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September 7, 2016

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

Re: 1233 Bockman Road
San Lorenzo, California
ACEH Case No: RO00003217

Dear Ms. Roe:

PaulsCorp, LLC, has retained Pangea Environmental Services, Inc. (Pangea) for environmental consulting services for the project referenced above. Pangea is submitting the attached report on my behalf.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report are true and correct to the best of my knowledge.

Sincerely,

Andrew J. Lavaux
Managing Director Multifamily Development

August 26, 2016

Andrew Lavaux
PaulsCorp, LLC
100 Saint Paul Street
Denver, Colorado 80206

Re: **Site Assessment Report**
Bockman Road Property
1233 Bockman Road
San Leandro, California 94577

Dear Mr. Lavaux:

On behalf of PaulsCorp, LLC, Pangea Environmental Services, Inc. (Pangea) prepared this *Site Assessment Report* for the subject property. This assessment was performed to investigate subsurface conditions to help facilitate development at the subject site. The Site assessment evaluated conditions near former dry cleaning operations and the surrounding area. This assessment was performed to help facilitate development at the subject site.

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: *Site Assessment Report*

SITE ASSESSMENT REPORT

1233 Bockman Road
San Lorenzo, CA 94577

August 26, 2016

Prepared for:

PaulsCorp, LLC
100 Saint Paul Street
Denver, Colorado 80206

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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1.0 INTRODUCTION

On behalf of PaulsCorp, LLC (PaulsCorp), PANGEA Environmental Services, Inc. (Pangea) has prepared this *Site Assessment Report* for the subject property located at 1233 Bockman Road in San Lorenzo, California (Site) (**Figure 1**). The purpose of this assessment is to investigate subsurface conditions relating to the on-site historical use of tetrachloroethylene (PCE) and petroleum hydrocarbons whose source is unknown. This assessment was performed to help facilitate development at the subject Site.

1.1 Project Work Scope

This assessment was scoped to quickly and comprehensively delineate contaminants in soil, groundwater, and soil gas to facilitate Site development with the approval of Alameda County Environmental Health (ACEH). The extensive and dynamic Site assessment work scope evolved over several phases based on sampling results and field observations made by Pangea staff.

- The first phase involved using *high resolution site characterization* techniques [low level membrane interface probe system with hydraulic profiling tool (MiHPT)] to delineate the extent of PCE discovered near the former dry cleaner at 1269 Bockman Road. The MiHPT system evaluated the levels of volatile organic compounds (VOCs), soil type and hydrogeologic conditions to better understand the site conceptual model for understanding potential fate and transport of PCE in the Site subsurface. The MiHPT commenced near the former PCE hot spot in soil gas and extended laterally for a total of six locations. The 'low level' MIP system was used for this assessment, which detects significantly lower concentrations of VOCs compared to the standard MIP system. (Limited VOC impact was only detected in one source area MIP location, MIP-2).

- Grab *groundwater* was also conducted within the MiHPT borings to delineate PCE impact to groundwater. (No significant VOC impact was detected in groundwater).

- The second phase involved source area *soil* sampling for possible correlation with MIP data. (No significant VOC impact was detected in soil.)

- The second phase also involved shallow *soil gas* sampling to delineate VOCs in soil gas. Fourteen (14) soil gas monitoring wells were installed in a dynamic manner based on field screening with a photoionization device (PID).

- The third phase involved additional shallow *soil gas* sampling to delineate VOCs in soil gas. Fifteen (15) step-out gas monitoring wells were installed based on results from prior sampling.

- Geophysical surveying was performed to identify potential underground utilities or conduits that could act as potential preferential pathways for VOC migration in soil vapor.

- The fourth phase involved sampling of soil, groundwater and soil gas to further evaluate conditions near the former auto shop at 1415 Bockman Road within the western portion of the Site.

2.0 SITE BACKGROUND

2.1 Site Description and History

The subject Site consists of an approximately 3.87 acre lot along Bockman road in San Lorenzo, California (**Figure 2**). The property is owned and being redeveloped by PaulsCorp into 53 two-story residential units. The Site's assessor parcel number (APN) is 411-63-17. The subject property is relatively flat and lies at an elevation of about 20 feet above mean sea level. There are currently no buildings on-site but historically the Site consisted of a strip mall and associated parking lot. The Site is surrounded in all directions by single and multi-family residences.

According to Phase 1 Environmental Site Assessment (ESA) prepared on June 3, 2016, by ENGEO Incorporated (ENGEO), the Site was used a strip mall until the buildings were demolished in 2007. Two former tenants of note were identified: a dry cleaner that operated between approximately 1960 and 1979; and an automotive repair shop that operated hydraulic lifts. The report also noted that a fuel station/auto repair facility (Impulse Motors B.P.) previously existed on the adjacent parcel to the south of the Site, across Bockman Road.

2.2 Summary of Previous Site Investigations

The following is a summary of previous environmental activities at the Site:

- **November 18, 2004, Phase I Environmental Site Assessment, Secor International Inc. (Secor):** A Phase 1 ESA revealed that the auto repair shop previously located on the western portion of the Site may have formerly had a fuel dispenser island and that an oil/water separator existed within the building. The possibility of a dry cleaner was noted for the eastern portion of the Site, but it was not determined if operations were on-site or if the business was just a drop-off location. A former fuel station/automotive repair facility, located at 1210 Bockman Road (adjacent to the Site to the south) was also indicated as an environmental concern due to the elevated levels of petroleum hydrocarbons detected in confirmation samples during tank removal activities in 2004.

- **December 21, 2004, Phase II Environmental Site Assessment, Secor:** A total of eight soil borings were advanced on-site to a depth of 10 to 15 feet below ground surface (bgs), but sample data was not reported.

- **June 30, 2015, Phase I Environmental Site Assessment, ENGEO:** A Phase 1 ESA revealed the same three environmental concerns as the Phase 1 ESA completed in 2004: possible historical dry cleaner operations, former fuel station/automotive facility adjacent and south of the Site, and the former automotive repair facility located on the western portion of the Site. Based on these findings and the lack of data from the Phase II ESA completed in 2004, ENGEO recommended a new Phase II ESA be completed.

- **July 2, 2015, Phase II Environmental Site Assessment, ENGEO: S**oil, groundwater, and soil gas were sampled to identify potential concerns related to the aforementioned historic operations. Three soil borings were advanced (S-1 through S-3) to a depth of 10 feet bgs in the vicinity of the former dry cleaner (S-1) and the former automotive repair facility (S-2 and S-3). Soil samples were collected at depths of 1, 5, and 10 feet bgs from each boring. Grab groundwater samples (GW-1 through GW-3) were also collected from three separate borings at depths ranging from 15 to 25 feet bgs depending on where groundwater was observed. Soil and groundwater samples were analyzed for VOCs, CAM-17 metals, and total petroleum hydrocarbons as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo).

  VOCs, TPHg, and metals were detected in groundwater samples, but with the exception of arsenic, all analytes were below screening levels.

  Two soil gas samples were collected (SG-1 and SG-2) from the Site and analyzed for VOCs; no detections above the screening levels were reported.

- **May 16, 2016, Site Management Plan (SMP), ENGEO:** A SMP was developed for the Site to provide procedures and protocols to address potential soil impacts that would be encountered while developing the Site.

- **June 3, 2016, Phase I Environmental Site Assessment Update, ENGEO:** The Phase 1 ESA completed in 2015 was updated to include the results of an environmental record search. No new environmental concerns were recognized.

- **August 2, 2016, Revised Phase II Environmental Site Assessment, ENGEO:** Additional Site assessment activities including installing and sampling six new temporary soil gas wells (SG-5 through SG-10) and collecting four grab groundwater samples (GW-1 through GW-4). The soil gas wells were installed to depths of 7 feet bgs (SG-6, SG-8, and SG-9) and 10 feet bgs (SG-5, SG-7, and

SG-10) and sampled for TPHg and VOCs. PCE was detected in soil gas wells SG-6 and SG-9 at an identical concentration of 256 micrograms per cubic meter (µg/m^3).

Grab groundwater borings GW-1 through GW-3 were advanced in close proximity to the borings by the same identity in 2015. All four borings were advanced to a depth of 16 to 17 feet bgs and samples collected between 12 to 17 ft bgs. A sample was collected from each boring and analyzed for VOCs, TPHg, TPHd, TPHmo, and CAM-17 metals. VOCs, TPHg, and metals were detected below screening levels except for arsenic.

2.3 Site Geology and Hydrogeology

The Site property is located within the East Bay Plain subbasin, which is part of the larger Santa Clara Valley Groundwater Basin. The East Bay Plain subbasin is a northwest trending alluvial plain bounded to the north by San Pablo bay, to the east by the contact with Franciscan Basement rock, and to the south by the Niles Cone Groundwater basin. The basin extends beneath San Francisco Bay to the west. Groundwater is generally found very near the surface throughout the basin.

The East Bay Plain subbasin aquifer system consists of unconsolidated sediments of Quaternary age. The Early Holocene Temescal Formation is the most recently deposited and consists of primarily silts and clays with some gravel layers.

The relatively flat Site lies at an elevation of approximately 20 feet above mean sea level to the east of San Francisco Bay (**Figure 1**). Based on drilling activities, soil beneath the Site consists of a 1-foot thick layer of fill underlain by a 2 to 3 feet of moderately plastic clay. The clay layer is underlain by silt along with a 1-foot thick discontinuous sand lense that was intermittently observed between 6 and 10 feet bgs. Groundwater was observed between 7 and 9 feet bgs. Based on data from neighboring sites, groundwater flows to the northwest. Lithologic and groundwater data is presented on geologic cross-section A-A' (**Figure 3**).

3.0 SITE ASSESSMENT

A dynamic Site assessment approach was conducted and involved the sampling of soil, groundwater, and shallow soil gas. Pangea also employed MiHPT, a high resolution Site characterization technique, to help delineate the extent of contaminants in the subsurface and to evaluate hydrogeologic conditions. The extensive Site assessment work scope included the following activities:

- Low level MiHPT borings advanced in six (6) locations in the vicinity of the former dry cleaner building footprint;

- Source area soil characterization via seven (7) borings in the vicinity of the former dry cleaner building footprint;

- Grab groundwater samples taken in eight (8) locations throughout the Site to delineate contamination in shallow groundwater;

- Temporary shallow soil gas wells installed and sampled at twenty-nine (29) locations throughout the Site; and

- Underground utility study to identify potential preferential pathways.

3.1 Pre-Drilling Activities

A Site-specific health and safety plan was prepared to protect Site workers and the plan was kept on-site during all field activities. Proposed drilling locations were marked and Underground Service Alert was notified before the proposed field activities. Boring permits were obtained from Alameda County Public Works Agency (ACPWA) (**Appendix A**).

3.2 MIP/HPT Investigation

On July 25, 2016, six MiHPT borings (MIP-1 through MIP-6) were advanced by Penecore Drilling (Penecore) of Woodland, California and ASC Tech Services (ASC) of Rancho Cordova, California (**Figure 2**). A track-mounted rig was used to advance the MiHPT tooling to 16 feet bgs in all six borings. The MiHPT system consists of a membrane interface probe (MIP) system for assessment of VOCs, and a hydraulic profiling tool (HPT) for evaluating the hydraulic permeability of subsurface materials. Continuous logs of qualitative VOC concentration data, soil electrical conductivity (EC), and hydraulic conductivity were collected by the MiHPT probe from each boring. For this Site, a *low level* MIP (LL-MIP) probe was utilized to collect *higher resolution* data every foot from each boring. A Pangea geologist reviewed all data collected in real-time and oversaw all drilling locations and practices. Borings were grouted under the supervision of an ACPWA inspector.

MIP is a relatively new and innovative tool for the assessment of VOCs. The MIP tool is driven to depth while measuring VOC concentrations and recording electrical conductivity. The MIP tool heats up the soil adjacent to the MIP tool and then extracts the vapor and measures the VOC concentration. When used properly and under appropriate conditions, the MIP can quickly and cost effectively delineate the extent of contamination and identify appropriate locations for future monitoring or remediation wells. The MIP tool provides more data than traditional soil and groundwater sampling techniques. The *four* detectors used by ASC to measure VOCs include the halogen specific detector (XSD), electron capture detector (ECD), photo ionization detector (PID), and flame ionization detector (FID). The *low level* MIP (LL-MIP) sensors can detect VOC impact at about 1/10 the level as compared to traditional MIP sensors. According to ASC technicians, the XSD and ECD detectors

are used primarily for chlorinated (TCE, PCE) contaminant detection, the PID is best used for the detection of aromatic hydrocarbons (BTEX compounds), while the FID is best used for detection of light, straight chained hydrocarbons (e.g., methane, butane). Historically, ECD sensors were the primary sensor for MIP assessment of chlorinated contaminants, with XSD sensor use started recently. According to ASC technicians, the ECD tends to respond less consistently to different VOCs than the XSD sensor, and the ECD has greater sensitivity to oxygen levels. The PID can be sensitive to moisture. Unlike the PID, the FID sensor can also detect methane.

The hydraulic profiling tool (HPT) evaluates the relative permeability of soil. The HPT system is designed to evaluate the hydraulic behavior of unconsolidated materials by injecting clean water into the subsurface and recording changes in the associated pressure. The HPT system records these changes in pressure and calculates the associated hydraulic conductivity. Both of which are plotted in vertical profiles with respect to depth. The HPT system operates by injecting water into the subsurface, usually at a flow rate less than 300 milliliters/min. The injection pressure provides an indication of the hydraulic properties of the soil. A relatively low pressure response indicates a relatively high permeability; conversely, a relatively high pressure response indicates a relatively low permeability. During post boring processing, the changes in pressure and flow are utilized to calculate an estimated hydraulic conductivity. Additionally, an electric conductivity (EC) dipole is integrated into the MiHPT probe to interpret the subsurface lithology.

For quality control, the MIP system response is evaluated prior to and upon completion of each MIP push location. The QA/QC testing is performed to ensure that the instrument is capable of generating good data, to prove that the instrumentation operated properly throughout the course of the log, and to generate logs in accordance with established standards.

3.3 Soil Sampling

On August 3, 2016, six soil borings (SB-1 through SB-6) were advanced by Penecore to a depth of 8 feet bgs, except SB-1 which was advanced to 15 feet bgs (**Figure 2**). A track-mounted Geoprobe™ rig was used for all six borings. At each soil boring location, a dual-tube sample consisting of an outer core barrel and an inner sampling rod was used to retrieve soil cores for lithologic observation by a Pangea geologist. Each core was also field screened for VOCs using a photo-ionization detector (PID). Soil samples were collected by cutting and capping soil in acetate liners. On August 22, 2016, one soil borings (SV-28) was advanced by Penecore to a depth of 8 feet bgs using a hand auger and soil samples were collected in a stainless steel tube.

All samples were placed in a cooler with ice for transport to Curtis and Tompkins Laboratories (C&T) following chain-of-custody protocol. Samples were analyzed for VOCs by EPA Method 8260, TPHg by EPA Method 8015, and lead by EPA Method 6010. Borings were grouted under the supervision of an ACPWA inspector. Standard operating procedures are included in **Appendix B**.

3.4 Grab Groundwater Sampling

On July 25, August 3, and August 22, 2016, a total of eight grab groundwater samples were taken from MIP-1 through MIP-6, SB-1, and SB-7 (**Figure 2**). Samples were taken from first encountered groundwater at approximately 8 feet bgs by placing 1" PVC with slotted screen downhole and retrieving water via bailer or peristaltic pump. The grab groundwater samples were decanted into laboratory provided 40 milliliter vials. The samples were placed in a cooler with ice for transport to C&T following chain-of-custody protocol. Samples were analyzed for VOCs by EPA Method 8260 and TPHg by EPA Method 8015. Standard operating procedures are included in **Appendix B**.

3.5 Temporary Soil Gas Well Install and Sampling

On July 26, August 3, and August 22, 2016, a total of 29 soil gas wells were installed by Penecore to a depth of 7 feet bgs (**Figure 2**). All 29 wells were constructed by setting a vapor implant attached to ¼-inch Teflon™ tubing at 6 feet bgs and backfilling the annular space with Monterey #3 sand pack up to 5 feet bgs. A ½ foot of dry bentonite crumbles was poured on top of the sand and the remaining annular space was backfilled with hydrated bentonite. The Teflon™ tubing was set in a 2-inch PVC riser and capped to prevent moisture from entering.

On July 27, July 28, and August 23, 2016, 28 soil gas wells were sampled by Pangea field staff. Due to the naturally tight formation, the soil gas wells were purged upon install between 24 and 48 hours prior to sampling. Samples were collected by connecting a 1-liter Summa™ canister to the tubing through a flow rate regulator calibrated to a rate of approximately 100-200 milliliters per minute (mL/min). To further evaluate potential leakage within the sampling system, a leak-check enclosure/shroud was placed over the sample train and isopropyl alcohol was introduced into the shroud. A PID was used to monitor the concentration of isopropyl alcohol within the shroud during sample collection. Soil gas samples were transported to C&T following chain-of-custody protocol. Samples were analyzed for VOCs by EPA Method TO-15. Standard operating procedures are included in **Appendix B**.

3.6 Underground Utility Study

Two underground utility studies were conducted by Safe2Core of San Jose, California. A mobile ground penetrating radar (GPR) cart was used to search for soil density anomalies that would indicate a hollow utility or trench in the subsurface. During the first study, which only addressed the eastern portion of the Site, three linear subsurface anomalies were identified by GPR. A second GPR study did not find any anomalies along the perimeter of the Site. A GPR search was attempted in the vicinity of the former automotive repair facility, but do to rough surface conditions, it could not be completed. The location of the three possible anomalies in the eastern portion of the Site are presented on **Figure 2**.

3.7 Waste Disposal

Investigation derived waste (IDW) including soil and decontamination water is being temporarily stored on-site in Department of Transportation approved 55-gallon drums. The IDW will be profiled and disposed of accordingly at an appropriate disposal facility.

4.0 SITE ASSESSMENT RESULTS

The Site assessment consisted of advancing six MiHPT borings, seven soil borings, and 29 temporary soil gas wells to delineate contamination in soil gas, soil, and groundwater; and to determine the subsurface geology and hydrogeology.

4.1 Field Observations

The Site subsurface is primarily composed of clay and silt with an intermittent sand lense at approximately 6 to 10 feet bgs. Groundwater was consistently encountered around 8 feet bgs and was slow to recharge except in areas where sand was encountered. Odors were encountered in only one boring (SV-28) near the former automotive repair facility hydraulic lifts. The PID confirmed this odor with a reading of 4.3 parts per million (ppm). Boring logs are included in **Appendix C**.

4.2 MIP/HPT Results

MIP data profiles were generated for six borings (MIP-1 through MIP-6) using the following detectors: electron capture detector (ECD), halogen specific detector (XSD), PID, and flame ionization detector (FID). The profiles for all 6 borings are provided in **Appendix D**. In addition to the four detectors, a gas flow controller was used to allow the detectors to detect VOCs at lower levels than is standard. Each of the detectors has a different sensitivity and range for various types of VOCs. Of the four detectors, ECD and PID were observed to be the most sensitive to the VOCs of concern.

The MIP response to VOCs was highest in MIP-2 between 4 to 6 feet bgs, where a spike in the ECD, XCD, and PID detectors is noticeable and pronounced. Very limited responses were detected in the other five MiHPT borings. HPT data profiles were generated by measuring the pressure response of soil to metered injection of water into the subsurface. HPT flow rates ranged between 90 and 220 mL/min throughout the borings, but tended to be at the higher end of the range at the same depths that MIP detections were the highest.

EC of the subsurface was measured as a proxy for lithologic interpretation. A general inverse correlation exists between higher EC and smaller grain size. EC ranged between 0 and 170 millisiemens/meter (mS/m). The EC response was generally above 50 mS/m throughout most the borings. MIP-2 had a relatively low EC response at 6 ft bgs which correlated to a sandy soil with a higher HPT flow rate and the MIP detections referenced

above. Quality assurance and quality control testing procedures during MIP assessment are described in MiHPT report in **Appendix D**.

4.3 Soil Analytical Results

A total of 20 soil samples were collected from seven borings (SB-1 through SB-6 and SV-28) for analysis of VOCs, TPHg, and/or lead. Sample depths were selected based on field observations including visual observations of staining and lithology, olfactory observations of odor, and PID readings. Soil sample results are shown in **Figure 3 and 4**, and summarized in **Table 1**. Soil analytical reports are presented in **Appendix E**.

VOCs were *not* detected above laboratory reporting limits in any samples with the exception of a minor detection of acetone at a concentration of 0.027 milligrams per kilogram (mg/kg) at a depth of 3.5 feet bgs in SB-3. For reference, the residential direct exposure environmental screening level (ESL) for acetone in shallow soil is 59,000 mg/kg.

TPHg was analyzed in seven samples and was *not* detected above laboratory reporting limits, except for a detection of 5.2 mg/kg at 7.5 feet bgs in SV-28. The residential direct exposure ESL for TPHg in shallow soil is 740 mg/kg.

Lead was analyzed in two samples and was detected at concentrations of 6.2 and 4.1 mg/kg in SB-2 and SB-6, respectively. Both samples were taken at a depth of 6 feet bgs. The residential direct exposure ESL for lead in shallow soil is 80 mg/kg.

4.4 Groundwater Analytical Results

A total of eight grab groundwater samples were collected from eight borings (MIP-1 through MIP-6, SB-1, and SB-7) for analysis of VOCs and TPHg. Samples were taken from first encountered groundwater which was consistently 8 feet bgs. Groundwater sample results are shown in **Figure 3 and 5**, and summarized in **Table 2**. Groundwater analytical reports are presented in **Appendix E**.

VOCs including PCE, chloroform, benzene, toluene, ethylbenzene, and xylenes were detected in various borings. However, only chloroform was detected at concentrations exceeding its residential vapor intrusion ESL for shallow groundwater of 2.3 micrograms per liter (µg/L). Chloroform was detected at concentrations of 3.6, 8.1, 13, and 2.6 µg/L in borings MIP-2, MIP-3, MIP-4, and MIP-6, respectively. TPHg was analyzed in seven samples and was not detected above the laboratory reporting limits in any sample.

4.5 Soil Gas Analytical Results

A total of 28 soil gas samples were collected from 28 temporary soil gas wells (SV-1 through SV-8 and SV-10 through SV-29) for analysis of VOCs. A twenty-ninth well, SV-9, was installed but could not be sampled due

to lack of flow. All samples were collected from probe implants placed 6 feet bgs. One sample, SV-28, detected the leak check compound, isopropyl alcohol, at an excessively high concentration indicating that the sample results may not be indicative of subsurface conditions. Soil gas sample results are shown on **Figure 3** and summarized in **Table 3.** Soil gas analytical reports are presented in **Appendix E**.

VOCs including PCE, trichloroethene (TCE), benzene, toluene, ethylbenzene, xylenes, and naphthalene were detected in various samples. However, TCE, toluene, xylenes, and naphthalene were not detected above their respective residential ESLs for soil gas.

PCE was detected in 24 samples and at a maximum concentration of 2,600 ($\mu g/m^3$) in SV-11. Eight of the 24 samples exceeded the residential ESL for PCE in soil gas of 240 $\mu g/m^3$. A ninth sample, SV-28, detected PCE at a concentration of 200 $\mu g/m^3$. Note that a de minimis amount of leak detection compound (1.4% isopropyl alcohol) was detected in the sample. The horizontal extent of PCE in soil gas is depicted in **Figure 6**.

Benzene was detected in 20 samples and at a maximum concentration of 73 $\mu g/m^3$ in SV-27. Two of the 20 samples exceeded the residential ESL for benzene in soil gas of 48 $\mu g/m^3$. The horizontal extent of benzene in soil gas is depicted in **Figure 7**.

Ethylbenzene was detected in 14 samples and at a maximum concentration of 8,700 $\mu g/m^3$ in SV-23. Five of the 14 samples exceeded the residential ESL for ethylbenzene in soil gas of 560 $\mu g/m^3$. The horizontal extent of ethylbenzene in soil gas is depicted in **Figure 8**.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the above information, Pangea offers the following conclusions and recommendations:

- Site soil consists primarily of clay and silt with an intermittent fine-grained sand lens at approximately 6-10 feet bgs.
- *Soil* and *groundwater* on-site has not been significantly impacted by VOCs, TPHg or lead.
- Shallow *soil gas* in the *eastern* portion of the Site is impacted with concentrations of PCE, benzene, and ethylbenzene that exceed their respective residential shallow soil gas ESLs. Additional soil gas assessment is planned to further delineate this impact based on agency direction.
- Shallow *soil gas* in the *western* portion of the Site, adjacent the hoists from the former automotive repair building, contained PCE below residential shallow soil gas ESLs. Additional soil gas assessment is planned to further delineate this impact based on agency direction.

- Pangea recommends preparation of a corrective action plan to provide source removal and mitigation of any VOCs of concerns. Pangea recommends that the corrective action plan include a Site-specific human health risk assessment to help guide corrective action and mitigation measures. The tentative corrective action and mitigation plan involves soil excavation to remove source VOC material, followed by confirmation sampling to document soil gas conditions. The plan could include contingent installation of passive subslab ventilation systems beneath any planned building near areas with residual VOCs of concern. As an additional contingency, each subslab ventilation system could be converted to active operation, if merited. ACEH has tentatively approved this conceptual plan, and requested submittal of a corrective action plan for agency approval and public notification.

