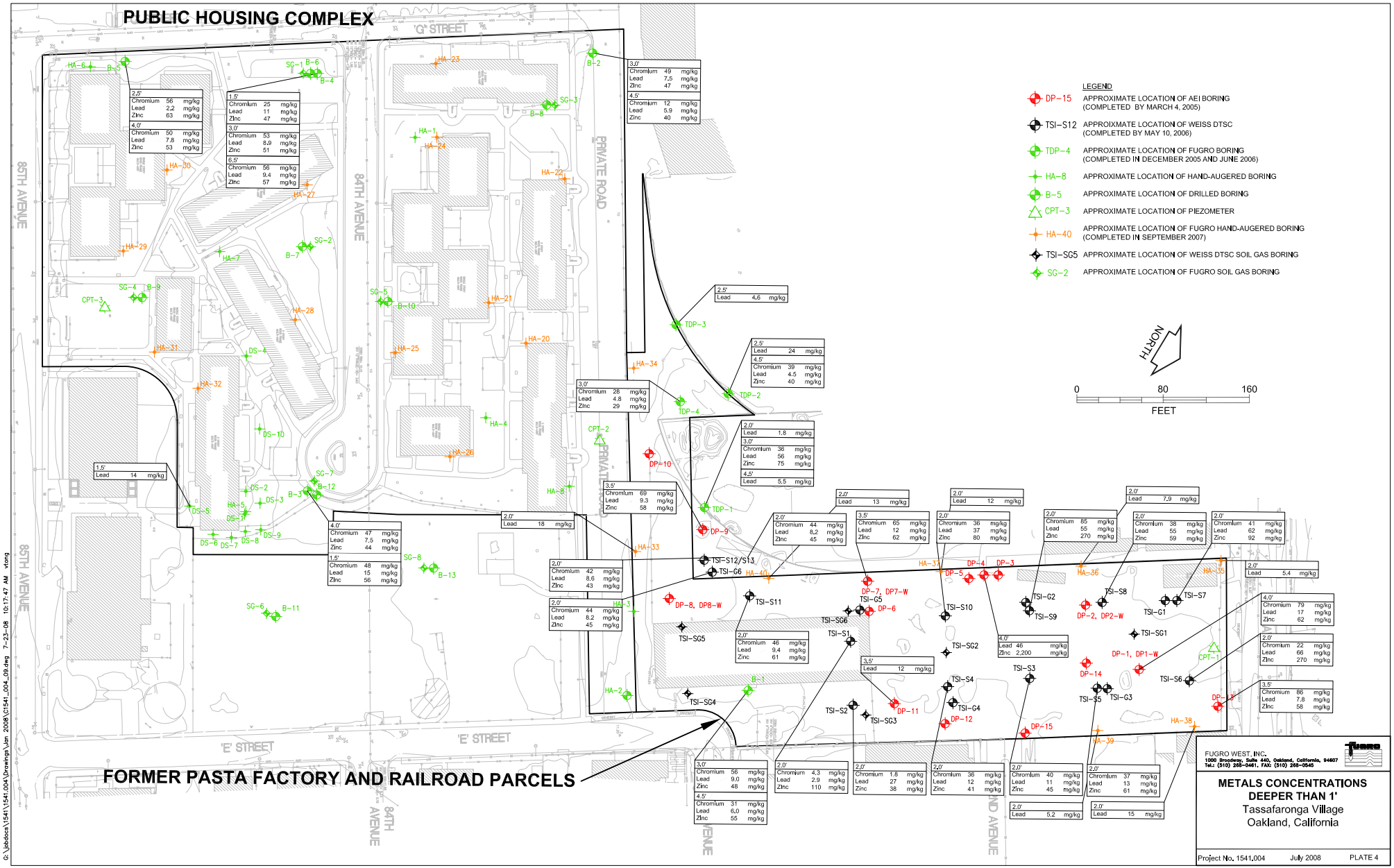

PUBLIC HOUSING COMPLEX
FORMER PASTA FACTORY AND RAILROAD PARCELS
'G' STREET
'E' STREET
85TH AVENUE
84TH AVENUE
PRIVATE ROAD
LEGEND
DP-15 APPROXIMATE LOCATION OF AEI BORING (COMPLETED BY MARCH 4, 2005)
TSI-S12 APPROIXMATE LOCATION OF WEISS DTSC (COMPLETED BY MAY 10, 2006)
TDP-4 APPROXIMATE LOCATION OF FUGRO BORING (COMPLETED IN DECEMBER 2005 AND JUNE 2006)
HA-8 APPROXIMATE LOCATION OF HAND-AUGERED BORING
B-5 APPROXIMATE LOCATION OF DRILLED BORING
CPT-3 APPROXIMATE LOCATION OF PIEZOMETER
HA-40 APPROXIMATE LOCATION OF FUGRO HAND-AUGERED BORING (COMPLETED IN SEPTEMBER 2007)
TSI-SG5 APPROXIMATE LOCATION OF WEISS DTSC SOIL GAS BORING
SG-2 APPROXIMATE LOCATION OF FUGRO SOIL GAS BORING
NORTH
0
80
160
FEET
FUGRO WEST, INC.
1000 Broadway, Suite 440, Oakland, California, 94607
Tel.: (510) 268-0461, FAX: (510) 268-0545
METALS CONCENTRATIONS DEEPER THAN 1'
Tassafaronga Village
Oakland, California
Project No. 1541.004
July 2008
PLATE 4
G:\jobdocs\1541\1541.004\Drawings\Jan 2008\C1541_004_09.dwg 7-23-08 10:17:47 AM vtong

Table 1B
Summary of Analytical Results - Grab Groundwater
Tassafaronga Village Housing Development Project
Oakland, California

		Regulatory Criteria		Tassafaronga Housing Complex												
Analyte		**ESL (Table F-1b)**	**MCLs**	**B-2[2]**	**B-3[2]**	**B-4[2]**	**B-5[2]**	**B-6**	**B-7**	**B-8**	**B-9**	**B-10**	**B-11**	**B-12**	**B-12 (DUP)**	**B-13**
				8-Dec-05	8-Dec-05	7-Dec-05	8-Dec-05	9-Oct-07	9-Oct-07	9-Oct-07	9-Oct-07	9-Oct-07	9-Oct-07	9-Oct-07	9-Oct-07	9-Oct-07
Hydrocarbons														B-3	B-3	**background**
TVHg	ug/L	5,000	NE	<50	**190**	**120**	<50	--	--	--	--	--	--	--	--	--
TPHd	ug/L	2,500	NE	**61**	<50	<50	<50	--	--	--	--	--	--	--	--	--
TPHmo	ug/L	2,500	NE	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--
Benzene	ug/L	NA	1	<0.5	<0.5	<0.5	<0.5	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50
Toluene	ug/L	NA	150	<0.5	<0.5	<0.5	<0.5	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50
Ethylbenzene	ug/L	NA	300	<0.5	<0.5	<0.5	<0.5	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50
Xylenes	ug/L	NA	1,800	<1.5	<1.5	<1.5	<1.5	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<4.0	<1.0
MTBE	ug/L	NA	13	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--
VOCs		NA	varies	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]
Acetone	ug/L	NA	6,300	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene (1,1-DCE)	ug/L	NA	6	<0.5	**0.63**	**0.64**	<0.5	**1.1**	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L	NA	6	**0.8**	**44**	**8.0**	<0.5	**11**	**12**	**3.3**	**1.5**	**4.9**	<0.50	**47**	**51**	<0.50
Tetrachloroethene (PCE)	ug/L	NA	5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.50	<0.50	**4.4**	<0.50	<0.50	<2.0	<2.0	**23**
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L	NA	10	<0.5	**18**	**2.3**	<0.5	**2.7**	**3.5**	**0.92**	<0.50	**2**	<0.50	**15**	**17**	<0.50
Trichloroethene (TCE)	ug/L	NA	5	**4.8**	**220**	**120**	<0.5	**110**	**93**	**20**	**8.4**	**18**	<0.50	**160**	**190**	**2.1**
Vinyl Chloride (VC)	ug/L	NA	0.5	<0.5	**1.8**	<0.5	<0.5	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50
Pesticides				ND	ND	ND	ND[4]	--	--	--	--	--	--	--	--	--
Dieldrin	ug/L	NA	0.0022	<0.050	<0.050	<0.050	**0.13[5]**	--	--	--	--	--	--	--	--	--
Lead	ug/L	NA	15	--	--	--	--	--	--	--	--	--	--	--	--	--
Asbestos	%	NA	NE	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
TPH = Total Petroleum Hydrocarbons
TVHg = Total Volatile Hydrocarbons as gasoline
TPHd = Total Petroleum Hydrocarbons as diesel
Detected concentrations are shown in **Bold**
< = not detected at or above the listed analytical reporting limit
-- = Not Analyzed
ug/L = micrograms per liter
ND = Not Detected
NE = Not Established
NA= Not Applicable

[1] = samples collected by AEI Consultants
[2] = samples collected by Fugro West, Inc.
[3] = Samples collected by Weiss Associates
[4] = Not Detected except for constituents listed below
[5] = Sampled was not filtered prior to analyses
[6] = Sampled was filtered prior to analyses
Table F-1b:Groundwater Screening Levels for groundwater that is not a drinking water source
ESL= Environmental Screening Levels Established by The Regional Water Quality Control Board and updated 2007
MCL =Maximum Contaminant Levels Established by the Environmental Protection Agency

Table 2B
Summary of Analytical Results - Grab Groundwater
Tassafaronga Village Housing Development Project
Oakland, California

Analyte		Regulatory Criteria: ESL (Table F-1b)	Regulatory Criteria: MCLs	Former Pasta Factory and Industrial Rail Spurs: DP1-W[1]	DP2-W[1]	DP7-W[1]	DP8-W[1]	B-1[2]	TSI-G1[3]	TSI-G2[3]	TSI-G3[3]	TSI-G4[3]	TSI-G4[3] (dup)	TSI-G5[3]	TSI-G6[3]	TDP-1[2]	TDP-2[2]
				4-Mar-05	4-Mar-05	4-Mar-05	4-Mar-05	7-Dec-05	9-May-06	9-May-06	9-May-06	9-May-06	9-May-06	9-May-06	10-May-06	10-Jun-06	10-Jun-06
Hydrocarbons															offsite	offsite	
TVHg	ug/L	5,000	NE	<50	<50	**57**	<50	**95**	**50**	--	<50	<50	<50	<50	--	**50**	**60**
TPHd	ug/L	2,500	NE	**210**	**160**	**180**	**190**	<50	--	--	--	--	--	--	--	<62	<62
TPHmo	ug/L	2,500	NE	**1,200**	**690**	<250	**1,400**	<0.05	--	--	--	--	--	--	--	<62	<62
Benzene	ug/L	NA	1	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	ug/L	NA	150	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	NA	300	<1.0	<0.5	**1.4**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes	ug/L	NA	1,800	<1.0	<0.5	**11**	<0.5	<1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5	<1.5
MTBE	ug/L	NA	13	<1.0	**1.0**	**0.68**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
VOCs		NA	varies	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]	ND[4]
Acetone	ug/L	NA	6,300	<10	<5.0	**65**	**36**	--	<50	<50	<50	<50	<50	<50	<50	<0.5	<0.5
1,1-Dichloroethene (1,1-DCE)	ug/L	NA	6	<1.0	<0.5	<0.5	<0.5	**0.54**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.56**
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L	NA	6	**5.2**	**0.76**	**0.52**	<0.5	**1.4**	**3.3**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene (PCE)	ug/L	NA	5	**44**	**13**	**27**	<0.5	**130**	**45**	**23**	**3.0**	**27**	**25**	**33**	**1.9**	**37**	**6.8**
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L	NA	10	<1.0	<0.5	<0.5	<0.5	<0.5	**0.59**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene (TCE)	ug/L	NA	5	**3.4**	**1.7**	**1.7**	<0.5	**3.0**	**5.2**	**2.0**	**1.7**	**1.2**	**1.2**	**2.0**	<0.5	**2.1**	**3.4**
Vinyl Chloride (VC)	ug/L	NA	0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pesticides				--	--	--	--	ND	--	--	--	--	--	--	--		
Dieldrin	ug/L	NA	0.0022	--	--	--	--	<0.062	--	--	--	--	--	--	--	--	--
Lead	ug/L	NA	15	--	--	--	--	--	**2.7**[6]	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--
Asbestos	%	NA	NE	--	--	--	--	--	ND	--	--	--	--	--	--	--	--

Notes:

TPH = Total Petroleum Hydrocarbons
TVHg = Total Volatile Hydrocarbons as gasoline
TPHd = Total Petroleum Hydrocarbons as diesel
Detected concentrations are shown in **Bold**
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[3] = Samples collected by Weiss Associates
[4] = Not Detected except for constituents listed below
[5] = Sampled was not filtered prior to analyses
[6] = Sampled was filtered prior to analyses
Table F-1b:Groundwater Screening Levels for groundwater that is not a drinking water source
ESL= Environmental Screening Levels Established by The Regional Water Quality Control Board and updated 2007
MCL =Maximum Contaminant Levels Established by the Environmental Protection Agency

Oakland Housing Authority
July 2008

Table 1C
Summary of Analytical Results - Soil Gas
Tassafaronga Village Housing Development Project
Oakland, California

	Regulatory Criteria		Tassafaronga Housing Complex																			
	CHHSLS's Table 2	ESLs Table E-2																	Quality Control			
Analyte	Residential (ug/m^3)	Residential (ug/m^3)	SG-1		SG-2		SG-3		SG-4		SG-5		SG-6		SG-7		SG-8		SG-7 Duplicate		Trip Blank	
Depth			5'		5'		5'		5'		5'		5'		5'		5'		5'		--	
Date			8-Oct-07		8-Oct-07		8-Oct-07		8-Oct-07		8-Oct-07		8-Oct-07		8-Oct-07		8-Oct-07		8-Oct-07		8-Oct-07	
			ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ug/m3	
Acetone	NE	660,000	**94**	**223.29**	**15**	**35.63**	**140**	**332.56**	**480**	**1,140.22**	**350**	**831.41**	**280**	**665.13**	**76**	**180.53**	**140**	**332.56**	**78**	**185.29**	< 23.75	
Carbon Disulfide	NE	NE	< 10	< 31.14	< 10	< 31.14	< 10	< 31.14	< 41	< 127.68	< 10	< 31.14	< 12	< 37.37	< 10	< 31.14	< 11	< 34.26	< 10	< 31.14	< 31.14	
Methylene Chloride	NE	5,200	**2.2**	**7.64**	< 2.0	< 6.95	**2.5**	**8.69**	< 8.3	< 28.83	**2.4**	**8.34**	< 2.4	< 8.34	**2.5**	**8.69**	**2.6**	**9.03**	**2.1**	**7.3**	< 6.95	
Bromomethane	NE	1,000	**5.0**	**19.42**	< 4.0	< 15.53	**5.6**	**21.75**	< 17	< 66.02	**5.2**	**20.19**	**6.4**	**24.85**	< 4.0	< 15.53	**5.6**	**21.75**	**4.4**	**17.09**	< 15.53	
cis-1,2-Dichloroethene	15,900	7,300	<2.0	<7.93	<2.0	<7.93	<2.0	<7.93	<8.3	<32.91	<2.0	<7.93	<2.4	<9.52	<2.0	<7.93	<2.2	<8.72	<2.0	<7.93	<7.93	
Chloromethane	NE	19,000	<4.0	<8.26	<4.0	<8.26	<4.0	<8.26	<17	<35.11	<4.0	<8.26	<4.7	<9.71	<4.0	<8.26	<4.4	<9.09	<4.0	<8.26	<8.26	
2-Butanone (Methyl Ethyl Ketone)	NE	1,000,000	< 10	< 29.49	< 10	< 29.49	**20**	**58.98**	< 41	< 120.9	**19**	**56.03**	**28**	**82.57**	**13**	**38.34**	**16**	**47.18**	**10**	**29.49**	< 29.49	
Benzene	36.2	84	< 3.0	< 9.58	< 3.0	< 9.58	< 3.0	< 9.58	< 12	< 38.34	< 3.0	< 9.58	< 3.5	< 11.18	< 3.0	< 9.58	< 3.3	< 10.54	< 3.0	< 9.58	< 9.58	
Toluene	135,000	63,000	**2.4**	**9.04**	< 2.0	< 7.54	**2.4**	**9.04**	< 8.3	< 31.28	**3.4**	**12.81**	**4.0**	**15.07**	**2.2**	**8.29**	**2.7**	**10.17**	**2.2**	**8.29**	< 7.54	
Ethylbenzene	NE	210,000	< 2.0	< 8.68	< 2.0	< 8.68	< 2.0	< 8.68	< 8.3	< 36.04	< 2.0	< 8.68	< 2.4	< 10.42	< 2.0	< 8.68	< 2.2	< 9.55	< 2.0	< 8.68	< 8.68	
m,p-xylene	317,000	NE	< 4.0	< 17.37	< 4.0	< 17.37	< 4.0	< 17.37	< 17	< 73.82	< 4.0	< 17.37	< 4.7	< 20.41	< 4.0	< 17.37	< 4.4	< 19.11	< 4.0	< 17.37	< 17.37	
Total xylenes	NE	21,000	<4.0	<17.37	<4.0	<17.37	<4.0	<17.37	<17	<73.82	<4.0	<17.37	<4.7	<20.41	<4.0	<17.37	<4.4	<19.11	<4.0	<17.37	<17.37	
o-xylene	315,000	NE	< 2.0	< 8.68	< 2.0	< 8.68	< 2.0	< 8.68	< 8.3	< 36.04	< 2.0	< 8.68	< 2.4	< 10.42	< 2.0	< 8.68	< 2.2	< 9.55	< 2.0	< 8.68	< 8.68	
Styrene	NE	190,000	<2.0	<8.52	<2.0	<8.52	<2.0	<8.52	<8.3	<35.35	<2.0	<8.52	<2.4	<10.22	<2.0	<8.52	<2.2	<9.37	<2.0	<8.52	<8.52	
Trichloroethene (TCE)	528	1,200	< 2.0	< 10.75	**9.6**	**51.59**	< 2.0	< 10.75	< 8.3	< 44.61	**4.2**	**22.57**	< 2.4	< 12.9	**5.0**	**26.87**	< 2.2	< 11.82	**8.1**	**43.53**	< 10.75	
1,1,2-Trichlor-1,2,2-Trifluoroethane	NE	NE	<2.0	<15.33	<2.0	<15.33	<2.0	<15.33	<8.3	<63.61	<2.0	<15.33	<2.4	<18.39	<2.0	<15.33	<2.2	<16.86	<2.0	<15.33	<15.33	
1,1-Dichloroethane	NE	1,500	<2.0	<8.1	<2.0	<8.1	<2.0	<8.1	<8.3	<33.6	<2.0	<8.1	<2.4	<9.71	<2.0	<8.1	<2.2	<8.91	<2.0	<8.1	<8.1	
1,1-Dichloroethene	NE	49	<2.0	<7.93	<2.0	<7.93	<2.0	<7.93	<8.3	<32.91	<2.0	<7.93	<2.4	<9.52	<2.0	<7.93	<2.2	<8.72	<2.0	<7.93	<7.93	
Trichlorofluoromethane	NE	NE	<2.0	NE	<2.0	NE	<2.0	NE	<8.3	NE	<2.0	NE	<2.4	NE	<2.0	NE	<2.2	NE	<2.0	NE	<2.0	
4-Methyl-2-pentanone	NE	NE	<10	<40.97	<10	<40.97	<10	<40.97	<41	<167.96	<10	<40.97	<12	<49.16	<10	<40.97	<11	<45.06	<10	<40.97	<40.97	
Other VOCs	varies	varies	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Leak Check Compound																						
Isopropylalchohol (2-Propanol)	NE	NE	< 10	< 24.58	< 10	< 24.58	< 10	< 24.58	< 41	< 100.76	< 10	< 24.58	**15**	**36.87**	< 10	< 24.58	**13**	**31.95**	< 10	< 24.58	<4.9	

	Tassafaronga Housing Complex										
									Quality Control		
Analyte	SG-1	SG-2	SG-3	SG-4	SG-5	SG-6	SG-7	SG-8	SG-7 Duplicate	Trip Blank	Ambient Air*
Depth	5'	5'	5'	5'	5'	5'	5'	5'	5'	--	
Date	8-Oct-07	8-Oct-07	8-Oct-07	8-Oct-07	8-Oct-07	8-Oct-07	8-Oct-07	8-Oct-07	8-Oct-07	8-Oct-07	
	%	%	%	%	%	%	%	%	%	%	%
Oxygen	**19**	**20**	**19**	**21**	**19**	**19**	**20**	**20**	**20**	--	20.95
Carbon Dioxide	**0.19**	**1.4**	**1.9**	**0.31**	**2.5**	**2.5**	**1.1**	**1.1**	**1.1**	--	0.03
Methane	**0.00052**	< 0.00038	< 0.00038	**0.00380**	< 0.00038	< 0.00038	< 0.00038	< 0.00038	< 0.00038	--	0.00
Nitrogen	**1.9**	**82**	**82**	**81**	**81**	**82**	**83**	**82**	**83**	**100**	78.08

Notes

Detected Concentration shown in bold
NE = Not established
ND = Not detected above laboratory reporting limits

-- = Not Analyzed
NA = Not Applicable
* Composition of dry unpolluted air by composition
Table E-2: Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion Concerns
CHHSLs = California Human Screening Levels (Janurary 2005)
ESL = Environmental Screening Levels Established by the Regional Water Quality Control Board and updated in November 2007.

Table 2C
Summary of Analytical Results - Soil Gas
Tassafaronga Village Housing Development Project
Oakland, California

	Regulatory Criteria		Former Pasta Factory and Industrial Railroad Spur												Quality Control	
	CHHSLS's Table 2	ESLs Table E-2														
Analyte	**Residential (ug/m^3)**	**Residential (ug/m^3)**	**TSI-SG1**		**TSI-SG2**		**TSI-SG3**		**TSI-SG4**		**TSI-SG5**		**TSI-SG6**		**TSI-SG7[1]**	
Depth			**5'**		**5'**		**5'**		**5'**		**5'**		**5'**		**5'**	
Date			8-May-06		8-May-06		8-May-06		8-May-06		8-May-06		8-May-06		8-May-06	
			ppbv	**ug/m3**	**ppbv**	**ug/m3**	**ppbv**	**ug/m3**	**ppbv**	**ug/m3**	**ppbv**	**ug/m3**	**ppbv**	**ug/m3**	**ppbv**	**ug/m3**
Acetone	NE	660,000	**530**	**1258.99**	**250**	**593.87**	**230**	**546.36**	**370**	**878.92**	**170**	**403.83**	**160**	**380.07**	**160**	**380.07**
Carbon Disulfide	NE	NE	<10	<31.14	<10	<31.14	<10	<31.14	<10	<31.14	**16**	**49.83**	**17**	**52.94**	<10	<31.14
Methylene Chloride	NE	5,200	<2.0	<6.95	<2.0	<6.95	<2.0	<6.95	<2.0	<6.95	<2.0	<6.95	<2.0	<6.95	<2.0	<6.95
Bromomethane	NE	1,000	<2.0	<7.77	<2.0	<7.77	<2.0	<7.77	<2.0	<7.77	<2.0	<7.77	<2.0	<7.77	<2.0	<7.77
cis-1,2-Dichloroethene	15,900	7,300	<2.0	<7.93	<2.0	<7.93	<2.0	<7.93	**9.3**	**36.87**	<2.0	<7.93	<2.0	<7.93	<2.0	<7.93
Chloromethane	NE	19,000	**5.0**	**10.33**	<4.0	<8.26	<4.0	<8.26	<4.0	<8.26	<4.0	<8.26	<4.0	<8.26	<4.0	<8.26
2-Butanone (Methyl Ethyl Ketone)	NE	1,000,000	**100**	**294.89**	**37**	**109.11**	**23**	**67.82**	**27**	**79.62**	**12**	**35.39**	**12**	**35.39**	**25**	**73.72**
Benzene	36.2	84	**35**	**111.81**	**31**	**99.04**	**13**	**41.53**	**7.2**	**23**	**3.8**	**12.14**	**7.4**	**23.64**	**7.4**	**23.64**
Toluene	135,000	63,000	**25**	**94.20**	**22**	**82.90**	**13**	**48.99**	**12**	**45.22**	**8.8**	**33.16**	**9.3**	**35.04**	**11**	**41.45**
Ethylbenzene	NE	210,000	**6.1**	**26.49**	**4.1**	**17.8**	**16**	**69.47**	**2.1**	**9.12**	<2.0	<8.68	<2.0	<8.68	**3.0**	**13.03**
m,p-xylene	317,000	NE	**12**	**52.11**	**12**	**52.11**	**43**	**186.72**	**6.2**	**26.92**	**5.0**	**21.71**	**5.3**	**23.01**	**11**	**47.77**
Total xylenes	NE	21,000	**17**	**73.82**	**17**	**73.82**	**62**	**269.22**	**8.3**	**36.04**	**5.0**	**21.71**	**7.4**	**32.13**	**16**	**69.48**
o-xylene	315,000	NE	**5.1**	**22.15**	**5.0**	**21.71**	**18**	**78.16**	**2.1**	**9.12**	<2.0	<8.68	**2**	**8.68**	**4.9**	**21.28**
styrene	NE	190,000	**2**	**8.52**	<2.0	<8.52	<2.0	<8.52	<2.0	<8.52	<2.0	<8.52	<2.0	<8.52	<2.0	<8.52
Trichloroethene (TCE)	528	1,200	<2.0	<10.75	<2.0	<10.75	<2.0	<10.75	<2.0	<10.75	<2.0	<10.75	<2.0	<10.75	<2.0	<10.75
1,1,2-Trichlor-1,2,2-Trifluoroethane	NE	NE	**25**	**191.61**	**43**	**329.56**	**4.4**	**33.72**	**2.5**	**19.16**	<2.0	<15.33	**4.8**	**36.79**	**3.6**	**27.59**
1,1-Dichloroethane	NE	1,500	<2.0	<8.1	<2.0	<8.1	<2.0	<8.1	**2.2**	**8.91**	<2.0	<8.1	<2.0	<8.1	<2.0	<8.1
1,1-Dichloroethene	NE	49	<2.0	<7.93	<2.0	<7.93	<2.0	<7.93	**3.3**	**13.09**	<2.0	<7.93	<2.0	<7.93	<2.0	<7.93
Trichlorofluoromethane	NE	NE	**120**	NE	**25**	NE	<2.0	NE	**3.1**	NE	<2.0	NE	**2.3**	NE	**2.0**	NE
4-Methyl-2-pentanone	NE	NE	**10**	**40.97**	<10	<40.97	<10	<40.97	<10	<40.97	<10	<40.97	<10	<40.97	<10	<40.97
Other VOCs	varies	varies	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Leak Check Compound																
Isopropylalchohol (2-Propanol)	NE	NE	**13**	**31.95**	<10	<24.58	**62**	**152.38**	<10	<24.58	<10	<24.58	<10	<24.58	<10	<24.58

Notes
Detected Concentration shown in bold
NE = Not established
ND = Not detected above laboratory reporting limits

-- = Not Analyzed
NA = Not Applicable
* Composition of dry unpolluted air by composition
Table E-2: Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion Concerns
CHHSLs = California Human Screening Levels (Janurary 2005)
ESL = Environmental Screening Levels Established by the Regional Water Quality Control Board and updated in November 2007.

Appendix C

Soil Gas Sampling Field Forms

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia
Project/Task Number:
Date: 6.30.17
Sampler(s): E. Lervaag
Sample ID / Time: SS-2P / 1033

PANGEA

Probe / Well ID: SS-2P
Canister Serial #: 5339
Flow Controller #: 6402
Initial Vacuum: 28.5
Final Vacuum: 5

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	150	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite

Tubing = π x (tubing diameter/2)^2 x length

Tubing = 15 mL

Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4

Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite= — mL

Sandpack = — mL

Single Purge Volume = 15 mL

Three Total Purge Volumes = 45 mL

Total Purge Time = 18 seconds

π = 3.1416 1 inch^3 = 16.4 mL 5 mL purge / 1 ft tubing Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("Hg): 1020 H2O 97.0 end time/pressure ("Hg): 1025 H2O 97.0

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
		Purge w/ syringe — 45ml			
1033		4.6	28.5	<1	Start Sample
1033		14.3	25	<1	
1034		13.9	20	<1	
1035		13.6	15	<1	
1036		13.8	10	<1	
1037		13.5	5	<1	Stop Sample
					Post-sampling PID screening (ppm):
					0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia
Project/Task Number:
Date: 6.30.17
Sampler(s): E. Hervaas
Sample ID / Time: SS-3P / 1101

PANGEA

Probe / Well ID: SS-3P
Canister Serial #: 5194
Flow Controller #: 7444
Initial Vacuum: 28.5
Final Vacuum: 5

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	150	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("Hg): H_2O 1051 / 95.5 end time/pressure ("Hg): H_2O 1056 / 95.5

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge	w/ Syringe - 45mL			
1101		4.6	28.5	<1	Start Sample
1104		18.9	25	<1	
1109		18.1	20	<1	
1115		17.3	15	<1	
1121		16.0	10	<1	
1128		14.8	5	<1	Stop Sample
					Post-sampling PID screening (ppm):
					0.0

NOTES: Very slow flow controller. appreciable vacuum in field
so problem probably in controller.