6.0 REFERENCES

CalEPA/DTSC, 2011, (CalEPA, 2011) *Vapor Intrusion Mitigation Advisory (VIMA),* October 2011

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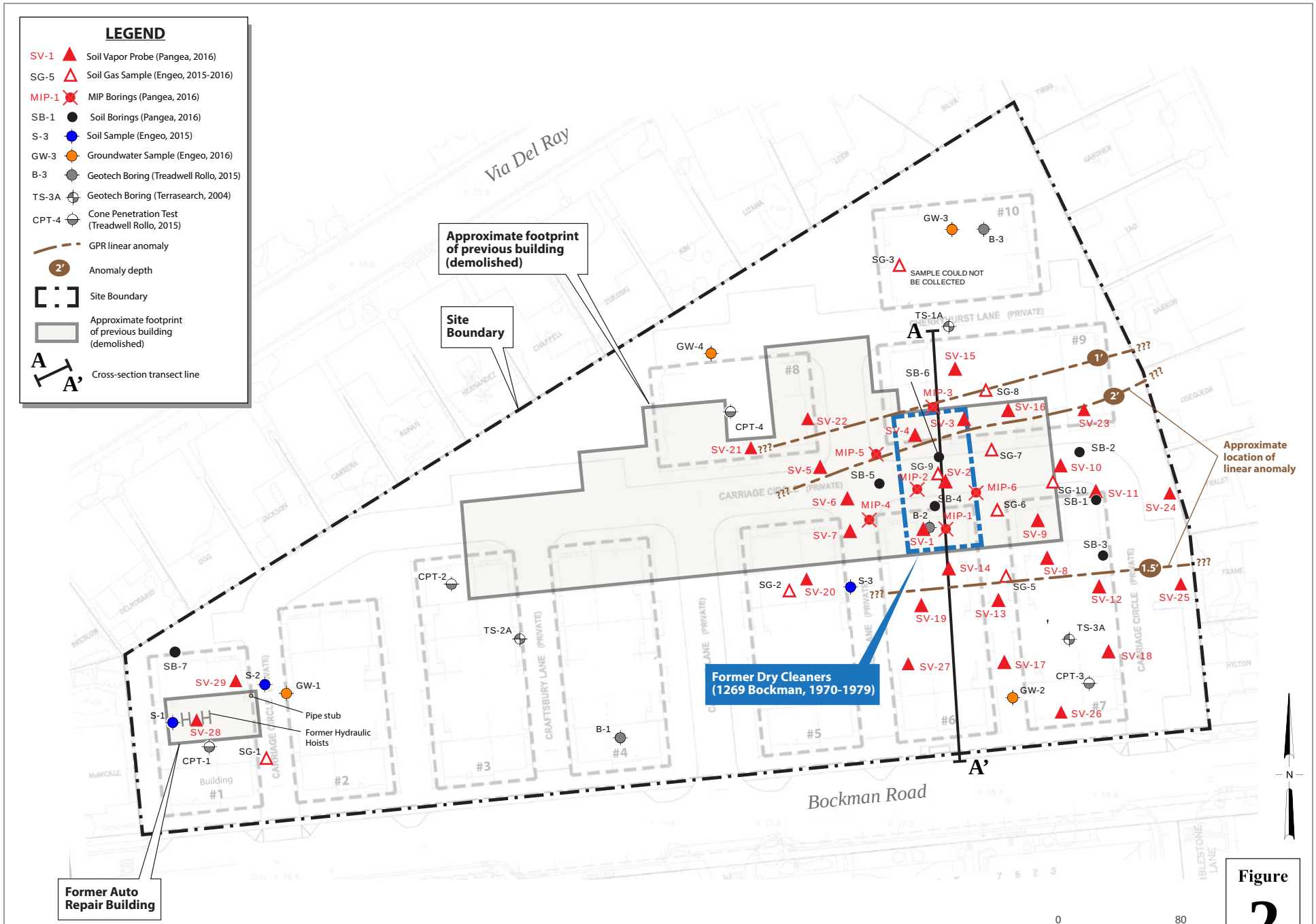


Figure 1

1233 Bockman Road
San Lorenzo, California

PANGEA

Vicinity Map



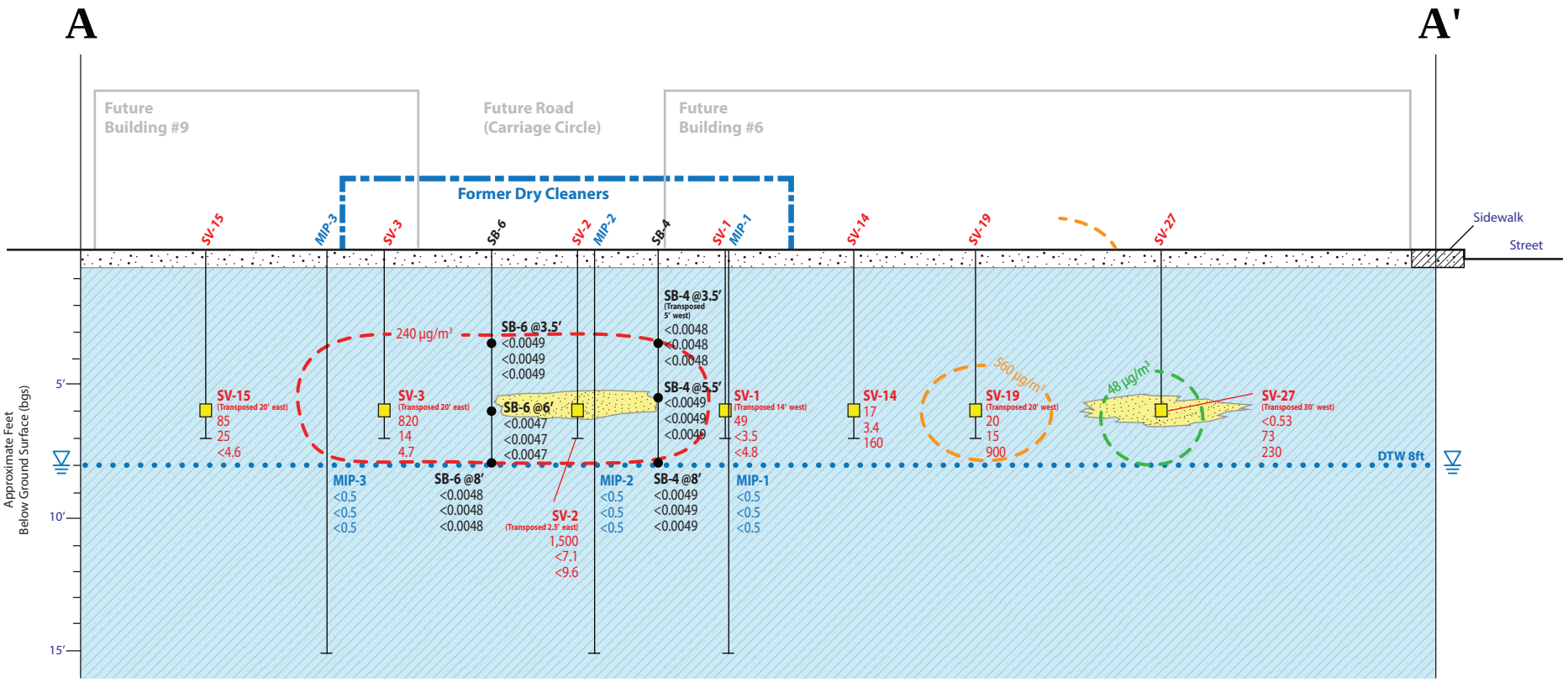
Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

Figure 2

1233 Bockman Road
San Lorenzo, California

PANGEA

Site Map



LEGEND

MIP-1 Soil Vapor Probe Soil Boring Sand Silt/Clay

SV-15	Soil Vapor Probe	**MIP-3**	Grab Groundwater sample	**SB-6 @3.5'**	Soil boring sample in ft bgs
85	PCE in soil gas (µg/m3)	<0.5	PCE in groundwater (µg/L)	<0.0049	PCE in soil (mg/kg)
25	Benzene in soil gas (µg/m3)	<0.5	Benzene in groundwater (µg/L)	ND	Benzene in soil (mg/kg)
<4.6	Ethylbenzene in soil gas (µg/m3)	<0.5	Ethylbenzene in groundwater (µg/L)	ND	Ethylbenzene in soil (mg/kg)

PCE in Soil Gas Isocontour

Benzene in Soil Gas Isocontour

Ethylbenzene in Soil Gas Isocontour

0 30

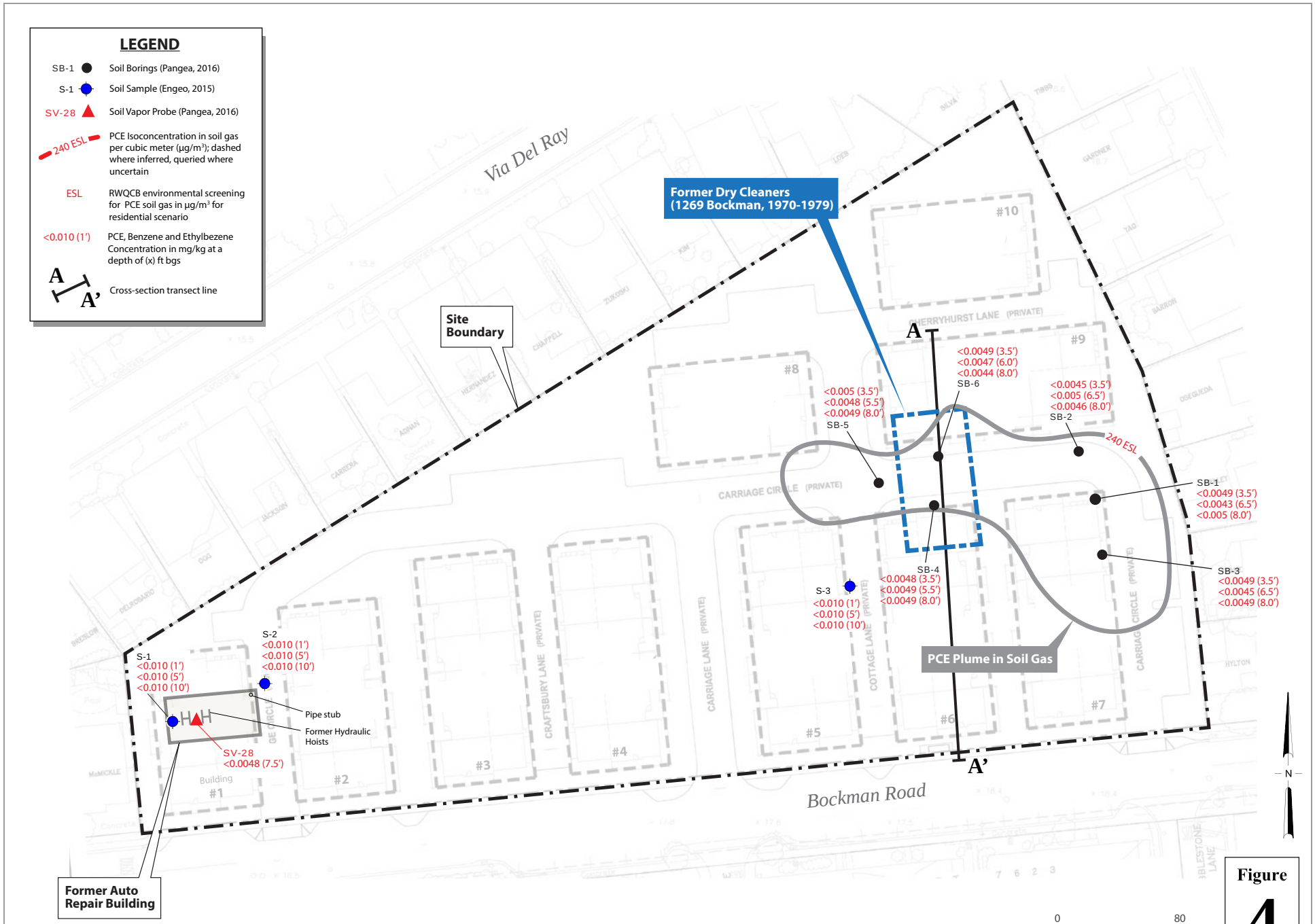
Approximate Scale (in Feet)

Figure 3

1233 Bockman Road
San Lorenzo, California

PANGEA

Cross Section A-A'



Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

1233 Bockman Road
San Lorenzo, California

PANGEA

VOCs in Shallow Soil

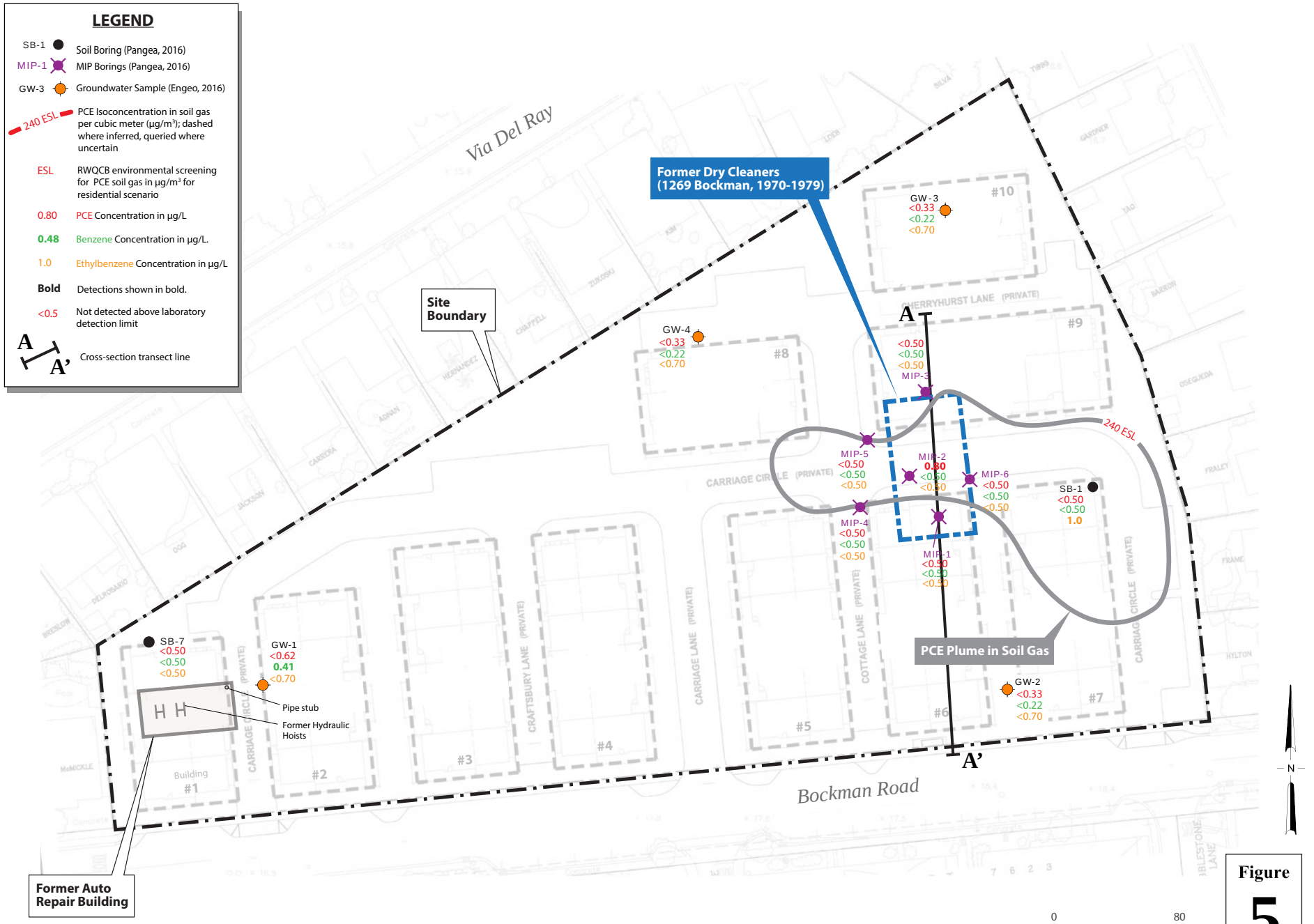


Figure 5

Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

1233 Bockman Road
San Lorenzo, California

PANGEA

VOCs in Shallow Groundwater

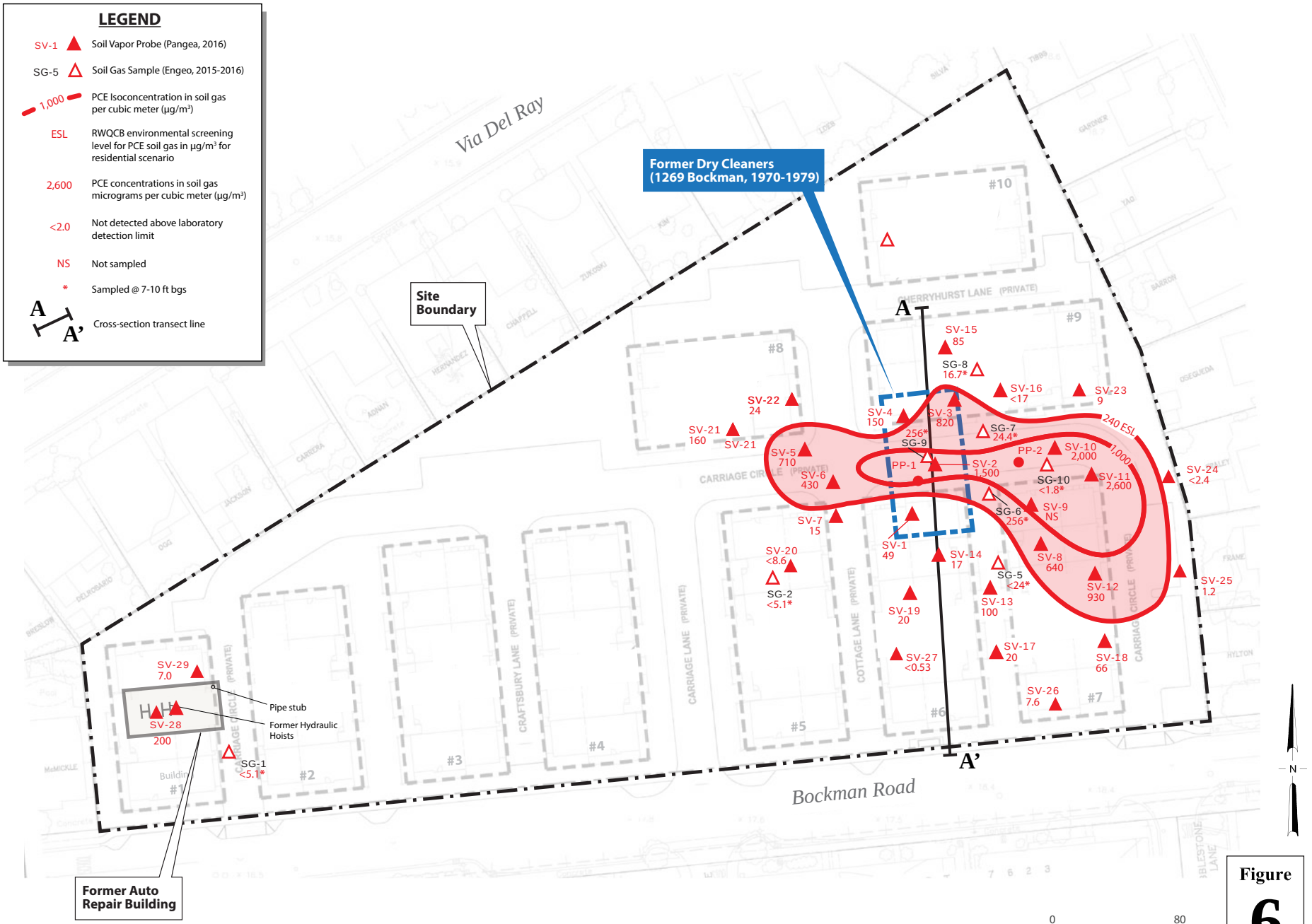


Figure 6

Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

1233 Bockman Road
San Lorenzo, California

PANGEA

PCE in Shallow Soil Gas

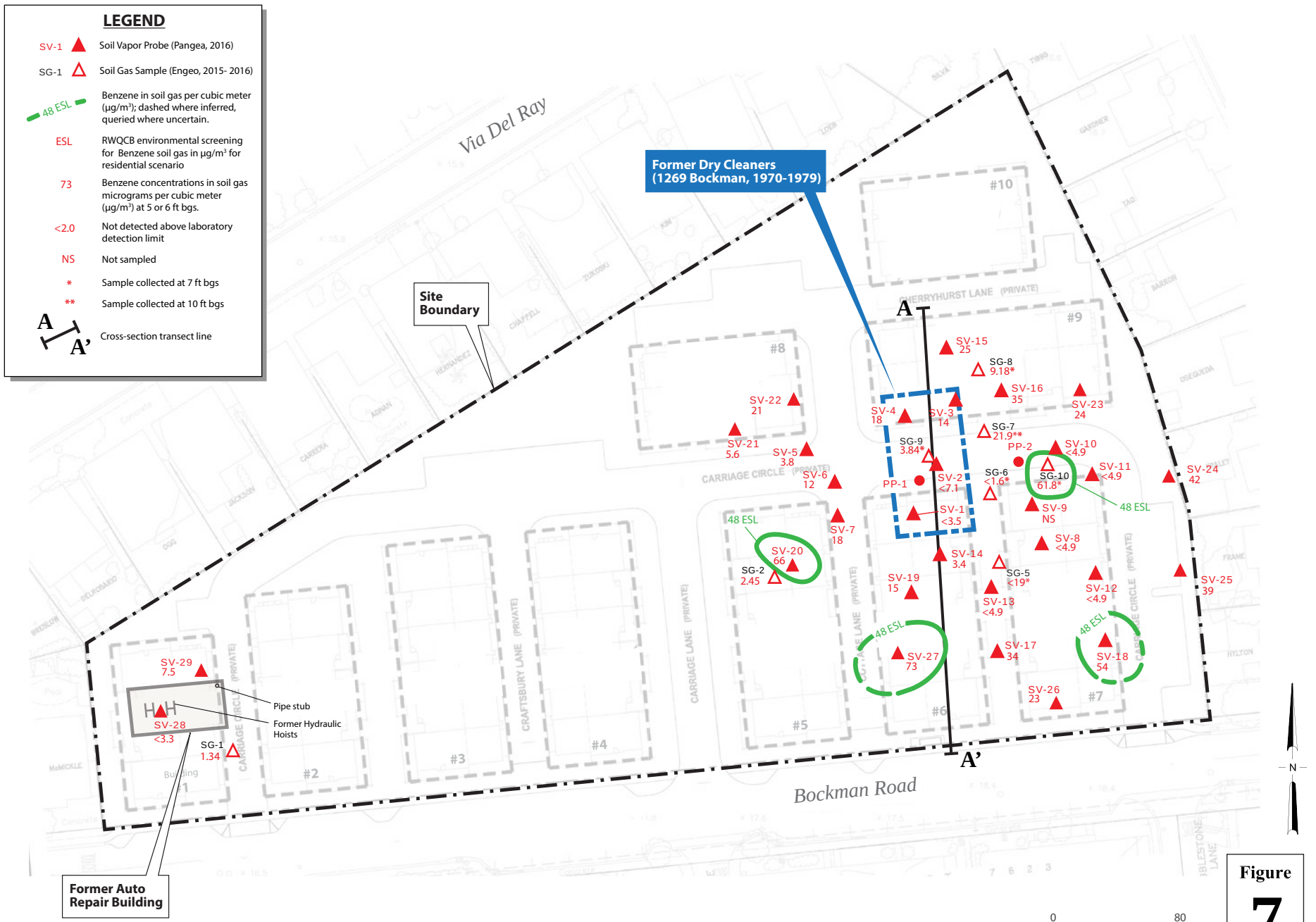


Figure 7

Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

1233 Bockman Road
San Lorenzo, California

PANGEA

Benzene in Shallow Soil Gas

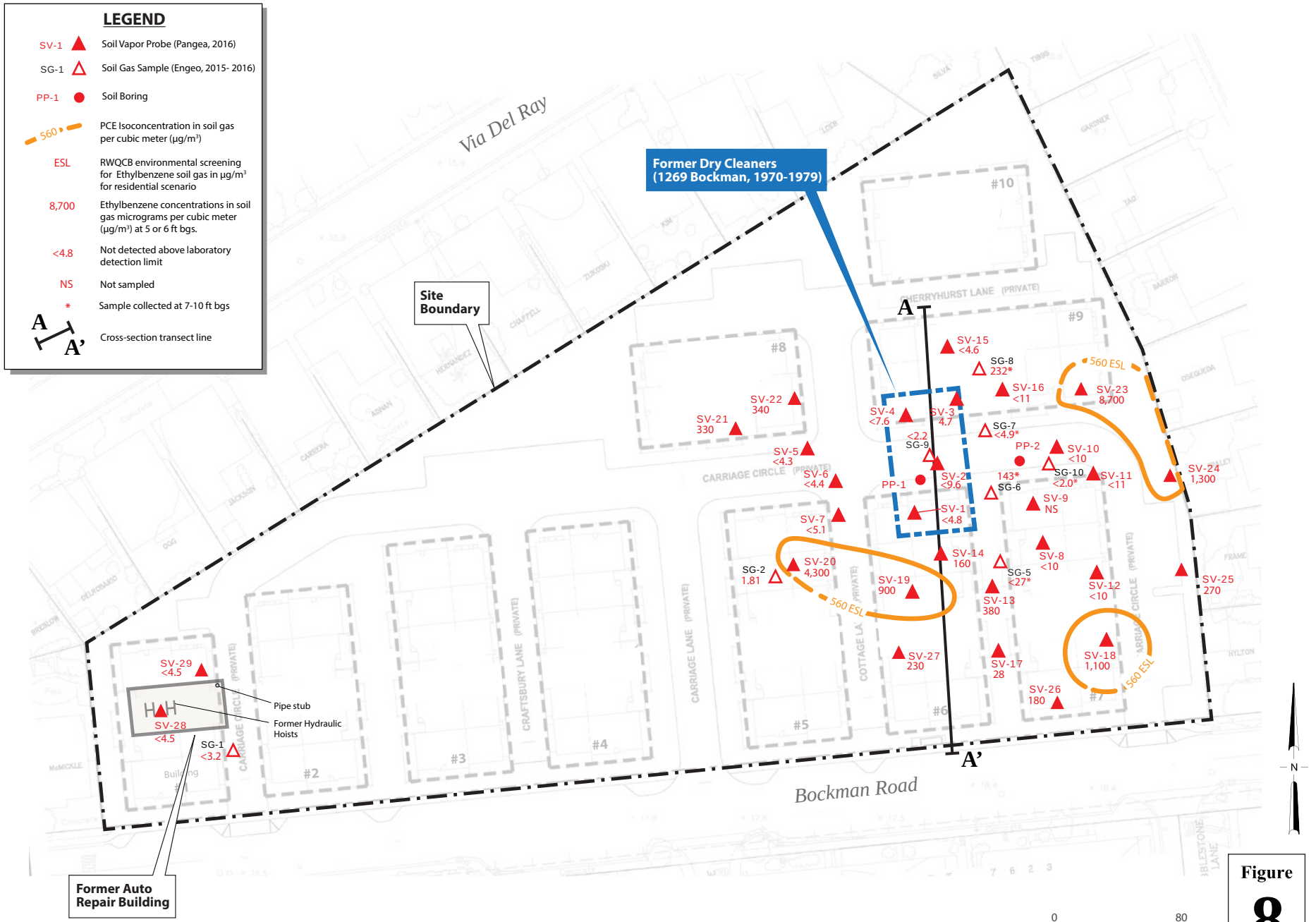


Figure 8

Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

1233 Bockman Road
San Lorenzo, California

PANGEA

Ethylbenzene in Shallow Soil Gas

Pangea

Table 1. Soil Analytical Data - 1233 Bockman Road, San Lorenzo California

Boring / Sample ID	Date Sampled	Sample Depth (ft bgs)	TPHg	TPHd	TPHmo	Lead	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	1,2-DCA	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Chloroform	Acetone	Other VOC's	Notes
Direct Exposure ESL - residential, shallow soil:			740	230	11,000	80	0.23	970	5.1	560	42	3.3	0.37	0.6	1.2	19	160	0.0082	0.30	59,000	varies	
			mg/Kg																			
Soil Data - ENGEO 2015																						
S-1	6/25/2015	1	<0.1	3.6	32	13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	---	
	6/25/2015	5	<0.1	<2.0	<10	5.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	---	
	6/25/2015	10	<0.1	<2.0	<10	5.6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	---	
S-2	6/25/2015	1	<0.1	<2.0	<10	7.6	<0.01	<0.01	<0.01	22.6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	---	
	6/25/2015	5	<0.1	<2.0	<10	8.3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	---	
	6/25/2015	10	<0.1	<2.0	<10	4.9	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	---	
S-3	6/25/2015	1	<0.1	14	230	1.3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	---	
	6/25/2015	5	<0.1	<2.0	17	6.3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	---	
	6/25/2015	10	<0.1	<2.0	<10	5.6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	---	
Soil Data - PANGEA 2016																						
SB-1	8/3/2016	3.5	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.02	---	
		6.5	<0.96	---	---	---	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0087	<0.0043	<0.017	---	
		8	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.005	<0.02	---	
SB-2	8/3/2016	3.5	---	---	---	---	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0091	<0.0045	<0.018	---	
		6	---	---	---	6.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
		6.5	<1.1	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.02	---	
		8	---	---	---	---	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0093	<0.0046	<0.019	---	
SB-3	8/3/2016	3.5	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	0.027	---	
		6.5	<0.99	---	---	---	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0091	<0.0045	<0.018	---	
		8	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.02	---	
SB-4	8/3/2016	3.5	---	---	---	---	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0097	<0.0048	<0.019	---	
		5.5	<0.99	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0097	<0.0049	<0.019	---	
		8	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.02	---	
SB-5	8/3/2016	3.5	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.005	<0.02	---	
		5.5	<1.1	---	---	---	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0097	<0.0048	<0.019	---	
		8	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.02	---	
SB-6	8/3/2016	3.5	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0097	<0.0049	<0.019	---	
		6	<0.98	---	---	4.1	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0093	<0.0047	<0.019	---	
		8	---	---	---	---	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0089	<0.0044	<0.018	---	
SV-28	8/22/2016	7.5	5.2	---	---	---	<0.0048	<0.0048	<0.0048	<0.0096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0095	<0.0048	<0.019	---	

Pangea

Table 1. Soil Analytical Data - 1233 Bockman Road, San Lorenzo California

Boring / Sample ID	Date Sampled	Sample Depth (ft bgs)	TPHg	TPHd	TPHmo	Lead	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	1,2-DCA	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Chloroform	Acetone	Other VOC's	Notes
Direct Exposure ESL - residential, shallow soil:			740	230	11,000	80	0.23	970	5.1	560	42	3.3	0.37	0.6	1.2	19	160	0.0082	0.30	59,000	varies	
			← mg/Kg →																			

Explanation:

TPHd and TPHmo analyzed by EPA Method 8015, TPHg and VOC's analyzed by EPA Method 8260

Benzene, Toluene, Ethylbenzene and Xylenes by EPA Method 8021.

TPHg = Total Petroleum Hydrocarbons as gasoline

TPHd = Total Petroleum Hydrocarbons as diesel

TPHmo = Total Petroleum Hydrocarbons as motor oil

MTBE = Methyl tert-butyl ether

1,2-DCA = 1,2-Dichloroethane

PCE = Tetrachloroethene

TCE = Trichloroethene

cis-1,2-DCE = cis-1,2-Dichloroethene

mg/Kg = Milligrams per kilogram

ft bgs = Depth below ground surface (bgs) in feet.

ESL = Environmental Screening Level, from California Regional Water Quality Control Board - San Francisco Bay Region, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Revised February 2016 (Revision 3).

< n = Chemical not present at a concentration in excess of detection limit shown.

contaminant detections highlighted in gray

Pangea

Table 2. Groundwater Analytical Data - 1233 Bockman Road, San Lorenzo, California

Boring / Sample ID	Date Sampled	Depth to Water (ft bgs)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	PCE	TCE	Chloroform	Other VOC's	Notes
			µg/L											
Vapor Intrusion ESL - shallow groundwater, residential:			--	1.1	3,600	13	1,300	20	6.1	3.0	5.6	2.3	varies	
Vapor Intrusion ESL - shallow groundwater, commercial:			--	9.7	30,000	110	11,000	170	53	26	49	20	varies	
Grab Groundwater Samples - ENGEO														
GW-1	6/25/2015	15-25[a]	51	0.48	0.42	<0.59	0.26	0.28	<0.17	<0.59	<0.59	<0.59	--	
	7/15/2016	12-17[b]	<41	0.41	<0.20	<0.70	<0.55	<1.7	0.15	0.62	<0.70	<0.70	--	
GW-2	6/25/2015	15-25[a]	<50	<0.50	<0.50	<0.50	<1.0	<0.16	<0.17	<0.50	<0.50	<0.50	--	
	7/15/2016	12-17[b]	<41	<0.22	<0.20	<0.70	<0.55	<1.7	<0.15	<0.33	<0.70	<0.70	--	
GW-3	6/25/2015	15-25[a]	<50	<0.50	<0.50	<0.50	<1.0	<0.16	<0.17	<0.50	<0.50	<0.50	--	
	7/15/2016	12-17[b]	53.2	<0.22	<0.20	<0.70	<0.55	<1.7	<0.13	<0.33	<0.70	<0.70	--	
GW-4	7/15/2016	12-17[b]	<41	<0.22	<0.20	<0.70	<0.55	<1.7	<0.15	<0.33	<0.70	<0.70	--	
Grab Groundwater Samples - PANGEA														
MIP-1	7/25/2016	8-12	<50	<0.5	0.70	<0.5	<1.0	<2.0	<0.5	<0.5	<0.5	2.3	--	
MIP-2	7/25/2016	8-12	<50	<0.5	<0.5	<0.5	<1.0	<2.0	<0.5	0.80	<0.5	**3.6**	--	
MIP-3	7/25/2016	8-12	<50	<0.5	3.3	<0.5	<1.0	<2.0	<0.5	<0.5	<0.5	**8.1**	--	
MIP-4	7/25/2016	8-12	<50	<0.5	1.5	<0.5	0.60	<2.0	<0.5	<0.5	<0.5	**13**	--	
MIP-5	7/25/2016	8-12	<50	<0.5	<0.5	<0.5	<1.0	<2.0	<0.5	<0.5	<0.5	<0.5	--	
MIP-6	7/25/2016	8-12	<50	<0.5	<0.5	<0.5	<1.0	<2.0	<0.5	<0.5	<0.5	**2.6**	--	
SB-1-W	8/3/2016	8	<50	<0.5	<0.5	1.0	6.2	<2.0	<0.5	<0.5	<0.5	<0.5	--	
SB-7	8/22/2016	8	--	<0.5	<0.5	<0.5	<1.0	<2.0	<0.5	<0.5	<0.5	<0.5	--	

Pangea

Table 2. Groundwater Analytical Data - 1233 Bockman Road, San Lorenzo, California

Boring / Sample ID	Date Sampled	Depth to Water (ft bgs)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	PCE	TCE	Chloroform	Other VOC's	Notes
			µg/L											
Vapor Intrusion ESL - shallow groundwater, residential:			--	1.1	3,600	13	1,300	20	6.1	3.0	5.6	2.3	varies	
Vapor Intrusion ESL - shallow groundwater, commercial:			--	9.7	30,000	110	11,000	170	53	26	49	20	varies	

Explanation:

TPHg = Total Petroleum Hydrocarbons Gasoline by EPA Method 8015.

1,2-DCA = 1,2-Dichloroethane

PCE = Tetrachloroethene

TCE = Trichloroethene

VOC's by EPA Method 8260

µg/L = micrograms per Liter

ft bgs = feet below grade surface.

ESL = Environmental screening level established by the SFB-RWQCB, Interim Final - November 2007 and amended in February 2016, (Rev. 3)

-- = Not analyzed or not available.

Bold indicates concentrations exceeds Drinking Water ESL

< n = Chemical not present at a concentration in excess of laboratory detection limit shown.

[a] = ENGEO report dated 07/02/2015 states samples were taken at first encountered groundwater which ranged between 15-25 ft bgs

[b] = ENGEO report dated 08/02/2016 states samples were taken at first encountered groundwater which ranged between 12-17 ft bgs

Contaminent detections highlighted in gray

Pangea

Table 3. Soil Gas Analytical Data - 1233 Bockman Road, San Lorenzo, California

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	PCE	TCE	Chloroform	Isopropyl Alcohol (Leak Check Compound)	Notes
			ug/m³										
Residential ESL for soil/subslab gas:			48	160,000	560	52,000	41	54	240	240	61	NA	
Soil Gas Samples - Engeo 2015 - 2016													
SG-1	06/25/15	5.0	1.34	6.33	<3.2	<6.5	<7.8	<3.1	<5.1	<8.1	4.92	<30	
SG-2	06/25/15	5.0	2.45	18.3	1.81	14.83	<7.8	<3.1	<5.1	<8.1	<7.4	<30	
SG-5	06/24/16	10	<19	<26	<27	<44	<140	<55	<24	<150	ND	--	
SG-6	06/24/16	7.0	<1.6	4.1	143	260	<5.2	<2.1	**256**	<5.4	ND	--	
SG-7	06/24/16	10	21.9	20.9	<4.9	<9.9	<12	<4.7	24.4	<12	ND	--	
SG-8	06/24/16	7.0	9.18	19.1	232	1,172	<5.2	<2.1	16.7	<5.4	ND	--	
SG-9	06/24/16	7.0	3.84	9.96	<2.2	4.69	<5.2	<2.1	**256**	<5.4	ND	--	
SG-10	06/24/16	10	**61.8**	76.2	<2.0	6.97	<10	<4.1	<1.8	<11	ND	--	
Soil Gas Samples - Pangea 2016													
SV-1	07/27/16	6.0	<3.5	<4.2	<4.8	<4.8	<23	<4.5	49	<5.9	<5.4	<11	
SV-2	07/27/16	6.0	<7.1	<8.3	<9.6	<9.6	<46	<8.9	**1,500**	<12	<11	<22	
SV-3	07/27/16	6.0	14	14	4.7	7.7	<22	<4.2	**820**	<5.6	<5.1	140	
SV-4	07/27/16	6.0	18	7.5	<7.6	<7.6	<36	<7.0	150	<9.4	<8.5	<17	
SV-5	07/27/16	6.0	3.8	<3.7	<4.3	<4.3	<21	<4.0	**710**	<5.3	<4.8	<9.6	
SV-6	07/27/16	6.0	12	<3.8	<4.4	<4.4	<21	<4.1	**430**	<5.4	<4.9	<9.9	
SV-7	07/27/16	6.0	18	27	<5.1	<5.1	<25	<4.7	15	<6.3	<5.7	<12	
SV-8	07/28/16	6.0	<4.9*	<11*	<10*	<15*	--	<14*	**640**	<8.7*	<9.4*	<22*	
SV-9	09/01/16	6.0	--	--	--	--	--	--	--	--	--	--	not sampled
SV-10	07/28/16	6.0	<4.9*	<11*	<10*	<15*	--	<14*	**2,000**	170*	<9.4*	<22*	
SV-11	07/28/16	6.0	<4.9*	<11*	<10*	<15*	--	<14*	**2,600**	150*	<9.4*	<22*	
SV-12	07/28/16	6.0	<4.9*	<11*	<10*	110*	--	<14*	**930**	76*	<9.4*	<22*	
SV-13	07/28/16	6.0	<4.9*	<11*	380	1,470	--	<14*	100*	<8.7*	<9.4*	<22*	

Pangea

Table 3. Soil Gas Analytical Data - 1233 Bockman Road, San Lorenzo, California

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	PCE	TCE	Chloroform	Isopropyl Alcohol (Leak Check Compound)	Notes
			ug/m^3										
Residential ESL for soil/subslab gas:			48	160,000	560	52,000	41	54	240	240	61	NA	
SV-14	07/27/16	6.0	3.4	3.6	160	980	<20	<3.8	17	<5.1	<4.6	64	
SV-15	07/27/16	6.0	25	9.2	<4.6	8.6	<22	<4.3	85	6.1	<5.2	<10	
SV-16	07/27/16	6.0	35	13	<11	<11	<52	<10	<17	<13	<12	<24	
SV-17	07/28/16	6.0	34	13	28	191	--	<4.1	20	9.7	<5.0	150	
SV-18	07/28/16	6.0	**54**	59	**1,100**	3,190	--	<4.1	66	<5.5	<5.0	7.9*	
SV-19	07/28/16	6.0	15	40	**900**	2,490	--	<4.1	20	11	<5.0	8.7*	
SV-20	08/05/16	6.0	66*	160	**4,300**	18,400	17*	<130	<8.6*	<170	<160	<310	
SV-21	08/05/16	6.0	5.6*	<11	330	3,090	3.2*	<12	160	<16	<15	<29	
SV-22	08/05/16	6.0	21*	<82	340	18,100	10*	<88	24*	<120	<110	<210	
SV-23	08/05/16	6.0	24*	150	**8,700**	34,000	19*	<130	9.0*	<170	<150	<310	
SV-24	08/05/16	6.0	42	45	**1,300**	5,500	13*	<35	<2.4*	<47	<43	<86	
SV-25	08/05/16	6.0	39	47	270	1,440	<1.2*	<11	1.2*	<14	<13	<26	
SV-26	08/05/16	6.0	23	28	180	920	2.6*	<4.4	7.6	<5.8	<5.3	<11	
SV-27	08/05/16	6.0	**73**	48	230	1,250	3.9*	<7.9	<0.53*	<11	<9.6	<19	
SV-28	08/22/16	6.0	<3.3	<3.9	<4.5	<9.0	<22	<4.2	200	9.6	<5.1	1,800	well destroyed 08/22/16
SV-29	08/22/16	6.0	7.5	<3.9	<4.5	17.1	<21	<4.1	7.0	<5.5	<5.0	83	well destroyed 08/22/16
Shroud (SV-8)	07/28/16	--	--	--	--	--	--	--	--	--	--	130,000	
Shroud (SV-24)	08/05/16	--	--	--	--	--	--	--	--	--	--	180,000	

Pangea

Table 3. Soil Gas Analytical Data - 1233 Bockman Road, San Lorenzo, California

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	PCE	TCE	Chloroform	Isopropyl Alcohol (Leak Check Compound)	Notes
			ug/m^3										
Residential ESL for soil/subslab gas:			48	160,000	560	52,000	41	54	240	240	61	NA	

Abbreviations:

DCA = 1,2-dichloroethane

PCE = Tetrachloroethene

TCE = Trichloroethene

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

VOCs by EPA Method TO-15.

See lab report for trace concentrations of other VOCs

ug/m^3 = Micrograms per cubic meter of air.

ft bgs = Feet below ground surface

ESL = Environmental Screening Level for Shallow Soil Gas for Evaluation of Potential Vapor Intrusion (Table E-2). Established by the SFBRWQCB, Interim Final - November 2007; Feb 2016 (Rev. 3)

ND = not detected above laboratory reporting limits.

-- = Not analyzed

< n = Chemical not present at a concentration in excess of laboratory detection limit shown.

Bold concentrations exceed residential ESL.

* = Represents an estimated concentration (j-flag value) below the reporting limit, or indicates that there was no detection above the method detection limit.

contaminant detections highlighted in gray

APPENDIX A

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: 07/14/2016 By jamesy

Permit Numbers: W2016-0499
Permits Valid from 07/25/2016 to 07/29/2016

Application Id:	1468522589853	**City of Project Site:**	San Lorenzo
Site Location:	1233 Bockman Road		
Project Start Date:	07/25/2016	**Completion Date:**	07/29/2016
Assigned Inspector:	Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org		
Applicant:	Pangea Environmental Services - Elizabeth Avery 1710 Franklin Street #200, Oakland, CA 94612	**Phone:**	510-836-3700
Property Owner:	Pauls Real Estate Investment, LLC Pauls Real Estate Investment, LLC 100 St. Paul Street, Suite 300, Denver, CO 80206	**Phone:**	--
Client:	Pauls Real Estate Investment, LLC Pauls Real Estate Investment, LLC 100 St. Paul Street, Suite 300, Denver, CO 80206	**Phone:**	--

	Total Due:	$265.00
Receipt Number: WR2016-0351	**Total Amount Paid:**	$265.00
Payer Name : Bob Clark-Riddell	Paid By: VISA	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Vapor Sampling 24 to 48 hours only - 23 Boreholes
Driller: Penecore Drilling - Lic #: 906899 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2016-0499	07/14/2016	10/23/2016	23	2.25 in.	20.00 ft

Specific Work Permit Conditions

1. 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.

2. 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.

3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an 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.

4. 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 and liability in connection with or resulting from the exercise of this Permit including, but not limited to, property damage, personal injury and wrongful death.

5. 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.

6. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

7. 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.

8. 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.

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

10. Vapor monitoring wells constructed with tubing shall be decomissioned by complete removal of tubing, grout seal, and fill material of sand or bentonite. Fill material may be removed by hand auger if material can be removed completely.

Vapor monitoring wells constructed with pvc pipe less than 2" shall be overdrilled to total depth.

Vapor monitoring wells constructed with 2" pvc pipe or larger may be grouted by tremie pipe (any depth) or pressure grouted (less than 30', 25 psi for 5 min).

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: 07/27/2016 By jamesy

Permit Numbers: W2016-0546
Permits Valid from 07/28/2016 to 07/29/2016

Application Id: 1469582970206
City of Project Site: San Lorenzo
Site Location: 1233 Bockman Road
Project Start Date: 07/28/2016
Completion Date: 07/29/2016
Assigned Inspector: Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org

Applicant: Pangea Environmental Services, Inc. - Patrick Groff
1710 Franklin ST #200, Oakland, CA 94612
Phone: 925-818-0010

Property Owner: Andrew Lavaux
100 St. Paul Street, #300, Denver, CO 80206
Phone: --

Client: ** same as Property Owner **

	Total Due:	$265.00
Receipt Number: WR2016-0379	**Total Amount Paid:**	$265.00
Payer Name : Robert Clark-Riddell	Paid By: VISA	**PAID IN FULL**

Works Requesting Permits:

Well Construction-Vapor monitoring well-Vapor monitoring well - 23 Wells
Driller: Penecore Drilling - Lic #: 906899 - Method: other

Work Total: $265.00

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2016-0546	07/27/2016	10/26/2016	SV-1	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-10	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-11	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-12	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-13	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-14	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-15	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-16	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-17	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-18	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-19	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-2	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-20	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-21	2.25 in.	0.25 in.	20.00 ft	20.00 ft

Alameda County Public Works Agency - Water Resources Well Permit

W2016-0546	07/27/2016	10/26/2016	SV-22	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-23	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-3	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-4	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-5	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-6	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-7	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-8	2.25 in.	0.25 in.	20.00 ft	20.00 ft
W2016-0546	07/27/2016	10/26/2016	SV-9	2.25 in.	0.25 in.	20.00 ft	20.00 ft

Specific Work Permit Conditions

1. Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

2. Compliance with the above well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate state reporting-requirements related to well destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days, including permit number and site map.

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. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

5. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an 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.

6. No changes in construction procedures or well type shall change, as described on this permit application. This permit may be voided if it contains incorrect information.

7. 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.

8. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.

9. 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.

10. 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.

11. Vapor monitoring wells above water level constructed with tubing maybe be backfilled with pancake-batter consistency bentonite. Minimum surface seal thickness is two inches of cement grout around well box.

Vapor monitoring wells above water level constructed with pvc pipe shall have a minimum seal depth (Neat Cement Seal) of 2 feet below ground surface (BGS). Minimum surface seal thickness is two inches of cement grout around well box. All other conditions for monitoring well construction shall apply.

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: 08/18/2016 By jamesy

Permit Numbers: W2016-0611
Permits Valid from 08/22/2016 to 08/22/2016

Application Id:	1471556703733	**City of Project Site:**	San Lorenzo
Site Location:	1233 Bockman Road, San Lorenzo		
	Request Start Date: August 22, 2016		
Project Start Date:	08/22/2016	**Completion Date:**	08/22/2016
Assigned Inspector:	Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org		
Applicant:	Pangea Environmental Services, Inc. - Patrick Groff 1710 Franklin Street, # 200, Oakland, CA 94612	**Phone:**	925-818-0010
Property Owner:	Andrew Lavaux 100 St. Paul Street, Suite 300, Denver, CO 80206	**Phone:**	--
Client:	Andrew Lavaux 100 St. Paul Street, Suite 300, Denver, CO 80206	**Phone:**	--

	Total Due:	$265.00
Receipt Number: WR2016-0412	**Total Amount Paid:**	$265.00
Payer Name : Robert Clark-Riddell	Paid By: VISA	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Vapor Sampling 24 to 48 hours only - 3 Boreholes
Driller: Penecore - Lic #: 906899 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2016-0611	08/18/2016	11/20/2016	2	2.25 in.	7.00 ft
W2016-0611	08/18/2016	11/20/2016	1	2.25 in.	7.00 ft

Specific Work Permit Conditions

1. 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.

2. 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.

3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an 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.

4. 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 and liability in connection with or resulting from the exercise of this Permit including, but not limited to, property damage, personal injury and wrongful death.

5. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

6. 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.

7. 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.

8. 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.

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

10. Vapor monitoring wells constructed with tubing shall be decomissioned by complete removal of tubing, grout seal, and fill material of sand or bentonite. Fill material may be removed by hand auger if material can be removed completely.

Vapor monitoring wells constructed with pvc pipe less than 2" shall be overdrilled to total depth.

Vapor monitoring wells constructed with 2" pvc pipe or larger may be grouted by tremie pipe (any depth) or pressure grouted (less than 30', 25 psi for 5 min).

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: 08/29/2016 By jamesy

Permit Numbers: W2016-0636 to W2016-0637
Permits Valid from 08/30/2016 to 08/30/2016

Application Id: 1472490361392
City of Project Site: Alameda
Site Location: 1233 Bockman Road
Project Start Date: 08/30/2016
Completion Date: 08/30/2016
Assigned Inspector: Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org

Applicant: Pangea Environmental Services, Inc. - Patrick Groff
1710 Franklin ST #200, Oakland, CA 94612
Phone: 925-818-0010

Property Owner: Andrew Lavaux
100 St. Paul Street, #300, Denver, CA 80206
Phone: --

Client: Andrew Lavaux
100 St. Paul Street, #300, Denver, CA 80206
Phone: --

Total Due: $530.00
Receipt Number: WR2016-0427 **Total Amount Paid:** $530.00
Payer Name : Robert Clark-Riddell Paid By: VISA **PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Vapor Sampling 24 to 48 hours only - 11 Boreholes
Driller: Penecore Drilling - Lic #: 906899 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2016-0636	08/29/2016	11/28/2016	11	2.25 in.	7.00 ft

Specific Work Permit Conditions

1. 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.