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 6.30.17
Sampler(s): E. Lesvaag
Sample ID / Time: SS-4P /

PANGEA

Probe / Well ID: SS-4P
Canister Serial #: 5478
Flow Controller #: 6034
Initial Vacuum: 30
Final Vacuum: 5

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	150	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("Hg): H2O 1105 98.0 end time/pressure ("Hg): H2O 1116 97.5

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H2O / "Hg)	COMMENTS
		Purge w/	Syringe - 45 mL		
1137		2.7	30	<1	Start Sample
1138		14.6	25	<1	
1139		14.2	20	<1	
1140		13.3	15	<1	
1141		13.7	10	<1	
1142		13.1	5	<1	Stop Sample
					Post-sampling PID screening (ppm):
					0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 6.30.17
Sampler(s): E. Lervaag
Sample ID / Time: SS-6P / 1159

PANGEA

Probe / Well ID: SS-6P
Canister Serial #: 7911
Flow Controller #: 6372
Initial Vacuum: 29
Final Vacuum:

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	150	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("Hg): 1145 95.0 (H2O) end time/pressure ("Hg): 1152 95.0 (H2O)

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H2O / "Hg)	COMMENTS
	Purge w/ syringe 45mL				
1159		1.6	28.5	<1	Start Sample
1159		11.7	25	<1	
1200		10.8	20	<1	
1201		10.3	15	<1	
1202		10.5	10	<1	
1203		9.9	5	<1	Stop Sample

Post-sampling PID screening (ppm): 2.5

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 6.29.17
Sampler(s): E. Lervaag
Sample ID / Time: SS-17P / 0952

PANGEA

Probe / Well ID: SS-16P
Canister Serial #: 5797
Flow Controller #: 6020
Initial Vacuum: 28
Final Vacuum: 5

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	150	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite

Tubing = π x (tubing diameter/2)^2 x length

Tubing = 15 mL

Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4

Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite= — mL

Sandpack = — mL

Single Purge Volume = 15 mL

Three Total Purge Volumes = 45 mL

Total Purge Time = 18sec seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("Hg): 0941 94.5" H_2O end time/pressure ("Hg): 0946 94.5" H_2O

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge	w/ syringe - 45ml			
0952		3.3	28	<1	Start Sample
0953		11.2	25	<1	
0954		10.8	20	<1	
0955		10.4	15	<1	
0956		10.1	10	<1	
0957		9.8	5	<1	Stop Sample
					Post-sampling PID screening (ppm):
					0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 6.29.17
Sampler(s): E. Lervaag
Sample ID / Time: SS-17P / 1006

PANGEA

Probe / Well ID: SS-17P
Canister Serial #: 5719
Flow Controller #: 6376
Initial Vacuum: 29
Final Vacuum:

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	150	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("Hg): 0959 98.0 end time/pressure ("Hg): 1003 98.0

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge w/	syringe	45 mL		
1006		1.8	29	<1	Start sample
1007		15.3	25	<1	
1007		14.7	20	<1	
1008		14.1	15	<1	
1009		14.0	10	<1	
1010		13.7	5	<1	Stop Sample
					Post-sampling PID screening (ppm):
					0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia
Project/Task Number:
Date: 6.29.17
Sampler(s): E. Lervaag
Sample ID / Time: SS-20P/1200

PANGEA

Probe / Well ID: SS-20P
Canister Serial #: 6182
Flow Controller #: 7460
Initial Vacuum: 30
Final Vacuum: 5

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	150	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite=	—	mL
Sandpack =	—	mL
Single Purge Volume =	15	mL
Three Total Purge Volumes =	45	mL
Total Purge Time =	18	seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("~~Hg~~ H_2O): 1147 965 end time/pressure ("~~Hg~~ H_2O): 1152 965

TIME	PURGE TIME (min./sec.)	He / IPA / N SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge w/ syringe	45 ml			
1200		1.7	30	<1	Start Sample
1201		13.4	25	<1	
1201		13.0	20	<1	
1202		12.5	15	<1	
1203		11.9	10	<1	
1204		11.2	5	<1	Stop Sample
					Post-sampling PID screening (ppm):
					0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia
Project/Task Number:
Date: 6.29.17
Sampler(s): E. Lervaag
Sample ID / Time: SS-21P

PANGEA

Probe / Well ID: SS-21P
Canister Serial #: 5677
Flow Controller #: 7731
Initial Vacuum: 29.5
Final Vacuum: 5

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	150	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite=	—	mL
Sandpack =	—	mL
Single Purge Volume =	15	mL
Three Total Purge Volumes =	45	mL
Total Purge Time =	18	seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("Hg): 1123 95.0 (H2O) end time/pressure ("Hg): 1127 95.0 (H2O)

TIME	PURGE TIME (min./sec.)	He / PA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge w/	Syringe	45 ml		
1128		4.7	30	7"	Start sample
1131		17.6	25	7"	Low flow protocol
1133		17.4	20	7"	implemented
1135		16.9	15	7"	
1138		16.2	10	7"	
1144		16.0	5	7"	Stop Sample

Post-sampling PID screening (ppm): field vacuum too high for [redacted] ec PID pump to pull vapor out from under slab

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 6.30.17
Sampler(s): E. Lervaag
Sample ID / Time: Shroud / 1201

PANGEA

Probe / Well ID: Shroud
Canister Serial #: 7281
Flow Controller #: 7836
Initial Vacuum: 30
Final Vacuum: 3

SPECIFICATIONS

Tubing Length: ____ inches
Tubing Diameter (ID): ____ inches
Boring Diameter: ____ inches
Dry Bentonite Height: ____ inches
Sandpack height: ____ inches
Probe Length: ____ inches
Probe Diameter: ____ inches
Summa Flow Rate: ____ mL/min
Purge Flow Rate: ____ mL/min

NO Purge

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = ____ mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= ____ mL
Sandpack = ____ mL
Single Purge Volume = ____ mL
Three Total Purge Volumes = ____ mL
Total Purge Time = ____ seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("Hg): 1146 H2O 97.0 end time/pressure ("Hg): 1152 H2O 97.0

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
		NO PURGE			
1201		11.7	30	—	Start Sample
1202		11.4	25	—	
1203		11.6	20	—	
1204		10.6	15	—	
1205		10.1	10	—	
1206		10.3	3	—	Stop Sample
					Post-sampling PID screening (ppm): ____

NOTES: Shroud collected at SS-6P

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.28.17
Sampler(s): E. Lervaag
Sample ID / Time: SS1 / 1643

PANGEA

Probe / Well ID: SS1
Canister Serial #: 8177
Flow Controller #: 8350
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1625 / 96.0" end time/pressure ("H_2O): 1630 / 96.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
		Purge w/ syringe 45 mL in 70 sec.			
1643	—	1.8	30	<1	Start Sample
1644	—	14.7	25	<1	
1645	—	14.2	20	<1	
1646	—	13.8	15	<1	
1648	—	13.5	10	<1	
1649	—	13.7	4	<1	Stop Sample

Post-sampling PID screening (ppm): 0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.29.17
Sampler(s): E. Lervaag
Sample ID / Time: SS2 / 1248

PANGEA

Probe / Well ID: SS2
Canister Serial #: 8204
Flow Controller #: 8343
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite

Tubing = π x (tubing diameter/2)^2 x length

Tubing = 15 mL

Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4

Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1238 / 98.5" end time/pressure ("H_2O): 1243 / 98.5"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (%) / PPM	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
		Purge w/ syringe 45ml in 20 sec			
1248	—	7.8	30	50	Start Sample
1249	—	12.3	25	50	
1250	—	11.8	20	50	
1252	—	12.0	15	50	
1253	—	11.6	10	46	
1256	—	11.0	4	40	Stop Sample
					Post-sampling PID screening (ppm): Too much vacuum for PID to pull against.

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.29.17
Sampler(s): E. Lervaag
Sample ID / Time: SS4 | 1522

PANGEA

Probe / Well ID: SS4
Canister Serial #: 8063
Flow Controller #: 8323
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite

Tubing = π x (tubing diameter/2)^2 x length

Tubing = 15 mL

Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4

Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1307 | 98.0" end time/pressure ("H_2O): 1315 | 98.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge w/ syringe 45 ml ~~for~~ in 20 sec.				
1522	—	2.7	30	1	Start Sample
1523	—	12.6	25	1	
1524	—	12.1	20	1	
1525	—	11.8	15	1	
1526	—	12.0	10	1	
1529	—	11.2	4	1	Stop Sample

Post-sampling PID screening (ppm):

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.29.17
Sampler(s): E. Lervaag
Sample ID / Time: SS6 / 1325

PANGEA

Probe / Well ID: SS6
Canister Serial #: 8172
Flow Controller #: 8327
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite=	—	mL
Sandpack =	—	mL
Single Purge Volume =	15	mL
Three Total Purge Volumes =	45	mL
Total Purge Time =	18	seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1312 / 99.0" end time/pressure ("H_2O): 1317 / 99.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge w/ syringe 45 ml in 20 sec				
1325	—	6.8	30	<1	Start Sample
	—	16.1	25	<1	
1327	—	16.5	20	<1	
1328	—	15.7	15	<1	
1329	—	15.3	10	<1	
1331	—	15.6	4	<1	Stop Sample

Post-sampling PID screening (ppm): 0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.29.17
Sampler(s): E. Lervaag
Sample ID / Time: SS8 / 1218

PANGEA

Probe / Well ID: ~~SS8~~ SS8
Canister Serial #: 8182
Flow Controller #: 8307
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite=	—	mL
Sandpack =	—	mL
Single Purge Volume =	15	mL
Three Total Purge Volumes =	45	mL
Total Purge Time =	18	seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1201 / 100.0" end time/pressure ("H_2O): 1207 / 100.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge w/ syringe 45 ml in 20 sec				
1218	—	7.9	30		Start Sample
1219	—	14.6	25		
1220	—	14.9	20		
1221	—	14.1	15		
1222	—	13.7	10		
1224	—	13.8	4		Stop Sample

Post-sampling PID screening (ppm): 0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.28.17
Sampler(s): E. Lervaa
Sample ID / Time: SS9 /

PANGEA

Probe / Well ID: SS9
Canister Serial #: 8243
Flow Controller #: 8314
Initial Vacuum: 30
Final Vacuum: 5

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length

Tubing =	15	mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4		
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4		
bentonite=	—	mL
Sandpack =	—	mL
Single Purge Volume =	15	mL
Three Total Purge Volumes =	45	mL
Total Purge Time =	18	seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1713 / 98.0" end time/pressure ("H_2O): 1518 / 98.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
		Purge w/ syringe 45 ml in 20 sec			
1722	—	1.8	30	4	Start Sample
1723	—	11.9	25	4	
1724	—	16.6	20	4	
1725	—	15.5	15	4	
1726	—	15.9	10	4	
1728	—	15.1	5	4	Stop Sample

Post-sampling PID screening (ppm): 0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.28.17
Sampler(s): E. Lervaag
Sample ID / Time: SS10 / 1745

PANGEA

Probe / Well ID: SS10
Canister Serial #: 8162
Flow Controller #: 8313
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1736 / 100.0" end time/pressure ("H_2O): 1741 / 100.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H2O / "Hg)	COMMENTS
		Purge W/ syringe 45 ml in 20 sec			
1745	—	4.7	30	1	Start Sample
1746	—	18.8	25	1	
1747	—	21.3	20	1	
1748	—	17.6	15	1	
1750	—	17.1	10	1	
1752	—	17.5	4	1	Stop Sample

Post-sampling PID screening (ppm): 0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.29.17
Sampler(s): E. Lervaag
Sample ID / Time: SS11 / 1451

PANGEA

Probe / Well ID: SS11
Canister Serial #: 8207
Flow Controller #: 8326
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite

Tubing = π x (tubing diameter/2)^2 x length

Tubing = 15 mL

Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4

Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1444 / 100.0" end time/pressure ("H_2O): 1450 / 100.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge	w/ syringe	45 ml	in 20 sec	
1451	—	6.9	30	<1	Start Sample
1452	—	16.2	25	<1	
1453	—	15.8	20	<1	
1454	—	16.0	15	<1	
1455	—	15.5	10	<1	
1457	—	15.7	4	<1	Stop Sample
					Post-sampling PID screening (ppm):
					0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St.
Project/Task Number:
Date: 8.29.17
Sampler(s): E. Lervaag
Sample ID / Time: SS12 / 1140

PANGEA

Probe / Well ID: SS12
Canister Serial #: 8185
Flow Controller #: 8320
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1126 / 99.0" end time/pressure ("H_2O): 1131 / 99.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
		Purge w/ syringe 45 ml in 20 sec			
1140	—	3.3	30	1	Start Sample
1141	—	11.6	25	1	
1142	—	13.9	20	1	
1143	—	17.8	15	1	
1144	—	16.9	10	1	
1146	—	16.1	4	1	stop Sample

Post-sampling PID screening (ppm): 0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.29.17
Sampler(s): E. Lervaag
Sample ID / Time: SS20 / 1622

PANGEA

Probe / Well ID: SS20
Canister Serial #: 8199
Flow Controller #: 8331
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite

Tubing = π x (tubing diameter/2)^2 x length

Tubing = 15 mL

Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4

Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1540 / 99.0" end time/pressure ("H_2O): 1550 / 98.5"

TIME	PURGE TIME (min./sec.)	He (IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
		Purge w/ syringe 45 ml in 20 sec			
1622	—	2.2	30	1	Start Sample
1623	—	14.6	25	1	
1624	—	14.3	20	1	
1625	—	14.7	15	1	
1626	—	13.7	10	1	
1628	—	13.3	4	1	Stop Sample

Post-sampling PID screening (ppm): 384.2

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 ~~8470~~ Amelia St
Project/Task Number:
Date: 8.28.17
Sampler(s): E. Lervaag
Sample ID / Time: SS-7P / 1111

PANGEA

Probe / Well ID: SS-7P
Canister Serial #: 8160
Flow Controller #: 008344
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite=	—	mL
Sandpack =	—	mL
Single Purge Volume =	15	mL
Three Total Purge Volumes =	45	mL
Total Purge Time =	14	seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1102 / 97.0" end time/pressure ("H_2O): 1107 / 97.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H2O / "Hg)	COMMENTS
	Purge	w/ syringe	45ml	in 20 sec.	
1111		5.1	30	<1	Start Sample
1112		13.3	25	<1	
1113		14.9	20	<1	
1114		14.7	15	<1	
1116		14.1	10	<1	
1117		13.7	4	<1	Stop Sample

Post-sampling PID screening (ppm): 1.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.28.17
Sampler(s): E. Lervaag
Sample ID / Time: SS-9P

PANGEA

Probe / Well ID: SS-9P
Canister Serial #: 8194
Flow Controller #: 8309
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1138 / 99.0" end time/pressure ("H_2O): 1146 / 99.0

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge w/ syringe		45ml in	20 sec.	
1150	—	3.6	30	1	Start Sample
1151	—	17.2	25	1	
1152	—	16.5	20	1	
1153	—	16.1	15	1	
1154	—	16.8	10	1	
1156	—	16.3	4	1	Stop Sample

Post-sampling PID screening (ppm): 3.9

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.28.17
Sampler(s): E. Lervaag
Sample ID / Time: SS-8P / 1537

PANGEA

Probe / Well ID: SS-8P
Canister Serial #: ecl ~~5190~~ 8201
Flow Controller #: 8310
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1528 / 98.0" end time/pressure ("H_2O): 1533 / 98.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	~~Purge~~ Purge w/ syringe 45ml in 20 sec				
1537	—	2.8	30	<1	Start Sample
1538	—	11.6	25	<1	
1539	—	17.5	20	<1	
1541	—	15.9	15	<1	
1542	—	16.3	10	<1	
1544	—	15.5	4	<1	Stop Sample

Post-sampling PID screening (ppm): 0.7

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 840 Amelia St
Project/Task Number:
Date: 8.28.17
Sampler(s): E. Lervaag
Sample ID / Time: SS-11P/

PANGEA

Probe / Well ID: SS-11P
Canister Serial #: 8197
Flow Controller #: 8315
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite

Tubing = π x (tubing diameter/2)^2 x length

Tubing = 15 mL

Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4

Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4

bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1801 / 98.0" end time/pressure ("H_2O): 1806 / 98.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge w/ syringe 45mL in 20 sec				
1811	—	5.5	30	1	Start Sample
1812	—	17.9	25	1	
1813	—	17.1	20	1	
1814	—	16.3	15	1	
1815	—	14.8	10	1	
1817	—	12.5	4	1	Stop Sample

Post-sampling PID screening (ppm): 3.1

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 840 Amelia St
Project/Task Number:
Date: 8.28.17
Sampler(s): E. Leavaag
Sample ID / Time: SS-12P /

PANGEA

Probe / Well ID: SS-12P
Canister Serial #: 8212
Flow Controller #: 008321
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	~~200~~ 150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 14 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1019 / 99.0" end time/pressure ("H_2O): 1024 / 99.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge w/ syringe	45 ml in 20 sec			
1044	—	9.6	30	1	Start Sample
1045	—	16.3	25	1	
1046	—	16.0	20	1	
1047	—	16.5	15	1	
1048	—	15.9	10	1	
	—	15.7	~~5~~ 4	1	Stop Sample

Post-sampling PID screening (ppm): 0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.28.17
Sampler(s): E Lervaag
Sample ID / Time: SS-13P / 1609

PANGEA

Probe / Well ID: SS-13P
Canister Serial #: 8187
Flow Controller #: 8338
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1600 / 100.0" end time/pressure ("H_2O): 1605 / 100.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge	w/ syringe	45mL in	20sec	
1609	—	2.9	30	12	Start Sample
1610	—	16.5	25	12	
1611	—	16.0	20	12	
1612	—	15.8	15	12	
1613	—	15.0	10	10	
1615	—	15.3	4	9	Stop Sample
					Post-sampling PID screening (ppm):
					0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.28.17
Sampler(s): E. Lervaag
Sample ID / Time: SS-14P / 1216

PANGEA

Probe / Well ID: SS-14P
Canister Serial #: 8156
Flow Controller #: 8332
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1205 / 98.0" end time/pressure ("H_2O): 1211 / 98.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge w/ syringe 45mL in 20 sec.				
1216	—	8.2	30	<1	Start Sample
1217	—	16.9	25	<1	
1218	—	17.1	20	<1	
1219	—	16.8	15	<1	
1220	—	16.3	10	<1	
1222	—	16.5	4	<1	Stop Sample

Post-sampling PID screening (ppm): 0.0

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8-28-17
Sampler(s): E. Lesvaag
Sample ID / Time: SS-15P

PANGEA

Probe / Well ID: SS-15P
Canister Serial #: 8190
Flow Controller #: 8346
Initial Vacuum: 30
Final Vacuum: 4

SPECIFICATIONS

Tubing Length:	36	inches
Tubing Diameter (ID):	0.170	inches
Boring Diameter:	—	inches
Dry Bentonite Height:	—	inches
Sandpack height:	—	inches
Probe Length:	—	inches
Probe Diameter:	—	inches
Summa Flow Rate:	200	mL/min
Purge Flow Rate:	150	mL/min

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = 15 mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= — mL
Sandpack = — mL
Single Purge Volume = 15 mL
Three Total Purge Volumes = 45 mL
Total Purge Time = 18 seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1352 / 95.0" end time/pressure ("H_2O): 1400 / 95.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	Purge	w/ Syringe	45ml in	20 sec.	
1404	—	7.1	30	8	Start Sample
1405	—	18.9	25		
1406	—	17.9	20		
1407	—	18.3	15		
1408	—	17.6	10		
1410	—	17.4	4		Stop Sample
					Post-sampling PID screening (ppm):
					2.1

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia St
Project/Task Number:
Date: 8.29.17
Sampler(s): E. Lervaag
Sample ID / Time: Shroud

PANGEA

Probe / Well ID: Shroud
Canister Serial #: 8211
Flow Controller #: 8342
Initial Vacuum: 25
Final Vacuum: 4

SPECIFICATIONS

Tubing Length: _____ inches
Tubing Diameter (ID): _____ inches
Boring Diameter: _____ inches
Dry Bentonite Height: _____ inches
Sandpack height: _____ inches
Probe Length: _____ inches
Probe Diameter: _____ inches
Summa Flow Rate: _____ mL/min
Purge Flow Rate: _____ mL/min

NO Purge

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = _____ mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= _____ mL
Sandpack = _____ mL
Single Purge Volume = _____ mL
Three Total Purge Volumes = _____ mL
Total Purge Time = _____ seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("H_2O): 1308 / 98.0" end time/pressure ("H_2O): 1314 / 98.0"

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	Probe-side Vacuum ("H20 / "Hg)	COMMENTS
	NO	Purge			
1523	—	12.6	25	—	Start sample
1524	—	12.0	20	—	
1525	—	11.9	15	—	
1526	—	11.9	10	—	
1528	—	11.3	4	—	Stop Sample
					Post-sampling PID screening (ppm):

NOTES: Collected on SS4

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia
Project/Task Number:
Date: 6.29.17
Sampler(s): E. Lervaag
Sample ID / Time: D-IA / 0858

PANGEA

Probe / Well ID: -IA-4
Canister Serial #: 7936
Flow Controller #: 6364
Initial Vacuum: 29
Final Vacuum: 1

SPECIFICATIONS

Tubing Length: ____ inches
Tubing Diameter (ID): ____ inches
Boring Diameter: ____ inches
Dry Bentonite Height: ____ inches
Sandpack height: ____ inches
Probe Length: ____ inches
Probe Diameter: ____ inches
Summa Flow Rate: ____ mL/min
Purge Flow Rate: ____ mL/min

No Purge
Indoor
Air
Sample

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = ____ mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= ____ mL
Sandpack = ____ mL
Single Purge Volume = ____ mL
Three Total Purge Volumes = ____ mL
Total Purge Time = ____ seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("Hg): end time/pressure ("Hg):

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	~~Probe~~ side Vacuum ("H20 / "Hg)	COMMENTS
Start time		6.29.17	- 0858	29	Start 24 hr Sample
Stop time		6.30.17	- 0835	1.0	Stop 24 hr Sample
					Post-sampling PID screening (ppm):

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia
Project/Task Number:
Date:
Sampler(s):
Sample ID / Time:

PANGEA

Probe / Well ID: CS-1
Canister Serial #: 7928
Flow Controller #: 7812
Initial Vacuum: 29
Final Vacuum: 14

SPECIFICATIONS

Tubing Length: ____ inches
Tubing Diameter (ID): ____ inches
Boring Diameter: ____ inches
Dry Bentonite Height: ____ inches
Sandpack height: ____ inches
Probe Length: ____ inches
Probe Diameter: ____ inches
Summa Flow Rate: ____ mL/min
Purge Flow Rate: ____ mL/min

No Purge Crawl Space Sample

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = ____ mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= ____ mL
Sandpack = ____ mL
Single Purge Volume = ____ mL
Three Total Purge Volumes = ____ mL
Total Purge Time = ____ seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("Hg): end time/pressure ("Hg):

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	~~Probe side~~ Vacuum ("H20 / "Hg)	COMMENTS
Start	time 06.29.17	—	0905	29	Start 24 hr sample
Stop	time 06.30.17	—	0855	14	Stop 24 hr Sample
					Post-sampling PID screening (ppm):

NOTES:

SOIL GAS PURGING / SAMPLING LOG

Project Name: 8410 Amelia
Project/Task Number:
Date:
Sampler(s):
Sample ID / Time:

PANGEA

Probe / Well ID: AA-2
Canister Serial #: 7685
Flow Controller #: 7820
Initial Vacuum: 28.5
Final Vacuum: 0.5

SPECIFICATIONS

Tubing Length: ____ inches
Tubing Diameter (ID): ____ inches
Boring Diameter: ____ inches
Dry Bentonite Height: ____ inches
Sandpack height: ____ inches
Probe Length: ____ inches
Probe Diameter: ____ inches
Summa Flow Rate: ____ mL/min
Purge Flow Rate: ____ mL/min

No purge
Ambient Air Sample

PURGE VOLUME CALCULATION

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)^2 x length
Tubing = ____ mL
Bentonite = π x (boring diameter/2)^2 bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)^2 sandpack height x .4[porosity] x 16.4
bentonite= ____ mL
Sandpack = ____ mL
Single Purge Volume = ____ mL
Three Total Purge Volumes = ____ mL
Total Purge Time = ____ seconds

π = 3.1416 | 1 inch^3 = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

SHUT-IN TEST start time/pressure ("Hg): end time/pressure ("Hg):

TIME	PURGE TIME (min./sec.)	He / IPA IN SHROUD (% / PPM)	CANISTER PRESSURE ("Hg)	~~Probe~~ side Vacuum ("H20 / "Hg)	COMMENTS
Start	time 06	29.17 —	0921	28.5	Start 24 hr sample
Stop	time 06	30.17 —	0835	0.5	Stop Sample
					Post-sampling PID screening (ppm):

NOTES:

INDOOR AIR SAMPLING LOG

Project Name: 8410 Amelia St

Project Address:

Project/Task Number:

Date: 08.28.17

Sampler(s): E. Lervaag

PANGEA

Sample ID	Canister #	Flow Controller #	Start/End Date	Start Time	Initial Vacuum	End Time	Final Vacuum	COMMENTS
IA-5	7945	8436	08.28.17 / 08.29.17	1249	30	0950	1.0	
IA-6	8010	7862	"	1256	27.5	1251	4	
IA-7	5569	6509	"	1325	28	1329	5	
AA-3	5390	7829	"	1336	21	0950	2.5	

NOTES:

Appendix D

Permits

Alameda County Public Works Agency - Water Resources Well Permit

Public Works Agency
Alameda County

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 08/14/2017 By jamesy

Permit Numbers: W2017-0646
Permits Valid from 08/28/2017 to 08/29/2017

Application Id: 1502228320539 **City of Project Site:** Oakland
Site Location: 8410 Amelia Street, Oakland, CA 94621
Project Start Date: 08/28/2017 **Completion Date:** 08/29/2017

Assigned Inspector: Contact Eneyew Amberber at (510) 670-5759 or eneyew@acpwa.org

Applicant: Pangea Environmental Services, Inc. - Patrick Groff
1710 Franklin Street, #200, Oakland, CA 94612 **Phone:** 925-836-3700

Property Owner: Amelia Oakland, LLC c/o
Rustic Canyon Inc., 1181-A Solano Avenue, Albany, CA 94706 **Phone:** --

Client: ** same as Property Owner **

	Total Due:	$265.00
Receipt Number: WR2017-0380	**Total Amount Paid:**	$265.00
Payer Name : Robert Clark-Riddell	Paid By: VISA	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 8 Boreholes
Driller: Confluence Environmental, Inc - Lic #: 913194 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2017-0646	08/14/2017	11/26/2017	8	3.00 in.	20.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

6. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic

submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload date should be on or prior to the regulatory due date.

7. NOTE:
Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.

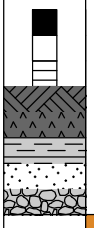
8. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

9. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

Appendix E

Boring Logs

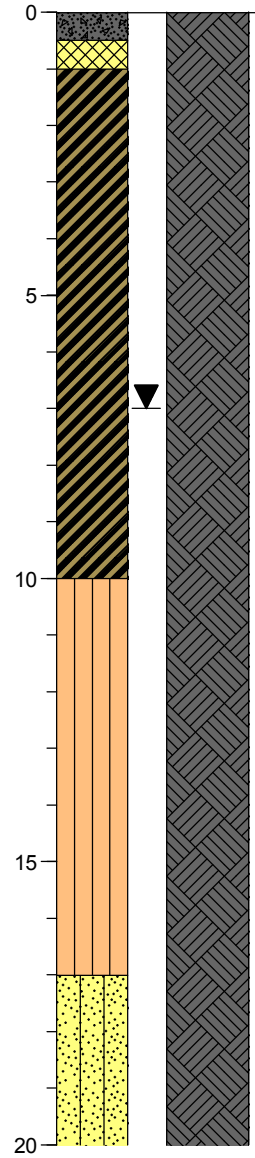
BORING AND WELL LOG LEGEND

LITHOLOGY	WATER LEVEL	WELL/BORING COMPLETION	SAMPLE TYPE	DESCRIPTION
				ASPHALT
				CONCRETE
				FILL
				TOPSOIL
				COBBLES
				IGNEOUS Rock
				METAMORPHIC Rock
				SEDIMENTARY Rock
				Well-graded GRAVEL (GW)
				Poorly graded GRAVEL (GP)
				Silty GRAVEL (GM)
				Clayey GRAVEL (GC)
				Well-graded GRAVEL with silt (GW-GM)
				Poorly graded GRAVEL with silt (GP-GM)
				Well-graded GRAVEL with clay (GW-GC)
				Poorly graded GRAVEL with clay (GP-GC)
				Well-graded SAND (SW)
				Poorly graded SAND (SP)
				Silty SAND (SM)
				Clayey SAND (SC)
				Well-graded SAND with silt (SW-SM)
				Poorly graded SAND with silt (SP-SM)
				Well-graded SAND with clay (SW-SC)
				Poorly graded SAND with clay (SP-SC)
				SILT (ML)
				Lean CLAY (CL)
				Organic SOIL (OL)
				Elastic SILT (MH)
				Fat CLAY (CH)
				Organic SOIL (OH)
				PEAT (PT)
				Volume Descriptors: Trace = <5% Few = 5-10% Little = 15-25% Some = 30-45% Mostly = >=50%
				Water Level During Drilling Water Level at End of Drilling/in Completed Well
				Cap Riser Screen Cement Bentonite Grout Bentonite Seal Filter Pack Backfill
			GR	Grab
			EN	Encore
			SS	Split Spoon
			SH	Shelby Tube
			CO	Core Barrel
			DP	Direct Push
			ID	Lab Sample and ID

NOTES:

PANGEA	**Client:** Murray Hill, LLC **Project:** 2005.001 **Address:** 8410 Amelia Street, Oakland, CA	**BORING LOG** **Boring No.** P-3 **Page:** 1 of 2

Drilling Start Date:	**08/31/2017**	Boring Depth (ft):	**25**
Drilling End Date:	**08/31/2017**	Boring Diameter (in):	**3**
Drilling Company:	**Confluence**	Sampling Method(s):	
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	
Drilling Equipment:		DTW After Drilling (ft):	**7**
Driller:		Ground Surface Elev. (ft):	
Logged By:	**PG**	Location (X,Y):	

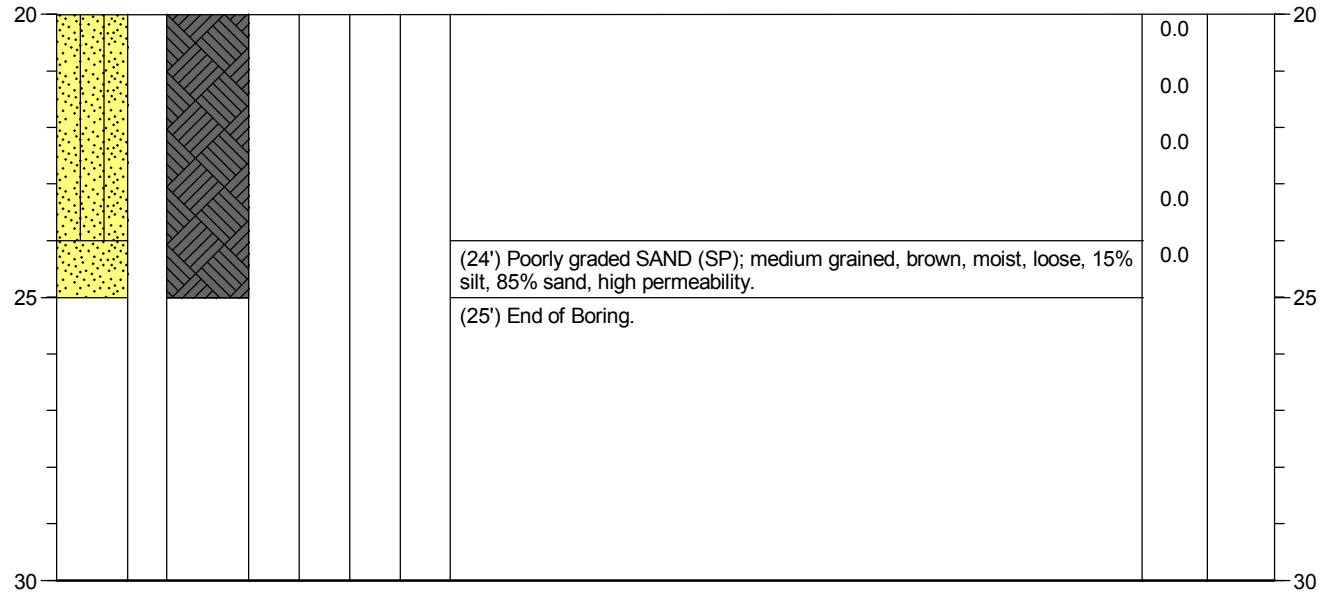


DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	PID (ppm)	Lab Sample	DEPTH (ft)
0	(0') 6" CONCRETE.	0.2		0
	(0.5') Sandy GRAVEL (FILL); grayish brown, dry, very loose, 20% sand, 80% gravel, high permeability.	0.1		
	(1') Fat CLAY (CH); black, moist, very stiff, 100% clay, high plasticity, low permeability.	0.1		
		0.1		
		0.1		
5		0.0		5
		0.0		
		0.0		
		0.0		
		0.0		
10	(10') Clayey SILT (ML); light brown, moist, stiff, 30% clay, 70% silt, medium plasticity, low permeability.	0.0		10
		0.0		
		0.0		
		0.0		
		0.0		
15		0.0		15
		0.0		
	(17') Silty SAND (SM); fine grained, brown, moist, dense, 40% silt, 60% sand, medium permeability.	0.0		
		0.0		
		0.0		
20				20

NOTES:

PANGEA	**Client:** Murray Hill, LLC **Project:** 2005.001 **Address:** 8410 Amelia Street, Oakland, CA	**BORING LOG** **Boring No. P-3** **Page: 2 of 2**

Drilling Start Date:	**08/31/2017**	Boring Depth (ft):	**25**
Drilling End Date:	**08/31/2017**	Boring Diameter (in):	**3**
Drilling Company:	**Confluence**	Sampling Method(s):	
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	
Drilling Equipment:		DTW After Drilling (ft):	**7**
Driller:		Ground Surface Elev. (ft):	
Logged By:	**PG**	Location (X,Y):	

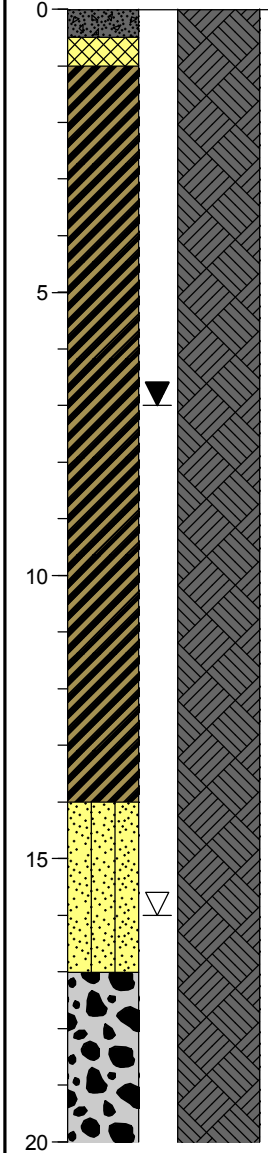


DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
20									0.0		20
									0.0		
									0.0		
									0.0		
								(24') Poorly graded SAND (SP); medium grained, brown, moist, loose, 15% silt, 85% sand, high permeability.	0.0		
25								(25') End of Boring.			25
30											30

NOTES:

PANGEA	**Client:** Murray Hill, LLC **Project:** 2005.001 **Address:** 8410 Amelia Street, Oakland, CA	**BORING LOG** **Boring No. P-4** **Page: 1 of 2**

Drilling Start Date:	**08/31/2017**	Boring Depth (ft):	**25**
Drilling End Date:	**08/31/2017**	Boring Diameter (in):	**3**
Drilling Company:	**Confluence**	Sampling Method(s):	
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**16**
Drilling Equipment:		DTW After Drilling (ft):	**7**
Driller:		Ground Surface Elev. (ft):	
Logged By:	**PG**	Location (X,Y):	

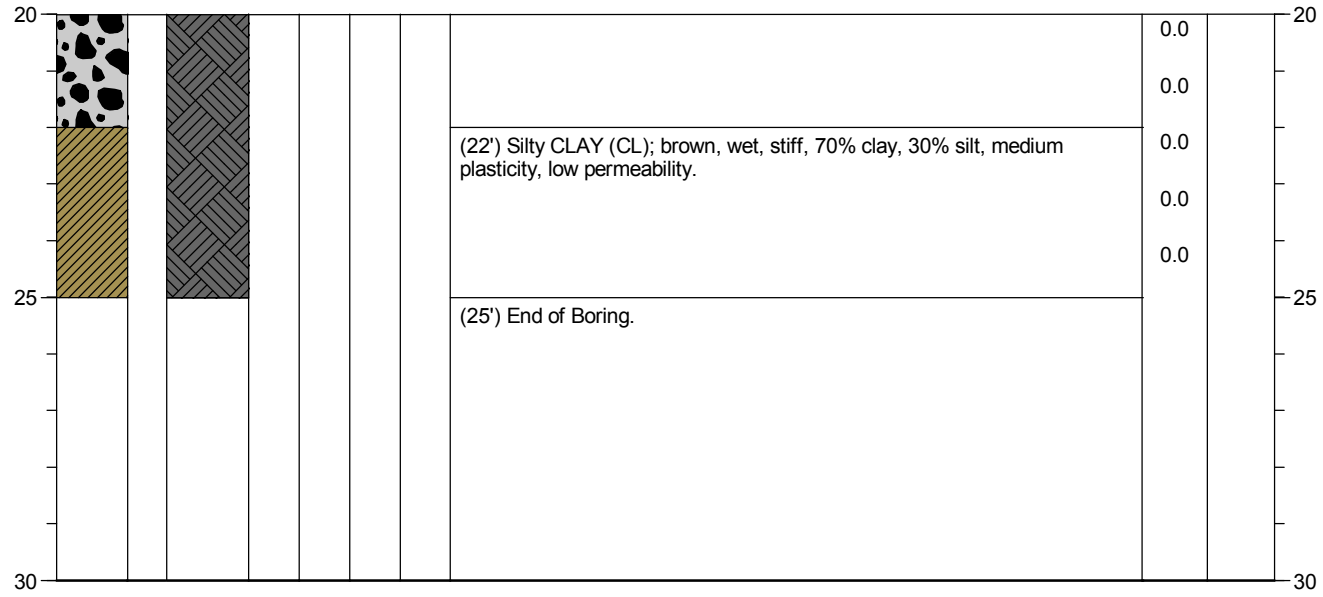


DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	PID (ppm)	Lab Sample	DEPTH (ft)
0	(0') 6" CONCRETE.	0.0		0
	(0.5') FILL, grayish brown, dry, very loose, 20% sand, 80% gravel, high permeability.	0.0		
	(1') Fat CLAY (CH); black, moist, very stiff, 100% clay, high plasticity, low permeability.	0.0		
		0.0		
		0.0		
5		0.0		5
		0.0		
		0.0		
		0.0		
		0.0		
		0.0		
10		0.0		10
		0.0		
		0.0		
		0.2		
	(14') Silty SAND (SM); fine grained, light brown, moist, compact, 30% silt, 70% sand, medium permeability.	0.4		
15		0.1		15
		0.1		
	(17') Well graded sandy GRAVEL (GW); medium to coarse grained, brown, wet, very loose, 40% sand, 60% gravel, high permeability.	0.0		
		0.0		
		0.0		
20				20

NOTES:

PANGEA	**Client:** Murray Hill, LLC **Project:** 2005.001 **Address:** 8410 Amelia Street, Oakland, CA	**BORING LOG** **Boring No. P-4** **Page: 2 of 2**

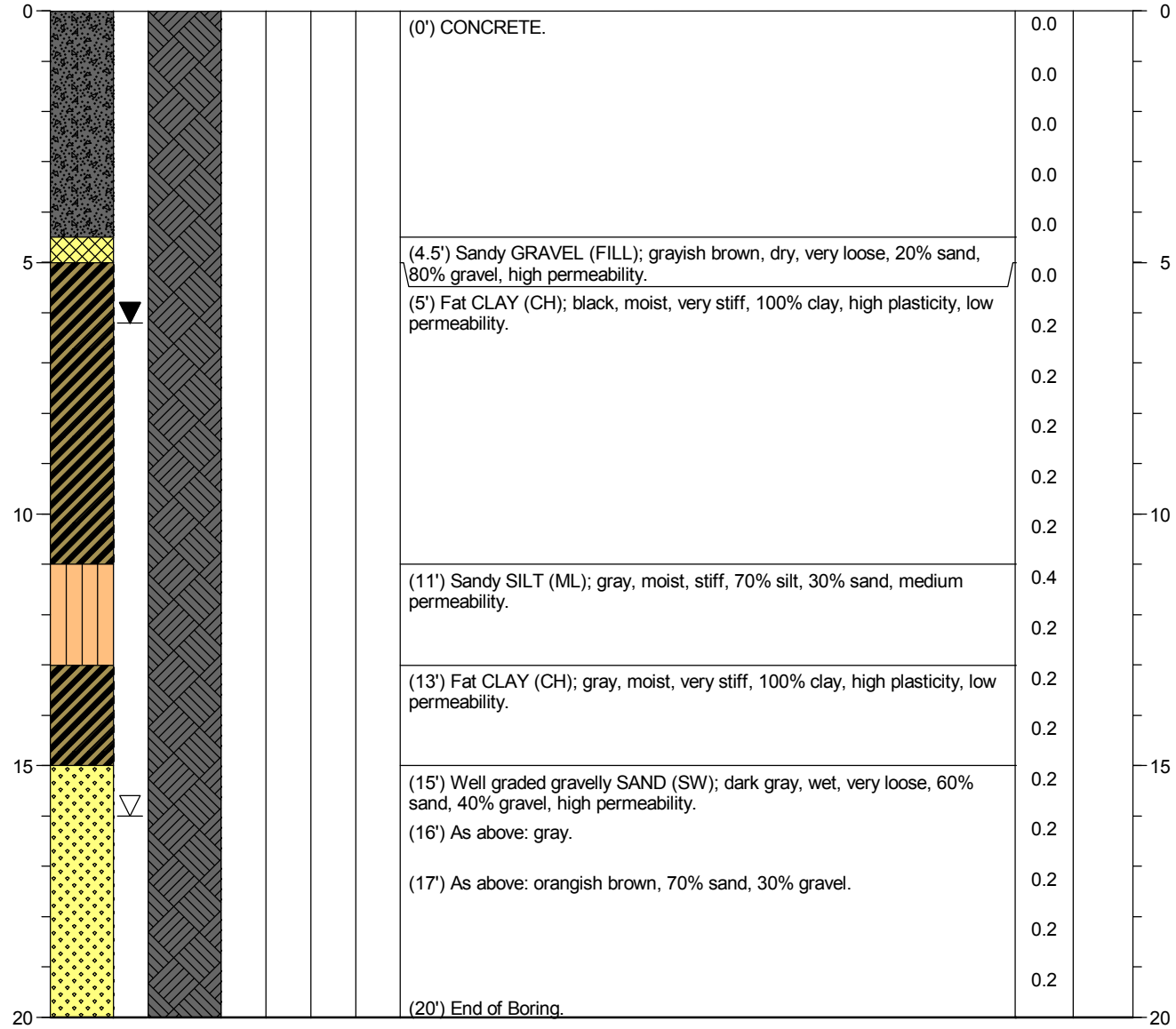
Drilling Start Date:	**08/31/2017**	Boring Depth (ft):	**25**
Drilling End Date:	**08/31/2017**	Boring Diameter (in):	**3**
Drilling Company:	**Confluence**	Sampling Method(s):	
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**16**
Drilling Equipment:		DTW After Drilling (ft):	**7**
Driller:		Ground Surface Elev. (ft):	
Logged By:	**PG**	Location (X,Y):	



NOTES:

PANGEA	**Client:** Murray Hill, LLC **Project:** 2005.001 **Address:** 8410 Amelia Street, Oakland, CA	**BORING LOG** **Boring No. P-5** **Page: 1 of 1**

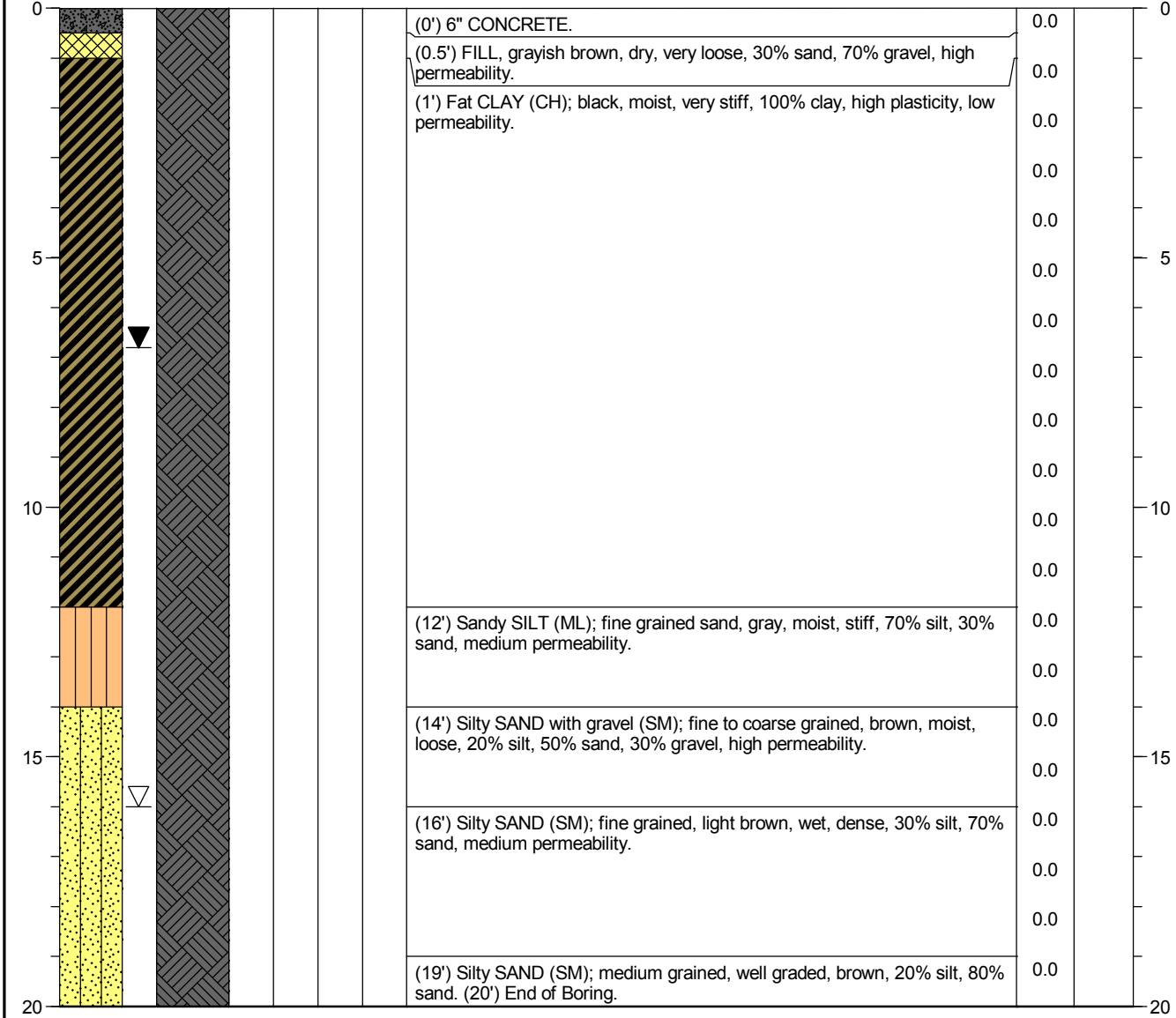
Drilling Start Date:	**08/31/2017**	Boring Depth (ft):	**20**
Drilling End Date:	**08/31/2017**	Boring Diameter (in):	**3**
Drilling Company:	**Confluence**	Sampling Method(s):	
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**16**
Drilling Equipment:		DTW After Drilling (ft):	**6.2**
Driller:		Ground Surface Elev. (ft):	
Logged By:	**PG**	Location (X,Y):	



NOTES:

PANGEA	**Client:** Murray Hill, LLC **Project:** 2005.001 **Address:** 8410 Amelia Street, Oakland, CA	**BORING LOG** **Boring No. P-6** **Page: 1 of 1**

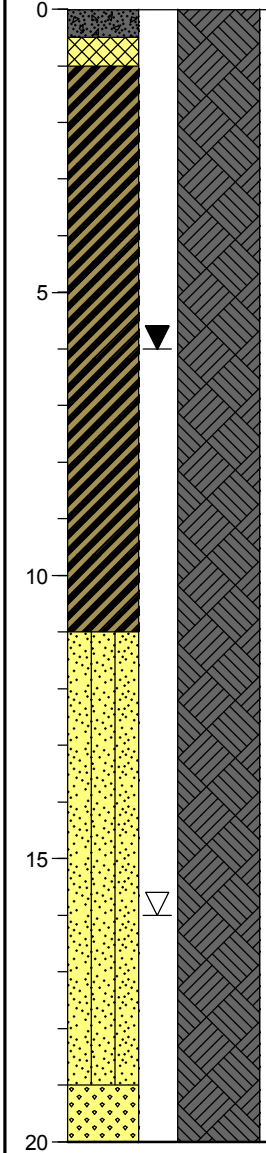
Drilling Start Date:	**08/31/2017**	Boring Depth (ft):	**20**
Drilling End Date:	**08/31/2017**	Boring Diameter (in):	**3**
Drilling Company:	**Confluence**	Sampling Method(s):	
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**16**
Drilling Equipment:		DTW After Drilling (ft):	**6.8**
Driller:		Ground Surface Elev. (ft):	
Logged By:	**PG**	Location (X,Y):	



NOTES:

PANGEA	**Client:** Murray Hill, LLC **Project:** 2005.001 **Address:** 8410 Amelia Street, Oakland, CA	**BORING LOG** **Boring No.** P-7 **Page:** 1 of 1

Drilling Start Date:	**09/01/2017**	Boring Depth (ft):	**20**
Drilling End Date:	**09/01/2017**	Boring Diameter (in):	**3**
Drilling Company:	**Confluence**	Sampling Method(s):	
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**16**
Drilling Equipment:		DTW After Drilling (ft):	**6**
Driller:		Ground Surface Elev. (ft):	
Logged By:	**PG**	Location (X,Y):	

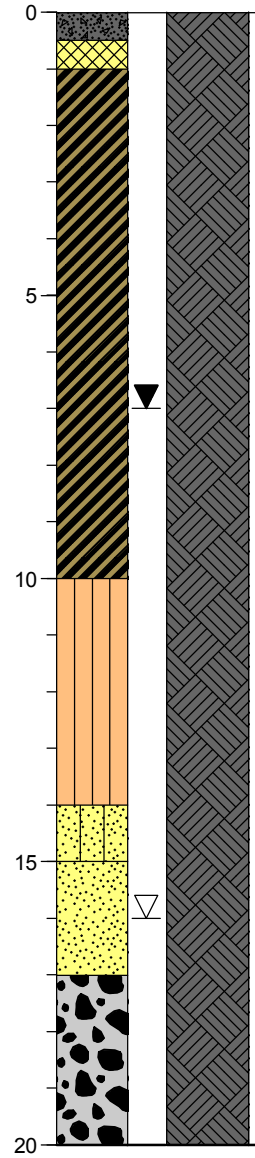


DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	PID (ppm)	Lab Sample	DEPTH (ft)
0	(0') 6" CONCRETE.	0.1		0
	(0.5') FILL, grayish brown, dry, very loose, 30% sand, 70% gravel, high permeability.	0.1		
	(1') Fat CLAY (CH); black, moist, very stiff, 100% clay, high plasticity, low permeability.	0.1		
		0.1		
		0.1		
5	(5') As above: light brown.	0.1		5
		0.1		
		0.1		
		0.1		
		0.1		
10		0.1		10
	(11') Silty SAND (SM); fine grained, brown, moist, dense, 40% silt, 60% sand, medium permeability.	0.1		
		0.1		
		0.1		
		0.2		
15		0.2		15
	(16') As above: wet.	0.2		
		0.2		
	(18') As above: medium grained, wet, 20% silt, 80% sand.	0.2		
	(19') Well-graded gravelly SAND (SW); brown, wet, loose, 70% sand, 30% gravel, high permeability. (20') End of Boring.	0.2		
20				20

NOTES:

PANGEA	**Client:** Murray Hill, LLC **Project:** 2005.001 **Address:** 8410 Amelia Street, Oakland, CA	**BORING LOG** **Boring No. P-8** **Page: 1 of 1**

Drilling Start Date:	**08/31/2017**	Boring Depth (ft):	**20**
Drilling End Date:	**08/31/2017**	Boring Diameter (in):	**3**
Drilling Company:	**Confluence**	Sampling Method(s):	
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**16**
Drilling Equipment:		DTW After Drilling (ft):	**7**
Driller:		Ground Surface Elev. (ft):	
Logged By:	**PG**	Location (X,Y):	

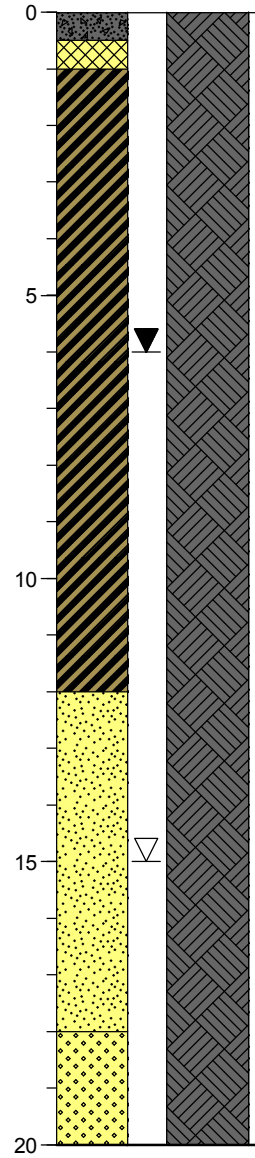


DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	PID (ppm)	Lab Sample	DEPTH (ft)
0	(0') 6" CONCRETE.	0.0		0
	(0.5') FILL, grayish brown, dry, very loose, 20% sand, 80% gravel, high permeability.	0.0		
	(1') Fat CLAY (CH); black, moist, very stiff, 100% clay, high plasticity, low permeability.	0.0		
5		0.0		5
		0.0		
		0.0		
		0.0		
		0.0		
10	(10') Sandy SILT (ML); fine grained sand, light brown, moist, stiff, 70% silt, 30% sand, medium permeability.	0.0		10
		0.0		
		0.0		
		0.0		
	(14') Silty SAND (SM); fine grained, well graded, brown, moist, loose, 30% silt, 70% sand, medium permeability.	0.0		
15	(15') Poorly graded SAND (SP); fine grained, brown, wet, loose, 100% sand, high permeability.	0.0		15
		0.0		
	(17') Well graded sandy GRAVEL (GW); medium grained, gray, wet, very loose, 30% sand, 70% gravel, high permeability.	0.0		
		0.0		
		0.0		
20	(20') End of boring.			20

NOTES:

PANGEA	**Client:** Murray Hill, LLC **Project:** 2005.001 **Address:** 8410 Amelia Street, Oakland, CA	**BORING LOG** **Boring No. P-9** **Page: 1 of 1**

Drilling Start Date:	**09/01/2017**	Boring Depth (ft):	**20**
Drilling End Date:	**09/01/2017**	Boring Diameter (in):	**3**
Drilling Company:	**Confluence**	Sampling Method(s):	
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**15**
Drilling Equipment:		DTW After Drilling (ft):	**6**
Driller:		Ground Surface Elev. (ft):	
Logged By:	**PG**	Location (X,Y):	

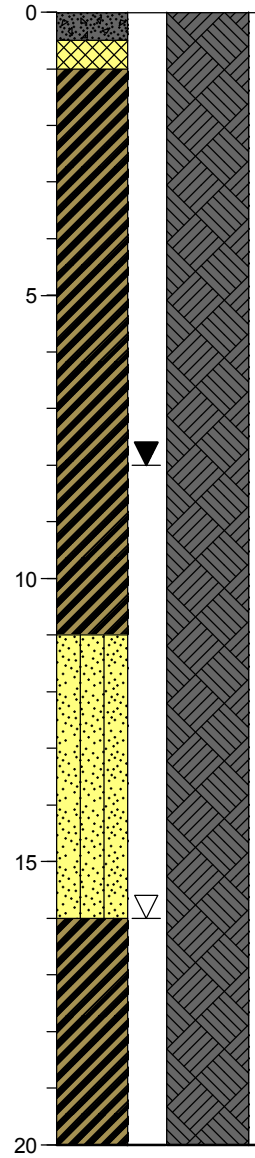


DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	PID (ppm)	Lab Sample	DEPTH (ft)
0	(0') 6" CONCRETE.	0.0		0
	(0.5') FILL, grayish brown, dry, very loose, 20% sand, 80% gravel, high permeability.	0.0		
	(1') Fat CLAY (CH); black, moist, very stiff, 100% clay, high plasticity, low permeability.	0.0		
		0.0		
		0.0		
5		0.0		5
		0.0		
		0.0		
		0.0		
		0.0		
		0.0		
10		0.0		10
	(11') Fat CLAY (CH); light brown, moist, very stiff, 100% clay, high plasticity, low permeability.	0.0		
	(12') Poorly graded SAND (SP); medium grained, brown, moist, dense, 100% sand, medium permeability.	0.0		
		0.0		
	(14') As above: wet.	0.0		
15		0.0		15
		0.0		
		0.0		
	(18') Well-graded SAND (SW); medium to coarse grained, brown, wet, loose, 90% sand, 10% gravel, high permeability.	0.0		
		0.0		
20	(20') End of Boring.			20

NOTES:

PANGEA	**Client:** Murray Hill, LLC **Project:** 2005.001 **Address:** 8410 Amelia Street, Oakland, CA	**BORING LOG** **Boring No. P-10** **Page: 1 of 1**

Drilling Start Date:	**09/01/2017**	Boring Depth (ft):	**20**
Drilling End Date:	**09/01/2017**	Boring Diameter (in):	**3**
Drilling Company:	**Confluence**	Sampling Method(s):	
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**16**
Drilling Equipment:		DTW After Drilling (ft):	**8**
Driller:		Ground Surface Elev. (ft):	
Logged By:	**PG**	Location (X,Y):	



DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	PID (ppm)	Lab Sample	DEPTH (ft)
0	(0') 6" CONCRETE.	0.0		0
	(0.5') FILL, grayish brown, dry, very loose, 20% sand, 80% gravel, high permeability.	0.0		
	(1') Fat CLAY (CH); black, moist, very stiff, 100% clay, high plasticity, low permeability.	0.0		
		0.0		
		0.0		
5		0.0		5
		0.0		
		0.0		
		0.0		
		0.0		
10		0.0		10
	(11') Silty SAND (SM); fine grained, light brown, moist, dense, 30% silt, 70% sand, medium permeability.	0.0		
		0.0		
		0.0		
		0.0		
15	(15') As above: brown, wet.	0.0		15
	(16') Fat CLAY (CH); grayish green, wet, very stiff, 100% clay, high plasticity, low permeability.	0.0		
		0.0		
		0.0		
		0.0		
20	(20') End of Boring.			20

NOTES: Hand Augered to 5' bgs.