2. 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.

3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an 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.

4. 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 and liability in connection with or resulting from the exercise of this Permit including, but not limited to,

property damage, personal injury and wrongful death.

5. 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.

6. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

7. 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.

8. 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.

9. 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.

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

11. Vapor monitoring wells constructed with tubing shall be decomissioned by complete removal of tubing, grout seal, and fill material of sand or bentonite. Fill material may be removed by hand auger if material can be removed completely.

Vapor monitoring wells constructed with pvc pipe less than 2" shall be overdrilled to total depth.

Vapor monitoring wells constructed with 2" pvc pipe or larger may be grouted by tremie pipe (any depth) or pressure grouted (less than 30', 25 psi for 5 min).

Borehole(s) for Investigation-Environmental/Monitorinig Study - 4 Boreholes
Driller: Penecore Drilling - Lic #: 906899 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2016-0637	08/29/2016	11/28/2016	4	2.25 in.	15.00 ft

Specific Work Permit Conditions

Alameda County Public Works Agency - Water Resources Well Permit

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.

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: 09/06/2016 By jamesy

Permit Numbers: W2016-0650 to W2016-0651
Permits Valid from 09/07/2016 to 09/07/2016

Application Id:	1472856646183	**City of Project Site:**	San Lorenzo
Site Location:	1233 Bockman Road, San Lorenzo		
Project Start Date:	09/07/2016	**Completion Date:**	09/07/2016
Assigned Inspector:	Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org		

Applicant:	Pangea Environmental Services, Inc. - Patrick Groff 1710 Franklin ST #200, Oakland, CA 94612	**Phone:** 925-818-0010
Property Owner:	Andrew Lavaux 100 St. Paul Street, #300, Denver, CA 80206	**Phone:** --
Client:	Andrew Lavaux 100 St. Paul Street, #300, Denver, CA 80206	**Phone:** --

	Total Due:	$530.00
Receipt Number: WR2016-0438	**Total Amount Paid:**	$530.00
Payer Name : Robert Clark-Riddell	Paid By: VISA	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 6 Boreholes
Driller: Penecore Drilling - Lic #: 906899 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2016-0650	09/06/2016	12/06/2016	6	2.25 in.	12.00 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.

Borehole(s) for Investigation-Vapor Sampling 24 to 48 hours only - 6 Boreholes
Driller: Penecore Drilling - Lic #: 906899 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2016-0651	09/06/2016	12/06/2016	6	2.25 in.	7.00 ft

Specific Work Permit Conditions

1. 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.

2. 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.

3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an 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.

4. 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 and liability in connection with or resulting from the exercise of this Permit including, but not limited to, property damage, personal injury and wrongful death.

5. 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.

6. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

7. 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.

8. 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.

9. 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.

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

11. Vapor monitoring wells constructed with tubing shall be decomissioned by complete removal of tubing, grout seal, and fill material of sand or bentonite. Fill material may be removed by hand auger if material can be removed completely.

Vapor monitoring wells constructed with pvc pipe less than 2" shall be overdrilled to total depth.

Vapor monitoring wells constructed with 2" pvc pipe or larger may be grouted by tremie pipe (any depth) or pressure grouted (less than 30', 25 psi for 5 min).

APPENDIX B

Standard Operating Procedures

STANDARD FIELD PROCEDURES FOR HAND-AUGER SOIL BORINGS

This document describes Pangea Environmental Services' standard field methods for drilling and sampling soil borings using a hand-auger. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality, and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG), Certified Engineering Geologist (CEG), or Professional Engineer. The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Boring and Sampling

Hand-auger borings are typically drilled using a hand-held bucket auger to remove soil to the desired sampling depth. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the augered hole. The vertical location of each soil sample is determined using a tape measure. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Augering and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

The borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55-gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

STANDARD FIELD PROCEDURES FOR SOIL BORINGS

This document describes Pangea Environmental Services' standard field methods for drilling and sampling soil borings. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality, and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist, scientist or engineer working under the supervision of a California Registered Engineer, California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or hydraulic-push technologies. At least one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples are collected near the water table and at lithologic changes. With hollow-stem drilling, samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the borehole. With hydraulic-push drilling, samples are typically collected using acetate liners. The vertical location of each soil sample is determined by measuring the distance from the middle of the soil sample tube to the end of the drive rod used to advance the split barrel sampler or the acetate tube. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes or cut acetate liners chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

Soil samples collected during drilling will be analyzed in the field for ionizable organic compounds using a photo-ionization detector (PID) with a 10.2 eV lamp. The screening procedure will involve placing an undisturbed soil sample in a sealed container (either a zip-lock bag, glass jar, or a capped soil tube). The container will be set aside, preferably in the sun or warm location. After approximately fifteen minutes, the head space within the container will be tested for total organic vapor, measured in parts per million on a volume to volume basis (ppmv) by the PID. The PID instrument will be calibrated prior to boring using hexane or isobutylene. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples collected from borings are either collected from the open borehole, from within screened PVC inserted into the borehole, or from a driven Hydropunch-type sampler. Groundwater is typically extracted using a bailer, check valve and/or a peristaltic pump. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

Pangea often performs electrical conductivity (EC) logging and/or continuous coring to identify potential water-bearing zones. Hydropunch-type sampling is then performed to provide discrete-depth grab groundwater sampling within potential water-bearing zones for vertical contaminant delineation. Hydropunch-type sampling typically involves driving a cylindrical sheath of hardened steel with an expendable drive point to the desired depth within undisturbed soil. The sheath is retracted to expose a stainless steel or PVC screen that is sealed inside the sheath with Neoprene O-rings to prevent infiltration of formation fluids until the desired depth is attained. The groundwater is extracted using tubing inserted down the center of the rods into the screened sampler.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

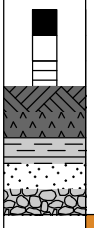
Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55 gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

APPENDIX C

Boring Logs

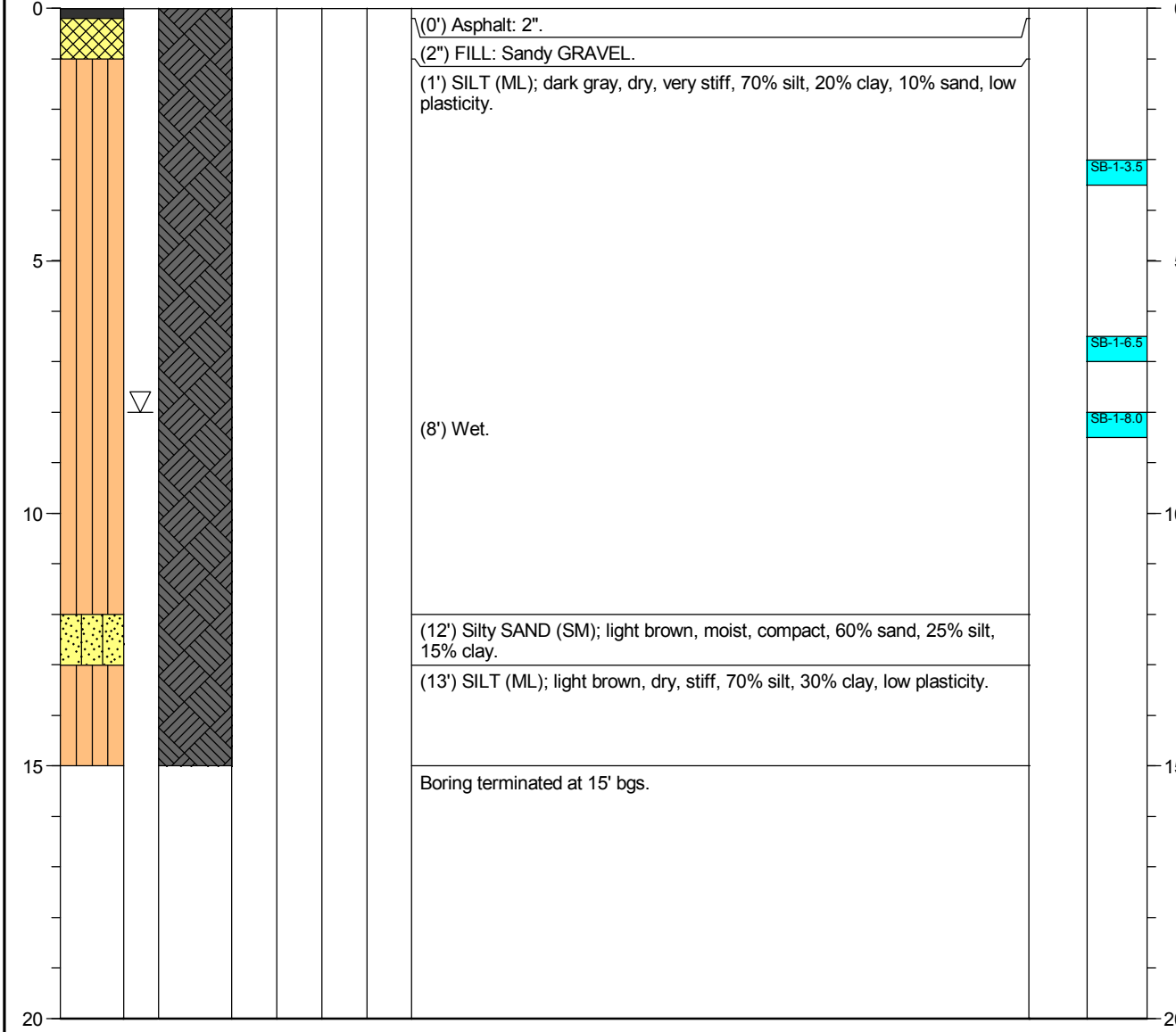
BORING AND WELL LOG LEGEND

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:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**BORING LOG** **Boring No. SB-1** **Page: 1 of 1**

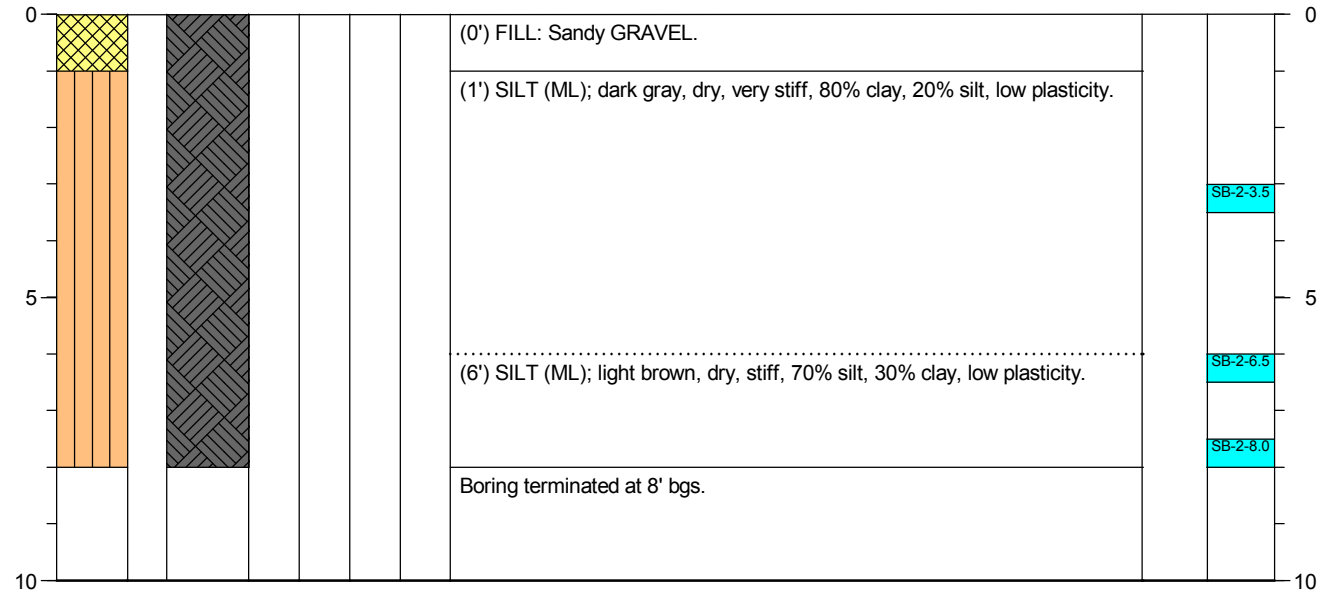
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Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**
Drilling Company:	**Penecore**	Sampling Method(s):	**Dual Tube**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):	**8**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	
Driller:		Ground Surface Elev. (ft):	
Logged By:	**Patrick Groff**	Location (X,Y):	



NOTES: Installed temporary PVC casing with 10 ft screen and collect GW sample with a disposal.

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**BORING LOG** **Boring No. SB-2** **Page: 1 of 1**

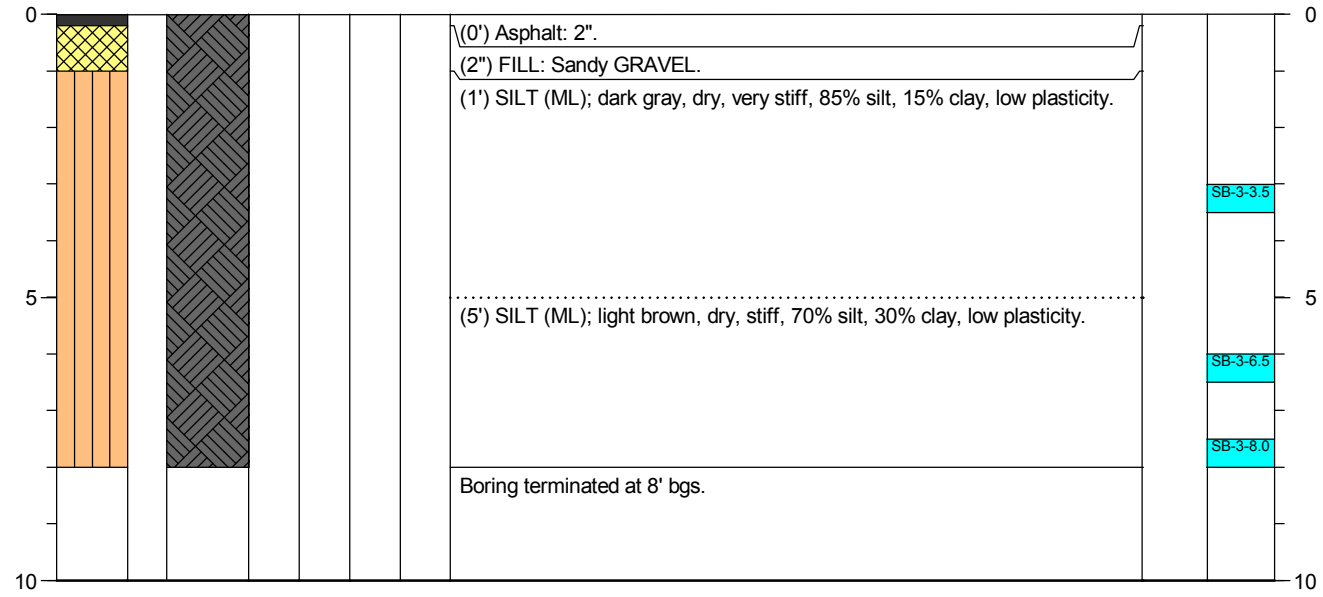
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Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**
Drilling Company:	**Penecore**	Sampling Method(s):	**Dual Tube**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):	
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	
Driller:		Ground Surface Elev. (ft):	
Logged By:	**Patrick Groff**	Location (X,Y):	



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**BORING LOG** **Boring No. SB-3** **Page: 1 of 1**

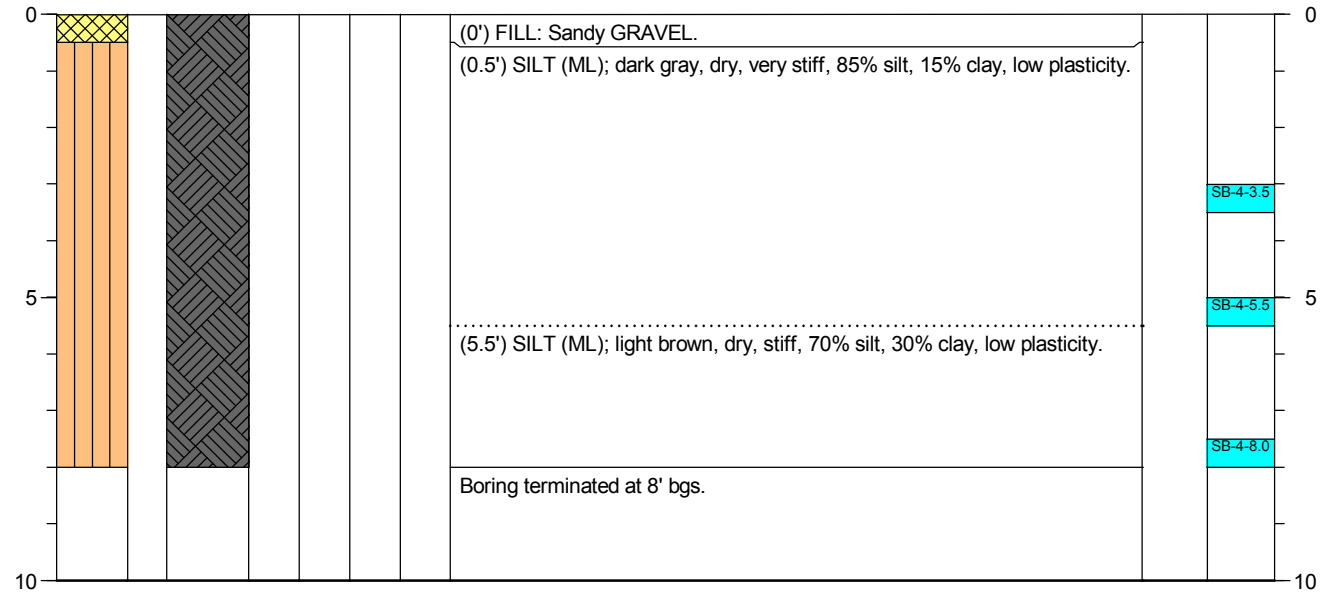
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Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**
Drilling Company:	**Penecore**	Sampling Method(s):	**Dual Tube**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):	
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	
Driller:		Ground Surface Elev. (ft):	
Logged By:	**Patrick Groff**	Location (X,Y):	



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**BORING LOG** **Boring No. SB-4** **Page: 1 of 1**

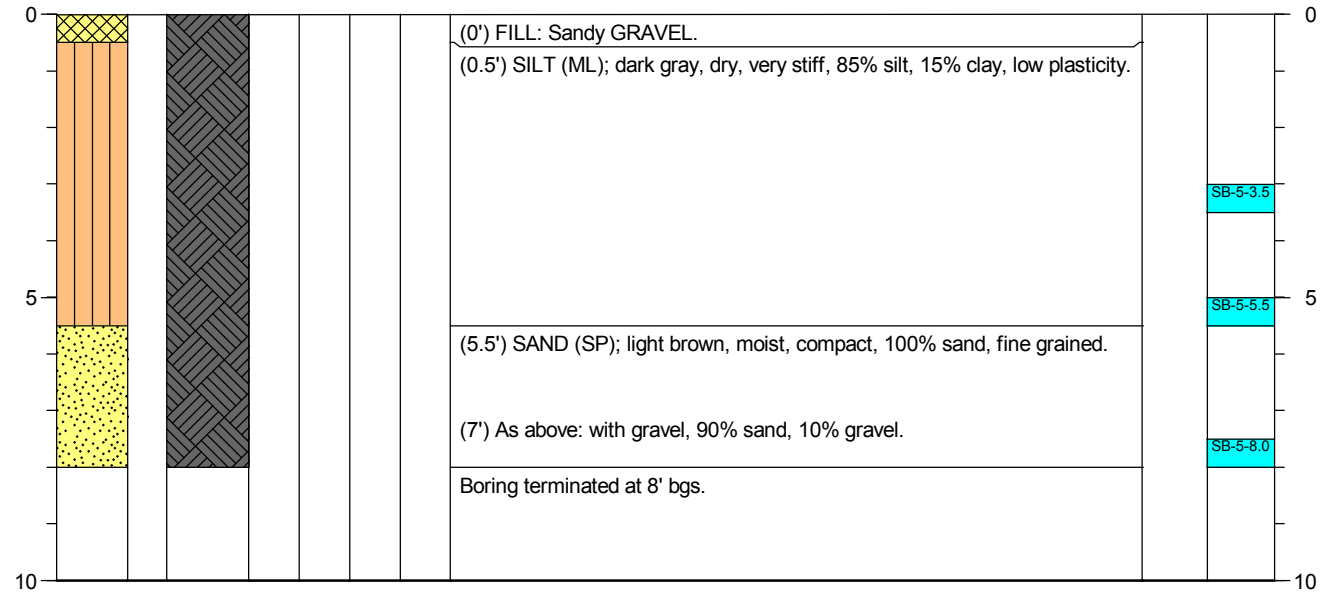
Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**8**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**
Drilling Company:	**Penecore**	Sampling Method(s):	**Dual Tube**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):	
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	
Driller:		Ground Surface Elev. (ft):	
Logged By:	**Patrick Groff**	Location (X,Y):	



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**BORING LOG** **Boring No. SB-5** **Page: 1 of 1**

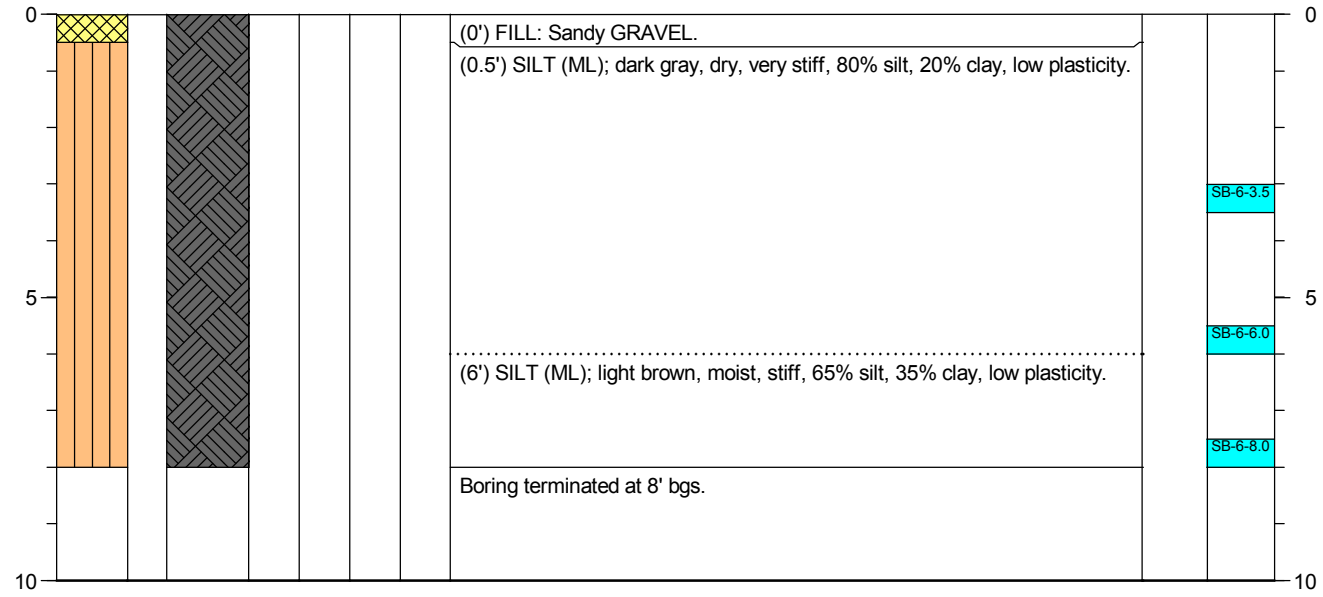
Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**8**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**
Drilling Company:	**Penecore**	Sampling Method(s):	**Dual Tube**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):	
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	
Driller:		Ground Surface Elev. (ft):	
Logged By:	**Patrick Groff**	Location (X,Y):	



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**BORING LOG** **Boring No. SB-6** **Page: 1 of 1**