Appendix F

Laboratory Analytical Reports

ENTHALPY

ANALYTICAL

Enthalpy Analytical

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 292067
ANALYTICAL REPORT

Pangea Environmental	Project : 2005.001.225
1710 Franklin Street	Location : Amelia
Oakland, CA 94612	Level : II

Sample ID	Lab ID
P-3-W	292067-001
P-4-W	292067-002
P-5-W	292067-003
P-6-W	292067-004
P-8-W	292067-005

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 09/08/2017

Will Rice
Project Manager
will.rice@enthalpy.com
(510) 204-2221 Ext 13102

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

CASE NARRATIVE

Laboratory number:	**292067**
Client:	**Pangea Environmental**
Project:	**2005.001.225**
Location:	**Amelia**
Request Date:	**09/01/17**
Samples Received:	**08/31/17**

This data package contains sample and QC results for five water samples, requested for the above referenced project on 09/01/17. The samples were received cold and intact.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

Enthalpy Analytical
Formerly Curtis & Tompkins
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510)486-0900 Phone
(510)486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : _____

C&T LOGIN # 292067

Project No: 2005.001
Project Name: Amelia
Rpt Level: II
Turnaround Time: Standard

Sampler: Patrick Goff
Report To: "
Company : Pangea
Telephone: (925) 818-0010
Email: pgroff@pangeaenv.com

Lab No.	Sample ID.	Sampling		Matrix				Chemical Preservative					Analytical Request
		Date	Time	Water	Soil	Other	# of Containers	HCl	H_2SO_4	HNO_3	NaOH	None	VOCs by 8260
	P-3-W	8-31-17	1545	X			3	X					X
	P-4-W		1630	X				X					X
	P-5-W		1555	X				X					X
	P-6-W		1330	X				X					X
	P-8-W		1345	X				X					X

Notes:
Please provide EDF

SAMPLE RECEIPT
☐ Intact ☐ Cold
☑ On Ice ☐ Ambient

RELINQUISHED BY:
8-31-17 1825 DATE/TIME
DATE/TIME
DATE/TIME

RECEIVED BY:
8/31/17 1825 DATE/TIME
DATE/TIME
DATE/TIME

COOLER RECEIPT CHECKLIST

ENTHALPY Berkeley

Login # 292067 Date Received 8.31.17 Number of coolers 1
Client Pangea Project Amelia

Date Opened 8.31.17 By (print) DC (sign)
Date Logged in 1 By (print) DC (sign)
Date Labelled 1 By (print) DC (sign)

1. Did cooler come with a shipping slip (airbill, etc) YES NO
   Shipping info
2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many Name Date
2B. Were custody seals intact upon arrival? YES NO N/A
3. Were custody papers dry and intact when received? YES NO
4. Were custody papers filled out properly (ink, signed, etc)? YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 3.6

☐ Temperature blank(s) included? ☐ Thermometer# ☒ IR Gun# B

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES NO
   If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? YES NO
10. Are there any missing / extra samples? YES NO
11. Are samples in the appropriate containers for indicated tests? YES NO
12. Are sample labels present, in good condition and complete? YES NO
13. Do the sample labels agree with custody papers? YES NO
14. Was sufficient amount of sample sent for tests requested? YES NO
15. Are the samples appropriately preserved? YES NO N/A
16. Did you check preservatives for all bottles for each sample? YES NO N/A
17. Did you document your preservative check? (pH strip lot#) YES NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO N/A
19. Did you change the hold time in LIMS for preserved terracores? YES NO N/A
20. Are bubbles > 6mm absent in VOA samples? YES NO N/A
21. Was the client contacted concerning this sample delivery? YES NO
   If YES, Who was called? By Date:

COMMENTS

Rev 14, 8/01/17

ENTHALPY ANALYTICAL

Detections Summary for 292067

Results for any subcontracted analyses are not included in this summary.

Client : Pangea Environmental
Project : 2005.001.225
Location : Amelia

Client Sample ID : P-3-W Laboratory Sample ID : 292067-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
1,1-Dichloroethene	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
MTBE	1.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
trans-1,2-Dichloroethene	1.2		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	11		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	49		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : P-4-W Laboratory Sample ID : 292067-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
1,1-Dichloroethene	1.2		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
MTBE	0.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
trans-1,2-Dichloroethene	2.3		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,1-Dichloroethane	0.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	28		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,1,1-Trichloroethane	1.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	55		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : P-5-W Laboratory Sample ID : 292067-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
MTBE	1.3		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	0.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	3.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Tetrachloroethene	0.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Propylbenzene	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
sec-Butylbenzene	0.8		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Naphthalene	15		2.0	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : P-6-W Laboratory Sample ID : 292067-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
MTBE	2.2		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	0.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	2.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : P-8-W Laboratory Sample ID : 292067-005

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
MTBE	2.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	2.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Field ID:	P-3-W	Batch#:	251263
Lab ID:	292067-001	Sampled:	08/31/17
Matrix:	Water	Received:	08/31/17
Units:	ug/L	Analyzed:	09/04/17
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	0.6	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	1.0	0.5
trans-1,2-Dichloroethene	1.2	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	11	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	49	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Field ID:	P-3-W	Batch#:	251263
Lab ID:	292067-001	Sampled:	08/31/17
Matrix:	Water	Received:	08/31/17
Units:	ug/L	Analyzed:	09/04/17
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-120
1,2-Dichloroethane-d4	127	73-136
Toluene-d8	100	80-120
Bromofluorobenzene	112	80-120

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Field ID:	P-4-W	Batch#:	251263
Lab ID:	292067-002	Sampled:	08/31/17
Matrix:	Water	Received:	08/31/17
Units:	ug/L	Analyzed:	09/04/17
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	1.2	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	0.7	0.5
trans-1,2-Dichloroethene	2.3	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	0.7	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	28	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	1.0	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	55	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Field ID:	P-4-W	Batch#:	251263
Lab ID:	292067-002	Sampled:	08/31/17
Matrix:	Water	Received:	08/31/17
Units:	ug/L	Analyzed:	09/04/17
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	107	80-120
1,2-Dichloroethane-d4	132	73-136
Toluene-d8	103	80-120
Bromofluorobenzene	117	80-120

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Field ID:	P-5-W	Batch#:	251278
Lab ID:	292067-003	Sampled:	08/31/17
Matrix:	Water	Received:	08/31/17
Units:	ug/L	Analyzed:	09/05/17
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	1.3	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	0.5	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	3.0	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	0.5	0.5

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Field ID:	P-5-W	Batch#:	251278
Lab ID:	292067-003	Sampled:	08/31/17
Matrix:	Water	Received:	08/31/17
Units:	ug/L	Analyzed:	09/05/17
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	0.6	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	0.8	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	15	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-120
1,2-Dichloroethane-d4	107	73-136
Toluene-d8	102	80-120
Bromofluorobenzene	102	80-120

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Field ID:	P-6-W	Batch#:	251263
Lab ID:	292067-004	Sampled:	08/31/17
Matrix:	Water	Received:	08/31/17
Units:	ug/L	Analyzed:	09/04/17
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	2.2	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	0.7	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	2.5	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Field ID:	P-6-W	Batch#:	251263
Lab ID:	292067-004	Sampled:	08/31/17
Matrix:	Water	Received:	08/31/17
Units:	ug/L	Analyzed:	09/04/17
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	106	80-120
1,2-Dichloroethane-d4	129	73-136
Toluene-d8	105	80-120
Bromofluorobenzene	115	80-120

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Field ID:	P-8-W	Batch#:	251263
Lab ID:	292067-005	Sampled:	08/31/17
Matrix:	Water	Received:	08/31/17
Units:	ug/L	Analyzed:	09/04/17
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	2.5	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	0.6	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	2.5	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Field ID:	P-8-W	Batch#:	251263
Lab ID:	292067-005	Sampled:	08/31/17
Matrix:	Water	Received:	08/31/17
Units:	ug/L	Analyzed:	09/04/17
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-120
1,2-Dichloroethane-d4	127	73-136
Toluene-d8	103	80-120
Bromofluorobenzene	104	80-120

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	251263
Units:	ug/L	Analyzed:	09/04/17
Diln Fac:	1.000		

Type: BS Lab ID: QC899393

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	12.51	100	66-127
Benzene	12.50	12.63	101	78-123
Trichloroethene	12.50	12.93	103	75-120
Toluene	12.50	13.01	104	80-120
Chlorobenzene	12.50	13.08	105	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-120
1,2-Dichloroethane-d4	119	73-136
Toluene-d8	103	80-120
Bromofluorobenzene	98	80-120

Type: BSD Lab ID: QC899394

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	12.81	102	66-127	2	20
Benzene	12.50	12.39	99	78-123	2	20
Trichloroethene	12.50	12.51	100	75-120	3	20
Toluene	12.50	12.96	104	80-120	0	20
Chlorobenzene	12.50	12.85	103	80-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-120
1,2-Dichloroethane-d4	113	73-136
Toluene-d8	103	80-120
Bromofluorobenzene	102	80-120

RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC899395	Batch#:	251263
Matrix:	Water	Analyzed:	09/04/17
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC899395	Batch#:	251263
Matrix:	Water	Analyzed:	09/04/17
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-120
1,2-Dichloroethane-d4	122	73-136
Toluene-d8	101	80-120
Bromofluorobenzene	114	80-120

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC899465	Batch#:	251278
Matrix:	Water	Analyzed:	09/05/17
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC899465	Batch#:	251278
Matrix:	Water	Analyzed:	09/05/17
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-120
1,2-Dichloroethane-d4	108	73-136
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-120

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	292067	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2005.001.225	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	251278
Units:	ug/L	Analyzed:	09/05/17
Diln Fac:	1.000		

Type: BS Lab ID: QC899468

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	13.54	108	66-127
Benzene	12.50	13.03	104	78-123
Trichloroethene	12.50	12.50	100	75-120
Toluene	12.50	13.00	104	80-120
Chlorobenzene	12.50	12.61	101	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-120
1,2-Dichloroethane-d4	106	73-136
Toluene-d8	101	80-120
Bromofluorobenzene	101	80-120

Type: BSD Lab ID: QC899469

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	13.34	107	66-127	1	20
Benzene	12.50	12.73	102	78-123	2	20
Trichloroethene	12.50	12.48	100	75-120	0	20
Toluene	12.50	12.74	102	80-120	2	20
Chlorobenzene	12.50	12.28	98	80-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-120
1,2-Dichloroethane-d4	105	73-136
Toluene-d8	100	80-120
Bromofluorobenzene	100	80-120

RPD= Relative Percent Difference

ENTHALPY

ANALYTICAL

Enthalpy Analytical
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 292088
ANALYTICAL REPORT

Pangea Environmental	Project : STANDARD
1710 Franklin Street	Location : Amelia
Oakland, CA 94612	Level : II

Sample ID	Lab ID
P-7-W	292088-001
P-9-W	292088-002
P-10-W	292088-003

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 09/08/2017

Will Rice
Project Manager
will.rice@enthalpy.com
(510) 204-2221 Ext 13102

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

CASE NARRATIVE

Laboratory number:	**292088**
Client:	**Pangea Environmental**
Location:	**Amelia**
Request Date:	**09/01/17**
Samples Received:	**09/01/17**

This data package contains sample and QC results for three water samples, requested for the above referenced project on 09/01/17. The samples were received cold and intact.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

Enthalpy Analytical
Formerly Curtis & Tompkins
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510)486-0900 Phone
(510)486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : _____

C&T LOGIN # 292088

Project No: 2005.001
Project Name: Amelia
Rpt Level: II
Turnaround Time: Standard

Sampler: Patrick Groff
Report To: Bob Clark-Riddell
Company : Pangea
Telephone: (925) 818-0010
Email: pgroff@pangaeaenv.com

Lab No.	Sample ID.	Sampling		Matrix				Chemical Preservative						Analytical Request
		Date	Time	Water	Soil	Other	# of Containers	HCl	H_2SO_4	HNO_3	NaOH	None	8260	
	P-7-W	9-1-17	1355	X			3	X					X	
	P-9-W	9-1-17	1430	X			3	X					X	
	P-10-W	9-1-17	1530	X			3	X					X	

Notes:
Please provide EDF

SAMPLE RECEIPT
☐ Intact ☐ Cold
☑ On Ice ☐ Ambient

RELINQUISHED BY:
9-1-17 1729 DATE/TIME
DATE/TIME
DATE/TIME

RECEIVED BY:
9/1/17 1729 DATE/TIME
DATE/TIME
DATE/TIME

COOLER RECEIPT CHECKLIST

ENTHALPY Berkeley

Login # 292088 Date Received 9-1-17 Number of coolers 1
Client Pangea Project Amelia

Date Opened 9-1-17 By (print) kp (sign) kp
Date Logged in ↓ By (print) kp (sign) kp
Date Labelled ↓ By (print) kp (sign) kp

1. Did cooler come with a shipping slip (airbill, etc) ____ YES (NO)
   Shipping info ____
2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☐ NO
   How many ____ Name ____ Date ____
2B. Were custody seals intact upon arrival? ____ YES NO (N/A)
3. Were custody papers dry and intact when received? ____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? ____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ____ (YES) NO
6. Indicate the packing in cooler: (if other, describe) ____

☐ Bubble Wrap ☐ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 5.5

☐ Temperature blank(s) included? ☐ Thermometer# ____ ☑ IR Gun# A

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? ____ YES (NO)
   If YES, what time were they transferred to freezer? ____
9. Did all bottles arrive unbroken/unopened? ____ (YES) NO
10. Are there any missing / extra samples? ____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? ____ (YES) NO
12. Are sample labels present, in good condition and complete? ____ (YES) NO
13. Do the sample labels agree with custody papers? ____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? ____ (YES) NO
15. Are the samples appropriately preserved? ____ (YES) NO N/A
16. Did you check preservatives for all bottles for each sample? ____ (YES) NO N/A
17. Did you document your preservative check? (pH strip lot# ____) (YES) NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? ____ (YES) NO N/A
19. Did you change the hold time in LIMS for preserved terracores? ____ (YES) NO N/A
20. Are bubbles > 6mm absent in VOA samples? ____ (YES) NO N/A
21. Was the client contacted concerning this sample delivery? ____ YES (NO)
   If YES, Who was called? ____ By ____ Date: ____

COMMENTS ____

Rev 14, 8/01/17

ENTHALPY ANALYTICAL

Detections Summary for 292088

Results for any subcontracted analyses are not included in this summary.

Client : Pangea Environmental
Project : STANDARD
Location : Amelia

Client Sample ID : P-7-W Laboratory Sample ID : 292088-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
MTBE	1.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	0.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	17		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Toluene	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
m,p-Xylenes	0.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,3,5-Trimethylbenzene	0.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,2,4-Trimethylbenzene	2.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : P-9-W Laboratory Sample ID : 292088-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
1,1-Dichloroethene	0.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
MTBE	2.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	0.9		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : P-10-W Laboratory Sample ID : 292088-003

No Detections

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292088	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	P-7-W	Batch#:	251298
Lab ID:	292088-001	Sampled:	09/01/17
Matrix:	Water	Received:	09/01/17
Units:	ug/L	Analyzed:	09/05/17
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	1.0	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	0.7	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	17	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	0.6	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292088	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	P-7-W	Batch#:	251298
Lab ID:	292088-001	Sampled:	09/01/17
Matrix:	Water	Received:	09/01/17
Units:	ug/L	Analyzed:	09/05/17
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	0.7	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	0.5	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	2.6	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-120
1,2-Dichloroethane-d4	123	73-136
Toluene-d8	96	80-120
Bromofluorobenzene	99	80-120

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292088	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	P-9-W	Batch#:	251298
Lab ID:	292088-002	Sampled:	09/01/17
Matrix:	Water	Received:	09/01/17
Units:	ug/L	Analyzed:	09/05/17
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	0.7	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	2.0	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	0.9	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292088	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	P-9-W	Batch#:	251298
Lab ID:	292088-002	Sampled:	09/01/17
Matrix:	Water	Received:	09/01/17
Units:	ug/L	Analyzed:	09/05/17
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-120
1,2-Dichloroethane-d4	120	73-136
Toluene-d8	98	80-120
Bromofluorobenzene	104	80-120

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292088	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	P-10-W	Batch#:	251298
Lab ID:	292088-003	Sampled:	09/01/17
Matrix:	Water	Received:	09/01/17
Units:	ug/L	Analyzed:	09/05/17
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #:	292088	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	P-10-W	Batch#:	251298
Lab ID:	292088-003	Sampled:	09/01/17
Matrix:	Water	Received:	09/01/17
Units:	ug/L	Analyzed:	09/05/17
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-120
1,2-Dichloroethane-d4	120	73-136
Toluene-d8	101	80-120
Bromofluorobenzene	96	80-120

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	292088	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	251298
Units:	ug/L	Analyzed:	09/05/17
Diln Fac:	1.000		

Type: BS Lab ID: QC899536

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	12.27	98	66-127
Benzene	12.50	12.20	98	78-123
Trichloroethene	12.50	13.23	106	75-120
Toluene	12.50	13.32	107	80-120
Chlorobenzene	12.50	13.39	107	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-120
1,2-Dichloroethane-d4	119	73-136
Toluene-d8	105	80-120
Bromofluorobenzene	99	80-120

Type: BSD Lab ID: QC899537

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	12.00	96	66-127	2	20
Benzene	12.50	11.71	94	78-123	4	20
Trichloroethene	12.50	11.39	91	75-120	15	20
Toluene	12.50	12.57	101	80-120	6	20
Chlorobenzene	12.50	12.68	101	80-120	5	20

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-120
1,2-Dichloroethane-d4	114	73-136
Toluene-d8	100	80-120
Bromofluorobenzene	96	80-120

RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	292088	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC899538	Batch#:	251298
Matrix:	Water	Analyzed:	09/05/17
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

ENTHALPY ANALYTICAL

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	292088	Location:	Amelia
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC899538	Batch#:	251298
Matrix:	Water	Analyzed:	09/05/17
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-120
1,2-Dichloroethane-d4	117	73-136
Toluene-d8	99	80-120
Bromofluorobenzene	101	80-120

ND= Not Detected
RL= Reporting Limit

ANALYTICAL REPORT

July 11, 2017

Pangea Environmental Serv - Oakland, CA

Sample Delivery Group:	L919988
Samples Received:	07/01/2017
Project Number:	2005.001, TASK 230
Description:	8410 Amelia St
Site:	OAKLAND, CA
Report To:	Ron Scheele 1710 Franklin Street Suite 200 Oakland, CA 94612

Entire Report Reviewed By:

Brian Ford

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

SS-2PP L919988-01 Air

Collected by: Erik Levang | Collected date/time: 06/30/17 10:37 | Received date/time: 07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG996244	2	07/07/17 09:59	07/07/17 09:59	MBF

SS-3P L919988-02 Air

Collected by: Erik Levang | Collected date/time: 06/30/17 11:28 | Received date/time: 07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG996244	2	07/07/17 10:48	07/07/17 10:48	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG996923	25	07/08/17 21:54	07/08/17 21:54	MBF

SS-4P L919988-03 Air

Collected by: Erik Levang | Collected date/time: 06/30/17 11:42 | Received date/time: 07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG996244	2	07/07/17 11:37	07/07/17 11:37	MBF

SS-6P L919988-04 Air

Collected by: Erik Levang | Collected date/time: 06/30/17 12:03 | Received date/time: 07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG996244	2	07/07/17 12:25	07/07/17 12:25	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG996923	25	07/08/17 22:42	07/08/17 22:42	MBF

SS-16P L919988-05 Air

Collected by: Erik Levang | Collected date/time: 06/29/17 09:57 | Received date/time: 07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG996244	2	07/07/17 13:14	07/07/17 13:14	MBF

SS-17P L919988-06 Air

Collected by: Erik Levang | Collected date/time: 06/29/17 10:10 | Received date/time: 07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG996244	2	07/07/17 14:04	07/07/17 14:04	MBF

SS-20P L919988-07 Air

Collected by: Erik Levang | Collected date/time: 06/29/17 12:04 | Received date/time: 07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG996244	2	07/07/17 14:53	07/07/17 14:53	MBF

SS-21P L919988-08 Air

Collected by: Erik Levang | Collected date/time: 06/29/17 11:44 | Received date/time: 07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG996244	2	07/07/17 15:43	07/07/17 15:43	MBF

SHROUD L919988-09 Air

Collected by	Collected date/time	Received date/time
Erik Levang	06/30/17 12:06	07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG996244	2	07/07/17 16:30	07/07/17 16:30	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG997119	2000	07/09/17 11:21	07/09/17 11:21	MBF

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	4.75	11.3		2	WG996244
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG996244
Benzene	71-43-2	78.10	0.400	1.28	5.65	18.0		2	WG996244
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG996244
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG996244
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG996244
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG996244
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG996244
Carbon disulfide	75-15-0	76.10	0.400	1.24	0.482	1.50		2	WG996244
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG996244
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG996244
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG996244
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG996244
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG996244
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG996244
Cyclohexane	110-82-7	84.20	0.400	1.38	0.955	3.29		2	WG996244
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG996244
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG996244
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG996244
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG996244
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG996244
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG996244
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG996244
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG996244
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG996244
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG996244
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG996244
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG996244
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG996244
1,4-Dioxane	123-91-1	88.10	0.400	1.44	0.557	2.01		2	WG996244
Ethanol	64-17-5	46.10	1.26	2.38	4.55	8.57		2	WG996244
Ethylbenzene	100-41-4	106	0.400	1.73	0.549	2.38		2	WG996244
4-Ethyltoluene	622-96-8	120	0.400	1.96	0.492	2.41		2	WG996244
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	0.496	2.79		2	WG996244
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.420	2.08		2	WG996244
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG996244
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG996244
Heptane	142-82-5	100	0.400	1.64	0.911	3.73		2	WG996244
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG996244
n-Hexane	110-54-3	86.20	0.400	1.41	3.85	13.6		2	WG996244
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG996244
Methylene Chloride	75-09-2	84.90	0.400	1.39	0.484	1.68	B	2	WG996244
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG996244
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG996244
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG996244
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG996244
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG996244
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG996244
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG996244
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG996244
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG996244
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG996244
Tetrachloroethylene	127-18-4	166	0.400	2.72	2.36	16.0		2	WG996244
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG996244
Toluene	108-88-3	92.10	0.400	1.51	4.72	17.8		2	WG996244
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG996244

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	0.945	5.14		2	WG996244
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG996244
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG996244
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	0.551	2.71		2	WG996244
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG996244
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	1.76	8.20		2	WG996244
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG996244
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG996244
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG996244
m&p-Xylene	1330-20-7	106	0.800	3.47	1.45	6.29		2	WG996244
o-Xylene	95-47-6	106	0.400	1.73	0.637	2.76		2	WG996244
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*97.6*				WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	15.9	37.8		2	WG996244
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG996244
Benzene	71-43-2	78.10	0.400	1.28	2.24	7.14		2	WG996244
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG996244
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG996244
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG996244
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG996244
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG996244
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG996244
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG996244
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG996244
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG996244
Chloroform	67-66-3	119	0.400	1.95	1.14	5.55		2	WG996244
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG996244
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG996244
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG996244
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG996244
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG996244
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG996244
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG996244
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG996244
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG996244
1,1-Dichloroethane	75-34-3	98	0.400	1.60	2.94	11.8		2	WG996244
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	48.3	191		2	WG996244
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG996244
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG996244
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG996244
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG996244
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG996244
1,4-Dioxane	123-91-1	88.10	0.400	1.44	0.656	2.36		2	WG996244
Ethanol	64-17-5	46.10	1.26	2.38	13.0	24.4		2	WG996244
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG996244
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG996244
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG996244
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG996244
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	0.562	4.31		2	WG996244
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG996244
Heptane	142-82-5	100	0.400	1.64	0.426	1.74		2	WG996244
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG996244
n-Hexane	110-54-3	86.20	0.400	1.41	1.40	4.93		2	WG996244
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG996244
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG996244
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG996244
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG996244
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG996244
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG996244
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG996244
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG996244
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG996244
Propene	115-07-1	42.10	0.800	1.38	1.27	2.18		2	WG996244
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG996244
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG996244
Tetrachloroethylene	127-18-4	166	0.400	2.72	2.89	19.6		2	WG996244
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG996244
Toluene	108-88-3	92.10	0.400	1.51	2.06	7.76		2	WG996244
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	5.00	27.2	167	910		25	WG996923
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG996244
Trichloroethylene	79-01-6	131	0.400	2.14	20.0	107		2	WG996244
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG996244
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG996244
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	0.612	2.86		2	WG996244
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG996244
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG996244
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG996244
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG996244
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG996244
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*100*				WG996244
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*105*				WG996923

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	7.14	17.0		2	WG996244
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG996244
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG996244
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG996244
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG996244
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG996244
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG996244
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG996244
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG996244
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG996244
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG996244
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG996244
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG996244
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG996244
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG996244
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG996244
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG996244
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG996244
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG996244
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG996244
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG996244
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG996244
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG996244
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	0.473	1.87		2	WG996244
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG996244
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG996244
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG996244
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG996244
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG996244
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG996244
Ethanol	64-17-5	46.10	1.26	2.38	4.08	7.69		2	WG996244
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG996244
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG996244
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG996244
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG996244
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG996244
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG996244
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG996244
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG996244
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG996244
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG996244
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG996244
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG996244
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG996244
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG996244
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG996244
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG996244
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG996244
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG996244
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG996244
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG996244
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG996244
Tetrachloroethylene	127-18-4	166	0.400	2.72	2.56	17.4		2	WG996244
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG996244
Toluene	108-88-3	92.10	0.400	1.51	ND	ND		2	WG996244
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	7.32	39.8		2	WG996244
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG996244
Trichloroethylene	79-01-6	131	0.400	2.14	1.20	6.44		2	WG996244
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG996244
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG996244
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG996244
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG996244
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG996244
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG996244
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG996244
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG996244
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*97.2*				WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	16.5	39.2		2	WG996244
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG996244
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG996244
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG996244
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG996244
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG996244
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG996244
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG996244
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG996244
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG996244
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG996244
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG996244
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG996244
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG996244
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG996244
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG996244
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG996244
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG996244
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG996244
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG996244
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG996244
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG996244
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG996244
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG996244
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG996244
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG996244
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG996244
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG996244
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG996244
1,4-Dioxane	123-91-1	88.10	0.400	1.44	1.14	4.11		2	WG996244
Ethanol	64-17-5	46.10	1.26	2.38	3.49	6.58		2	WG996244
Ethylbenzene	100-41-4	106	0.400	1.73	4.27	18.5		2	WG996244
4-Ethyltoluene	622-96-8	120	0.400	1.96	91.3	448		2	WG996244
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG996244
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.421	2.08		2	WG996244
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG996244
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG996244
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG996244
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG996244
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG996244
Isopropylbenzene	98-82-8	120.20	0.400	1.97	1.87	9.19		2	WG996244
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG996244
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG996244
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG996244
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG996244
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG996244
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG996244
Naphthalene	91-20-3	128	1.26	6.60	77.9	408		2	WG996244
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG996244
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG996244
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG996244
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG996244
Tetrachloroethylene	127-18-4	166	0.400	2.72	4.15	28.2		2	WG996244
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG996244
Toluene	108-88-3	92.10	0.400	1.51	0.631	2.38		2	WG996244
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	97.9	532		2	WG996244
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG996244
Trichloroethylene	79-01-6	131	0.400	2.14	0.539	2.89		2	WG996244
1,2,4-Trimethylbenzene	95-63-6	120	5.00	24.5	180	882		25	WG996923
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	39.0	191		2	WG996244
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG996244
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG996244
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG996244
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG996244
m&p-Xylene	1330-20-7	106	0.800	3.47	23.6	102		2	WG996244
o-Xylene	95-47-6	106	0.400	1.73	16.9	73.2		2	WG996244
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*108*				WG996923
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*113*				WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	3.88	9.21		2	WG996244
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG996244
Benzene	71-43-2	78.10	0.400	1.28	1.55	4.94		2	WG996244
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG996244
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG996244
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG996244
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG996244
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG996244
Carbon disulfide	75-15-0	76.10	0.400	1.24	0.439	1.37		2	WG996244
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG996244
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG996244
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG996244
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG996244
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG996244
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG996244
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG996244
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG996244
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG996244
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG996244
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG996244
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG996244
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG996244
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG996244
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG996244
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG996244
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG996244
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG996244
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG996244
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG996244
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG996244
Ethanol	64-17-5	46.10	1.26	2.38	6.44	12.1		2	WG996244
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG996244
4-Ethyltoluene	622-96-8	120	0.400	1.96	0.646	3.17		2	WG996244
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	1.44	8.11		2	WG996244
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.486	2.41		2	WG996244
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG996244
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG996244
Heptane	142-82-5	100	0.400	1.64	0.481	1.97		2	WG996244
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG996244
n-Hexane	110-54-3	86.20	0.400	1.41	1.06	3.75		2	WG996244
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG996244
Methylene Chloride	75-09-2	84.90	0.400	1.39	0.539	1.87	B	2	WG996244
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG996244
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG996244
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG996244
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG996244
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG996244
Naphthalene	91-20-3	128	1.26	6.60	5.30	27.7	B	2	WG996244
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG996244
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG996244
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG996244
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG996244
Tetrachloroethylene	127-18-4	166	0.400	2.72	0.508	3.45		2	WG996244
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG996244
Toluene	108-88-3	92.10	0.400	1.51	1.78	6.70		2	WG996244
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	0.548	2.98		2	WG996244
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG996244
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG996244
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	3.74	18.3		2	WG996244
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	0.876	4.30		2	WG996244
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	0.558	2.61		2	WG996244
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG996244
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG996244
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG996244
m&p-Xylene	1330-20-7	106	0.800	3.47	1.06	4.57		2	WG996244
o-Xylene	95-47-6	106	0.400	1.73	0.581	2.52		2	WG996244
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.1*				WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	4.25	10.1		2	WG996244
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG996244
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG996244
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG996244
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG996244
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG996244
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG996244
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG996244
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG996244
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG996244
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG996244
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG996244
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG996244
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG996244
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG996244
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG996244
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG996244
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG996244
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG996244
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG996244
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG996244
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG996244
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG996244
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG996244
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG996244
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG996244
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG996244
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG996244
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG996244
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG996244
Ethanol	64-17-5	46.10	1.26	2.38	4.98	9.39		2	WG996244
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG996244
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG996244
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	0.701	3.94		2	WG996244
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	1.00	4.95		2	WG996244
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG996244
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG996244
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG996244
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG996244
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG996244
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG996244
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG996244
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG996244
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG996244
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG996244
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG996244
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG996244
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG996244
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG996244
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG996244
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG996244
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG996244
Tetrachloroethylene	127-18-4	166	0.400	2.72	1.41	9.58		2	WG996244
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG996244
Toluene	108-88-3	92.10	0.400	1.51	ND	ND		2	WG996244
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	0.411	2.24		2	WG996244
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG996244
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG996244
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG996244
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG996244
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG996244
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG996244
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG996244
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG996244
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG996244
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG996244
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*95.6*				WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	6.44	15.3		2	WG996244
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG996244
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG996244
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG996244
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG996244
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG996244
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG996244
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG996244
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG996244
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG996244
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG996244
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG996244
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG996244
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG996244
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG996244
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG996244
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG996244
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG996244
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG996244
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG996244
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG996244
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG996244
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG996244
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG996244
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG996244
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG996244
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG996244
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG996244
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG996244
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG996244
Ethanol	64-17-5	46.10	1.26	2.38	7.69	14.5		2	WG996244
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG996244
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG996244
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	36.3	204		2	WG996244
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG996244
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG996244
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG996244
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG996244
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG996244
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG996244
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG996244
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG996244
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG996244
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG996244
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG996244
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG996244
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG996244
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG996244
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG996244
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG996244
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG996244
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG996244
Tetrachloroethylene	127-18-4	166	0.400	2.72	2.66	18.1		2	WG996244
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	0.449	1.32		2	WG996244
Toluene	108-88-3	92.10	0.400	1.51	ND	ND		2	WG996244
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	0.506	2.75		2	WG996244
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG996244
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG996244
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG996244
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG996244
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG996244
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG996244
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG996244
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG996244
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG996244
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG996244
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.4*				WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	12.8	30.4		2	WG996244
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG996244
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG996244
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG996244
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG996244
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG996244
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG996244
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG996244
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG996244
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG996244
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG996244
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG996244
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG996244
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG996244
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG996244
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG996244
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG996244
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG996244
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG996244
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG996244
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG996244
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG996244
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG996244
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG996244
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG996244
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG996244
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG996244
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG996244
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG996244
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG996244
Ethanol	64-17-5	46.10	1.26	2.38	9.47	17.9		2	WG996244
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG996244
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG996244
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	0.447	2.51		2	WG996244
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.448	2.22		2	WG996244
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG996244
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG996244
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG996244
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG996244
n-Hexane	110-54-3	86.20	0.400	1.41	0.500	1.76		2	WG996244
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG996244
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG996244
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG996244
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG996244
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG996244
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG996244
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG996244
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG996244
2-Propanol	67-63-0	60.10	2.50	6.15	14.1	34.6		2	WG996244
Propene	115-07-1	42.10	0.800	1.38	0.901	1.55		2	WG996244
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG996244
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG996244
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG996244
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	0.446	1.32		2	WG996244
Toluene	108-88-3	92.10	0.400	1.51	2.85	10.7		2	WG996244
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG996244
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG996244
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG996244
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	0.441	2.16		2	WG996244
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG996244
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG996244
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG996244
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG996244
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG996244
m&p-Xylene	1330-20-7	106	0.800	3.47	0.903	3.91		2	WG996244
o-Xylene	95-47-6	106	0.400	1.73	0.455	1.97		2	WG996244
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.5*				WG996244

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	22.9	54.4		2	WG996244
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG996244
Benzene	71-43-2	78.10	0.400	1.28	6.55	20.9		2	WG996244
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG996244
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG996244
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG996244
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG996244
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG996244
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG996244
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG996244
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG996244
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG996244
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG996244
Chloromethane	74-87-3	50.50	0.400	0.826	0.964	1.99		2	WG996244
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG996244
Cyclohexane	110-82-7	84.20	0.400	1.38	0.995	3.43		2	WG996244
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG996244
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG996244
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG996244
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG996244
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG996244
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG996244
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG996244
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG996244
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG996244
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG996244
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG996244
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG996244
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG996244
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG996244
Ethanol	64-17-5	46.10	1.26	2.38	6.86	12.9		2	WG996244
Ethylbenzene	100-41-4	106	0.400	1.73	0.988	4.28		2	WG996244
4-Ethyltoluene	622-96-8	120	0.400	1.96	0.412	2.02		2	WG996244
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	0.579	3.25		2	WG996244
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.675	3.34		2	WG996244
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	0.401	3.07		2	WG996244
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG996244
Heptane	142-82-5	100	0.400	1.64	1.38	5.66		2	WG996244
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG996244
n-Hexane	110-54-3	86.20	0.400	1.41	4.10	14.5		2	WG996244
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG996244
Methylene Chloride	75-09-2	84.90	0.400	1.39	2.44	8.49		2	WG996244
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG996244
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG996244
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG996244
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG996244
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG996244
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG996244
2-Propanol	67-63-0	60.10	2500	6150	38500	94700		2000	WG997119
Propene	115-07-1	42.10	0.800	1.38	1.04	1.78		2	WG996244
Styrene	100-42-5	104	0.400	1.70	0.792	3.37		2	WG996244
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG996244
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG996244
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	0.957	2.82		2	WG996244
Toluene	108-88-3	92.10	0.400	1.51	9.63	36.3		2	WG996244
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG996244

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG996244
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG996244
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG996244
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	0.665	3.26		2	WG996244
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG996244
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	1.99	9.30		2	WG996244
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG996244
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG996244
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG996244
m&p-Xylene	1330-20-7	106	0.800	3.47	2.65	11.5		2	WG996244
o-Xylene	95-47-6	106	0.400	1.73	1.06	4.58		2	WG996244
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*92.8*				WG997119
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.9*				WG996244

Method Blank (MB)

(MB) R3231789-3 07/07/17 08:20

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	0.128	J	0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

Method Blank (MB)

(MB) R3231789-3 07/07/17 08:20

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	0.0882	J	0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	0.412	J	0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	*89.0*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3231789-1 07/07/17 02:49 • (LCSD) R3231789-2 07/07/17 07:31

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.54	3.49	94.5	93.0	52.0-158			1.57	25
Propene	3.75	3.84	3.81	102	102	54.0-155			0.730	25
Dichlorodifluoromethane	3.75	3.97	4.15	106	111	69.0-143			4.57	25
1,2-Dichlorotetrafluoroethane	3.75	3.97	4.09	106	109	70.0-130			3.08	25
Chloromethane	3.75	3.86	3.89	103	104	70.0-130			0.850	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3231789-1 07/07/17 02:49 • (LCSD) R3231789-2 07/07/17 07:31

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	3.97	4.03	106	107	70.0-130			1.48	25
1,3-Butadiene	3.75	3.88	3.89	103	104	70.0-130			0.230	25
Bromomethane	3.75	4.14	4.11	110	110	70.0-130			0.790	25
Chloroethane	3.75	4.08	4.05	109	108	70.0-130			0.740	25
Trichlorofluoromethane	3.75	3.97	3.98	106	106	70.0-130			0.170	25
1,1,2-Trichlorotrifluoroethane	3.75	3.96	3.95	106	105	70.0-130			0.120	25
1,1-Dichloroethene	3.75	3.86	3.87	103	103	70.0-130			0.200	25
1,1-Dichloroethane	3.75	3.88	3.88	103	104	70.0-130			0.180	25
Acetone	3.75	3.91	3.86	104	103	70.0-130			1.28	25
2-Propanol	3.75	3.89	3.86	104	103	66.0-150			0.740	25
Carbon disulfide	3.75	3.96	3.97	105	106	70.0-130			0.430	25
Methylene Chloride	3.75	3.58	3.55	95.3	94.7	70.0-130			0.690	25
MTBE	3.75	3.85	3.84	103	102	70.0-130			0.380	25
trans-1,2-Dichloroethene	3.75	3.97	3.92	106	105	70.0-130			1.26	25
n-Hexane	3.75	3.94	3.88	105	103	70.0-130			1.57	25
Vinyl acetate	3.75	4.02	3.91	107	104	70.0-130			2.75	25
Methyl Ethyl Ketone	3.75	3.94	3.86	105	103	70.0-130			1.83	25
cis-1,2-Dichloroethene	3.75	4.01	3.98	107	106	70.0-130			0.830	25
Chloroform	3.75	3.85	3.85	103	103	70.0-130			0.0800	25
Cyclohexane	3.75	3.88	3.90	103	104	70.0-130			0.620	25
1,1,1-Trichloroethane	3.75	3.83	3.84	102	102	70.0-130			0.200	25
Carbon tetrachloride	3.75	3.89	3.89	104	104	70.0-130			0.0100	25
Benzene	3.75	3.87	3.89	103	104	70.0-130			0.330	25
1,2-Dichloroethane	3.75	3.88	3.82	104	102	70.0-130			1.65	25
Heptane	3.75	3.87	3.80	103	101	70.0-130			1.84	25
Trichloroethylene	3.75	3.87	3.84	103	102	70.0-130			0.850	25
1,2-Dichloropropane	3.75	3.90	3.91	104	104	70.0-130			0.0900	25
1,4-Dioxane	3.75	3.72	3.83	99.2	102	70.0-152			2.75	25
Bromodichloromethane	3.75	3.91	3.87	104	103	70.0-130			0.850	25
cis-1,3-Dichloropropene	3.75	3.97	3.96	106	106	70.0-130			0.100	25
4-Methyl-2-pentanone (MIBK)	3.75	3.99	3.92	106	105	70.0-142			1.77	25
Toluene	3.75	3.98	4.04	106	108	70.0-130			1.47	25
trans-1,3-Dichloropropene	3.75	3.90	3.90	104	104	70.0-130			0.0400	25
1,1,2-Trichloroethane	3.75	3.92	3.98	105	106	70.0-130			1.59	25
Tetrachloroethylene	3.75	3.88	3.93	104	105	70.0-130			1.31	25
Methyl Butyl Ketone	3.75	3.95	3.78	105	101	70.0-150			4.37	25
Dibromochloromethane	3.75	3.94	4.05	105	108	70.0-130			2.67	25
1,2-Dibromoethane	3.75	3.90	4.01	104	107	70.0-130			2.74	25
Chlorobenzene	3.75	3.89	3.97	104	106	70.0-130			2.08	25
Ethylbenzene	3.75	3.89	3.86	104	103	70.0-130			0.740	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3231789-1 07/07/17 02:49 • (LCSD) R3231789-2 07/07/17 07:31

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
m&p-Xylene	7.50	7.52	7.46	100	99.5	70.0-130			0.700	25
o-Xylene	3.75	3.74	3.78	99.8	101	70.0-130			0.910	25
Styrene	3.75	3.89	3.94	104	105	70.0-130			1.21	25
Bromoform	3.75	3.93	4.02	105	107	70.0-130			2.27	25
1,1,2,2-Tetrachloroethane	3.75	3.59	3.64	95.7	97.0	70.0-130			1.32	25
4-Ethyltoluene	3.75	3.49	3.57	93.0	95.1	70.0-130			2.21	25
1,3,5-Trimethylbenzene	3.75	3.48	3.55	92.9	94.7	70.0-130			1.95	25
1,2,4-Trimethylbenzene	3.75	3.47	3.54	92.6	94.4	70.0-130			1.96	25
1,3-Dichlorobenzene	3.75	3.36	3.47	89.5	92.5	70.0-130			3.23	25
1,4-Dichlorobenzene	3.75	3.26	3.43	86.8	91.6	70.0-130			5.33	25
Benzyl Chloride	3.75	3.41	3.40	90.8	90.8	70.0-144			0.0600	25
1,2-Dichlorobenzene	3.75	3.21	3.34	85.7	89.1	70.0-130			3.88	25
1,2,4-Trichlorobenzene	3.75	3.61	3.85	96.2	103	70.0-155			6.55	25
Hexachloro-1,3-butadiene	3.75	3.38	3.46	90.2	92.3	70.0-145			2.31	25
Naphthalene	3.75	3.69	3.88	98.5	104	70.0-155			5.02	25
Allyl Chloride	3.75	3.91	3.85	104	103	70.0-130			1.59	25
2-Chlorotoluene	3.75	3.57	3.64	95.2	97.1	70.0-130			1.94	25
Methyl Methacrylate	3.75	3.92	3.91	105	104	70.0-130			0.390	25
Tetrahydrofuran	3.75	3.78	3.68	101	98.0	70.0-140			2.74	25
2,2,4-Trimethylpentane	3.75	3.98	3.92	106	105	70.0-130			1.37	25
Vinyl Bromide	3.75	4.12	4.14	110	111	70.0-130			0.680	25
Isopropylbenzene	3.75	3.63	3.68	96.7	98.1	70.0-130			1.40	25
(S) 1,4-Bromofluorobenzene				*94.7*	*97.4*	*60.0-140*				

Method Blank (MB)

(MB) R3231829-3 07/08/17 21:07

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
1,1,1-Trichloroethane	U		0.0665	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
(S) 1,4-Bromofluorobenzene	*84.4*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3231829-1 07/08/17 19:30 • (LCSD) R3231829-2 07/08/17 20:18

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,1,1-Trichloroethane	3.75	3.69	3.71	98.5	99.0	70.0-130			0.570	25
1,2,4-Trimethylbenzene	3.75	3.27	3.35	87.3	89.2	70.0-130			2.23	25
(S) 1,4-Bromofluorobenzene				*89.7*	*92.8*	*60.0-140*				

Method Blank (MB)

(MB) R3231957-3 07/09/17 09:01

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
2-Propanol	U		0.0882	1.25
(S) 1,4-Bromofluorobenzene	*93.2*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3231957-1 07/09/17 07:33 • (LCSD) R3231957-2 07/09/17 08:16

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2-Propanol	3.75	3.91	3.87	104	103	66.0-150			1.07	25
(S) 1,4-Bromofluorobenzene				*93.4*	*95.0*	*60.0-140*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

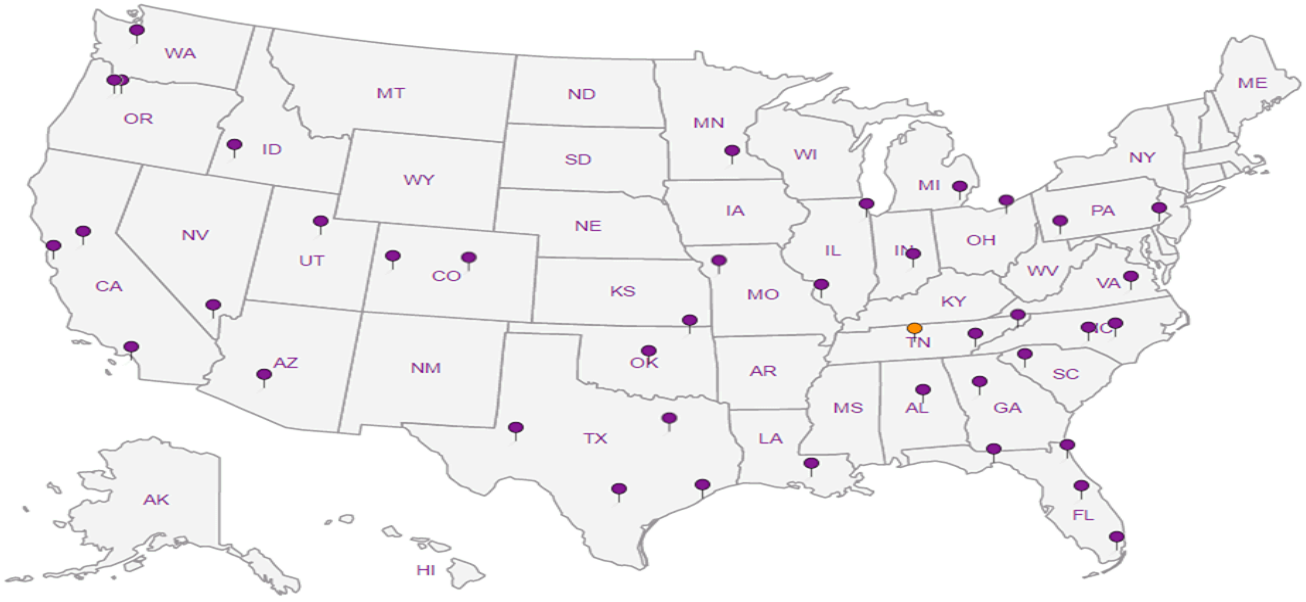
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
Pangea Environmental
1710 Franklin St, Suite #200
Oakland, CA 94612

Billing Information:
← same

Report to: Ron Scheele

Email To: rscheele@pangeaenv.com

Project Description: 8410 Amelia St

City/State Collected: Oakland, CA

Phone: 510-459-6012
Fax:

Client Project # 2005.001, Task 230

Lab Project #

Collected by (print): Erik Levang

Site/Facility ID #

P.O. #

Collected by (signature): E. Levang

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No ✓Yes
FAX? ___No ___Yes

Canister Pressure/Vacuum

Analysis: TO-15 (full list) + toluene/xylenes

Chain of Custody Page 1 of 1

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L999988

M226

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Sample Description	Can #	Date	Time	Initial	Final	Rem./Contaminant	Sample # (lab only)
SS-2P	subslab sample - soil gas	5339	6/30/17	10:37	29.0	5		-01
SS-3P	subslab sample - " "	5194	6/30/17	11:28	28.5	5		-02
SS-4P	subslab sample - " "	5478	6/30/17	11:42	30	5		-03
SS-6P	subslab sample - " "	7911	6/30/17	12:03	28.5	5		-04
SS-16P	subslab sample - " "	5797	6/29/17	09:57	28	5		-05
SS-17P	subslab sample - " "	5719	6/29/17	10:10	29	5		-06
SS-20P	subslab sample - " "	6182	6/29/17	1204	30	5		-07
SS-21P	subslab sample - " "	5677	6/29/17	11:44	30	5		-08
Shroud	subslab sample - " "	7281	6/30/17	12:06	30	3		-09

Remarks:

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ____	Condition: (lab use only)
Ken Scheele	6/30/17	16:30	MICHAEL WOODY JR		OK
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.3 °C Bottles Received: 9	COC Seal Intact: ___Y ___N ___NA
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7-1-17 Time: 0845	pH Checked: NCF:

ESC LAB SCIENCES
Cooler Receipt Form

Client: PANENVOCA		SDG#	L919988
Cooler Received/Opened On: 7/1/17	Temperature:	AM 3	
Received By: M Lowe			
Signature:			

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

ANALYTICAL REPORT

October 02, 2017

Pangea Environmental Serv - Oakland, CA

Sample Delivery Group:	L920122
Samples Received:	07/01/2017
Project Number:	2005.001, TASK 230
Description:	8410 Amelia St
Site:	OAKLAND, CA
Report To:	Ron Scheele 1710 Franklin Street Suite 200 Oakland, CA 94612

Entire Report Reviewed By:

Brian Ford

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

IA-4 L920122-01 Air

			Collected by	Collected date/time	Received date/time
			Erik Levang	06/30/17 08:35	07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG995986	1	07/06/17 08:29	07/06/17 08:29	GLN
Volatile Organic Compounds (MS) by Method TO-15	WG997227	1	07/10/17 17:01	07/10/17 17:01	AMC

CS-1 L920122-02 Air

			Collected by	Collected date/time	Received date/time
			Erik Levang	06/30/17 08:55	07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG995986	1	07/06/17 09:34	07/06/17 09:34	GLN
Volatile Organic Compounds (MS) by Method TO-15	WG997227	1	07/10/17 18:13	07/10/17 18:13	AMC

AA-2 L920122-03 Air

			Collected by	Collected date/time	Received date/time
			Erik Levang	06/30/17 08:35	07/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG997227	1	07/10/17 18:56	07/10/17 18:56	MBF

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

Project Narrative

Toluene, xylene; TO-15: Summa canisters were certified as clean for the TO-15SIM list of analytes only which does not include 12-dichlorobenzene, toluene, or xylenes.

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.0926	0.296		1	WG997227
Carbon tetrachloride	56-23-5	154	0.0200	0.126	0.0710	0.447		1	WG997227
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	ND	ND		1	WG997227
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG997227
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG997227
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG997227
Ethylbenzene	100-41-4	106	0.0300	0.130	0.0703	0.305		1	WG997227
Tetrachloroethylene	127-18-4	166	0.0200	0.136	ND	ND		1	WG997227
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	ND	ND		1	WG997227
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG997227
Toluene	108-88-3	92.10	0.200	0.753	0.422	1.59		1	WG995986
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG997227
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG995986
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG995986
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG997227
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*101*				WG995986

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.135	0.431		1	WG997227
Carbon tetrachloride	56-23-5	154	0.0200	0.126	0.0553	0.348		1	WG997227
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	ND	ND		1	WG997227
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG997227
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG997227
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG997227
Ethylbenzene	100-41-4	106	0.0300	0.130	0.337	1.46		1	WG997227
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0215	0.146		1	WG997227
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	ND	ND		1	WG997227
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG997227
Toluene	108-88-3	92.10	0.200	0.753	4.68	17.6		1	WG995986
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG997227
m&p-Xylene	1330-20-7	106	0.400	1.73	3.05	13.2		1	WG995986
o-Xylene	95-47-6	106	0.200	0.867	1.18	5.12		1	WG995986
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG997227
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.3*				WG995986

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.187	0.597		1	WG997227
Carbon tetrachloride	56-23-5	154	0.0200	0.126	0.0664	0.418		1	WG997227
Chloroethane	75-00-3	64.50	0.0400	0.106	ND	ND		1	WG997227
Chloroform	67-66-3	119	0.0200	0.0973	ND	ND		1	WG997227
Chloromethane	74-87-3	50.50	0.0300	0.0620	0.507	1.05		1	WG997227
1,2-Dibromoethane	106-93-4	188	0.0200	0.154	ND	ND		1	WG997227
1,4-Dichlorobenzene	106-46-7	147	0.0200	0.120	ND	ND		1	WG997227
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	ND	ND		1	WG997227
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG997227
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG997227
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG997227
1,2-Dichloropropane	78-87-5	113	0.0300	0.139	ND	ND		1	WG997227
cis-1,3-Dichloropropene	10061-01-5	111	0.0200	0.0908	ND	ND		1	WG997227
trans-1,3-Dichloropropene	10061-02-6	111	0.0300	0.136	ND	ND		1	WG997227
Ethylbenzene	100-41-4	106	0.0300	0.130	0.612	2.65		1	WG997227
1,1,2,2-Tetrachloroethane	79-34-5	168	0.0200	0.137	ND	ND		1	WG997227
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0346	0.235		1	WG997227
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	ND	ND		1	WG997227
1,1,2-Trichloroethane	79-00-5	133	0.0300	0.163	ND	ND		1	WG997227
Trichloroethylene	79-01-6	131	0.0200	0.107	0.0312	0.167		1	WG997227
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG997227
Vinyl acetate	108-05-4	86.10	0.0200	0.0704	0.266	0.935		1	WG997227
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*106*				WG997227

Method Blank (MB)

(MB) R3231540-3 07/06/17 02:15

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Toluene	U		0.0499	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
(S) 1,4-Bromofluorobenzene	*96.8*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3231540-1 07/06/17 00:46 • (LCSD) R3231540-2 07/06/17 01:30

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Toluene	3.75	3.91	3.98	104	106	70.0-130			1.80	25
m&p-Xylene	7.50	8.03	7.91	107	106	70.0-130			1.52	25
o-Xylene	3.75	3.90	3.92	104	105	70.0-130			0.530	25
(S) 1,4-Bromofluorobenzene				*98.8*	*97.7*	*60.0-140*				

Method Blank (MB)

(MB) R3232242-3 07/10/17 09:31

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.00541	0.0200
Carbon tetrachloride	U		0.00575	0.0200
Chloroethane	U		0.0159	0.0400
Chloroform	U		0.00464	0.0200
Chloromethane	U		0.00972	0.0300
1,2-Dibromoethane	U		0.0185	0.0200
1,4-Dichlorobenzene	U		0.00691	0.0200
1,1-Dichloroethane	U		0.00505	0.0200
1,1-Dichloroethene	U		0.00521	0.0200
cis-1,2-Dichloroethene	U		0.00770	0.0200
trans-1,2-Dichloroethene	U		0.00499	0.0200
1,2-Dichloropropane	U		0.00840	0.0300
cis-1,3-Dichloropropene	U		0.00556	0.0200
trans-1,3-Dichloropropene	U		0.00853	0.0300
Ethylbenzene	U		0.00904	0.0300
1,1,2,2-Tetrachloroethane	U		0.00481	0.0200
Tetrachloroethylene	U		0.00457	0.0200
1,1,1-Trichloroethane	U		0.00552	0.0200
1,1,2-Trichloroethane	U		0.0287	0.0300
Trichloroethylene	U		0.00736	0.0200
Vinyl chloride	U		0.00765	0.0200
Vinyl acetate	U		0.00430	0.0200
(S) 1,4-Bromofluorobenzene	*98.7*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3232242-1 07/10/17 08:08 • (LCSD) R3232242-2 07/10/17 08:50

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.500	0.495	0.492	99.1	98.5	70.0-130			0.610	25
Carbon tetrachloride	0.500	0.478	0.477	95.6	95.4	70.0-130			0.230	25
Chloroethane	0.500	0.634	0.566	127	113	70.0-130			11.2	25
Chloroform	0.500	0.482	0.483	96.5	96.6	70.0-130			0.0800	25
Chloromethane	0.500	0.496	0.489	99.1	97.8	70.0-130			1.29	25
1,2-Dibromoethane	0.500	0.473	0.477	94.6	95.4	70.0-130			0.830	25
1,4-Dichlorobenzene	0.500	0.485	0.495	97.1	99.0	70.0-130			1.91	25
1,1-Dichloroethane	0.500	0.489	0.486	97.9	97.3	70.0-130			0.620	25
1,1-Dichloroethene	0.500	0.497	0.496	99.3	99.3	70.0-130			0.0600	25
cis-1,2-Dichloroethene	0.500	0.486	0.485	97.2	97.0	70.0-130			0.220	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3232242-1 07/10/17 08:08 • (LCSD) R3232242-2 07/10/17 08:50

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
trans-1,2-Dichloroethene	0.500	0.490	0.488	98.0	97.7	70.0-130			0.340	25
1,2-Dichloropropane	0.500	0.477	0.478	95.4	95.7	70.0-130			0.330	25
cis-1,3-Dichloropropene	0.500	0.471	0.473	94.2	94.5	70.0-130			0.380	25
trans-1,3-Dichloropropene	0.500	0.468	0.472	93.7	94.4	70.0-130			0.710	25
Ethylbenzene	0.500	0.484	0.475	96.7	94.9	70.0-130			1.84	25
1,1,2,2-Tetrachloroethane	0.500	0.482	0.482	96.4	96.3	70.0-130			0.100	25
Tetrachloroethylene	0.500	0.473	0.479	94.6	95.8	70.0-130			1.27	25
1,1,1-Trichloroethane	0.500	0.493	0.490	98.7	98.1	70.0-130			0.570	25
1,1,2-Trichloroethane	0.500	0.475	0.478	95.0	95.6	70.0-130			0.580	25
Trichloroethylene	0.500	0.479	0.479	95.8	95.8	70.0-130			0.0400	25
Vinyl chloride	0.500	0.527	0.513	105	103	70.0-130			2.79	25
Vinyl acetate	0.500	0.493	0.486	98.6	97.1	70.0-130			1.55	25
(S) 1,4-Bromofluorobenzene				*99.6*	*101*	*60.0-140*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

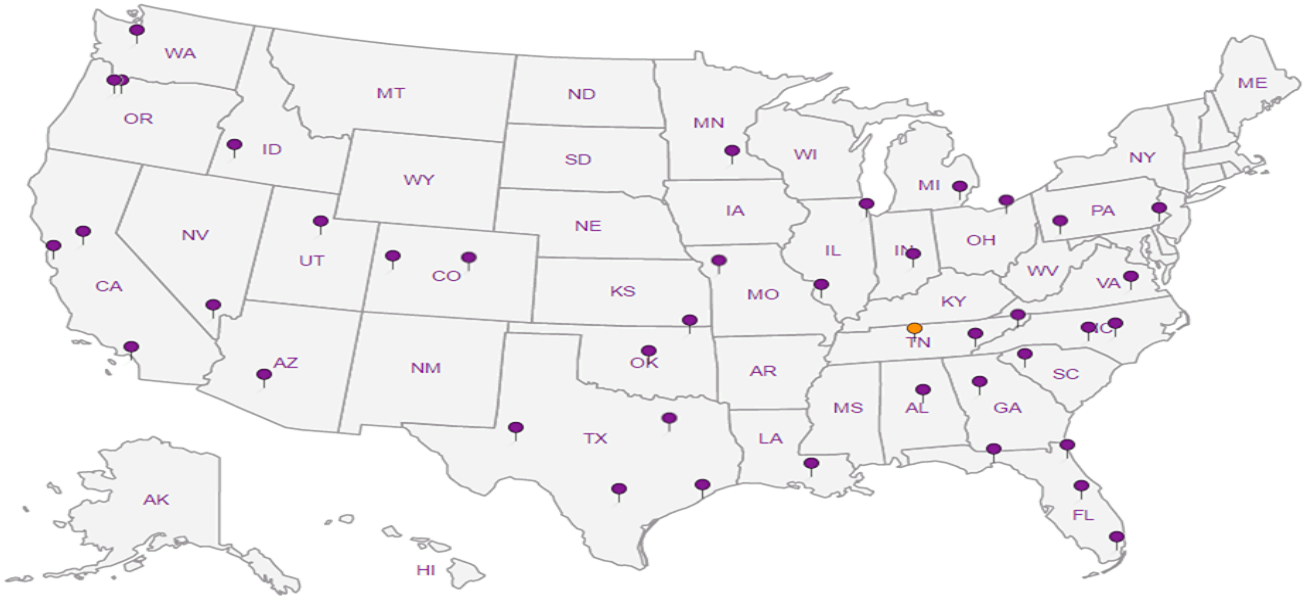
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
Pangea Environmental
1710 Franklin St, Suite 200
Oakland, CA 94612

Billing Information:
← Same

Report to: Ron Scheele

Email To: rscheele@pangeaenv.com

Project Description: 8410 Amelia St.