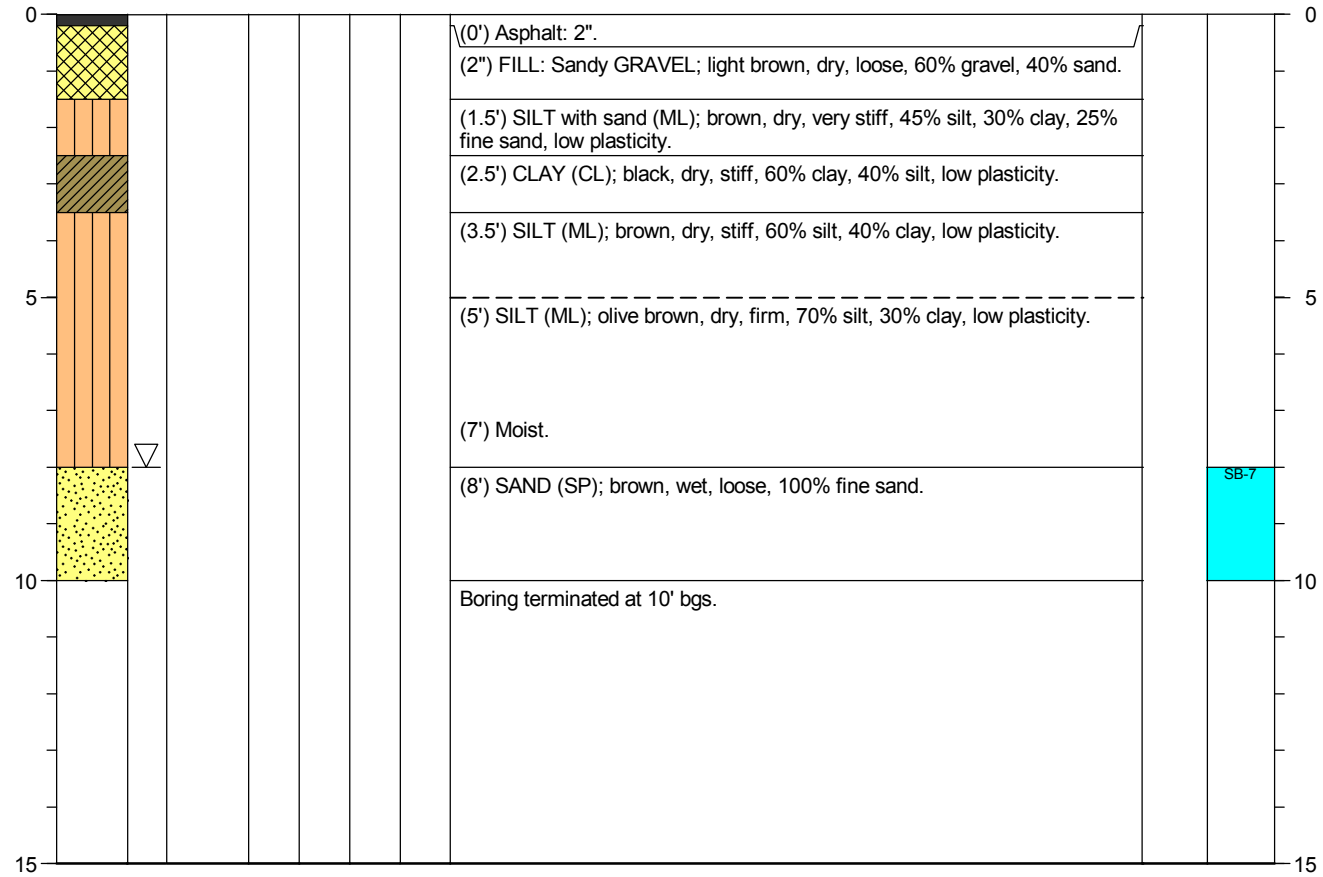
Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**8**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**
Drilling Company:	**Penecore**	Sampling Method(s):	**Dual Tube**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):	
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	
Driller:		Ground Surface Elev. (ft):	
Logged By:	**Patrick Groff**	Location (X,Y):	



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**BORING LOG** **Boring No. SB-7** **Page: 1 of 1**

Drilling Start Date:	**08/22/2016**	Boring Depth (ft):	**10**
Drilling End Date:	**08/22/2016**	Boring Diameter (in):	**3**
Drilling Company:	**Penecore**	Sampling Method(s):	
Drilling Method:	**Hand Auger**	DTW During Drilling (ft):	**8**
Drilling Equipment:		DTW After Drilling (ft):	
Driller:		Ground Surface Elev. (ft):	
Logged By:	**Albert Simmons**	Location (X,Y):	



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-1 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-2 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-3 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-4 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-5 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-6 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-7 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-8 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-9 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No. SV-10** **Page: 1 of 1**

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-11 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-12 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-13 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-14 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-15 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-16 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-18 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-19 **Page:** 1 of 1

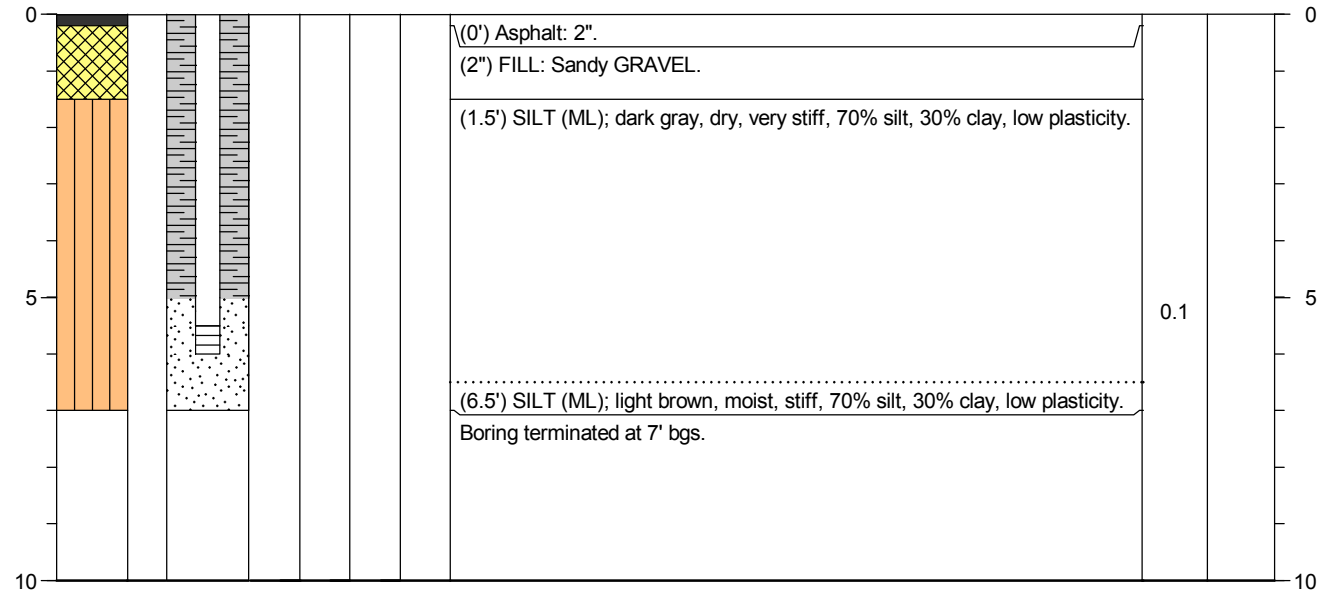
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Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Solid Tip)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								Boring advanced with solid tip; no soil recovered.			0
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-20 **Page:** 1 of 1

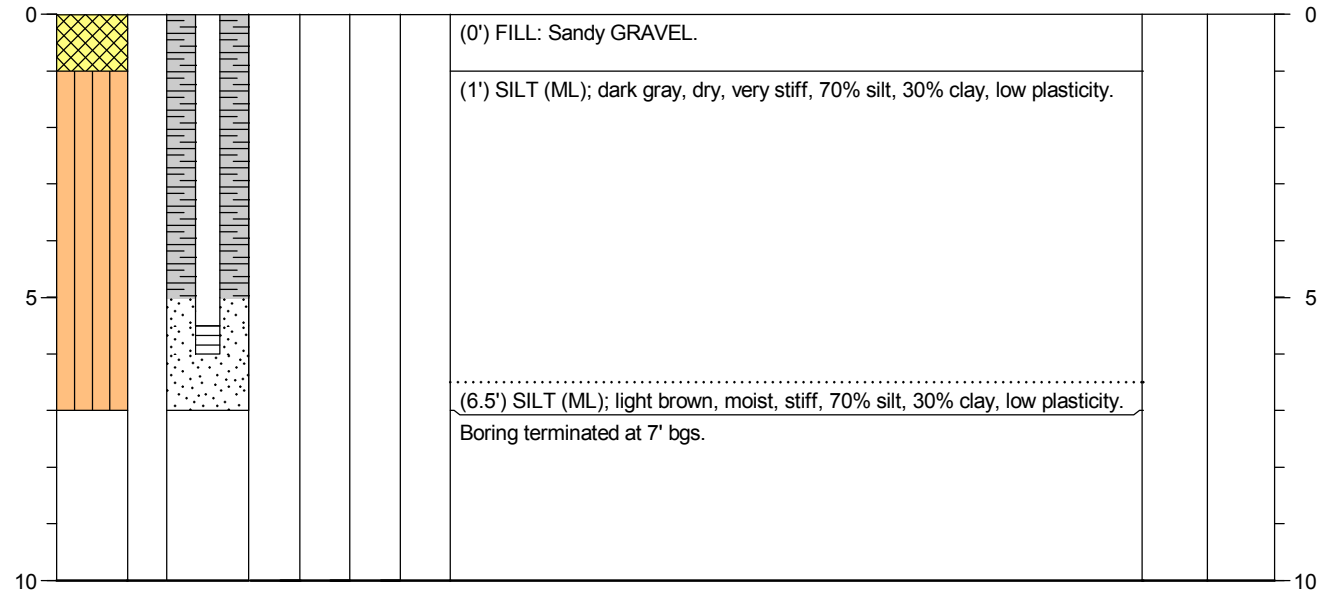
Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-21 **Page:** 1 of 1

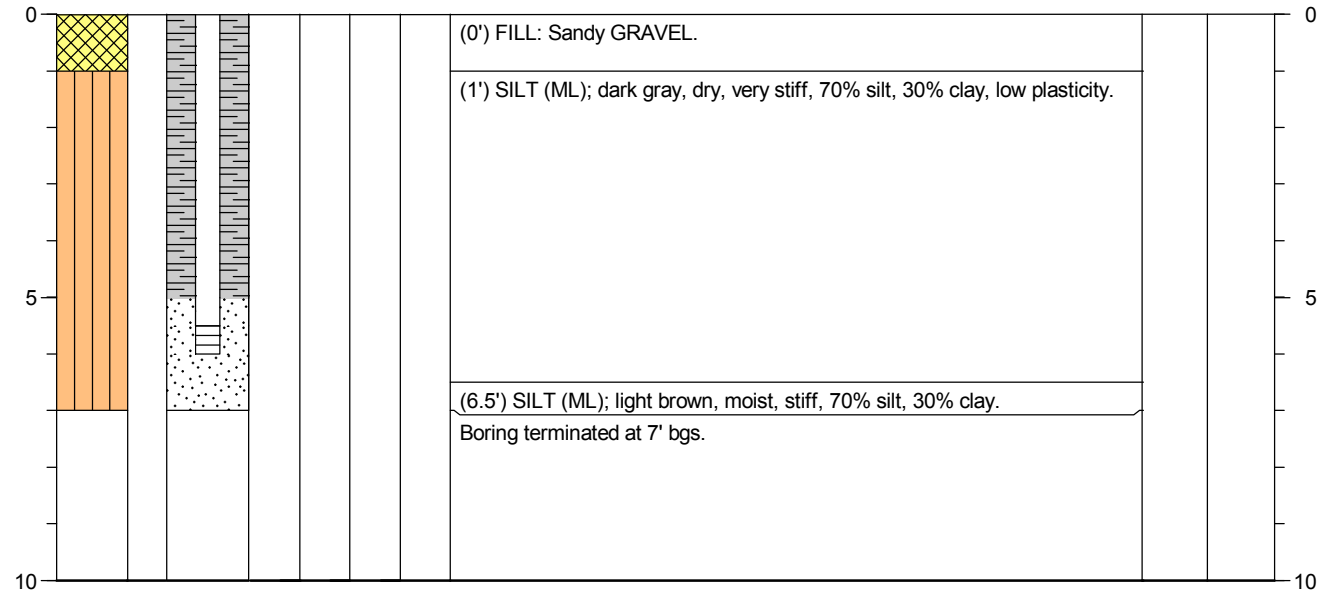
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Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-22 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-23 **Page:** 1 of 1

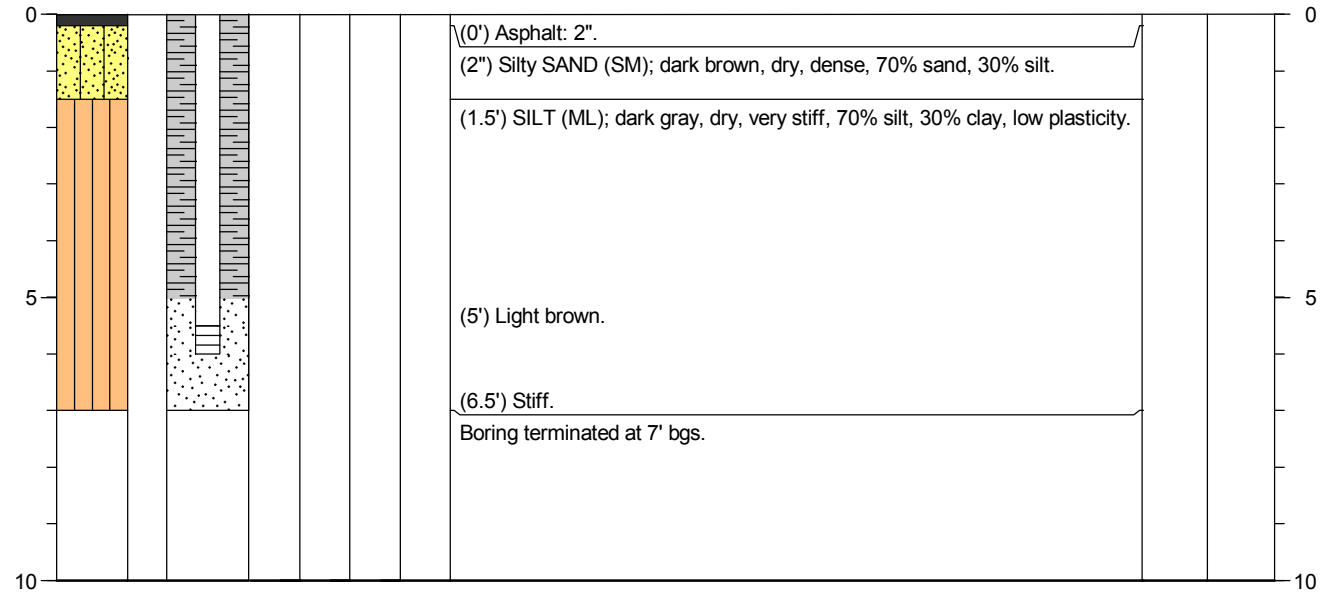
Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') FILL: Silty SAND (SM); light brownish gray, dry, stiff.			0
								(1') SILT (ML); dark gray, dry, very stiff, 70% silt, 30% clay, low plasticity.			
5											5
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-24 **Page:** 1 of 1

Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-25 **Page:** 1 of 1

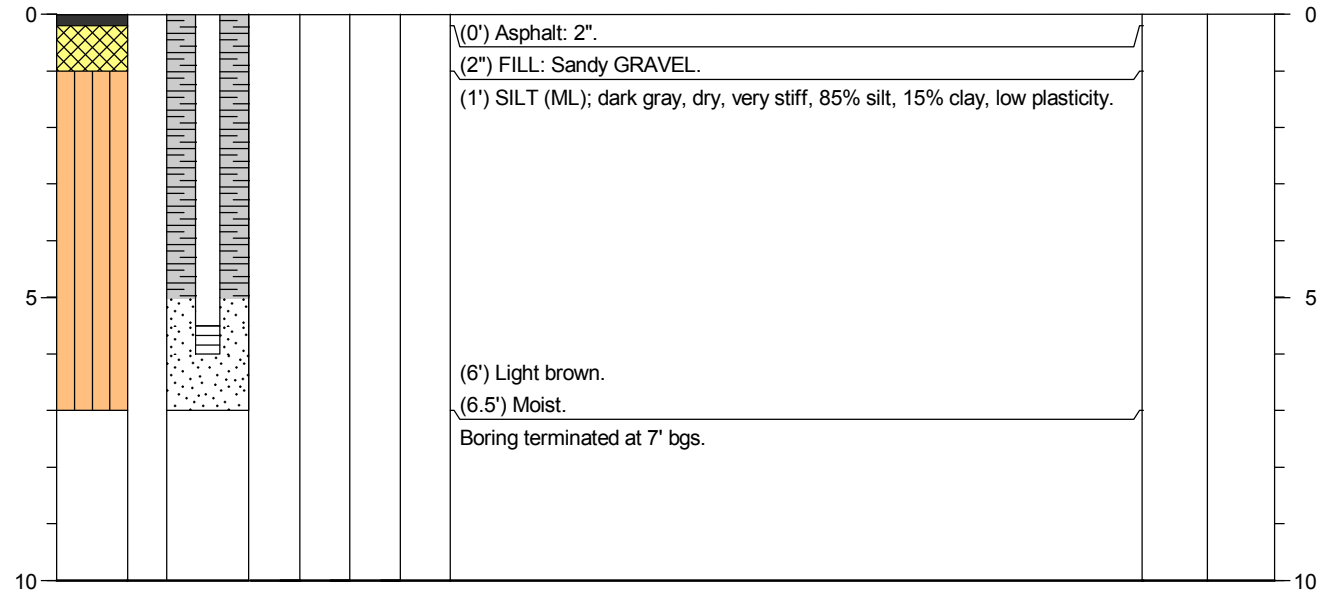
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Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Date & Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') Asphalt: 2".			0
								(2") FILL: Sandy GRAVEL.			
								(1') SILT (ML); dark gray, dry, very stiff, 85% silt, 15% clay, low plasticity.			
5											5
								(6.5') Sandy CLAY (CL); light brown, moist, stiff, 40% clay, 40% sand, 20% silt, low plasticity.			
								Boring terminated at 7' bgs.			
10											10

NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-26 **Page:** 1 of 1

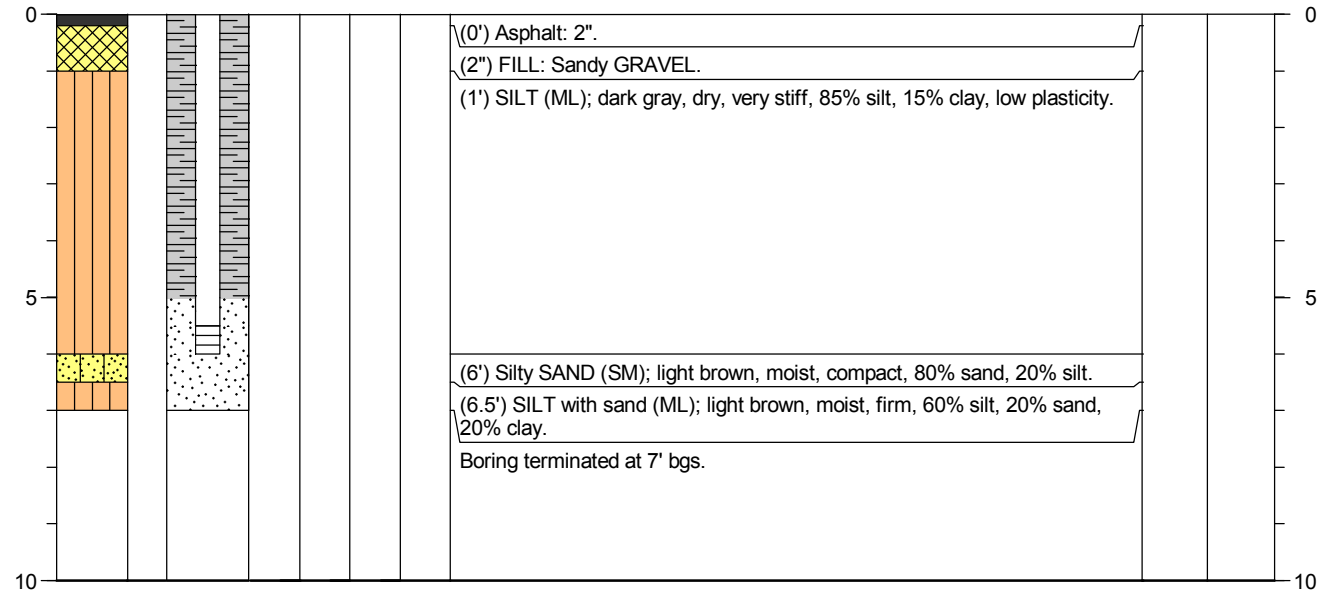
Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-27 **Page:** 1 of 1

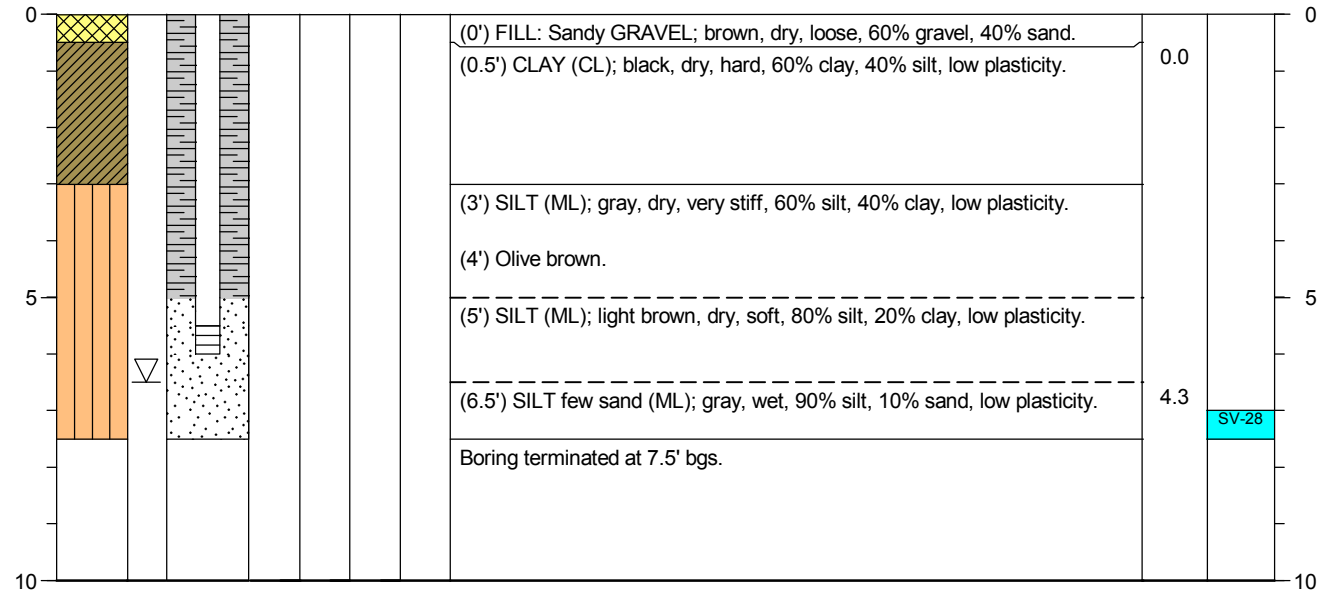
Drilling Start Date:	**08/03/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/03/2016**	Boring Diameter (in):	**2**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):	**N/A**	Screen Slot (in):	**N/A**
Drilling Method:	**Direct Push (Dual Tube)**	DTW During Drilling (ft):		Riser Material:	**Teflon Tubing**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Patrick Groff**	Location (X,Y):		Filter Pack:	**2/12 Sand**



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-28 **Page:** 1 of 1

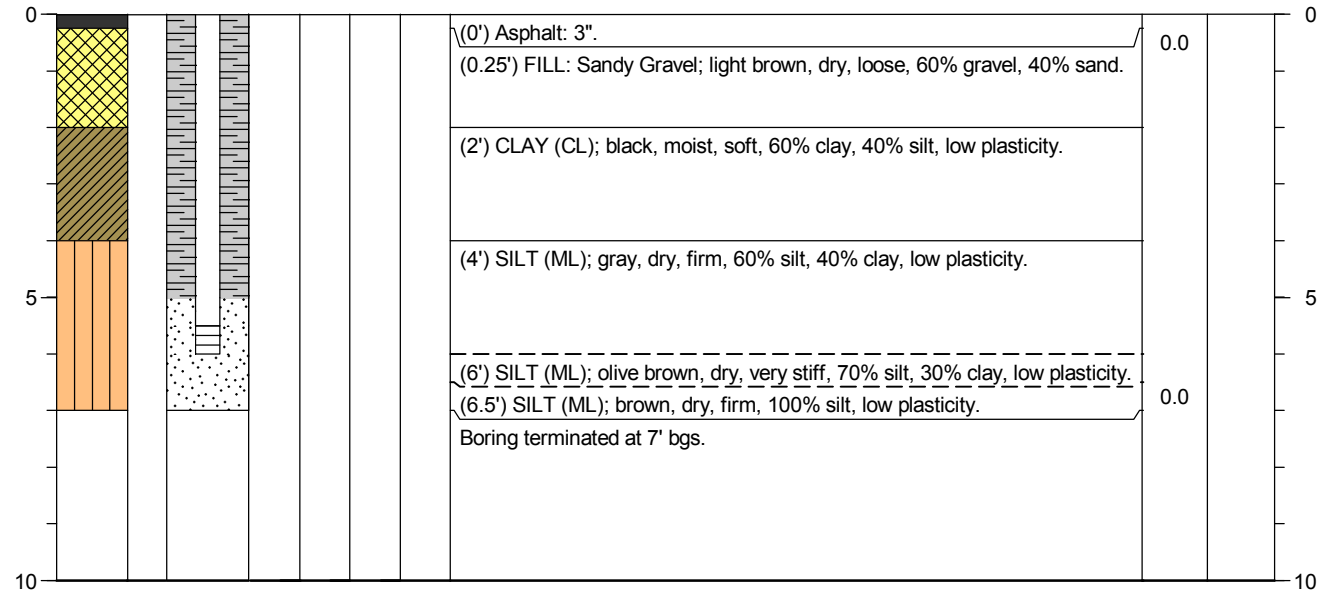
Drilling Start Date:	**08/22/2016**	Boring Depth (ft):	**7.5**	Well Depth (ft):	**7.5**
Drilling End Date:	**08/22/2016**	Boring Diameter (in):	**3**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):		Screen Slot (in):	**N/A**
Drilling Method:	**Hand Auger**	DTW During Drilling (ft):	**6.5**	Riser Material:	**1/4" Teflon Tubing**
Drilling Equipment:		DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Albert Simmons**	Location (X,Y):		Filter Pack:	**2/12 Sand**



NOTES:

PANGEA	**Client:** Pauls Corporation, LLC **Project:** Bockman **Address:** 1233 Bockman Road, San Lorenzo, CA	**WELL LOG** **Well No.** SV-29 **Page:** 1 of 1

Drilling Start Date:	**08/22/2016**	Boring Depth (ft):	**7**	Well Depth (ft):	**7**
Drilling End Date:	**08/22/2016**	Boring Diameter (in):	**3**	Well Diameter (in):	
Drilling Company:	**Penecore**	Sampling Method(s):		Screen Slot (in):	**N/A**
Drilling Method:	**Hand Auger**	DTW During Drilling (ft):		Riser Material:	**1/4" Teflon Tubing**
Drilling Equipment:		DTW After Drilling (ft):		Screen Material:	**Vapor Implant**
Driller:		Top of Casing Elev. (ft):		Seal Material(s):	**Bentonite Cement**
Logged By:	**Albert Simmons**	Location (X,Y):		Filter Pack:	**2/12 Sand**



NOTES:

APPENDIX D

MIP/HPT Report

ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | UVOST | CPT | PST | EC | GTP

FIELD SERVICES REPORT
LOW LEVEL MEMBRANE INTERFACE PROBE®
(LL-MIP)

1233 BROCKMAN ROAD
SAN LORENZO, CALIFORNIA

PREPARED FOR:
Mr. Bob Clark-Riddell
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA 94612

PREPARED BY:
ASC Tech Services
11275 Sunrise Gold Circle, Suite R
Rancho Cordova, CA 95742-6561

July 28, 2016

ASC Project: A07122016-01

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Figure 2 – Site Map Depicting LL-MIP Locations

APPENDICES

Appendix A – Field Data Sheets

Appendix B – LL-MIP Logs

1 INTRODUCTION

This report was prepared by ASC Tech Services (ASC) summarizing a Low-Level Membrane Interface Probe® (LL-MIP) field screening conducted on behalf of Pangea Environmental Services, Inc (Pangea) of Oakland, California. The field services were conducted at the property located at 1233 Brockman Road, San Lorenzo, California (Figure 1).

1.1 SCOPE OF WORK

The investigation was conducted on July 25, 2016, and consisted of six (6) LL-MIP (Figure 2) screening locations to depths ranging from 14.85 feet (MIP.01 and MIP.03) to 15.20 feet (MIP.05) below ground surface (bgs). PeneCore Drilling of Woodland, California provided the direct push rig to advance the tooling. Enclosed in this report are the following items for your review and project use:

- ❑ MIP raw data; and
- ❑ Detailed graphs of each LL-MIP push location, which consist of LL-MIP detector responses, vs depth; and
- ❑ Cross-Log Correlation figures comparing LL-MIP detector channel responses.

1.2 OBJECTIVES

The objectives of this MIP® investigation were to:

- ❑ Complete a high-resolution LL-MIP survey in order to delineate the vertical and horizontal extent of chlorinate solvent based impacts within the investigation area from 25 feet bgs to 60 feet bgs; and
- ❑ Collect data to facilitate better understanding of the contaminant distribution for future field activities, which may include sampling, well installations, and remedial activities.

1.3 LL-MIP EQUIPMENT DESCRIPTION

The following LL-MIP system configuration was used for this investigation:

Component	Manufacturer	Model #
MIP Contrtoller	Geoprobe Systems	MP6505
LL MIP Controller	Geoprobe Systems	MP9000
MIHPT Probe	Geoprobe Systems	MH6163
HPT Contrtoller	Geoprobe Systems	K6300
GC	SRI GC ECD/FID/PID OI Analytical XSD	Model 310 Model 5360A

The following Sections describe the major components of the low level and MiHpt systems:

1.3.1 Membrane Interface Probe® (MIP)

The Membrane Interface Probe® (MIP) is a subsurface field screening tool with semi-quantitative capabilities for hydrocarbons. The MIP membrane acts as an interface between contaminants in the subsurface and gas phase detectors at the surface. Volatile hydrocarbons in the subsurface diffuse across the membrane and partition into a stream of carrier gas (nitrogen) where they are

be swept to gas phase detectors at the surface. The membrane is heated so that travel by VOCs across this film is almost instantaneous. MIP acquisition software logs detector signal responses with depth. The ability to detect a contaminant is determined by the type of detectors being used. Detectors used by ASC include photo ionization detector (PID), electron capture detector (ECD), halogen specific detector (XSD), and flame ionization detector (FID). Each detector is designed for sensitivity to a group or type of contaminant. The ECD and XSD are used for chlorinated (TCE, PCE) contaminant detection, PID is best used for the detection of aromatic hydrocarbons (BTEX compounds), and the FID is best used for straight chained hydrocarbons (methane, butane). These detector signals, in conjunction with the time in which a contaminant takes to return to the surface, are graphed versus depth. The detector information and the electrical conductivity (EC) of the soil are logged and graphed in the field by the FI6000 field instrument. This allows ASC's MIP operator to determine the location of the contaminant, the relative concentration of the contaminant and the soil in which the contaminant is located. The MIP log can be used to determine the depth at which a monitoring well should be placed, at what depth discrete samples need to be collected, and/or the interval for injection of remediation materials.

1.3.2 Low Level Membrane Interface Probe® (LL-MIP)

The Low-Level Membrane Interface Probe® (MIP) is a subsurface field screening tool with semi-quantitative capabilities for low level hydrocarbons. The tool functions similarly to the traditional MIP, but with an additional controller, MP9000 series, to control gas flow. In low level mode, at the sample interval the gas to the trunkline is stopped to build pressure at the membrane. After a specified time, the flow to the trunkline is turned on, and air in the trunkline is vented for a specified time. Approximately ten (10) seconds prior to the contaminant reaching the vent, the flow from the trunkline is sent to the detectors at the gas chromatograph (GC). The flow continues to the GC until approximately ten (10) seconds after the contamination peak, when the trunkline flow is vented and the tool is advanced to the next sample interval. During trunkline venting and no trunkline flow, the detectors are receiving a stream of pure nitrogen to keep the background levels to a minimum (Geoprobe, 2014).

1.3.3 Hydraulic Profiling Tool® (HPT)

The Hydraulic Profiling Tool (HPT) system was developed for the hydrogeologic characterization of soils by evaluating the hydraulic behavior of unconsolidated materials. The HPT system measures the pressure response of soil to metered injection of potable water into the subsurface media. These pressure responses are used to identify potential flow paths and to assist with characterization of soil type. HPT logs are used to indicate hydraulic conductivity, EC, hydrostratigraphic profile, and areas of EC/permeability anomalies. As the HPT or MiHpt probe is pushed into the subsurface, potable water is injected into the subsurface strata through a screened port on the side of the HPT probe. Injection pressure, which is monitored and plotted with depth, is an indication of the hydraulic properties of the soil. Typically a low pressure response indicates a relatively large grain size, and the ability to easily transmit water, while a high HPT pressure response would indicate a relatively small grain size and the lack of ability to transmit

water (and therefore the to the soil's dominant grain size), the HPT system can be used to identify potential contaminant migration pathways. Similarly, it can help identify zones for remedial material injection or provide qualitative guidance on how difficult injection may be in different zones of the formation. The HPT system may be used to direct other investigation methods, such as soil and groundwater sampling and slug testing. HPT pressure response and EC data can help target zones of geologic and hydraulic interest, minimizing the number of soil and groundwater samples required to adequately develop a site conceptual model. When hydraulic conductivity values are required, the HPT system can also help the user identify zones to slug test, as well as the length of the screen required to adequately test the zone (Geoprobe 2011a, & Geoprobe 2010).

Estimated Hydraulic Conductivity (K)/Dissipation Test

In order to estimate hydraulic conductivity (K) based on the procedures in Geoprobe 2011a, at least one dissipation test per HPT/MiHpt must be performed in order to calculate the static water level and subsequent estimated K readings from the HPT log. Dissipation tests need to be performed below the water table and are best completed in zones of high permeability, where the injection pressure can dissipate off quickly once the flow to the HPT head is shut off (Geoprobe 2013, & 2011a).

1.3.4 Soil Electrical Conductivity (EC)

An electrical conductivity (EC) measurement array is built into the MIP, HPT, and MiHpt probes. This allows the user to collect soil EC data for lithologic interpretation. In general, the higher the electrical conductivity value, the smaller the grain size, and vice versa. However, other factors can affect EC, such as soil mineralogy and pore water chemistry (brines, extreme pH, contaminants, etc.).

2 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

As a quality control check, the MiHpt system response is evaluated prior to and upon completion of each MiHpt push location. The purpose of QA/QC testing is to ensure that the instrument is capable of generating good data, to prove that the instrumentation operated properly throughout the course of the log and that the logs have been performed in accordance with established standards. Response testing in MiHpt logging includes performing chemical responses tests using a chemical standard (MIP Response Testing), electrical conductivity (EC) testing, and HPT reference testing. QA/QC testing was conducted consistent with Geoprobe (Geoprobe 2013, Geoprobe 2012) and ASTM (ASTM 2012) Standards.

2.1 MIP Response Testing

It is crucial that the MiHpt operator and clients have confidence that the MIP detector system is functioning properly and will be able to detect the contaminants present. MIP chemical response testing tests an analog for the expected site compound, i.e. Benzene, Toluene or Gasoline for a petroleum site, PCE of TCE for a dry cleaner sites. This test will validate that the detection system is working from properly from the membrane to the detectors.

Chemical response testing was completed using a three-decade response test using PCE as the standard 25 ppb, 250 ppb, and 2.5 ppm. A statistical summary of MIP chemical response testing is provided in Table 1.

2.2 ELECTRICAL CONDUCTIVITY (EC) TESTING

An electrical conductivity (EC) test will ensure the electrical conductivity will be accurate and consistent throughout an investigation. The test involves applying a known load value, which results in a specific EC response ensuring that the electrical conductivity will be accurate and consistent in the logs. In addition the data acquisition system will perform an instrument test that will check the instruments EC calibration.

2.3 HPT RESPONSE TESTING

It is crucial that the HPT/MiHpt operator and clients have confidence that the HPT detector system is functioning properly and will be able to provide representative subsurface data. HPT pressure response testing validates that the detection system is working from properly by evaluating pressure response to a known column height change under static and flow conditions.

3 MIP DATA EVALUATION

Table 2 of this report presents a statistical evaluation of the raw MIP data collected as part of this investigation. MiHpt boring logs consolidating data collected for each of the MiHpt pushes and cross-log correlations are provided in Appendix B (MiHpt Logs).

4 REFERENCES

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TABLES

TABLE 1: Summary of Quality Assurance/Quality Control (QA/QC) Data

MIP Location	Detector	Detector Response (µV)							
		Pre-Log Response				Post-Log Response			
		Baseline	Standard Concentration (TCE)			Baseline	Standard Concentration (TCE)		
			25 ppb	250 ppb	2.5 ppm		25 ppb	250 ppb	2.5 ppm
MIP.01	XSD	6.44E+04	6.96E+04	1.13E+05	5.27E+05	5.68E+04	6.31E+04	1.03E+05	4.42E+05
	ECD	6.76E+05	1.43E+06	1.68E+06	2.09E+06	5.69E+05	1.49E+06	1.69E+06	2.07E+06
	PID	7.47E+04	8.75E+04	1.20E+05	2.82E+05	5.03E+04	6.70E+04	9.65E+04	2.23E+05
	FID	6.76E+04	7.05E+04	7.43E+04	8.74E+04	8.90E+04	9.09E+04	9.47E+04	1.06E+05
MIP.02	XSD	5.68E+04	6.31E+04	1.03E+05	4.42E+05	6.03E+04	6.70E+04	1.00E+05	4.46E+05
	ECD	5.69E+05	1.49E+06	1.69E+06	2.07E+06	5.97E+05	1.55E+06	1.74E+06	2.12E+06
	PID	5.03E+04	6.70E+04	9.65E+04	2.23E+05	5.43E+04	7.02E+04	9.34E+04	2.17E+05
	FID	8.90E+04	9.09E+04	9.47E+04	1.06E+05	1.23E+05	---	1.30E+05	1.43E+05
MIP.03	XSD	6.03E+04	6.70E+04	1.00E+05	4.46E+05	5.03E+04	5.73E+04	1.15E+05	6.07E+05
	ECD	5.97E+05	1.55E+06	1.74E+06	2.12E+06	4.45E+05	1.54E+06	1.82E+06	2.23E+06
	PID	5.43E+04	7.02E+04	9.34E+04	2.17E+05	4.70E+04	6.02E+04	9.99E+04	2.58E+05
	FID	1.23E+05	---	1.30E+05	1.43E+05	7.62E+04	---	7.92E+04	9.84E+04
MIP.04	XSD	5.03E+04	5.73E+04	1.15E+05	6.07E+05	4.83E+04	5.38E+04	6.93E+04	2.50E+05
	ECD	4.45E+05	1.54E+06	1.82E+06	2.23E+06	4.08E+05	1.55E+06	1.65E+06	1.99E+06
	PID	4.70E+04	6.02E+04	9.99E+04	2.58E+05	4.48E+04	6.27E+04	7.62E+04	1.58E+05
	FID	7.62E+04	---	7.92E+04	9.84E+04	7.55E+04	---	7.69E+04	8.29E+04
MIP.05	XSD	4.83E+03	5.38E+04	6.93E+04	2.50E+05	4.17E+04	4.69E+04	6.66E+04	2.43E+05
	ECD	4.08E+05	1.55E+06	1.65E+06	1.99E+06	3.32E+05	1.50E+06	1.63E+06	1.96E+06
	PID	4.48E+04	6.27E+04	7.62E+04	1.58E+05	4.63E+04	6.52E+04	8.03E+04	1.58E+05
	FID	7.55E+04	---	7.69E+04	8.29E+04	8.30E+04	8.51E+04	8.92E+04	8.98E+04
MIP.06	XSD	4.17E+04	4.69E+04	6.66E+04	2.43E+05	5.18E+04	5.25E+04	6.06E+04	8.27E+04
	ECD	3.32E+05	1.50E+06	1.63E+06	1.96E+06	4.45E+05	1.38E+06	1.48E+06	1.61E+06
	PID	4.63E+04	6.52E+04	8.03E+04	1.58E+05	5.89E+04	7.21E+04	7.96E+04	8.95E+04
	FID	8.30E+04	8.51E+04	8.92E+04	8.98E+04	1.60E+05	---	1.67E+05	1.69E+05

Response Test Statistics		Baseline	Standard Concentration (TCE)			Trend Statistics	
			25 ppb	250 ppb	2.5 ppm	Linear Equation	R^2
XSD Response	*MIN*	*4.83E+03*	*4.69E+04*	*6.06E+04*	*8.27E+04*	y = 130.44x + 56157	0.7139
	MAX	*6.44E+04*	*6.96E+04*	*1.15E+05*	*6.07E+05*		
	AVG	***4.90E+04***	***5.82E+04***	***9.01E+04***	***3.82E+05***		
ECD Response	*MIN*	*3.32E+05*	*1.38E+06*	*1.48E+06*	*1.61E+06*	y = 190.89x + 2E+06	0.7558
	MAX	*6.76E+05*	*1.55E+06*	*1.82E+06*	*2.23E+06*		
	AVG	***4.85E+05***	***1.51E+06***	***1.69E+06***	***2.04E+06***		
PID Response	*MIN*	*4.48E+04*	*6.02E+04*	*7.62E+04*	*8.95E+04*	y = 51.447x + 71909	0.7595
	MAX	*7.47E+04*	*8.75E+04*	*1.20E+05*	*2.82E+05*		
	AVG	***5.16E+04***	***6.75E+04***	***9.10E+04***	***2.00E+05***		
FID Response	*MIN*	*6.76E+04*	*7.05E+04*	*7.43E+04*	*8.29E+04*	y = 6.1828x + 92952	0.072
	MAX	*1.60E+05*	*9.09E+04*	*1.67E+05*	*1.69E+05*		
	AVG	***9.34E+04***	***8.45E+04***	***9.84E+04***	***1.08E+05***		

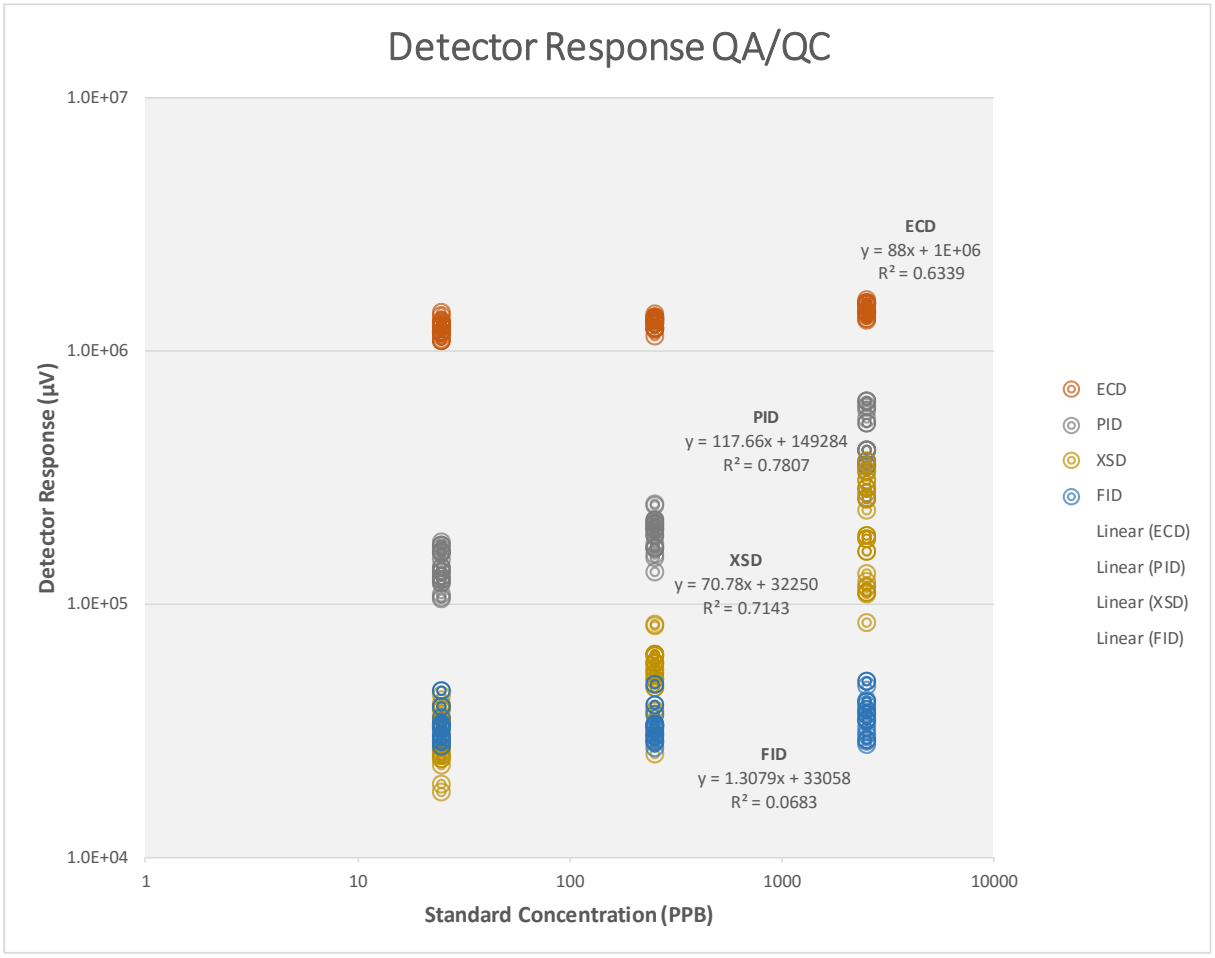

Detector Response QA/QC
1.0E+07
1.0E+06
1.0E+05
1.0E+04
Detector Response (µV)
1
10
100
1000
10000
Standard Concentration (PPB)
ECD
y = 88x + 1E+06
R² = 0.6339
PID
y = 117.66x + 149284
R² = 0.7807
XSD
y = 70.78x + 32250
R² = 0.7143
FID
y = 1.3079x + 33058
R² = 0.0683
ECD
PID
XSD
FID
Linear (ECD)
Linear (PID)
Linear (XSD)
Linear (FID)

TABLE 2: Summary of MIP Sensor Data

MIP Location	Detector	Detector Response (µV)		
		Min	Max	Average
MIP.01	XSD	6.61E+04	7.88E+04	7.27E+04
	ECD	7.17E+05	1.59E+06	8.77E+05
	PID	5.80E+04	5.47E+05	7.75E+04
	FID	7.84E+04	2.59E+05	9.20E+04
MIP.02	XSD	5.26E+04	2.48E+05	6.00E+04
	ECD	4.94E+05	1.89E+06	6.78E+05
	PID	4.78E+04	4.90E+05	5.89E+04
	FID	6.52E+04	2.99E+05	7.04E+04
MIP.03	XSD	5.04E+04	6.36E+04	5.57E+04
	ECD	4.62E+05	1.62E+06	6.23E+05
	PID	4.81E+04	5.32E+05	5.59E+04
	FID	7.00E+04	3.39E+05	7.44E+04
MIP.04	XSD	4.52E+04	5.72E+04	5.13E+04
	ECD	3.68E+05	1.60E+06	5.49E+05
	PID	4.62E+04	4.46E+05	5.36E+04
	FID	7.26E+04	2.31E+05	7.68E+04
MIP.05	XSD	4.68E+04	6.60E+04	5.38E+04
	ECD	4.01E+05	1.59E+06	5.63E+05
	PID	4.46E+04	5.62E+05	5.44E+04
	FID	7.83E+04	6.44E+05	8.56E+04
MIP.06	XSD	4.43E+04	6.23E+04	5.19E+04
	ECD	3.56E+05	1.67E+06	6.32E+05
	PID	4.62E+04	3.05E+05	5.78E+04
	FID	7.87E+04	2.85E+05	9.78E+04

MIP Statistics	Min	Max	Average
XSD Response	*4.43E+04*	*5.72E+04*	*5.13E+04*
ECD Response	*3.56E+05*	*1.59E+06*	*5.49E+05*
PID Response	*4.46E+04*	*3.05E+05*	*5.36E+04*
FID Response	*6.52E+04*	*2.31E+05*	*7.04E+04*

FIGURES



Modified From: San Leandro, California (1993)
USGS 7.5-Minute Quadrangle, Topographic Series

FIGURE 1
LOCATION MAP

MAP NOT TO SCALE

Project Name: 1233 Bockman Road, San Lorenzo, California		
Project No.: A07122016-01	**Drafter:** JSR **Review:** EWG	**Revision Date:** 07/26/2016

ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | OIP | UVOST | CPT | EC | GTP

11275 Sunrise Gold Circle, Suite R
Rancho Cordova, CA 95742
(925) 756-1210 Office · (925) 756-1227 Fax
WEB: www.asc-technologies.com



EXPLANATION

LL MIP Push Location

MIP.01

FIGURE 2
SITE PLAN

MAP NOT TO SCALE

Project Name: 1233 Bockman Road, San Lorenzo, California		
Project No.: A07122016-01	**Drafter:** JSR **Review:** EWG	**Revision Date:** 07/26/2016

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APPENDIX A
FIELD DATA SHEETS

MIP FIELD INFORMATION FORM

SITE INFORMATION

Site Name:	1233 Bockman, San Lorenzo
Location Name:	MIP.01
Date/Time:	7/25/16
MIP Operator:	Jaime S. Ricci
MIP Contractor:	ASC Tech Services

INSTRUMENT INFORMATION

Detectors Used:	XSD / ECD / PID / FID
Probe Type:	MP6520/MP4520/MH6530
Probe S/N	P=6163, F=K115
HPT Sensor ID	XD20379A

LOGGING INFORMATION

MIP File Name:	MIP.01
Final Depth of Penetration:	14.85
Pre-Log Response Test File Name:	8:37 *.pre.tim
Response Test Compound:	PCE
Trip Time (seconds):	40
Post Log Response Test File Name:	10:02 *.post.tim
Response Test Compound:	PCE
Trip Time (seconds):	40

MIP QA/QC DATA

	PRE	POST
XSD	6.81e4	
ECD	7.17e5	✓
PID	7.11e4	
FID	8.60e4	
	PRE	POST
Flow	61.2	60.3
psi	21.4	21.9