City/State Collected: Oakland, CA

Phone: 510-459-6012
Fax:

Client Project # 2005.001, Task 230

Lab Project #

Collected by (print): Erik Levang

Site/Facility ID #

P.O. #

Collected by (signature): E Levang

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? No Yes
FAX? ___No ___Yes

Canister Pressure/Vacuum

Sample ID	Sample Description	Can #	Date	Time	Initial	Final	TO15 (full list) SIM	TO15 SIM (PCE, TCE, cis-1,2-DCE, VC, 1,1-DCE, 1,1,1-TCA, BTEX)			Rem./Contaminant	Sample # (lab only)
IA-4	indoor air (bldg.D)	7936	6/30/17	0835	29	1.0		X				-01
CS-1	Crawl space air (bldg.C)	7685	6/30/17	0855	29	14.0		X				-02
AA-2	ambient air	7928	6/30/17	0835	28.5	0.5	X					-03

Analysis

Chain of Custody Page ___ of ___

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L920122
M223

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Remarks:

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Ron Scheele	6/30/17	16:30	MICHAEL WOODY
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ____

Temp: 4.3 °C Bottles Received: 3

Date: 7-1-17 Time: 0845

Condition: OK (lab use only)

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

ESC LAB SCIENCES
Cooler Receipt Form

Client: PANENOCA		SDG#	L920122
Cooler Received/Opened On: 7-1-17	Temperature:	AMB	
Received By: M. Lowe			
Signature:			

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	/		
COC Signed / Accurate?		-	
Bottles arrive intact?		/	
Correct bottles used?		/	
Sufficient volume sent?		/	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

ANALYTICAL REPORT

September 07, 2017

Pangea Environmental Serv - Oakland, CA

Sample Delivery Group:	L933234
Samples Received:	08/31/2017
Project Number:	2005.001, 235
Description:	8410 Amelia St
Site:	OAKLAND, CA
Report To:	Ron Scheele 1710 Franklin Street Suite 200 Oakland, CA 94612

Entire Report Reviewed By:

Brian Ford

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

SS-11P L933234-01 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/28/17 18:11	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016372	1	09/02/17 14:57	09/02/17 14:57	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1016540	25	09/03/17 12:17	09/03/17 12:17	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1017148	200	09/06/17 10:34	09/06/17 10:34	MBF

SS 12 L933234-02 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/29/17 11:40	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016372	1	09/02/17 15:48	09/02/17 15:48	MBF

SS 8 L933234-03 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/29/17 12:18	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016372	1	09/02/17 16:38	09/02/17 16:38	MBF

SS 2 L933234-04 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/29/17 12:48	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016372	1	09/02/17 17:28	09/02/17 17:28	MBF

SS 6 L933234-05 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/29/17 13:25	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016372	1	09/02/17 18:19	09/02/17 18:19	MBF

SS 11 L933234-06 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/29/17 14:51	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016372	1	09/02/17 19:10	09/02/17 19:10	MBF

SS 4 L933234-07 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/29/17 15:22	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016372	1	09/02/17 19:59	09/02/17 19:59	MBF

SHROUD L933234-08 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/29/17 15:23	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016372	1	09/02/17 20:48	09/02/17 20:48	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1017148	2000	09/06/17 11:16	09/06/17 11:16	MBF

SS 20 L933234-09 Air

Collected by: E. Lervaag | Collected date/time: 08/29/17 16:22 | Received date/time: 08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016372	800	09/02/17 21:28	09/02/17 21:28	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1016540	10000	09/03/17 13:40	09/03/17 13:40	MBF

SS-12P L933234-10 Air

Collected by: E. Lervaag | Collected date/time: 08/28/17 10:44 | Received date/time: 08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016372	1	09/02/17 22:15	09/02/17 22:15	MBF

SS-7P L933234-11 Air

Collected by: E. Lervaag | Collected date/time: 08/28/17 11:11 | Received date/time: 08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016372	1	09/02/17 23:04	09/02/17 23:04	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1016540	25	09/03/17 14:22	09/03/17 14:22	MBF

SS-9P L933234-12 Air

Collected by: E. Lervaag | Collected date/time: 08/28/17 11:50 | Received date/time: 08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016373	1	09/02/17 20:43	09/02/17 20:43	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1017148	200	09/06/17 11:58	09/06/17 11:58	MBF

SS-14P L933234-13 Air

Collected by: E. Lervaag | Collected date/time: 08/28/17 12:16 | Received date/time: 08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016373	1	09/02/17 21:35	09/02/17 21:35	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1016540	25	09/03/17 15:45	09/03/17 15:45	MBF

SS-15P L933234-14 Air

Collected by: E. Lervaag | Collected date/time: 08/28/17 14:04 | Received date/time: 08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016541	1	09/03/17 10:37	09/03/17 10:37	MBF

SS-8P L933234-15 Air

Collected by: E. Lervaag | Collected date/time: 08/28/17 15:37 | Received date/time: 08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016541	1	09/03/17 11:28	09/03/17 11:28	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1017148	10	09/06/17 12:39	09/06/17 12:39	MBF

SS-131P L933234-16 Air

Collected by: E. Lervaag | Collected date/time: 08/28/17 16:09 | Received date/time: 08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016541	1	09/03/17 12:16	09/03/17 12:16	MBF

SS 1 L933234-17 Air

Collected by: E. Lervaag | Collected date/time: 08/28/17 16:43 | Received date/time: 08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016541	1	09/03/17 13:11	09/03/17 13:11	MBF

SS 9 L933234-18 Air

Collected by: E. Lervaag | Collected date/time: 08/28/17 17:22 | Received date/time: 08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016541	1	09/03/17 14:00	09/03/17 14:00	MBF

SS 10 L933234-19 Air

Collected by: E. Lervaag | Collected date/time: 08/28/17 17:45 | Received date/time: 08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016541	1	09/03/17 14:47	09/03/17 14:47	MBF

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	7.55	17.9		1	WG1016372
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016372
Benzene	71-43-2	78.10	0.200	0.639	1.08	3.44		1	WG1016372
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016372
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016372
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016372
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016372
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016372
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.221	0.689		1	WG1016372
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016372
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016372
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016372
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016372
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1016372
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016372
Cyclohexane	110-82-7	84.20	0.200	0.689	2.23	7.67		1	WG1016372
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016372
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016372
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016372
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016372
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016372
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016372
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016372
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	1.56	6.20		1	WG1016372
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	19.5	77.3		1	WG1016372
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	19.6	77.5		1	WG1016372
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016372
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016372
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016372
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016372
Ethanol	64-17-5	46.10	0.630	1.19	13.0	24.5		1	WG1016372
Ethylbenzene	100-41-4	106	0.200	0.867	0.428	1.85		1	WG1016372
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.250	1.23		1	WG1016372
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.266	1.50		1	WG1016372
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	ND	ND		1	WG1016372
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016372
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016372
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016372
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016372
n-Hexane	110-54-3	86.20	0.200	0.705	1.13	3.98		1	WG1016372
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016372
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016372
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016372
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016372
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016372
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016372
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016372
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016372
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1016372
Propene	115-07-1	42.10	0.400	0.689	39.1	67.3		1	WG1016372
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016372
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016372
Tetrachloroethylene	127-18-4	166	0.200	1.36	1.19	8.06		1	WG1016372
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016372
Toluene	108-88-3	92.10	0.200	0.753	1.74	6.54		1	WG1016372
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016372
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016372
Trichloroethylene	79-01-6	131	5.00	26.8	706	3780		25	WG1016540
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.332	1.63		1	WG1016372
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016372
2,2,4-Trimethylpentane	540-84-1	114.22	5.00	23.4	279	1300		25	WG1016540
Vinyl chloride	75-01-4	62.50	40.0	102	896	2290		200	WG1017148
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016372
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016372
m&p-Xylene	1330-20-7	106	0.400	1.73	1.55	6.71		1	WG1016372
o-Xylene	95-47-6	106	0.200	0.867	0.471	2.04		1	WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1016540
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1017148
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*145*		J1		WG1016372

Sample Narrative:

L933234-01 WG1016372: Surrogate failure due to matrix interference.

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	14.1	33.6		1	WG1016372
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016372
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1016372
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016372
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016372
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016372
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016372
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016372
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1016372
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016372
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016372
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016372
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016372
Chloromethane	74-87-3	50.50	0.200	0.413	0.250	0.517		1	WG1016372
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016372
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1016372
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016372
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016372
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016372
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016372
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016372
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016372
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016372
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016372
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016372
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016372
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016372
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016372
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016372
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016372
Ethanol	64-17-5	46.10	0.630	1.19	21.0	39.5		1	WG1016372
Ethylbenzene	100-41-4	106	0.200	0.867	0.212	0.920		1	WG1016372
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016372
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.354	1.99		1	WG1016372
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	ND	ND		1	WG1016372
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016372
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016372
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016372
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016372
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016372
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016372
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016372
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016372
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016372
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016372
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016372
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016372
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016372
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1016372
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1016372
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016372
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016372
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.938	6.37		1	WG1016372
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016372
Toluene	108-88-3	92.10	0.200	0.753	0.732	2.76		1	WG1016372
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016372
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016372
Trichloroethylene	79-01-6	131	0.200	1.07	1.08	5.80		1	WG1016372
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016372
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016372
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.454	2.12		1	WG1016372
Vinyl chloride	75-01-4	62.50	0.200	0.511	1.84	4.71		1	WG1016372
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016372
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016372
m&p-Xylene	1330-20-7	106	0.400	1.73	0.702	3.04		1	WG1016372
o-Xylene	95-47-6	106	0.200	0.867	0.222	0.962		1	WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	10.1	23.9		1	WG1016372
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016372
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1016372
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016372
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016372
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016372
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016372
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016372
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1016372
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016372
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016372
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016372
Chloroform	67-66-3	119	0.200	0.973	0.445	2.16		1	WG1016372
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1016372
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016372
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1016372
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016372
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016372
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016372
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016372
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016372
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016372
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016372
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016372
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016372
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016372
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016372
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016372
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016372
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016372
Ethanol	64-17-5	46.10	0.630	1.19	12.4	23.3		1	WG1016372
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1016372
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016372
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.624	3.50		1	WG1016372
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.208	1.03		1	WG1016372
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016372
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016372
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016372
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016372
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016372
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016372
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016372
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016372
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016372
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016372
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016372
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016372
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016372
2-Propanol	67-63-0	60.10	1.25	3.07	2.79	6.86		1	WG1016372
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1016372
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016372
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016372
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1016372
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016372
Toluene	108-88-3	92.10	0.200	0.753	0.521	1.96		1	WG1016372
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016372
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016372
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1016372
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016372
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016372
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1016372
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016372
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016372
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016372
m&p-Xylene	1330-20-7	106	0.400	1.73	0.538	2.33		1	WG1016372
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*105*				WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	13.3	31.6		1	WG1016372
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016372
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1016372
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016372
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016372
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016372
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016372
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016372
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1016372
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016372
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016372
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016372
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016372
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1016372
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016372
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1016372
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016372
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016372
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016372
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016372
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016372
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016372
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016372
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016372
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016372
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016372
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016372
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016372
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016372
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016372
Ethanol	64-17-5	46.10	0.630	1.19	16.9	32.0		1	WG1016372
Ethylbenzene	100-41-4	106	0.200	0.867	1.25	5.42		1	WG1016372
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016372
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.266	1.49		1	WG1016372
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	ND	ND		1	WG1016372
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016372
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016372
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016372
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016372
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016372
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016372
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016372
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016372
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016372
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016372
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016372
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016372
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016372
2-Propanol	67-63-0	60.10	1.25	3.07	1.92	4.73		1	WG1016372
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1016372
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016372
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016372
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.233	1.58		1	WG1016372
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	0.268	0.790		1	WG1016372
Toluene	108-88-3	92.10	0.200	0.753	0.807	3.04		1	WG1016372
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016372
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016372
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1016372
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.381	1.87		1	WG1016372
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016372
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1016372
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016372
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016372
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016372
m&p-Xylene	1330-20-7	106	0.400	1.73	1.70	7.35		1	WG1016372
o-Xylene	95-47-6	106	0.200	0.867	0.616	2.67		1	WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*101*				WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	24.9	59.3		1	WG1016372
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016372
Benzene	71-43-2	78.10	0.200	0.639	0.238	0.760		1	WG1016372
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016372
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016372
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016372
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016372
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016372
Carbon disulfide	75-15-0	76.10	0.200	0.622	1.56	4.87		1	WG1016372
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016372
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016372
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016372
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016372
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1016372
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016372
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1016372
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016372
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016372
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016372
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016372
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016372
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016372
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016372
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016372
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016372
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016372
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016372
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016372
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016372
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016372
Ethanol	64-17-5	46.10	0.630	1.19	10.7	20.1		1	WG1016372
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1016372
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016372
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.520	2.92		1	WG1016372
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.259	1.28		1	WG1016372
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016372
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016372
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016372
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016372
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016372
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016372
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016372
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016372
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	2.01	5.94		1	WG1016372
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016372
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016372
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016372
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016372
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1016372
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1016372
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016372
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016372
Tetrachloroethylene	127-18-4	166	0.200	1.36	21.6	146		1	WG1016372
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	0.641	1.89		1	WG1016372
Toluene	108-88-3	92.10	0.200	0.753	0.435	1.64		1	WG1016372
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.559	3.04		1	WG1016372
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016372
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1016372
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016372
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016372
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1016372
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016372
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016372
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016372
m&p-Xylene	1330-20-7	106	0.400	1.73	0.524	2.27		1	WG1016372
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*103*				WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	12.7	30.1		1	WG1016372
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016372
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1016372
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016372
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016372
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016372
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016372
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016372
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1016372
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016372
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016372
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016372
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016372
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1016372
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016372
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1016372
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016372
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016372
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016372
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016372
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016372
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016372
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016372
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016372
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016372
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016372
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016372
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016372
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016372
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016372
Ethanol	64-17-5	46.10	0.630	1.19	13.2	25.0		1	WG1016372
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1016372
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016372
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.348	1.96		1	WG1016372
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	ND	ND		1	WG1016372
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016372
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016372
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016372
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016372
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016372
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016372
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016372
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016372
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016372
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016372
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016372
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016372
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016372
2-Propanol	67-63-0	60.10	1.25	3.07	12.7	31.2		1	WG1016372
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1016372
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016372
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016372
Tetrachloroethylene	127-18-4	166	0.200	1.36	1.59	10.8		1	WG1016372
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	0.903	2.66		1	WG1016372
Toluene	108-88-3	92.10	0.200	0.753	0.443	1.67		1	WG1016372
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	1.19	6.48		1	WG1016372
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016372
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1016372
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016372
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016372
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1016372
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016372
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016372
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016372
m&p-Xylene	1330-20-7	106	0.400	1.73	0.499	2.16		1	WG1016372
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*101*				WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	9.45	22.4		1	WG1016372
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016372
Benzene	71-43-2	78.10	0.200	0.639	0.310	0.989		1	WG1016372
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016372
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016372
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016372
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016372
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016372
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.206	0.642		1	WG1016372
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016372
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016372
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016372
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016372
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1016372
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016372
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1016372
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016372
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016372
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016372
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016372
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016372
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016372
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016372
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016372
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016372
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016372
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016372
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016372
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016372
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016372
Ethanol	64-17-5	46.10	0.630	1.19	4.64	8.74		1	WG1016372
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1016372
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016372
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.881	4.95		1	WG1016372
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.218	1.08		1	WG1016372
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016372
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016372
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016372
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016372
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016372
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016372
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016372
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016372
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016372
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016372
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016372
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016372
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016372
2-Propanol	67-63-0	60.10	1.25	3.07	1.30	3.18		1	WG1016372
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1016372
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016372
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016372
Tetrachloroethylene	127-18-4	166	0.200	1.36	11.5	78.2		1	WG1016372
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	0.224	0.661		1	WG1016372
Toluene	108-88-3	92.10	0.200	0.753	0.458	1.72		1	WG1016372
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.329	1.79		1	WG1016372
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016372
Trichloroethylene	79-01-6	131	0.200	1.07	0.218	1.17		1	WG1016372
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016372
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016372
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.233	1.09		1	WG1016372
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016372
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016372
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016372
m&p-Xylene	1330-20-7	106	0.400	1.73	0.555	2.41		1	WG1016372
o-Xylene	95-47-6	106	0.200	0.867	0.210	0.911		1	WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*104*				WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	18.6	44.3		1	WG1016372
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016372
Benzene	71-43-2	78.10	0.200	0.639	0.299	0.954		1	WG1016372
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016372
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016372
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016372
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016372
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016372
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1016372
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016372
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016372
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016372
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016372
Chloromethane	74-87-3	50.50	0.200	0.413	0.469	0.968		1	WG1016372
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016372
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1016372
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016372
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016372
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016372
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016372
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016372
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016372
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016372
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016372
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016372
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016372
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016372
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016372
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016372
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016372
Ethanol	64-17-5	46.10	0.630	1.19	ND	ND		1	WG1016372
Ethylbenzene	100-41-4	106	0.200	0.867	0.288	1.25		1	WG1016372
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.228	1.12		1	WG1016372
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.207	1.16		1	WG1016372
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.241	1.19		1	WG1016372
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016372
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016372
Heptane	142-82-5	100	0.200	0.818	0.320	1.31		1	WG1016372
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016372
n-Hexane	110-54-3	86.20	0.200	0.705	0.365	1.29		1	WG1016372
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016372
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016372
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016372
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016372
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016372
Methyl methacrylate	80-62-6	100.12	0.200	0.819	0.527	2.16		1	WG1016372
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016372
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016372
2-Propanol	67-63-0	60.10	2500	6150	30800	75800		2000	WG1017148
Propene	115-07-1	42.10	0.400	0.689	6.77	11.7		1	WG1016372
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016372
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016372
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1016372
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016372
Toluene	108-88-3	92.10	0.200	0.753	2.02	7.63		1	WG1016372
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016372
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016372
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1016372
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.242	1.19		1	WG1016372
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016372
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.262	1.23		1	WG1016372
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016372
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016372
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016372
m&p-Xylene	1330-20-7	106	0.400	1.73	0.985	4.27		1	WG1016372
o-Xylene	95-47-6	106	0.200	0.867	0.349	1.51		1	WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*103*				WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1017148

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1000	2380	ND	ND		800	WG1016372
Allyl chloride	107-05-1	76.53	160	501	ND	ND		800	WG1016372
Benzene	71-43-2	78.10	160	511	ND	ND		800	WG1016372
Benzyl Chloride	100-44-7	127	160	831	ND	ND		800	WG1016372
Bromodichloromethane	75-27-4	164	160	1070	ND	ND		800	WG1016372
Bromoform	75-25-2	253	480	4970	ND	ND		800	WG1016372
Bromomethane	74-83-9	94.90	160	621	ND	ND		800	WG1016372
1,3-Butadiene	106-99-0	54.10	1600	3540	ND	ND		800	WG1016372
Carbon disulfide	75-15-0	76.10	160	498	ND	ND		800	WG1016372
Carbon tetrachloride	56-23-5	154	160	1010	ND	ND		800	WG1016372
Chlorobenzene	108-90-7	113	160	739	ND	ND		800	WG1016372
Chloroethane	75-00-3	64.50	160	422	ND	ND		800	WG1016372
Chloroform	67-66-3	119	160	779	ND	ND		800	WG1016372
Chloromethane	74-87-3	50.50	160	330	ND	ND		800	WG1016372
2-Chlorotoluene	95-49-8	126	160	825	ND	ND		800	WG1016372
Cyclohexane	110-82-7	84.20	160	551	8290	28600		800	WG1016372
Dibromochloromethane	124-48-1	208	160	1360	ND	ND		800	WG1016372
1,2-Dibromoethane	106-93-4	188	160	1230	ND	ND		800	WG1016372
1,2-Dichlorobenzene	95-50-1	147	160	962	ND	ND		800	WG1016372
1,3-Dichlorobenzene	541-73-1	147	160	962	ND	ND		800	WG1016372
1,4-Dichlorobenzene	106-46-7	147	160	962	ND	ND		800	WG1016372
1,2-Dichloroethane	107-06-2	99	160	648	ND	ND		800	WG1016372
1,1-Dichloroethane	75-34-3	98	160	641	ND	ND		800	WG1016372
1,1-Dichloroethene	75-35-4	96.90	160	634	ND	ND		800	WG1016372
cis-1,2-Dichloroethene	156-59-2	96.90	160	634	ND	ND		800	WG1016372
trans-1,2-Dichloroethene	156-60-5	96.90	160	634	ND	ND		800	WG1016372
1,2-Dichloropropane	78-87-5	113	160	739	ND	ND		800	WG1016372
cis-1,3-Dichloropropene	10061-01-5	111	160	726	ND	ND		800	WG1016372
trans-1,3-Dichloropropene	10061-02-6	111	160	726	ND	ND		800	WG1016372
1,4-Dioxane	123-91-1	88.10	160	577	ND	ND		800	WG1016372
Ethanol	64-17-5	46.10	504	950	ND	ND		800	WG1016372
Ethylbenzene	100-41-4	106	160	694	177	766		800	WG1016372
4-Ethyltoluene	622-96-8	120	160	785	ND	ND		800	WG1016372
Trichlorofluoromethane	75-69-4	137.40	160	899	ND	ND		800	WG1016372
Dichlorodifluoromethane	75-71-8	120.92	160	791	ND	ND		800	WG1016372
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	160	1230	ND	ND		800	WG1016372
1,2-Dichlorotetrafluoroethane	76-14-2	171	160	1120	ND	ND		800	WG1016372
Heptane	142-82-5	100	160	654	ND	ND		800	WG1016372
Hexachloro-1,3-butadiene	87-68-3	261	504	5380	ND	ND		800	WG1016372
n-Hexane	110-54-3	86.20	160	564	2460	8690		800	WG1016372
Isopropylbenzene	98-82-8	120.20	160	787	ND	ND		800	WG1016372
Methylene Chloride	75-09-2	84.90	160	556	ND	ND		800	WG1016372
Methyl Butyl Ketone	591-78-6	100	1000	4090	ND	ND		800	WG1016372
2-Butanone (MEK)	78-93-3	72.10	1000	2950	ND	ND		800	WG1016372
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1000	4090	ND	ND		800	WG1016372
Methyl methacrylate	80-62-6	100.12	160	655	ND	ND		800	WG1016372
MTBE	1634-04-4	88.10	160	577	ND	ND		800	WG1016372
Naphthalene	91-20-3	128	504	2640	958	5020		800	WG1016372
2-Propanol	67-63-0	60.10	1000	2460	5800	14300		800	WG1016372
Propene	115-07-1	42.10	320	551	ND	ND		800	WG1016372
Styrene	100-42-5	104	160	681	ND	ND		800	WG1016372
1,1,2,2-Tetrachloroethane	79-34-5	168	160	1100	ND	ND		800	WG1016372
Tetrachloroethylene	127-18-4	166	160	1090	ND	ND		800	WG1016372
Tetrahydrofuran	109-99-9	72.10	160	472	ND	ND		800	WG1016372
Toluene	108-88-3	92.10	160	603	469	1770		800	WG1016372
1,2,4-Trichlorobenzene	120-82-1	181	504	3730	ND	ND		800	WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	160	870	ND	ND		800	WG1016372
1,1,2-Trichloroethane	79-00-5	133	160	870	ND	ND		800	WG1016372
Trichloroethylene	79-01-6	131	160	857	ND	ND		800	WG1016372
1,2,4-Trimethylbenzene	95-63-6	120	160	785	160	786		800	WG1016372
1,3,5-Trimethylbenzene	108-67-8	120	160	785	ND	ND		800	WG1016372
2,2,4-Trimethylpentane	540-84-1	114.22	2000	9340	206000	964000		10000	WG1016540
Vinyl chloride	75-01-4	62.50	160	409	ND	ND		800	WG1016372
Vinyl Bromide	593-60-2	106.95	160	700	ND	ND		800	WG1016372
Vinyl acetate	108-05-4	86.10	160	563	ND	ND		800	WG1016372
m&p-Xylene	1330-20-7	106	320	1390	1030	4450		800	WG1016372
o-Xylene	95-47-6	106	160	694	429	1860		800	WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*103*				WG1016540

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	5.49	13.0		1	WG1016372
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016372
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1016372
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016372
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016372
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016372
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016372
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016372
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.728	2.27		1	WG1016372
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016372
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016372
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016372
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016372
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1016372
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016372
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1016372
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016372
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016372
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016372
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016372
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016372
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016372
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016372
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016372
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016372
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016372
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016372
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016372
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016372
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016372
Ethanol	64-17-5	46.10	0.630	1.19	14.9	28.1		1	WG1016372
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1016372
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016372
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.329	1.85		1	WG1016372
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.243	1.20		1	WG1016372
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016372
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016372
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016372
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016372
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016372
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016372
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016372
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016372
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016372
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016372
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016372
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016372
Naphthalene	91-20-3	128	0.630	3.30	0.649	3.40		1	WG1016372
2-Propanol	67-63-0	60.10	1.25	3.07	2.92	7.18		1	WG1016372
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1016372
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016372
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016372
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.237	1.61		1	WG1016372
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016372
Toluene	108-88-3	92.10	0.200	0.753	0.223	0.841		1	WG1016372
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.549	2.99		1	WG1016372
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016372
Trichloroethylene	79-01-6	131	0.200	1.07	4.51	24.2		1	WG1016372
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016372
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016372
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	2.97	13.9		1	WG1016372
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016372
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016372
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016372
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1016372
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.6*				WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	8.91	21.2		1	WG1016372
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016372
Benzene	71-43-2	78.10	0.200	0.639	0.364	1.16		1	WG1016372
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016372
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016372
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016372
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016372
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016372
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.789	2.46		1	WG1016372
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016372
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016372
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016372
Chloroform	67-66-3	119	0.200	0.973	1.11	5.39		1	WG1016372
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1016372
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016372
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1016372
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016372
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016372
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016372
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016372
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016372
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016372
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016372
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016372
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	1.30	5.15		1	WG1016372
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	0.280	1.11		1	WG1016372
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016372
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016372
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016372
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016372
Ethanol	64-17-5	46.10	0.630	1.19	33.1	62.5		1	WG1016372
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1016372
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016372
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.297	1.67		1	WG1016372
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.349	1.73		1	WG1016372
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016372
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016372
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016372
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016372
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016372
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016372
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016372
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016372
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016372
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016372
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016372
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016372
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016372
2-Propanol	67-63-0	60.10	1.25	3.07	1.52	3.74		1	WG1016372
Propene	115-07-1	42.10	0.400	0.689	0.454	0.782		1	WG1016372
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016372
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016372
Tetrachloroethylene	127-18-4	166	0.200	1.36	1.35	9.15		1	WG1016372
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016372
Toluene	108-88-3	92.10	0.200	0.753	0.369	1.39		1	WG1016372
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016372

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016372
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016372
Trichloroethylene	79-01-6	131	5.00	26.8	699	3740		25	WG1016540
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016372
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016372
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1016372
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016372
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016372
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016372
m&p-Xylene	1330-20-7	106	0.400	1.73	0.401	1.74		1	WG1016372
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*100*				WG1016372
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.8*				WG1016540

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	1.53	3.63		1	WG1016373
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016373
Benzene	71-43-2	78.10	0.200	0.639	0.308	0.985		1	WG1016373
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016373
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016373
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016373
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016373
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016373
Carbon disulfide	75-15-0	76.10	0.200	0.622	1.38	4.31		1	WG1016373
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016373
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016373
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016373
Chloroform	67-66-3	119	0.200	0.973	11.0	53.4		1	WG1016373
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1016373
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016373
Cyclohexane	110-82-7	84.20	0.200	0.689	0.274	0.944		1	WG1016373
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016373
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016373
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016373
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016373
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016373
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016373
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016373
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016373
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	28.7	114		1	WG1016373
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	5.11	20.2		1	WG1016373
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016373
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016373
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016373
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016373
Ethanol	64-17-5	46.10	0.630	1.19	ND	ND		1	WG1016373
Ethylbenzene	100-41-4	106	0.200	0.867	1.39	6.02		1	WG1016373
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016373
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.383	2.16		1	WG1016373
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.252	1.25		1	WG1016373
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016373
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016373
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016373
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016373
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016373
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016373
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016373
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016373
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016373
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016373
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016373
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016373
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016373
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1016373
Propene	115-07-1	42.10	0.400	0.689	0.905	1.56		1	WG1016373
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016373
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016373
Tetrachloroethylene	127-18-4	166	0.200	1.36	2.21	15.0		1	WG1016373
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016373
Toluene	108-88-3	92.10	0.200	0.753	0.869	3.27		1	WG1016373
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016373

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016373
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016373
Trichloroethylene	79-01-6	131	40.0	214	1020	5470		200	WG1017148
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016373
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016373
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.206	0.961		1	WG1016373
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016373
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND	J4	1	WG1016373
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016373
m&p-Xylene	1330-20-7	106	0.400	1.73	1.65	7.17		1	WG1016373
o-Xylene	95-47-6	106	0.200	0.867	0.592	2.57		1	WG1016373
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*101*				WG1017148
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*105*				WG1016373