HPT Reference

8:46 / 10:09

Pre-Log Peak Response Data

Detector	Concentration (ppm) BL	0.025	0.25	2.5	
XSD	6.44e4	6.96e4	1.13e5	5.27e5	
~~ECD~~	~~6.76e5~~	~~1.22e6~~	~~1.46e6~~	~~1.98e6~~	
PID	7.47e4	9.75e4	1.20e5	2.82e5	
FID	6.76e4	7.05e4	7.43e5	8.71e5	
ECD	6.76e5	1.43e6	1.68e6	2.09e6	

Post-Log Peak Response Data

Detector	Concentration (ppm) BL	0.025	0.25	2.5	
XSD	5.68e4	6.31e4	1.03e5	4.42e5	
ECD	5.67e5	1.49e6	1.69e6	2.07e6	
PID	5.03e4	6.70e4	9.65e4	2.23e5	
FID	8.20e4	9.09e4	9.47e4	1.06e5	

OBSERVATIONS

0.00 **Start Push** 08:59

14.85 End Push 09:39

GPS Point 498
Accuracy = 8 feet
37.67072 °N
122.13431 °W
7 ft Elevation

MIP FIELD INFORMATION FORM

SITE INFORMATION

Site Name:	1233 Bockman, San Lorenzo
Location Name:	MIP.02
Date/Time:	7/25/16
MIP Operator:	Jaime S. Ricci
MIP Contractor:	ASC Tech Services

INSTRUMENT INFORMATION

Detectors Used:	XSD / ECD / PID / FID
Probe Type:	MP6520/MP4520/MH6530
Probe S/N	P=6163, F=K115
HPT Sensor ID	XD20379A

LOGGING INFORMATION

MIP File Name:	MIP.02
Final Depth of Penetration:	14.95
	10:02
Pre-Log Response Test File Name:	*.pre.tim
Response Test Compound:	PCE
Trip Time (seconds):	40
	11:29
Post Log Response Test File Name:	*.post.tim
Response Test Compound:	PCE
Trip Time (seconds):	40

MIP QA/QC DATA

	PRE	POST
XSD	5.31e4	
ECD	5.00e5	
PID	4.77e4	
FID	6.70e4	
Flow	**PRE**	**POST**
psi	60.3 / 21.8	60.1 / 22.1

HPT Reference

10:09 / 11:37

Pre-Log Peak Response Data					
Detector	Concentration (ppm)				
	BL	0.025	0.25	2.5	
XSD	5.68e4	6.31e4	1.05e5	4.42e5	
ECD	5.69e5	1.49e6	1.69e6	2.07e6	
PID	5.05e4	6.70e4	9.65e4	2.23e5	
FID	8.90e4	9.09e4	9.47e4	1.06e5	

Post-Log Peak Response Data					
Detector	Concentration (ppm)				
	BL	0.025	0.25	2.5	
XSD	6.03e4	6.70e4	1.00e5	4.46e5	
ECD	5.97e5	1.55e6	1.74e6	2.12e6	
PID	5.43e4	7.02e4	9.34e4	2.17e5	
FID	1.23e5	—	1.30e5	1.43e5	

OBSERVATIONS

0.00 Start Push 10:29

14.95 End Push 11:09

GPS Point 499
Accuracy 8 ft

37.67079 °N

122.13442 °W

Elevation -6 ft

MIP FIELD INFORMATION FORM

SITE INFORMATION

Site Name:	1233 Bockman, San Lorenzo
Location Name:	MIP.03
Date/Time:	7/25/16
MIP Operator:	Jaime S. Ricci
MIP Contractor:	ASC Tech Services

INSTRUMENT INFORMATION

Detectors Used:	XSD / ECD / PID / FID
Probe Type:	MP6520/MP4520/MH6530
Probe S/N	P=6163, F=K115
HPT Sensor ID	XD20379A

LOGGING INFORMATION

MIP File Name:	MIP.03
Final Depth of Penetration:	14.85
Pre-Log Response Test File Name:	11:29 *.pre.tim
Response Test Compound:	PCE
Trip Time (seconds):	40
Post Log Response Test File Name:	12:53 *.post.tim
Response Test Compound:	PCE
Trip Time (seconds):	40

MIP QA/QC DATA

	PRE	POST
XSD	5.19e4	
ECD	4.68e5	
PID	4.85e4	
FID	7.25e4	
Flow	60.0	59.8
psi	21.8	21.9

HPT Reference

11:37 / 13:01

Pre-Log Peak Response Data

Detector	Concentration (ppm)				
	BL	0.025	0.25	2.5	
XSD	6.05e4	6.70e4	1.00e5	4.46e5	
ECD	5.92e5	1.55e6	1.74e6	2.12e6	
PID	5.43e4	7.02e4	9.34e4	2.17e5	
FID	1.23e5	—	1.30e5	1.43e5	

Post-Log Peak Response Data

Detector	Concentration (ppm)				
	BL	0.025	0.25	2.5	
XSD	5.03e4	5.73e4	1.15e5	6.07e5	
ECD	4.45e5	1.54e6	1.82e6	2.23e6	
PID	4.70e4	6.02e4	9.99e4	2.58e5	
FID	7.62e4	—	7.92e4	9.84e4	

OBSERVATIONS

0.00 Start Push 11:51

14.85 End Push 12:50

GPS Point ~~500~~ 500

Accuracy 7 feet

37.67091 °N

122.13441 °W

Elevation 37 feet

MIP FIELD INFORMATION FORM

SITE INFORMATION

Site Name:	1233 Bockman, San Lorenzo
Location Name:	MIP.04
Date/Time:	7/25/16
MIP Operator:	Jaime S. Ricci
MIP Contractor:	ASC Tech Services

INSTRUMENT INFORMATION

Detectors Used:	XSD / ECD / PID / FID
Probe Type:	MP6520/MP4520/MH6530
Probe S/N	P=6163, F=K115
HPT Sensor ID	XD20379A

LOGGING INFORMATION

MIP File Name:	MIP.04
Final Depth of Penetration:	15.15
Pre-Log Response Test File Name:	12:53 *.pre.tim
Response Test Compound:	PCE
Trip Time (seconds):	40
Post Log Response Test File Name:	14:40 *.post.tim
Response Test Compound:	PCE
Trip Time (seconds):	40

MIP QA/QC DATA

	PRE	POST
XSD	4.58e4	
ECD	3.70e5	
PID	4.63e4	
FID	7.70e4	
	PRE	**POST**
Flow	60.0	59.8
psi	21.7	22.1

HPT Reference

13:01 / 14:50

Pre-Log Peak Response Data					
Detector	Concentration (ppm)				
	BL	0.025	0.25	2.5	
XSD	5.03e4	5.73e4	1.15e5	6.07e5	
ECD	4.45e5	1.54e6	1.82e6	2.23e6	
PID	4.70e4	6.02e4	9.99e4	2.58e5	
FID	7.62e4	—	7.92e4	9.84e4	

Post-Log Peak Response Data					
Detector	Concentration (ppm)				
	BL	0.025	0.25	2.5	
XSD	4.93 e4	5.38 e4	6.43 e4	2.50 e5	
ECD	4.06 e5	1.55 e6	1.65 e6	1.99 e6	
PID	4.48 e4	6.27 e4	7.62 e4	1.58 e5	
FID	7.55 e4	—	7.62e4	8.29 e4	

OBSERVATIONS

0.00 Start Push 13:40

15.15 End Push 14:20

GPS Location 501
Accuracy 7 feet
37.67068 °N
122.13446 °W
Elevation 12 ft

MIP FIELD INFORMATION FORM

SITE INFORMATION

Site Name:	1233 Bockman, San Lorenzo
Location Name:	MIP.05
Date/Time:	7/25/16
MIP Operator:	Jaime S. Ricci
MIP Contractor:	ASC Tech Services

INSTRUMENT INFORMATION

Detectors Used:	XSD / ECD / PID / FID
Probe Type:	MP6520/MP4520/MH6530
Probe S/N	P=6163, F=K115
HPT Sensor ID	XD20379A

LOGGING INFORMATION

MIP File Name:	MIP.05
Final Depth of Penetration:	
Pre-Log Response Test File Name:	14:40 *.pre.tim
Response Test Compound:	PCE
Trip Time (seconds):	40
Post Log Response Test File Name:	17:32 *.post.tim
Response Test Compound:	PCE
Trip Time (seconds):	40

MIP QA/QC DATA

	PRE	POST
XSD	4.82e4	
ECD	4.14e5	
PID	4.46e4	
FID	7.83e4	
	PRE	POST
Flow	60.1	
psi	21.9	



HPT Reference 14:50 / 17:39

Pre-Log Peak Response Data

Detector	Concentration (ppm)				
	BL	0.025	0.25	2.5	
XSD	4.83e4	5.38e4	6.93e4	2.50e5	
ECD	4.08e5	1.55e6	1.65e6	1.91e6	
PID	4.48e4	6.27e4	7.62e4	1.58e5	
FID	7.55e4	—	7.69e4	8.29e4	

Post-Log Peak Response Data

Detector	Concentration (ppm)				
	BL	0.025	0.25	2.5	
XSD	4.17e4	4.69e4	6.66e4	2.43e5	
ECD	3.32e5	1.50e6	1.63e6	1.96e6	
PID	4.63e4	6.52e4	8.03e4	1.58e5	
FID	8.30e4	8.51e4	8.92e4	8.98e4	

OBSERVATIONS

0.00 Start Push 15:01

At 15.15 feet, thermocouple went bad. collected final data and pulled rods.

15.20 End Push 15:40

GPS Point 502
Accuracy 9 feet
37.67085 °N
122.13450 °W
Elevation -9 feet

MIP FIELD INFORMATION FORM

SITE INFORMATION

Site Name:	1233 Bockman, San Lorenzo
Location Name:	MIP.06
Date/Time:	7/25/16
MIP Operator:	Jaime S. Ricci
MIP Contractor:	ASC Tech Services

INSTRUMENT INFORMATION

Detectors Used:	XSD / ECD / PID / FID
Probe Type:	MP6520/MP4520/MH6530
Probe S/N	P=6163, F=K115
HPT Sensor ID	XD20379A

LOGGING INFORMATION

MIP File Name:	MIP.06
Final Depth of Penetration:	
	17:32
Pre-Log Response Test File Name:	*.pre.tim
Response Test Compound:	PCE
Trip Time (seconds):	40
	18:45
Post Log Response Test File Name:	*.post.tim
Response Test Compound:	PCE
Trip Time (seconds):	40

MIP QA/QC DATA

	PRE	POST
XSD	1.49e4	
ECD	3.63e5	
PID	4.66e4	
FID	8.61e4	
	PRE	**POST**
Flow	60.1	59.7
psi	22.0	22.1

HPT Reference

17:39/18:54

Pre-Log Peak Response Data

Detector	Concentration (ppm) 2.43e5				
	BL	0.025	0.25	2.5	
XSD	4.17e4	4.69e4	6.66e4	[illegible]	
ECD	3.32e5	1.50e6	1.63e6	1.96e6	
PID	4.63e4	6.52e4	8.03e4	1.58e5	
FID	8.30e4	8.51e4	8.92e4	8.98e4	

Post-Log Peak Response Data

Detector	Concentration (ppm)				
	BL	0.025	0.25	2.5	
XSD	5.18e4	5.25e4	6.06e4	8.27e4	
ECD	4.45e5	1.38e6	1.48e6	1.61e6	
PID	5.81e4	7.24e4	7.96e4	8.95e4	
FID	1.60e5	—	1.67e5	1.69e5	

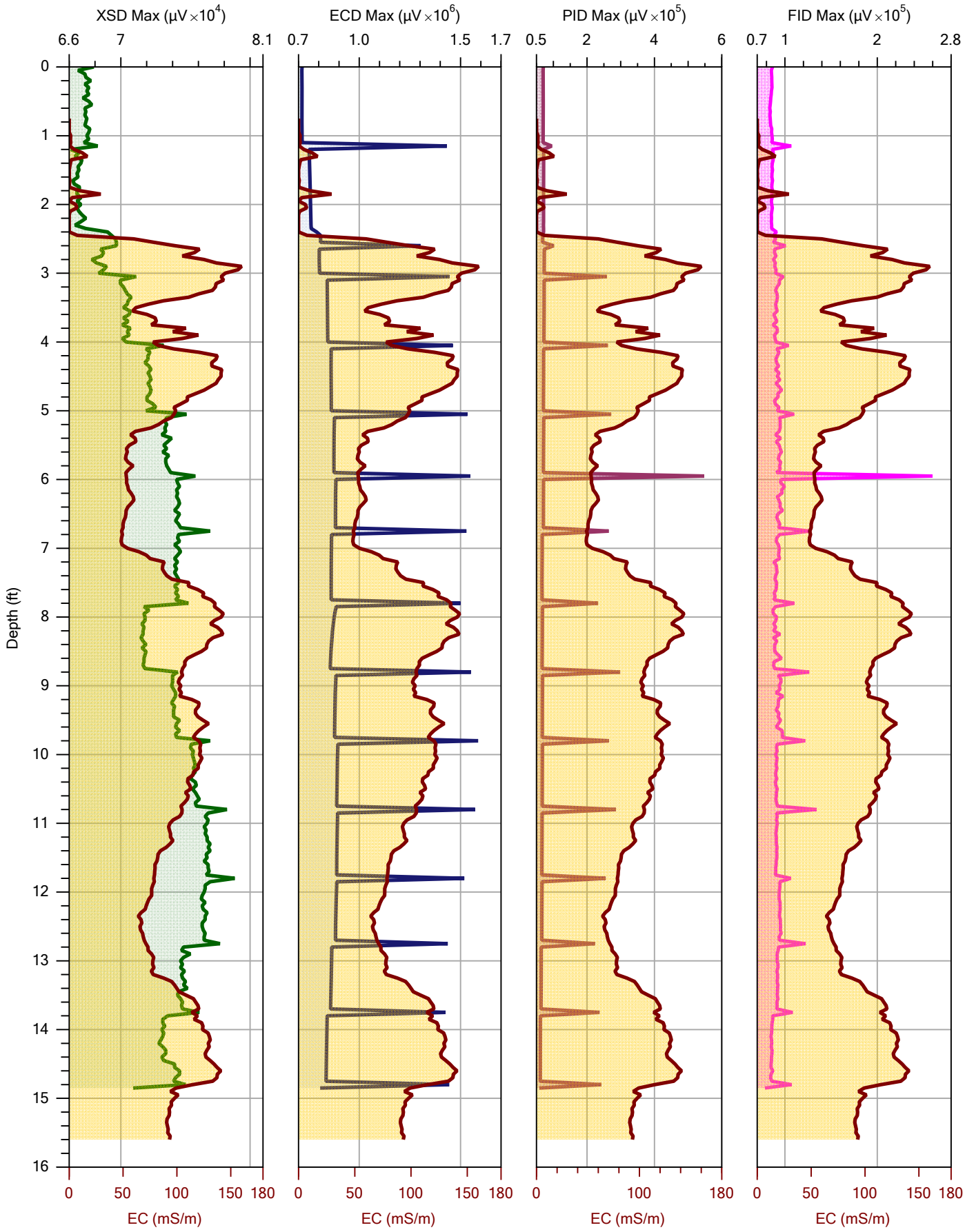
OBSERVATIONS

0.00 Start Push 17:50

15.15 End Push 18:25

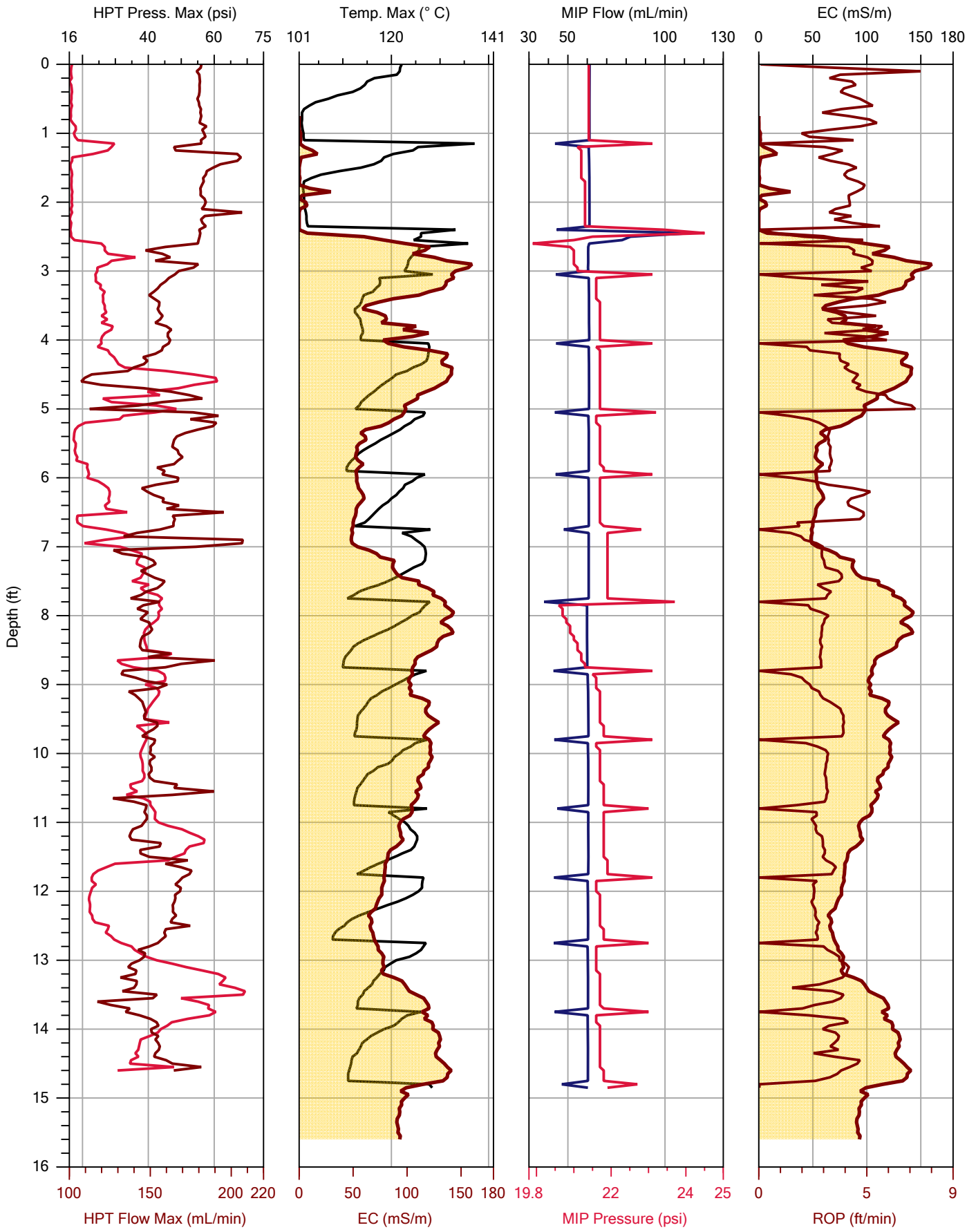
GPS Point 503
Accuracy 7 feet
37.67078 °N
122.13433 °W
Elevation 4 feet

APPENDIX B
MIHPT LOGS



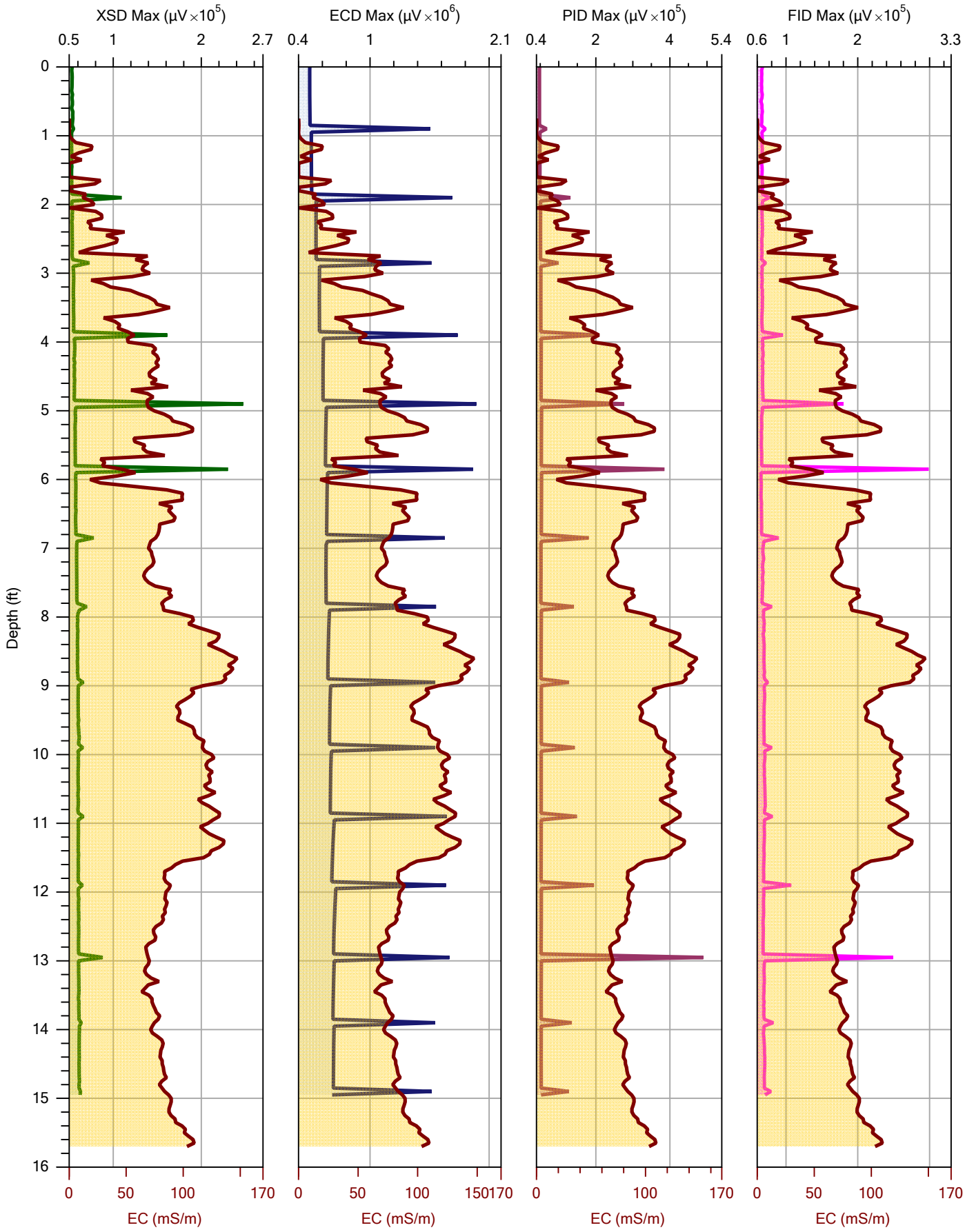
ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

Company: ASC Tech Services	Operator: Jaime Ricci	File: MIP.01.MHP
		Date: 7/25/2016
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Location: 37° 40′ 15″ N, 122° 8′ 4″ W



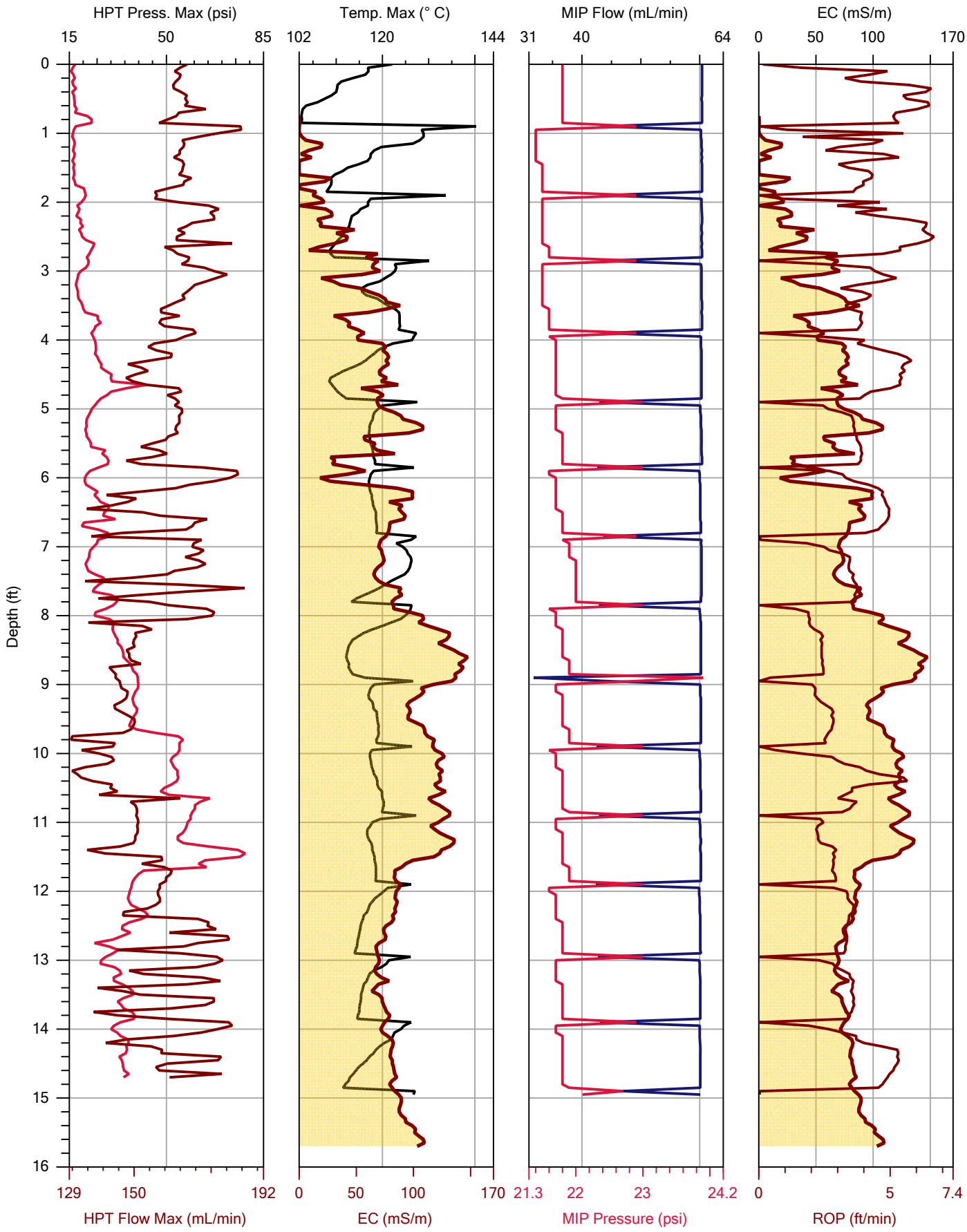
ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