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	2.48	5.88		1	WG1016373
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016373
Benzene	71-43-2	78.10	0.200	0.639	0.222	0.708		1	WG1016373
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016373
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016373
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016373
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016373
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016373
Carbon disulfide	75-15-0	76.10	0.200	0.622	1.05	3.27		1	WG1016373
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016373
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016373
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016373
Chloroform	67-66-3	119	0.200	0.973	0.275	1.34		1	WG1016373
Chloromethane	74-87-3	50.50	0.200	0.413	0.257	0.532		1	WG1016373
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016373
Cyclohexane	110-82-7	84.20	0.200	0.689	0.421	1.45		1	WG1016373
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016373
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016373
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016373
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016373
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016373
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016373
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016373
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016373
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	0.768	3.04		1	WG1016373
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016373
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016373
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016373
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016373
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016373
Ethanol	64-17-5	46.10	0.630	1.19	ND	ND		1	WG1016373
Ethylbenzene	100-41-4	106	0.200	0.867	0.233	1.01		1	WG1016373
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016373
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.712	4.00		1	WG1016373
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.287	1.42		1	WG1016373
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016373
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016373
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016373
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016373
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016373
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016373
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.202	0.703		1	WG1016373
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016373
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016373
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016373
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016373
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016373
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016373
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1016373
Propene	115-07-1	42.10	0.400	0.689	1.04	1.78		1	WG1016373
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016373
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016373
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.502	3.41		1	WG1016373
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016373
Toluene	108-88-3	92.10	0.200	0.753	0.754	2.84		1	WG1016373
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016373

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016373
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016373
Trichloroethylene	79-01-6	131	5.00	26.8	134	720		25	WG1016540
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016373
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016373
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.566	2.65		1	WG1016373
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016373
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND	J4	1	WG1016373
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016373
m&p-Xylene	1330-20-7	106	0.400	1.73	0.627	2.72		1	WG1016373
o-Xylene	95-47-6	106	0.200	0.867	0.204	0.883		1	WG1016373
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*98.1*				WG1016373
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*101*				WG1016540

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	9.18	21.8		1	WG1016541
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016541
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1016541
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016541
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016541
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016541
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016541
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016541
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.274	0.854		1	WG1016541
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016541
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016541
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016541
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016541
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1016541
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016541
Cyclohexane	110-82-7	84.20	0.200	0.689	0.991	3.41		1	WG1016541
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016541
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016541
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016541
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016541
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016541
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016541
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016541
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016541
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016541
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016541
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016541
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016541
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016541
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016541
Ethanol	64-17-5	46.10	0.630	1.19	20.3	38.3		1	WG1016541
Ethylbenzene	100-41-4	106	0.200	0.867	1.18	5.13		1	WG1016541
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.213	1.04		1	WG1016541
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.440	2.47		1	WG1016541
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.237	1.17		1	WG1016541
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016541
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016541
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016541
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016541
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016541
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016541
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016541
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016541
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016541
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016541
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016541
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016541
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016541
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1016541
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1016541
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016541
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016541
Tetrachloroethylene	127-18-4	166	0.200	1.36	1.02	6.95		1	WG1016541
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016541
Toluene	108-88-3	92.10	0.200	0.753	1.49	5.61		1	WG1016541
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016541

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016541
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016541
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1016541
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.200	0.984		1	WG1016541
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016541
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.215	1.01		1	WG1016541
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016541
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016541
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016541
m&p-Xylene	1330-20-7	106	0.400	1.73	2.30	9.99		1	WG1016541
o-Xylene	95-47-6	106	0.200	0.867	0.695	3.01		1	WG1016541
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*105*				WG1016541

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	11.4	27.2		1	WG1016541
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016541
Benzene	71-43-2	78.10	0.200	0.639	0.287	0.917		1	WG1016541
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016541
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016541
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016541
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016541
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016541
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.211	0.656		1	WG1016541
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016541
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016541
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016541
Chloroform	67-66-3	119	0.200	0.973	2.30	11.2		1	WG1016541
Chloromethane	74-87-3	50.50	0.200	0.413	0.588	1.21		1	WG1016541
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016541
Cyclohexane	110-82-7	84.20	0.200	0.689	0.675	2.33		1	WG1016541
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016541
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016541
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016541
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016541
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016541
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016541
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016541
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016541
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	0.542	2.15		1	WG1016541
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016541
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016541
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016541
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016541
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016541
Ethanol	64-17-5	46.10	6.30	11.9	58.1	110		10	WG1017148
Ethylbenzene	100-41-4	106	0.200	0.867	0.510	2.21		1	WG1016541
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.290	1.42		1	WG1016541
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.303	1.70		1	WG1016541
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.243	1.20		1	WG1016541
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016541
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016541
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016541
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016541
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016541
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016541
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.331	1.15		1	WG1016541
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016541
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016541
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016541
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016541
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016541
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016541
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1016541
Propene	115-07-1	42.10	0.400	0.689	0.952	1.64		1	WG1016541
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016541
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016541
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.717	4.87		1	WG1016541
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016541
Toluene	108-88-3	92.10	0.200	0.753	1.39	5.24		1	WG1016541
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016541

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016541
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016541
Trichloroethylene	79-01-6	131	2.00	10.7	153	817		10	WG1017148
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.304	1.49		1	WG1016541
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016541
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.221	1.03		1	WG1016541
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016541
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016541
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016541
m&p-Xylene	1330-20-7	106	0.400	1.73	1.96	8.52		1	WG1016541
o-Xylene	95-47-6	106	0.200	0.867	0.574	2.49		1	WG1016541
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.7*				WG1017148
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1016541

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	5.53	13.1		1	WG1016541
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016541
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1016541
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016541
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016541
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016541
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016541
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016541
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1016541
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016541
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016541
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016541
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016541
Chloromethane	74-87-3	50.50	0.200	0.413	0.336	0.694		1	WG1016541
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016541
Cyclohexane	110-82-7	84.20	0.200	0.689	0.207	0.713		1	WG1016541
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016541
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016541
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016541
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016541
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016541
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016541
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016541
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016541
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016541
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016541
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016541
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016541
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016541
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016541
Ethanol	64-17-5	46.10	0.630	1.19	9.29	17.5		1	WG1016541
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1016541
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016541
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1016541
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.290	1.43		1	WG1016541
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016541
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016541
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016541
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016541
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016541
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016541
Methylene Chloride	75-09-2	84.90	0.200	0.694	1.74	6.06		1	WG1016541
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016541
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016541
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016541
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016541
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016541
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016541
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1016541
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1016541
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016541
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016541
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1016541
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016541
Toluene	108-88-3	92.10	0.200	0.753	0.462	1.74		1	WG1016541
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016541

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016541
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016541
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1016541
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016541
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016541
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1016541
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016541
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016541
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016541
m&p-Xylene	1330-20-7	106	0.400	1.73	0.458	1.98		1	WG1016541
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1016541
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*97.9*				WG1016541

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	10.6	25.1		1	WG1016541
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016541
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1016541
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016541
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016541
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016541
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016541
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016541
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.308	0.957		1	WG1016541
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016541
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016541
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016541
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016541
Chloromethane	74-87-3	50.50	0.200	0.413	0.218	0.451		1	WG1016541
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016541
Cyclohexane	110-82-7	84.20	0.200	0.689	0.658	2.26		1	WG1016541
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016541
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016541
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016541
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016541
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016541
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016541
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016541
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016541
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016541
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016541
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016541
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016541
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016541
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016541
Ethanol	64-17-5	46.10	0.630	1.19	6.92	13.0		1	WG1016541
Ethylbenzene	100-41-4	106	0.200	0.867	0.372	1.61		1	WG1016541
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.226	1.11		1	WG1016541
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.834	4.69		1	WG1016541
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.251	1.24		1	WG1016541
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016541
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016541
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016541
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016541
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016541
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016541
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1016541
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016541
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016541
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016541
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016541
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016541
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016541
2-Propanol	67-63-0	60.10	1.25	3.07	2.24	5.51		1	WG1016541
Propene	115-07-1	42.10	0.400	0.689	0.657	1.13		1	WG1016541
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016541
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016541
Tetrachloroethylene	127-18-4	166	0.200	1.36	2.27	15.4		1	WG1016541
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	0.272	0.802		1	WG1016541
Toluene	108-88-3	92.10	0.200	0.753	1.62	6.09		1	WG1016541
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016541

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1016541
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016541
Trichloroethylene	79-01-6	131	0.200	1.07	7.21	38.6		1	WG1016541
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.248	1.22		1	WG1016541
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016541
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.246	1.15		1	WG1016541
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016541
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016541
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016541
m&p-Xylene	1330-20-7	106	0.400	1.73	1.40	6.06		1	WG1016541
o-Xylene	95-47-6	106	0.200	0.867	0.413	1.79		1	WG1016541
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*103*				WG1016541

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	9.47	22.5		1	WG1016541
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016541
Benzene	71-43-2	78.10	0.200	0.639	0.218	0.695		1	WG1016541
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016541
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016541
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016541
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016541
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016541
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1016541
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016541
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016541
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016541
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016541
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1016541
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016541
Cyclohexane	110-82-7	84.20	0.200	0.689	0.499	1.72		1	WG1016541
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016541
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016541
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016541
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016541
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016541
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016541
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016541
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016541
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016541
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016541
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016541
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016541
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016541
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016541
Ethanol	64-17-5	46.10	0.630	1.19	9.09	17.1		1	WG1016541
Ethylbenzene	100-41-4	106	0.200	0.867	0.855	3.71		1	WG1016541
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016541
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.763	4.29		1	WG1016541
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.295	1.46		1	WG1016541
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016541
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016541
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016541
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016541
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016541
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016541
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.907	3.15		1	WG1016541
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	1.90	7.76		1	WG1016541
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016541
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016541
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016541
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016541
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016541
2-Propanol	67-63-0	60.10	1.25	3.07	5.43	13.3		1	WG1016541
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1016541
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016541
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016541
Tetrachloroethylene	127-18-4	166	0.200	1.36	32.0	217		1	WG1016541
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016541
Toluene	108-88-3	92.10	0.200	0.753	0.993	3.74		1	WG1016541
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016541

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	1.63	8.88		1	WG1016541
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016541
Trichloroethylene	79-01-6	131	0.200	1.07	0.475	2.55		1	WG1016541
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016541
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016541
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1016541
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016541
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016541
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016541
m&p-Xylene	1330-20-7	106	0.400	1.73	1.43	6.20		1	WG1016541
o-Xylene	95-47-6	106	0.200	0.867	0.504	2.19		1	WG1016541
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1016541

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	5.62	13.4		1	WG1016541
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1016541
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1016541
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1016541
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1016541
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1016541
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1016541
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1016541
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1016541
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1016541
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1016541
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1016541
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1016541
Chloromethane	74-87-3	50.50	0.200	0.413	0.268	0.553		1	WG1016541
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1016541
Cyclohexane	110-82-7	84.20	0.200	0.689	0.286	0.985		1	WG1016541
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1016541
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1016541
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1016541
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1016541
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1016541
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1016541
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1016541
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1016541
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1016541
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1016541
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1016541
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1016541
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1016541
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1016541
Ethanol	64-17-5	46.10	0.630	1.19	8.59	16.2		1	WG1016541
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1016541
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1016541
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.340	1.91		1	WG1016541
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.278	1.37		1	WG1016541
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1016541
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1016541
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1016541
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1016541
n-Hexane	110-54-3	86.20	0.200	0.705	ND	ND		1	WG1016541
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1016541
Methylene Chloride	75-09-2	84.90	0.200	0.694	1.08	3.76		1	WG1016541
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1016541
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1016541
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1016541
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1016541
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1016541
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1016541
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1016541
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1016541
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1016541
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1016541
Tetrachloroethylene	127-18-4	166	0.200	1.36	3.86	26.2		1	WG1016541
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1016541
Toluene	108-88-3	92.10	0.200	0.753	0.521	1.96		1	WG1016541
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1016541

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.357	1.94		1	WG1016541
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1016541
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1016541
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1016541
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1016541
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1016541
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1016541
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1016541
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1016541
m&p-Xylene	1330-20-7	106	0.400	1.73	0.511	2.21		1	WG1016541
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1016541
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.0*				WG1016541

Method Blank (MB)

(MB) R3246592-2 09/02/17 08:52

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	0.0828	J	0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

Method Blank (MB)

(MB) R3246592-2 09/02/17 08:52

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	U		0.154	0.630
2-Propanol	0.108	J	0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	*103*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246592-1 09/02/17 08:07 • (LCSD) R3246592-3 09/02/17 10:27

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	2.76	2.61	73.5	69.7	52.0-158			5.38	25
Propene	3.75	3.48	3.70	92.8	98.7	54.0-155			6.18	25
Dichlorodifluoromethane	3.75	2.79	2.99	74.4	79.7	69.0-143			6.89	25
1,2-Dichlorotetrafluoroethane	3.75	3.10	2.89	82.7	77.2	70.0-130			6.89	25
Chloromethane	3.75	3.53	3.68	94.0	98.0	70.0-130			4.16	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246592-1 09/02/17 08:07 • (LCSD) R3246592-3 09/02/17 10:27

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	3.35	3.48	89.4	92.9	70.0-130			3.76	25
1,3-Butadiene	3.75	3.58	3.78	95.4	101	70.0-130			5.43	25
Bromomethane	3.75	3.25	3.32	86.7	88.4	70.0-130			1.97	25
Chloroethane	3.75	3.46	3.58	92.3	95.5	70.0-130			3.36	25
Trichlorofluoromethane	3.75	3.42	3.44	91.3	91.8	70.0-130			0.560	25
1,1,2-Trichlorotrifluoroethane	3.75	3.31	3.35	88.2	89.3	70.0-130			1.20	25
1,1-Dichloroethene	3.75	3.57	3.65	95.3	97.2	70.0-130			1.95	25
1,1-Dichloroethane	3.75	3.51	3.57	93.7	95.2	70.0-130			1.63	25
Acetone	3.75	3.53	3.62	94.2	96.6	70.0-130			2.53	25
2-Propanol	3.75	3.69	3.78	98.4	101	66.0-150			2.50	25
Carbon disulfide	3.75	3.38	3.42	90.1	91.2	70.0-130			1.24	25
Methylene Chloride	3.75	3.59	3.61	95.6	96.3	70.0-130			0.730	25
MTBE	3.75	3.38	3.42	90.2	91.2	70.0-130			1.08	25
trans-1,2-Dichloroethene	3.75	3.60	3.70	96.0	98.7	70.0-130			2.75	25
n-Hexane	3.75	3.41	3.55	90.9	94.6	70.0-130			3.95	25
Vinyl acetate	3.75	3.99	4.18	106	111	70.0-130			4.54	25
Methyl Ethyl Ketone	3.75	3.33	3.37	88.9	89.8	70.0-130			0.960	25
cis-1,2-Dichloroethene	3.75	3.57	3.66	95.1	97.5	70.0-130			2.49	25
Chloroform	3.75	3.41	3.45	90.9	92.0	70.0-130			1.28	25
Cyclohexane	3.75	3.30	3.30	88.1	88.0	70.0-130			0.130	25
1,1,1-Trichloroethane	3.75	3.37	3.36	90.0	89.7	70.0-130			0.330	25
Carbon tetrachloride	3.75	3.28	3.28	87.5	87.4	70.0-130			0.140	25
Benzene	3.75	3.42	3.50	91.3	93.4	70.0-130			2.27	25
1,2-Dichloroethane	3.75	3.73	3.75	99.5	100	70.0-130			0.500	25
Heptane	3.75	3.79	3.91	101	104	70.0-130			3.13	25
Trichloroethylene	3.75	3.37	3.45	89.9	92.0	70.0-130			2.24	25
1,2-Dichloropropane	3.75	3.64	3.72	97.0	99.2	70.0-130			2.25	25
1,4-Dioxane	3.75	2.96	3.03	78.9	80.9	70.0-152			2.46	25
Bromodichloromethane	3.75	3.60	3.66	96.1	97.6	70.0-130			1.48	25
cis-1,3-Dichloropropene	3.75	3.53	3.63	94.1	96.7	70.0-130			2.76	25
4-Methyl-2-pentanone (MIBK)	3.75	3.86	4.06	103	108	70.0-142			5.01	25
Toluene	3.75	3.33	3.37	88.8	89.8	70.0-130			1.07	25
trans-1,3-Dichloropropene	3.75	3.77	3.87	101	103	70.0-130			2.53	25
1,1,2-Trichloroethane	3.75	3.39	3.42	90.5	91.3	70.0-130			0.820	25
Tetrachloroethylene	3.75	2.77	2.79	73.9	74.4	70.0-130			0.660	25
Methyl Butyl Ketone	3.75	4.13	4.13	110	110	70.0-150			0.100	25
Dibromochloromethane	3.75	3.33	3.36	88.7	89.5	70.0-130			0.900	25
1,2-Dibromoethane	3.75	3.33	3.41	88.9	91.0	70.0-130			2.30	25
Chlorobenzene	3.75	3.06	3.15	81.5	84.1	70.0-130			3.07	25
Ethylbenzene	3.75	3.51	3.53	93.7	94.1	70.0-130			0.370	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246592-1 09/02/17 08:07 • (LCSD) R3246592-3 09/02/17 10:27

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
m&p-Xylene	7.50	7.09	7.18	94.5	95.7	70.0-130			1.29	25
o-Xylene	3.75	3.43	3.49	91.5	93.0	70.0-130			1.55	25
Styrene	3.75	3.48	3.58	92.8	95.5	70.0-130			2.91	25
Bromoform	3.75	3.17	3.25	84.5	86.6	70.0-130			2.45	25
1,1,2,2-Tetrachloroethane	3.75	3.62	3.75	96.6	100	70.0-130			3.53	25
4-Ethyltoluene	3.75	3.29	3.37	87.8	89.9	70.0-130			2.39	25
1,3,5-Trimethylbenzene	3.75	3.31	3.30	88.2	88.0	70.0-130			0.290	25
1,2,4-Trimethylbenzene	3.75	3.26	3.29	86.8	87.7	70.0-130			0.950	25
1,3-Dichlorobenzene	3.75	3.03	3.10	80.9	82.6	70.0-130			2.04	25
1,4-Dichlorobenzene	3.75	3.11	3.16	82.9	84.4	70.0-130			1.79	25
Benzyl Chloride	3.75	3.39	3.46	90.5	92.4	70.0-144			2.03	25
1,2-Dichlorobenzene	3.75	3.05	3.07	81.4	81.8	70.0-130			0.480	25
1,2,4-Trichlorobenzene	3.75	3.16	3.13	84.3	83.5	70.0-155			0.940	25
Hexachloro-1,3-butadiene	3.75	2.87	2.89	76.7	77.2	70.0-145			0.650	25
Naphthalene	3.75	3.35	3.40	89.4	90.7	70.0-155			1.39	25
Allyl Chloride	3.75	3.65	3.76	97.4	100	70.0-130			2.88	25
2-Chlorotoluene	3.75	3.14	3.19	83.6	85.1	70.0-130			1.74	25
Methyl Methacrylate	3.75	4.00	4.12	107	110	70.0-130			2.98	25
Tetrahydrofuran	3.75	3.56	3.69	95.0	98.3	70.0-140			3.45	25
2,2,4-Trimethylpentane	3.75	3.48	3.53	92.8	94.0	70.0-130			1.26	25
Vinyl Bromide	3.75	3.27	3.31	87.2	88.2	70.0-130			1.12	25
Isopropylbenzene	3.75	3.33	3.34	88.7	89.1	70.0-130			0.420	25
(S) 1,4-Bromofluorobenzene				*105*	*104*	*60.0-140*				

Method Blank (MB)

(MB) R3246589-3 09/02/17 09:13

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	0.0655	J	0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

Method Blank (MB)

(MB) R3246589-3 09/02/17 09:13

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	0.215	J	0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	0.172	J	0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	*79.4*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246589-1 09/02/17 07:34 • (LCSD) R3246589-2 09/02/17 08:23

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.02	3.79	107	101	52.0-158			5.98	25
Propene	3.75	3.87	3.88	103	103	54.0-155			0.260	25
Dichlorodifluoromethane	3.75	3.43	3.41	91.4	91.0	69.0-143			0.440	25
1,2-Dichlorotetrafluoroethane	3.75	4.52	4.53	120	121	70.0-130			0.230	25
Chloromethane	3.75	3.92	3.94	105	105	70.0-130			0.320	25
Vinyl chloride	3.75	4.11	4.13	110	110	70.0-130			0.270	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246589-1 09/02/17 07:34 • (LCSD) R3246589-2 09/02/17 08:23

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,3-Butadiene	3.75	3.72	3.69	99.3	98.5	70.0-130			0.770	25
Bromomethane	3.75	4.88	4.85	130	129	70.0-130			0.670	25
Chloroethane	3.75	4.48	4.40	119	117	70.0-130			1.88	25
Trichlorofluoromethane	3.75	4.39	4.39	117	117	70.0-130			0.0100	25
1,1,2-Trichlorotrifluoroethane	3.75	4.79	4.72	128	126	70.0-130			1.39	25
1,1-Dichloroethene	3.75	4.07	4.07	108	109	70.0-130			0.0700	25
1,1-Dichloroethane	3.75	4.19	4.20	112	112	70.0-130			0.120	25
Acetone	3.75	3.92	3.93	105	105	70.0-130			0.150	25
2-Propanol	3.75	4.09	4.09	109	109	66.0-150			0.000	25
Carbon disulfide	3.75	4.68	4.66	125	124	70.0-130			0.430	25
Methylene Chloride	3.75	4.01	4.02	107	107	70.0-130			0.310	25
MTBE	3.75	4.24	4.27	113	114	70.0-130			0.760	25
trans-1,2-Dichloroethene	3.75	4.74	4.77	126	127	70.0-130			0.640	25
n-Hexane	3.75	4.22	4.27	113	114	70.0-130			0.980	25
Vinyl acetate	3.75	4.17	4.18	111	112	70.0-130			0.280	25
Methyl Ethyl Ketone	3.75	4.50	4.54	120	121	70.0-130			0.920	25
cis-1,2-Dichloroethene	3.75	4.28	4.28	114	114	70.0-130			0.0500	25
Chloroform	3.75	4.23	4.24	113	113	70.0-130			0.190	25
Cyclohexane	3.75	4.18	4.22	112	112	70.0-130			0.760	25
1,1,1-Trichloroethane	3.75	3.85	3.93	103	105	70.0-130			2.03	25
Carbon tetrachloride	3.75	3.84	3.94	102	105	70.0-130			2.63	25
Benzene	3.75	4.36	4.48	116	119	70.0-130			2.75	25
1,2-Dichloroethane	3.75	3.90	4.01	104	107	70.0-130			2.68	25
Heptane	3.75	3.81	3.90	102	104	70.0-130			2.32	25
1,2-Dichloropropane	3.75	3.95	4.04	105	108	70.0-130			2.41	25
1,4-Dioxane	3.75	4.72	5.12	126	136	70.0-152			7.97	25
Bromodichloromethane	3.75	4.10	4.23	109	113	70.0-130			3.16	25
cis-1,3-Dichloropropene	3.75	4.16	4.24	111	113	70.0-130			2.00	25
4-Methyl-2-pentanone (MIBK)	3.75	3.75	3.88	100	104	70.0-142			3.42	25
Toluene	3.75	3.99	4.15	106	111	70.0-130			4.10	25
trans-1,3-Dichloropropene	3.75	3.97	4.07	106	108	70.0-130			2.47	25
1,1,2-Trichloroethane	3.75	4.08	4.30	109	115	70.0-130			5.16	25
Tetrachloroethylene	3.75	4.06	4.28	108	114	70.0-130			5.18	25
Methyl Butyl Ketone	3.75	4.07	4.23	108	113	70.0-150			3.96	25
Dibromochloromethane	3.75	3.87	4.09	103	109	70.0-130			5.74	25
1,2-Dibromoethane	3.75	3.98	4.20	106	112	70.0-130			5.33	25
Chlorobenzene	3.75	3.66	3.82	97.7	102	70.0-130			4.31	25
Ethylbenzene	3.75	4.10	4.19	109	112	70.0-130			1.98	25
m&p-Xylene	7.50	7.91	8.07	106	108	70.0-130			2.01	25
o-Xylene	3.75	3.85	3.96	103	106	70.0-130			2.98	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246589-1 09/02/17 07:34 • (LCSD) R3246589-2 09/02/17 08:23

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Styrene	3.75	4.21	4.21	112	112	70.0-130			0.0400	25
Bromoform	3.75	4.33	4.45	115	119	70.0-130			2.81	25
1,1,2,2-Tetrachloroethane	3.75	3.65	3.76	97.2	100	70.0-130			3.05	25
4-Ethyltoluene	3.75	3.72	3.83	99.2	102	70.0-130			2.85	25
1,3,5-Trimethylbenzene	3.75	3.61	3.65	96.3	97.5	70.0-130			1.19	25
1,2,4-Trimethylbenzene	3.75	3.49	3.53	93.0	94.1	70.0-130			1.10	25
1,3-Dichlorobenzene	3.75	3.80	4.02	101	107	70.0-130			5.59	25
1,4-Dichlorobenzene	3.75	3.76	3.93	100	105	70.0-130			4.34	25
Benzyl Chloride	3.75	3.29	3.49	87.7	93.1	70.0-144			6.02	25
1,2-Dichlorobenzene	3.75	3.53	3.56	94.3	94.9	70.0-130			0.700	25
1,2,4-Trichlorobenzene	3.75	3.82	4.14	102	110	70.0-155			8.07	25
Hexachloro-1,3-butadiene	3.75	4.91	4.92	131	131	70.0-145			0.250	25
Naphthalene	3.75	4.06	4.28	108	114	70.0-155			5.41	25
Allyl Chloride	3.75	3.93	3.92	105	104	70.0-130			0.350	25
2-Chlorotoluene	3.75	3.51	3.64	93.7	97.0	70.0-130			3.48	25
Methyl Methacrylate	3.75	4.13	4.32	110	115	70.0-130			4.47	25
Tetrahydrofuran	3.75	3.79	3.85	101	103	70.0-140			1.50	25
2,2,4-Trimethylpentane	3.75	4.24	4.24	113	113	70.0-130			0.0100	25
Vinyl Bromide	3.75	5.20	5.12	139	137	70.0-130	J4	J4	1.52	25
Isopropylbenzene	3.75	3.85	3.90	103	104	70.0-130			1.12	25
(S) 1,4-Bromofluorobenzene				*88.9*	*87.8*	*60.0-140*				

Method Blank (MB)

(MB) R3246682-3 09/03/17 09:08

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Trichloroethylene	U		0.0545	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
(S) 1,4-Bromofluorobenzene	*99.1*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246682-1 09/03/17 07:40 • (LCSD) R3246682-2 09/03/17 08:24

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Trichloroethylene	3.75	3.37	3.37	89.8	89.8	70.0-130			0.0200	25
2,2,4-Trimethylpentane	3.75	3.06	3.05	81.7	81.3	70.0-130			0.510	25
(S) 1,4-Bromofluorobenzene				*101*	*101*	*60.0-140*				

Method Blank (MB)

(MB) R3246732-3 09/03/17 09:13

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

Method Blank (MB)

(MB) R3246732-3 09/03/17 09:13

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	U		0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	*97.0*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246732-1 09/03/17 07:43 • (LCSD) R3246732-2 09/03/17 08:27

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.42	3.56	91.3	94.9	52.0-158			3.88	25
Propene	3.75	3.46	3.59	92.1	95.7	54.0-155			3.82	25
Dichlorodifluoromethane	3.75	3.47	3.60	92.5	95.9	69.0-143			3.62	25
1,2-Dichlorotetrafluoroethane	3.75	3.39	3.50	90.4	93.3	70.0-130			3.08	25
Chloromethane	3.75	3.32	3.46	88.6	92.2	70.0-130			3.91	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246732-1 09/03/17 07:43 • (LCSD) R3246732-2 09/03/17 08:27

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	3.18	3.30	84.9	87.9	70.0-130			3.52	25
1,3-Butadiene	3.75	3.02	3.14	80.6	83.6	70.0-130			3.63	25
Bromomethane	3.75	2.83	2.94	75.5	78.5	70.0-130			3.93	25
Chloroethane	3.75	2.86	2.97	76.3	79.3	70.0-130			3.86	25
Trichlorofluoromethane	3.75	3.44	3.46	91.9	92.4	70.0-130			0.550	25
1,1,2-Trichlorotrifluoroethane	3.75	3.46	3.53	92.2	94.3	70.0-130			2.26	25
1,1-Dichloroethene	3.75	3.45	3.54	91.9	94.4	70.0-130			2.64	25
1,1-Dichloroethane	3.75	3.45	3.54	92.0	94.4	70.0-130			2.60	25
Acetone	3.75	3.43	3.55	91.4	94.6	70.0-130			3.43	25
2-Propanol	3.75	3.57	3.66	95.2	97.6	66.0-150			2.42	25
Carbon disulfide	3.75	3.48	3.59	92.8	95.8	70.0-130			3.14	25
Methylene Chloride	3.75	3.34	3.44	89.1	91.7	70.0-130			2.95	25
MTBE	3.75	3.50	3.58	93.3	95.5	70.0-130			2.34	25
trans-1,2-Dichloroethene	3.75	3.48	3.56	92.9	95.1	70.0-130			2.29	25
n-Hexane	3.75	3.47	3.57	92.4	95.3	70.0-130			3.02	25
Vinyl acetate	3.75	3.54	3.74	94.3	99.7	70.0-130			5.58	25
Methyl Ethyl Ketone	3.75	3.51	3.62	93.6	96.5	70.0-130			3.09	25
cis-1,2-Dichloroethene	3.75	3.47	3.57	92.4	95.1	70.0-130			2.88	25
Chloroform	3.75	3.41	3.51	91.0	93.7	70.0-130			2.93	25
Cyclohexane	3.75	3.44	3.54	91.9	94.5	70.0-130			2.82	25
1,1,1-Trichloroethane	3.75	3.43	3.53	91.5	94.0	70.0-130			2.74	25
Carbon tetrachloride	3.75	3.44	3.54	91.7	94.4	70.0-130			2.91	25
Benzene	3.75	3.46	3.57	92.2	95.2	70.0-130			3.17	25
1,2-Dichloroethane	3.75	3.39	3.51	90.5	93.5	70.0-130			3.32	25
Heptane	3.75	3.54	3.63	94.3	96.9	70.0-130			2.64	25
Trichloroethylene	3.75	3.46	3.53	92.4	94.1	70.0-130			1.90	25
1,2-Dichloropropane	3.75	3.44	3.52	91.7	93.9	70.0-130			2.42	25
1,4-Dioxane	3.75	3.33	3.46	88.9	92.3	70.0-152			3.79	25
Bromodichloromethane	3.75	3.48	3.54	92.8	94.3	70.0-130			1.61	25
cis-1,3-Dichloropropene	3.75	3.53	3.62	94.1	96.6	70.0-130			2.67	25
4-Methyl-2-pentanone (MIBK)	3.75	3.57	3.68	95.2	98.3	70.0-142			3.19	25
Toluene	3.75	3.50	3.58	93.2	95.5	70.0-130			2.42	25
trans-1,3-Dichloropropene	3.75	3.55	3.62	94.7	96.6	70.0-130			2.01	25
1,1,2-Trichloroethane	3.75	3.41	3.51	91.0	93.6	70.0-130			2.80	25
Tetrachloroethylene	3.75	3.41	3.49	91.0	93.0	70.0-130			2.26	25
Methyl Butyl Ketone	3.75	3.64	3.78	97.2	101	70.0-150			3.61	25
Dibromochloromethane	3.75	3.38	3.48	90.1	92.8	70.0-130			2.97	25
1,2-Dibromoethane	3.75	3.33	3.43	88.7	91.4	70.0-130			3.04	25
Chlorobenzene	3.75	3.27	3.37	87.2	89.8	70.0-130			2.84	25
Ethylbenzene	3.75	3.59	3.66	95.8	97.5	70.0-130			1.73	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246732-1 09/03/17 07:43 • (LCSD) R3246732-2 09/03/17 08:27

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
m&p-Xylene	7.50	7.16	7.34	95.4	97.8	70.0-130			2.45	25
o-Xylene	3.75	3.59	3.67	95.6	97.9	70.0-130			2.33	25
Styrene	3.75	3.74	3.85	99.7	103	70.0-130			2.97	25
Bromoform	3.75	3.70	3.78	98.7	101	70.0-130			2.20	25
1,1,2,2-Tetrachloroethane	3.75	3.58	3.67	95.5	97.9	70.0-130			2.53	25
4-Ethyltoluene	3.75	3.77	3.86	101	103	70.0-130			2.19	25
1,3,5-Trimethylbenzene	3.75	3.67	3.74	97.8	99.8	70.0-130			2.04	25
1,2,4-Trimethylbenzene	3.75	3.68	3.77	98.2	100	70.0-130			2.30	25
1,3-Dichlorobenzene	3.75	3.82	3.91	102	104	70.0-130			2.29	25
1,4-Dichlorobenzene	3.75	4.00	4.12	107	110	70.0-130			2.82	25
Benzyl Chloride	3.75	4.17	4.30	111	115	70.0-144			3.03	25
1,2-Dichlorobenzene	3.75	3.72	3.80	99.1	101	70.0-130			2.30	25
1,2,4-Trichlorobenzene	3.75	3.85	4.02	103	107	70.0-155			4.22	25
Hexachloro-1,3-butadiene	3.75	3.81	3.90	102	104	70.0-145			2.31	25
Naphthalene	3.75	4.09	4.21	109	112	70.0-155			3.03	25
Allyl Chloride	3.75	3.43	3.58	91.4	95.6	70.0-130			4.47	25
2-Chlorotoluene	3.75	3.63	3.73	96.8	99.5	70.0-130			2.68	25
Methyl Methacrylate	3.75	3.47	3.57	92.6	95.3	70.0-130			2.85	25
Tetrahydrofuran	3.75	3.50	3.59	93.2	95.7	70.0-140			2.67	25
2,2,4-Trimethylpentane	3.75	3.51	3.60	93.7	96.1	70.0-130			2.55	25
Vinyl Bromide	3.75	3.45	2.77	92.1	73.9	70.0-130			21.9	25
Isopropylbenzene	3.75	3.59	3.68	95.8	98.1	70.0-130			2.34	25
(S) 1,4-Bromofluorobenzene				*104*	*104*	*60.0-140*				

Method Blank (MB)

(MB) R3247373-3 09/06/17 08:45

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
2-Propanol	U		0.0882	1.25
Trichloroethylene	U		0.0545	0.200
Vinyl chloride	U		0.0457	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	*99.1*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3247373-1 09/06/17 07:16 • (LCSD) R3247373-2 09/06/17 08:00

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	2.74	3.13	73.2	83.4	52.0-158			13.0	25
Vinyl chloride	3.75	3.42	3.41	91.3	90.8	70.0-130			0.560	25
2-Propanol	3.75	3.90	3.87	104	103	66.0-150			0.630	25
Trichloroethylene	3.75	3.57	3.58	95.3	95.4	70.0-130			0.0600	25
(S) 1,4-Bromofluorobenzene				*101*	*100*	*60.0-140*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J4	The associated batch QC was outside the established quality control range for accuracy.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

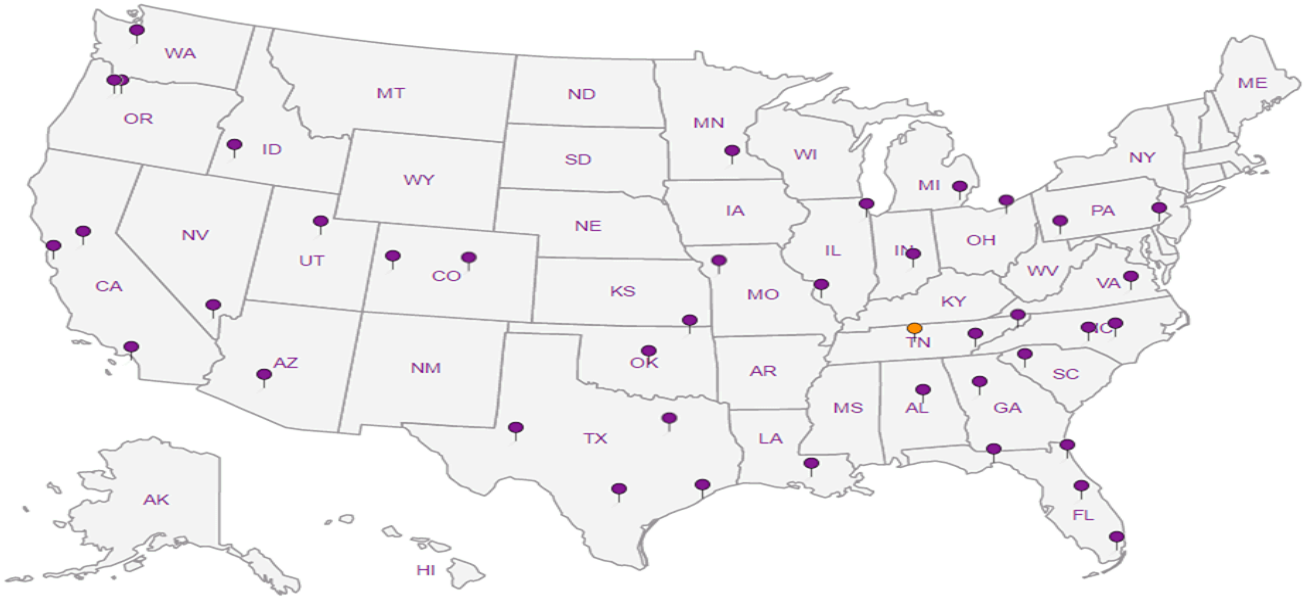
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Pangea Environmental Serv - Oakland, CA

1710 Franklin Street

Billing Information: ~~Jake Wilson~~ Ron Scheele
1710 Franklin St., Ste. 200
Oakland, CA 94612

Fres Chk

Report to: Ron Scheele

Email To: rscheele@pangeaenv.com

Project Description: 8410 Amelia St

City/State Collected: Oakland, CA

Phone: ~~415-259-8860~~ Fax: 510-459-6012

Client Project # 2005.001, 235

Lab Project # PANENVOCA-8410AMELIA

Collected by (print): E. Lervaag

Site/Facility ID # OAKLAND, CA

P.O. #

Collected by (signature):

Immediately Packed on Ice N ~~Y~~ ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Standard

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*custom TO-15SIM Summa	TO-15 Summa	TO-15SIM Summa	TO-15 Leak check							Remarks	Sample # (lab only)
SS-118	Grab	Air	—	8.28.17	1811	1		X		X							#8197	-01
SS12		Air		8.29.17	1140	1		X		X							#8185	-02
SS 8		Air		8.29.17	1218	1		X		X							#8182	-03
SS 2		Air			1248	1		X		X							#8204	-04
SS 6		Air			1325	1		X		X							#8172	-05
SS 11		Air			1451	1		X		X							#8207	-06
SS 4		Air			1522	1		X		X							#8063	-07
Shroud		Air			1523	1		X		X							#8211	-08
SS20	Grab	Air	—	8.29.17	1622	1		X		X							#8199	-09
		Air								X								

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

~~Remarks: *custom TO-15SIM=BTEX,PCE,TCE,cis-1,2-DCE,VC,1,1-DCE,1,1-DCA,1,1,1-TCA. Lab note: must be logged for both TO-15 and TO-15SIM.~~

Samples returned via: __ UPS __ FedEx __ Courier __ _____

Tracking # 7466 1464 6208 / 7466 1464 6230 / 7466 1464 6220
7466 1464 8219
7466 1464 6193

pH _____ Temp _____
Flow _____ Other _____

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	8.29.17	1700	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / ~~No~~ HCL / MeoH TBR

Temp: AM13 °C Bottles Received: 19

Date: 8/31/17 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: ___NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Chain of Custody Page 1 of 2

ESC LAB SCIENCES
a subsidiary of Pace Analytical

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L933234

M014

Acctnum: PANENVOCA
Template: T126751
Prelogin: P613787
TSR: 110 - Brian Ford
PB: MLB 8/15/17

Shipped Via: FedEX Ground

Pangea Environmental Serv - Oakland, CA

1710 Franklin Street

Billing Information: ~~Jake Wilson~~ Ron Scheele
1710 Franklin St., Ste. 200
Oakland, CA 94612

Report to: Ron Scheele

Email To: rscheele@pangeaenv.com

Project Description: 8410 Amelia St

City/State Collected: Oakland, CA

Phone: ~~415-259-8860~~
Fax: 510-459-6012

Client Project # 2005.001, 235

Lab Project # PANENVOCA-8410AMELIA

Collected by (print): E. Lervaag

Site/Facility ID # OAKLAND, CA

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Standard

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*custom TO-15SIM Summa	TO-15 Summa	TO-15SIM Summa	IPA Leak check	Remarks	Sample # (lab only)
SS-12P	Grab	Air	—	8.28.17	1044	1		X		X	#8212	-10
SS-7P		Air	—		1111	1		X		X	#8160	-11
SS-9P		Air	—		1150	1		X		X	#8194	-12
SS-14P		Air	—		1214	1		X		X	#8156	-13
SS-15P		Air	—		1404	1		X		X	#8190	-14
SS-8P		Air	—		1537	1		X		X	#8201	-15
SS-13P		Air	—		1609	1		X		X	#8187	-16
SS1		Air	—		1643	1		X		X	#8177	-17
SS9		Air	—		1722	1		X		X	#8243	-18
SS10	Grab	Air	—		1745	1		X		X	#8162	-19

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ___

~~Remarks: *custom TO-15SIM=BTEX,PCE,TCE,cis-12-DCE,VC,11-DCE,11-DCA,111-TCA. Lab note: must be logged for both TO-15 and TO-15SIM.~~

pH ___ Temp ___
Flow ___ Other ___

Samples returned via: __ UPS __ FedEx __ Courier __ ___

Tracking # Same

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	8.29.17	1700	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / (No) HCL / MeoH TBR

Temp: AMB °C Bottles Received: 19

Date: 8/31/17 Time: 0845

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody Page 2 of 2

ESC LABORATORIES
a subsidiary of Pace Analytical

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: PANENVOCA
Template: T126751
Prelogin: P613787
TSR: 110 - Brian Ford
PB: MLB 8/15/17

Shipped Via: FedEx Ground

ANALYTICAL REPORT

September 07, 2017

Pangea Environmental Serv - Oakland, CA

Sample Delivery Group:	L933246
Samples Received:	08/31/2017
Project Number:	2005.001,235
Description:	8410 Amelia St
Site:	OAKLAND, CA
Report To:	Ron Scheele 1710 Franklin Street Suite 200 Oakland, CA 94612

Entire Report Reviewed By:

Brian Ford

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

IA-5 L933246-01 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/29/17 21:00	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016003	1	09/01/17 17:05	09/01/17 17:05	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1017148	1	09/06/17 14:50	09/06/17 14:50	MBF

IA-6 L933246-02 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/29/17 23:59	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016003	1	09/01/17 17:50	09/01/17 17:50	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1017148	1	09/06/17 15:38	09/06/17 15:38	MBF

IA-7 L933246-03 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/29/17 23:59	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016003	1	09/01/17 18:36	09/01/17 18:36	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1017148	1	09/06/17 16:27	09/06/17 16:27	MBF

AA-3 L933246-04 Air

Collected by	Collected date/time	Received date/time
E. Lervaag	08/29/17 20:05	08/31/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1016003	1	09/01/17 19:27	09/01/17 19:27	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG1017148	1	09/06/17 17:25	09/06/17 17:25	MBF

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

Project Narrative

Toluene, xylene: Analyzed from TO-15SIM canisters which have not been certified clean for toluene or xylenes.

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.471	1.50		1	WG1016003
Carbon tetrachloride	56-23-5	154	0.0200	0.126	0.111	0.700		1	WG1016003
Chloroethane	75-00-3	64.50	0.0400	0.106	ND	ND		1	WG1016003
Chloroform	67-66-3	119	0.0200	0.0973	ND	ND		1	WG1016003
Chloromethane	74-87-3	50.50	0.0300	0.0620	0.475	0.981		1	WG1016003
1,2-Dibromoethane	106-93-4	188	0.0200	0.154	ND	ND		1	WG1016003
1,4-Dichlorobenzene	106-46-7	147	0.0200	0.120	0.227	1.37		1	WG1016003
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	ND	ND		1	WG1016003
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1016003
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1016003
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1016003
1,2-Dichloropropane	78-87-5	113	0.0300	0.139	ND	ND		1	WG1016003
cis-1,3-Dichloropropene	10061-01-5	111	0.0200	0.0908	ND	ND		1	WG1016003
trans-1,3-Dichloropropene	10061-02-6	111	0.0300	0.136	ND	ND		1	WG1016003
Ethylbenzene	100-41-4	106	0.0300	0.130	0.778	3.37		1	WG1016003
1,1,2,2-Tetrachloroethane	79-34-5	168	0.0200	0.137	ND	ND		1	WG1016003
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0499	0.339		1	WG1016003
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	ND	ND		1	WG1016003
1,1,2-Trichloroethane	79-00-5	133	0.0300	0.163	ND	ND		1	WG1016003
Trichloroethylene	79-01-6	131	0.0200	0.107	0.0323	0.173		1	WG1016003
Toluene	108-88-3	92.10	0.200	0.753	4.37	16.5		1	WG1017148
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1016003
Vinyl acetate	108-05-4	86.10	0.0200	0.0704	ND	ND		1	WG1016003
m&p-Xylene	1330-20-7	106	0.400	1.73	2.74	11.9		1	WG1017148
o-Xylene	95-47-6	106	0.200	0.867	0.782	3.39		1	WG1017148
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*106*				WG1016003
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*103*				WG1017148

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.940	3.00		1	WG1016003
Carbon tetrachloride	56-23-5	154	0.0200	0.126	0.141	0.890		1	WG1016003
Chloroethane	75-00-3	64.50	0.0400	0.106	ND	ND		1	WG1016003
Chloroform	67-66-3	119	0.0200	0.0973	ND	ND		1	WG1016003
Chloromethane	74-87-3	50.50	0.0300	0.0620	0.487	1.01		1	WG1016003
1,2-Dibromoethane	106-93-4	188	0.0200	0.154	ND	ND		1	WG1016003
1,4-Dichlorobenzene	106-46-7	147	0.0200	0.120	0.148	0.892		1	WG1016003
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	ND	ND		1	WG1016003
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1016003
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1016003
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1016003
1,2-Dichloropropane	78-87-5	113	0.0300	0.139	ND	ND		1	WG1016003
cis-1,3-Dichloropropene	10061-01-5	111	0.0200	0.0908	ND	ND		1	WG1016003
trans-1,3-Dichloropropene	10061-02-6	111	0.0300	0.136	ND	ND		1	WG1016003
Ethylbenzene	100-41-4	106	0.0300	0.130	1.91	8.27		1	WG1016003
1,1,2,2-Tetrachloroethane	79-34-5	168	0.0200	0.137	ND	ND		1	WG1016003
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0914	0.620		1	WG1016003
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	ND	ND		1	WG1016003
1,1,2-Trichloroethane	79-00-5	133	0.0300	0.163	ND	ND		1	WG1016003
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG1016003
Toluene	108-88-3	92.10	0.200	0.753	20.8	78.3		1	WG1017148
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1016003
Vinyl acetate	108-05-4	86.10	0.0200	0.0704	ND	ND		1	WG1016003
m&p-Xylene	1330-20-7	106	0.400	1.73	6.65	28.8		1	WG1017148
o-Xylene	95-47-6	106	0.200	0.867	1.88	8.15		1	WG1017148
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*105*				WG1016003
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*103*				WG1017148

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.820	2.62		1	WG1016003
Carbon tetrachloride	56-23-5	154	0.0200	0.126	0.223	1.40		1	WG1016003
Chloroethane	75-00-3	64.50	0.0400	0.106	ND	ND		1	WG1016003
Chloroform	67-66-3	119	0.0200	0.0973	ND	ND		1	WG1016003
Chloromethane	74-87-3	50.50	0.0300	0.0620	0.483	0.998		1	WG1016003
1,2-Dibromoethane	106-93-4	188	0.0200	0.154	ND	ND		1	WG1016003
1,4-Dichlorobenzene	106-46-7	147	0.0200	0.120	0.156	0.938		1	WG1016003
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	ND	ND		1	WG1016003
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1016003
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1016003
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1016003
1,2-Dichloropropane	78-87-5	113	0.0300	0.139	ND	ND		1	WG1016003
cis-1,3-Dichloropropene	10061-01-5	111	0.0200	0.0908	ND	ND		1	WG1016003
trans-1,3-Dichloropropene	10061-02-6	111	0.0300	0.136	ND	ND		1	WG1016003
Ethylbenzene	100-41-4	106	0.0300	0.130	2.26	9.81		1	WG1016003
1,1,2,2-Tetrachloroethane	79-34-5	168	0.0200	0.137	ND	ND		1	WG1016003
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0935	0.635		1	WG1016003
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	ND	ND		1	WG1016003
1,1,2-Trichloroethane	79-00-5	133	0.0300	0.163	ND	ND		1	WG1016003
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG1016003
Toluene	108-88-3	92.10	0.200	0.753	24.5	92.3		1	WG1017148
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1016003
Vinyl acetate	108-05-4	86.10	0.0200	0.0704	ND	ND		1	WG1016003
m&p-Xylene	1330-20-7	106	0.400	1.73	8.00	34.7		1	WG1017148
o-Xylene	95-47-6	106	0.200	0.867	2.28	9.88		1	WG1017148
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*106*				WG1016003
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1017148

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.0200	0.0639	0.184	0.587		1	WG1016003
Carbon tetrachloride	56-23-5	154	0.0200	0.126	ND	ND		1	WG1016003
Chloroethane	75-00-3	64.50	0.0400	0.106	ND	ND		1	WG1016003
Chloroform	67-66-3	119	0.0200	0.0973	ND	ND		1	WG1016003
Chloromethane	74-87-3	50.50	0.0300	0.0620	0.752	1.55		1	WG1016003
1,2-Dibromoethane	106-93-4	188	0.0200	0.154	ND	ND		1	WG1016003
1,4-Dichlorobenzene	106-46-7	147	0.0200	0.120	ND	ND		1	WG1016003
1,1-Dichloroethane	75-34-3	98	0.0200	0.0802	ND	ND		1	WG1016003
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1016003
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1016003
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1016003
1,2-Dichloropropane	78-87-5	113	0.0300	0.139	ND	ND		1	WG1016003
cis-1,3-Dichloropropene	10061-01-5	111	0.0200	0.0908	ND	ND		1	WG1016003
trans-1,3-Dichloropropene	10061-02-6	111	0.0300	0.136	ND	ND		1	WG1016003
Ethylbenzene	100-41-4	106	0.0300	0.130	0.0791	0.343		1	WG1016003
1,1,2,2-Tetrachloroethane	79-34-5	168	0.0200	0.137	ND	ND		1	WG1016003
Tetrachloroethylene	127-18-4	166	0.0200	0.136	ND	ND		1	WG1016003
1,1,1-Trichloroethane	71-55-6	133	0.0200	0.109	ND	ND		1	WG1016003
1,1,2-Trichloroethane	79-00-5	133	0.0300	0.163	ND	ND		1	WG1016003
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG1016003
Toluene	108-88-3	92.10	0.200	0.753	0.487	1.83		1	WG1017148
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1016003
Vinyl acetate	108-05-4	86.10	0.0200	0.0704	ND	ND		1	WG1016003
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1017148
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1017148
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*103*				WG1016003
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*104*				WG1017148

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3246458-1 09/01/17 10:59

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.00541	0.0200
Carbon tetrachloride	U		0.00575	0.0200
Chloroethane	U		0.0159	0.0400
Chloroform	U		0.00464	0.0200
Chloromethane	U		0.00972	0.0300
1,2-Dibromoethane	U		0.0185	0.0200
1,4-Dichlorobenzene	U		0.00691	0.0200
1,1-Dichloroethane	U		0.00505	0.0200
1,1-Dichloroethene	U		0.00521	0.0200
cis-1,2-Dichloroethene	U		0.00770	0.0200
trans-1,2-Dichloroethene	U		0.00499	0.0200
1,2-Dichloropropane	U		0.00840	0.0300
cis-1,3-Dichloropropene	U		0.00556	0.0200
trans-1,3-Dichloropropene	U		0.00853	0.0300
Ethylbenzene	U		0.00904	0.0300
1,1,2,2-Tetrachloroethane	U		0.00481	0.0200
Tetrachloroethylene	U		0.00457	0.0200
1,1,1-Trichloroethane	U		0.00552	0.0200
1,1,2-Trichloroethane	U		0.0287	0.0300
Trichloroethylene	U		0.00736	0.0200
Vinyl chloride	U		0.00765	0.0200
Vinyl acetate	U		0.00430	0.0200
(S) 1,4-Bromofluorobenzene	*99.4*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246458-2 09/01/17 11:42 • (LCSD) R3246458-3 09/01/17 12:24

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.500	0.537	0.535	107	107	70.0-130			0.320	25
Carbon tetrachloride	0.500	0.501	0.493	100	98.7	70.0-130			1.44	25
Chloroethane	0.500	0.368	0.421	73.6	84.1	70.0-130			13.3	25
Chloroform	0.500	0.531	0.525	106	105	70.0-130			1.04	25
Chloromethane	0.500	0.530	0.529	106	106	70.0-130			0.140	25
1,2-Dibromoethane	0.500	0.528	0.528	106	106	70.0-130			0.0200	25
1,4-Dichlorobenzene	0.500	0.458	0.458	91.5	91.7	70.0-130			0.130	25
1,1-Dichloroethane	0.500	0.547	0.545	109	109	70.0-130			0.400	25
1,1-Dichloroethene	0.500	0.544	0.542	109	108	70.0-130			0.400	25
cis-1,2-Dichloroethene	0.500	0.542	0.541	108	108	70.0-130			0.250	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3246458-2 09/01/17 11:42 • (LCSD) R3246458-3 09/01/17 12:24

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
trans-1,2-Dichloroethene	0.500	0.551	0.551	110	110	70.0-130			0.0500	25
1,2-Dichloropropane	0.500	0.550	0.547	110	109	70.0-130			0.460	25
cis-1,3-Dichloropropene	0.500	0.541	0.539	108	108	70.0-130			0.260	25
trans-1,3-Dichloropropene	0.500	0.528	0.527	106	105	70.0-130			0.140	25
Ethylbenzene	0.500	0.535	0.530	107	106	70.0-130			1.01	25
1,1,2,2-Tetrachloroethane	0.500	0.517	0.518	103	104	70.0-130			0.0100	25
Tetrachloroethylene	0.500	0.488	0.489	97.6	97.7	70.0-130			0.110	25
1,1,1-Trichloroethane	0.500	0.510	0.511	102	102	70.0-130			0.0100	25
1,1,2-Trichloroethane	0.500	0.529	0.528	106	106	70.0-130			0.100	25
Trichloroethylene	0.500	0.540	0.536	108	107	70.0-130			0.720	25
Vinyl chloride	0.500	0.455	0.461	90.9	92.3	70.0-130			1.47	25
Vinyl acetate	0.500	0.566	0.558	113	112	70.0-130			1.48	25
(S) 1,4-Bromofluorobenzene				*100*	*101*	*60.0-140*				

Method Blank (MB)

(MB) R3247373-3 09/06/17 08:45

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Toluene	U		0.0499	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
(S) 1,4-Bromofluorobenzene	*99.1*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3247373-1 09/06/17 07:16 • (LCSD) R3247373-2 09/06/17 08:00

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Toluene	3.75	3.54	3.55	94.5	94.7	70.0-130			0.160	25
m&p-Xylene	7.50	7.49	7.45	99.9	99.4	70.0-130			0.490	25
o-Xylene	3.75	3.70	3.66	98.6	97.7	70.0-130			0.910	25
(S) 1,4-Bromofluorobenzene				*101*	*100*	*60.0-140*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

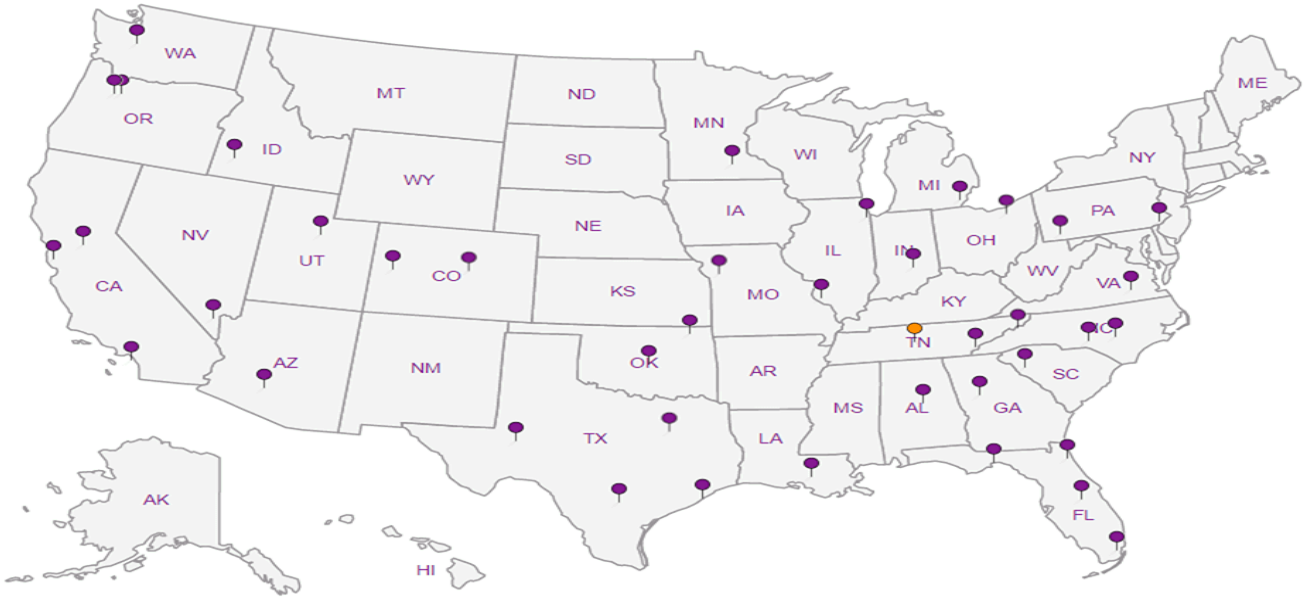
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Pangea Environmental Serv - Oakland, CA

1710 Franklin Street

Billing Information: Ron Scheele ~~Jake Wilson~~
1710 Franklin St., Ste. 200
Oakland, CA 94612

Report to: Ron Scheele

Email To: rscheele@pangeaenv.com

Project Description: 8410 Amelia St

City/State Collected: Oakland, CA

Phone: ~~415-259-8860~~ Fax: 510-459-6012

Client Project # 2005.001, 235

Lab Project # PANENVOCA-8410AMELIA

Collected by (print): E. Lervaag

Site/Facility ID # OAKLAND, CA

P.O. #

Collected by (signature):

Immediately Packed on Ice N___ Y___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	# cntrs	*custom TO-15SIM Summa (Full list plus Toluene, Xylenes, 1,1,2,2-PCA by TO-15	TO-15 Summa	TO-15SIM Summa	Remarks	Sample # (lab only)
IA-5	24 hr	Air		~~8.29.17~~ 8.29.17	21 hrs	1	X			Canister #7945	-01
IA-6	24 hr	Air		~~8.29.17~~ 8.29.17	24 hrs	1	X			#8010	-02
IA-7	24 hr	Air		8-29-17	24 hrs	1	X			#5569	-03
AA-3	24 hr	Air		8-29-17	20.5 hrs	1	X			#5390	-04
		Air									
		Air									

Chain of Custody Page 1 of 1

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L# L933246

M021

Acctnum: PANENVOCA

Template: T126751

Prelogin: P613787

TSR: 110 - Brian Ford

PB: MLB 8/15/17

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: *custom TO-15SIM=~~BTEX,PCE,TCE,cis-12-DCE,VC,11-DCE,1,1-DCA,111-TCA~~. Lab note: must be logged for both TO-15 and TO-15SIM. Full list plus toluene xylenes, 1,1,2,2-PCA by TO-15

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 7466 1464 6182

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	8.29.17	1700		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: AMB °C Bottles Received: 4
				If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/31/17 Time: 0845
				Hold:

Condition: NCF / OK