		File: MIP.01.MHP
Company: ASC Tech Services	Operator: Jaime Ricci	Date: 7/25/2016
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Location: 37° 40′ 15″ N, 122° 8′ 4″ W



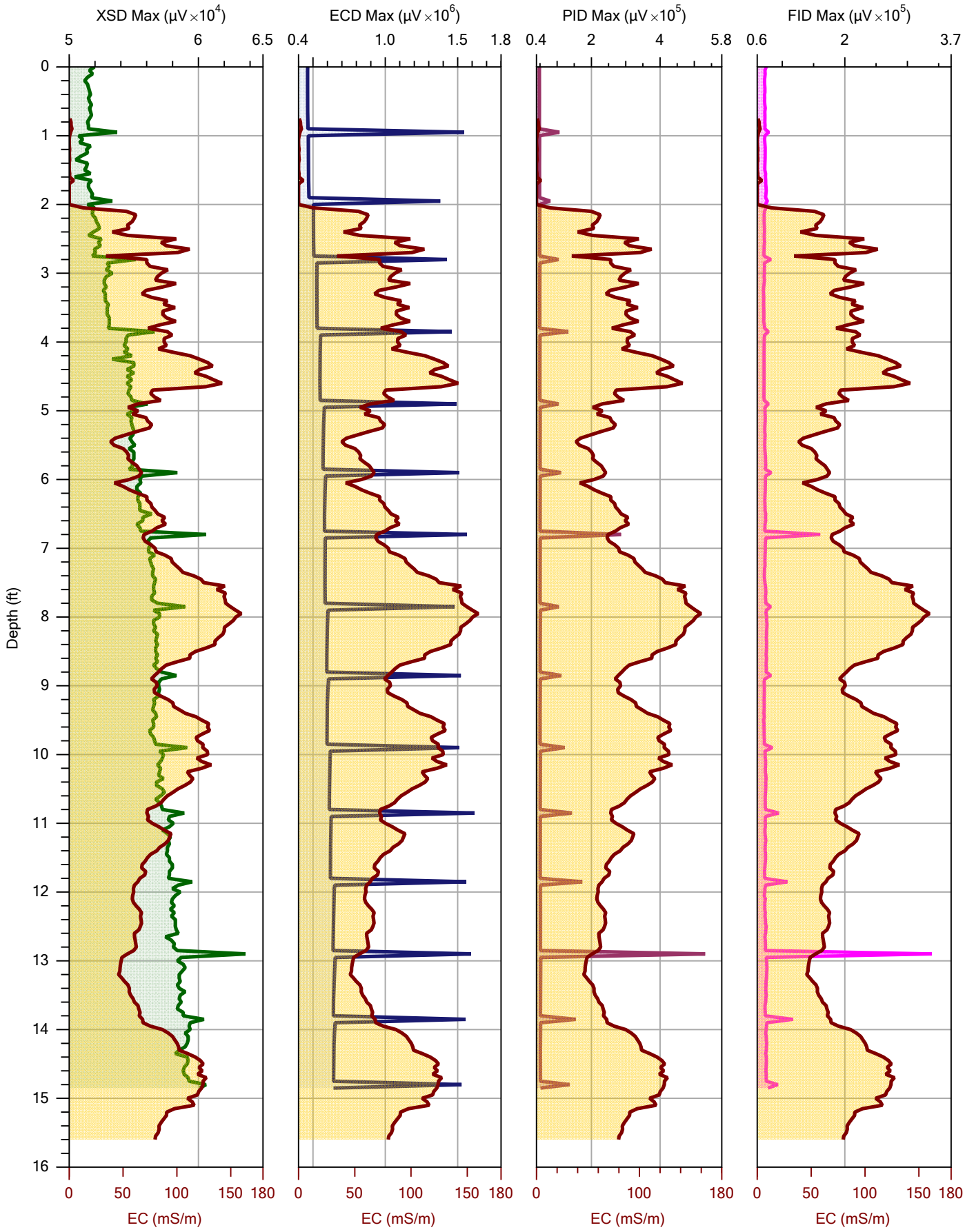
ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

Company: ASC Tech Services	Operator: Jaime Ricci	File: MIP.02.MHP
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Date: 7/25/2016
		Location: 37° 40′ 15″ N, 122° 8′ 4″ W



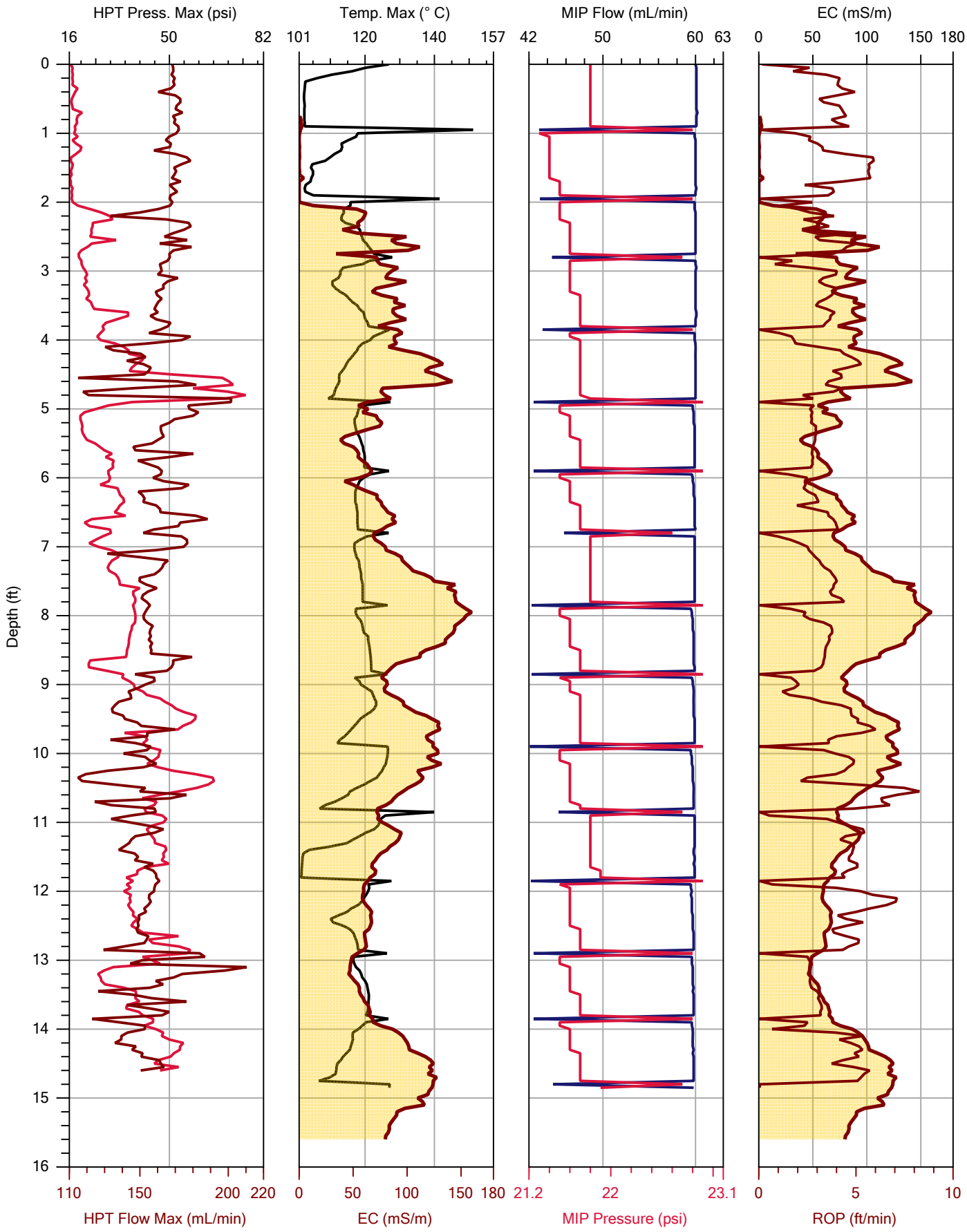
ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

		File: MIP.02.MHP
Company: ASC Tech Services	Operator: Jaime Ricci	Date: 7/25/2016
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Location: 37° 40′ 15″ N, 122° 8′ 4″ W



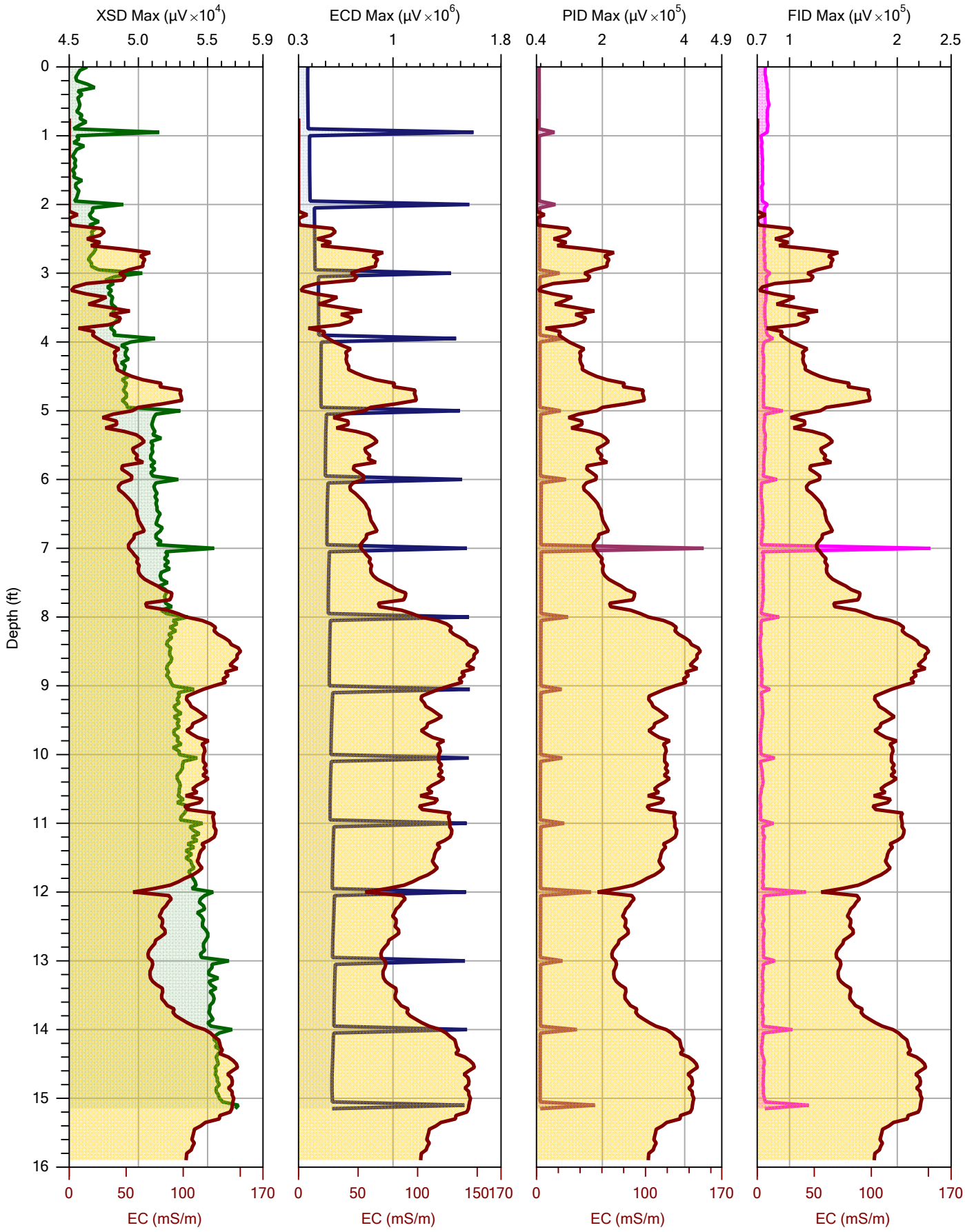
ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

Company: ASC Tech Services	Operator: Jaime Ricci	File: MIP.03.MHP
		Date: 7/25/2016
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Location: 37° 40′ 15″ N, 122° 8′ 4″ W



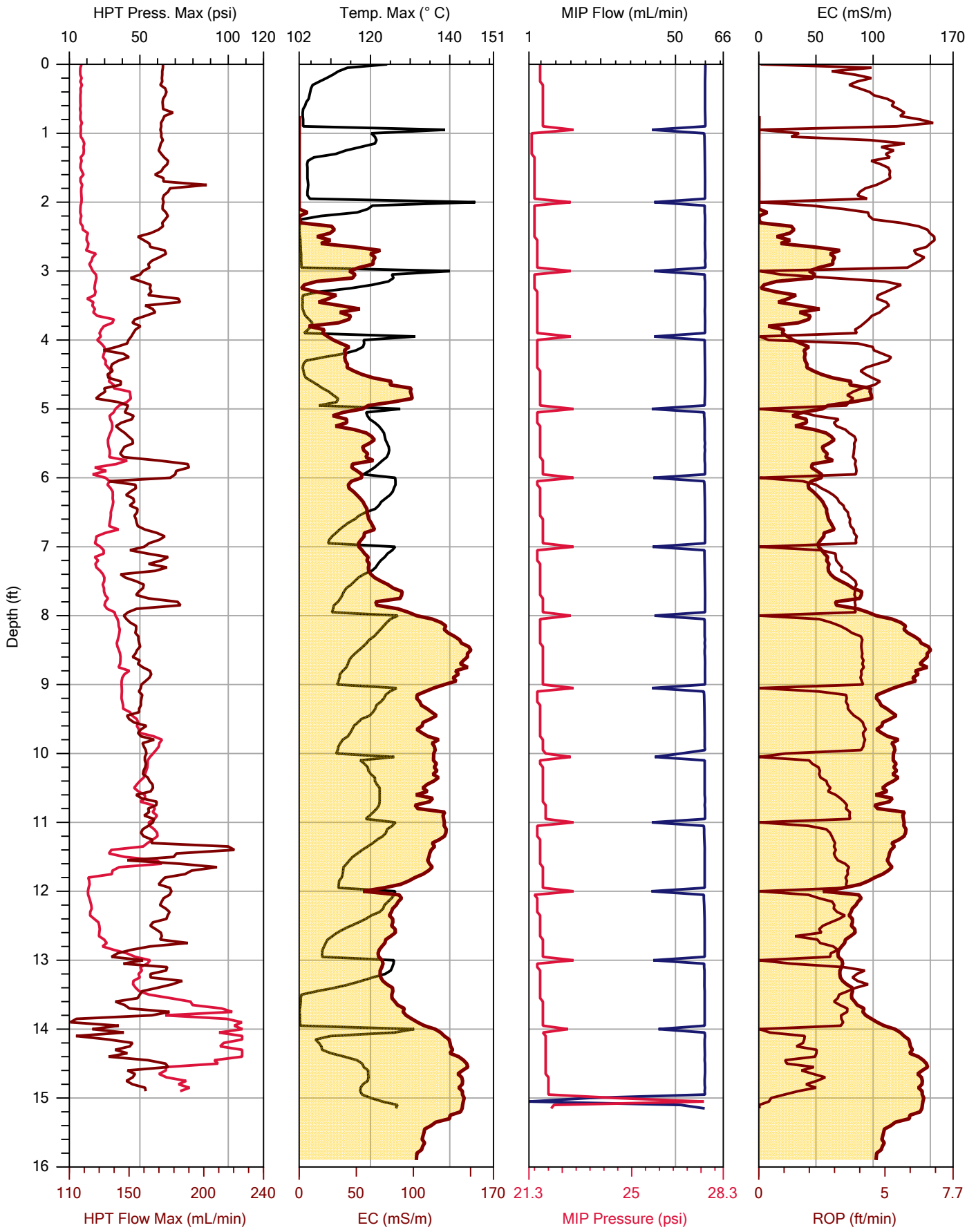
ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

Company: ASC Tech Services	Operator: Jaime Ricci	File: MIP.03.MHP
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Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Location: 37° 40′ 15″ N, 122° 8′ 4″ W



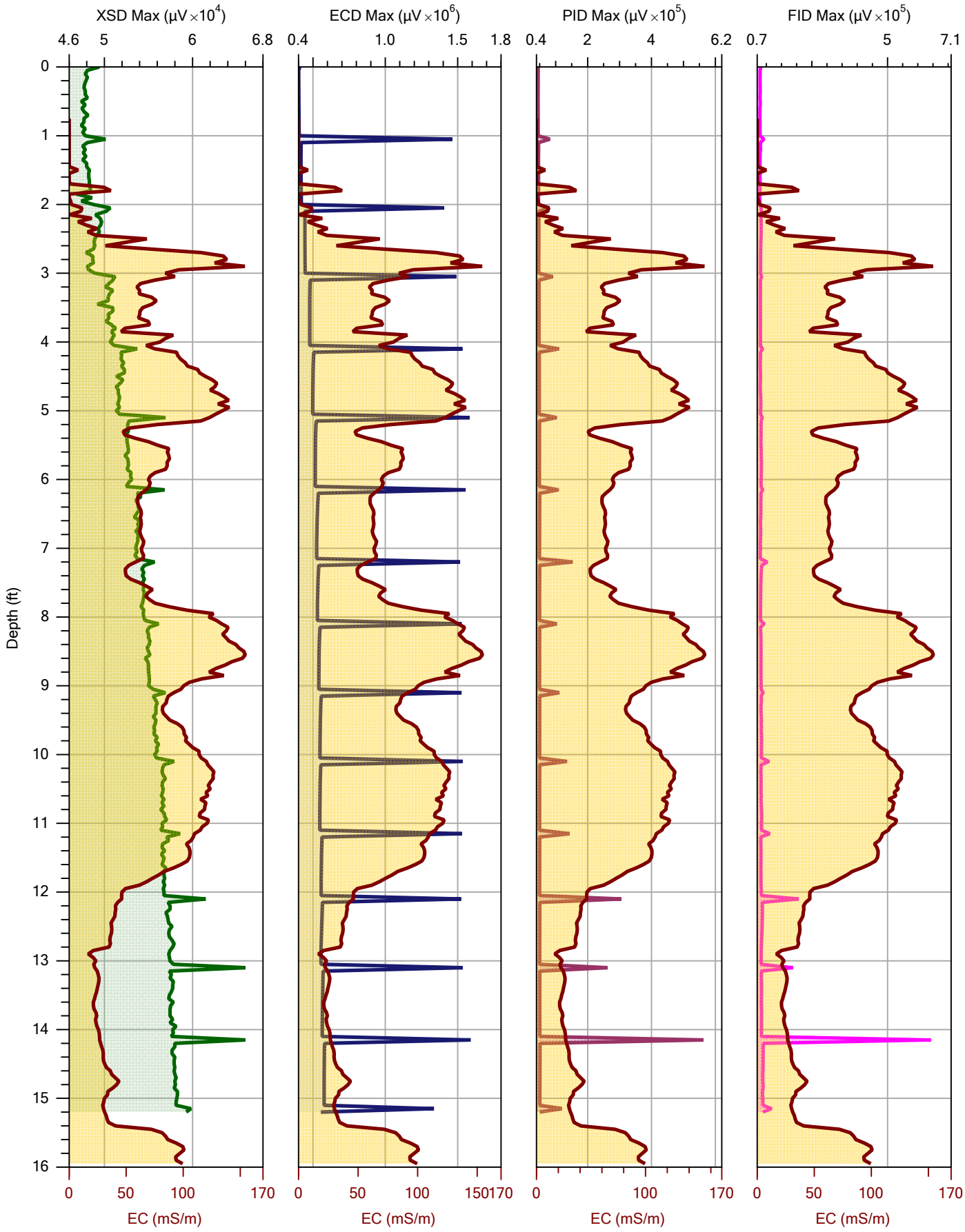
ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

Company: ASC Tech Services	Operator: Jaime Ricci	File: MIP.04.MHP
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Date: 7/25/2016
		Location: 37° 40′ 14″ N, 122° 8′ 4″ W



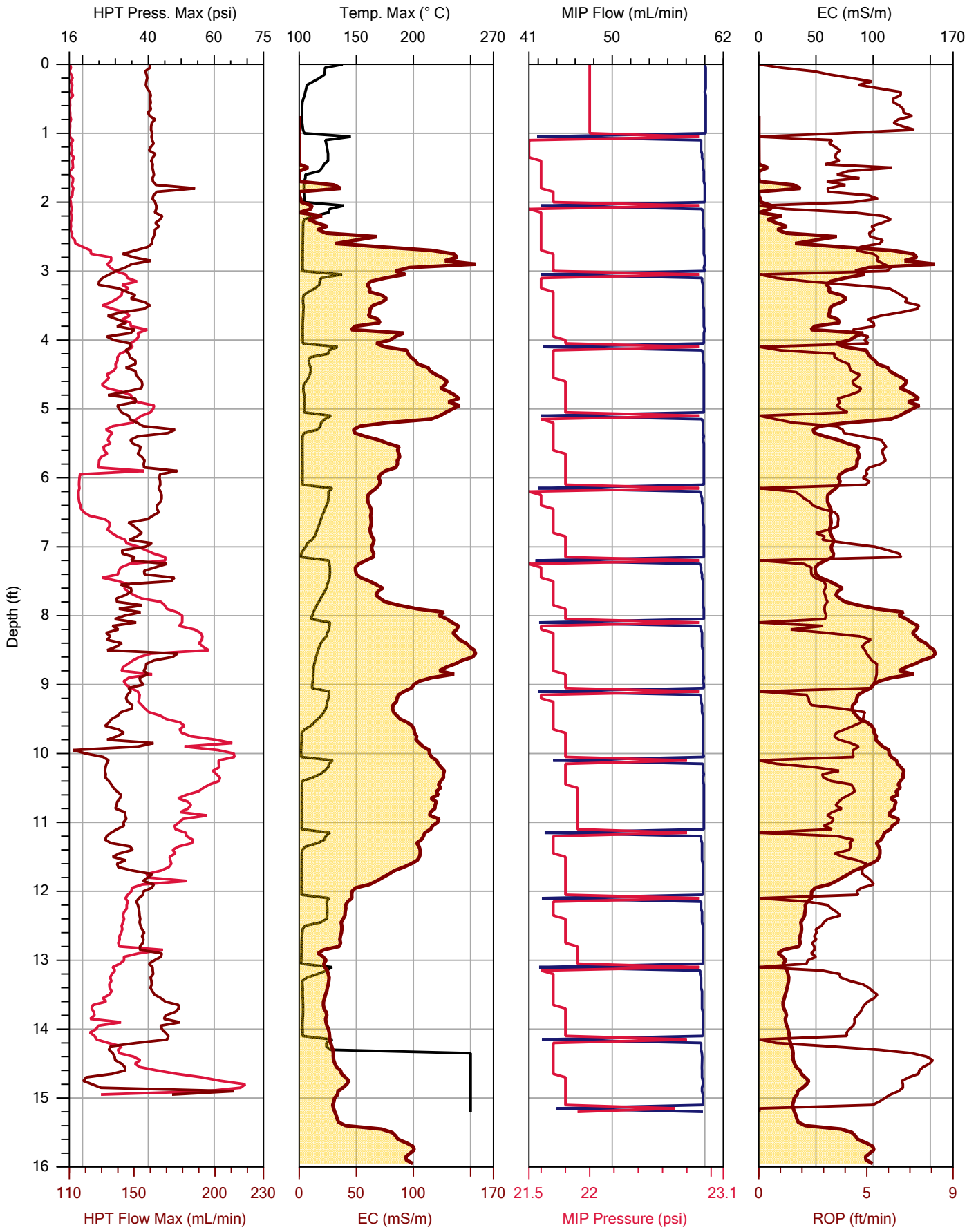
ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

		File: MIP.04.MHP
Company: ASC Tech Services	Operator: Jaime Ricci	Date: 7/25/2016
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Location: 37° 40′ 14″ N, 122° 8′ 4″ W



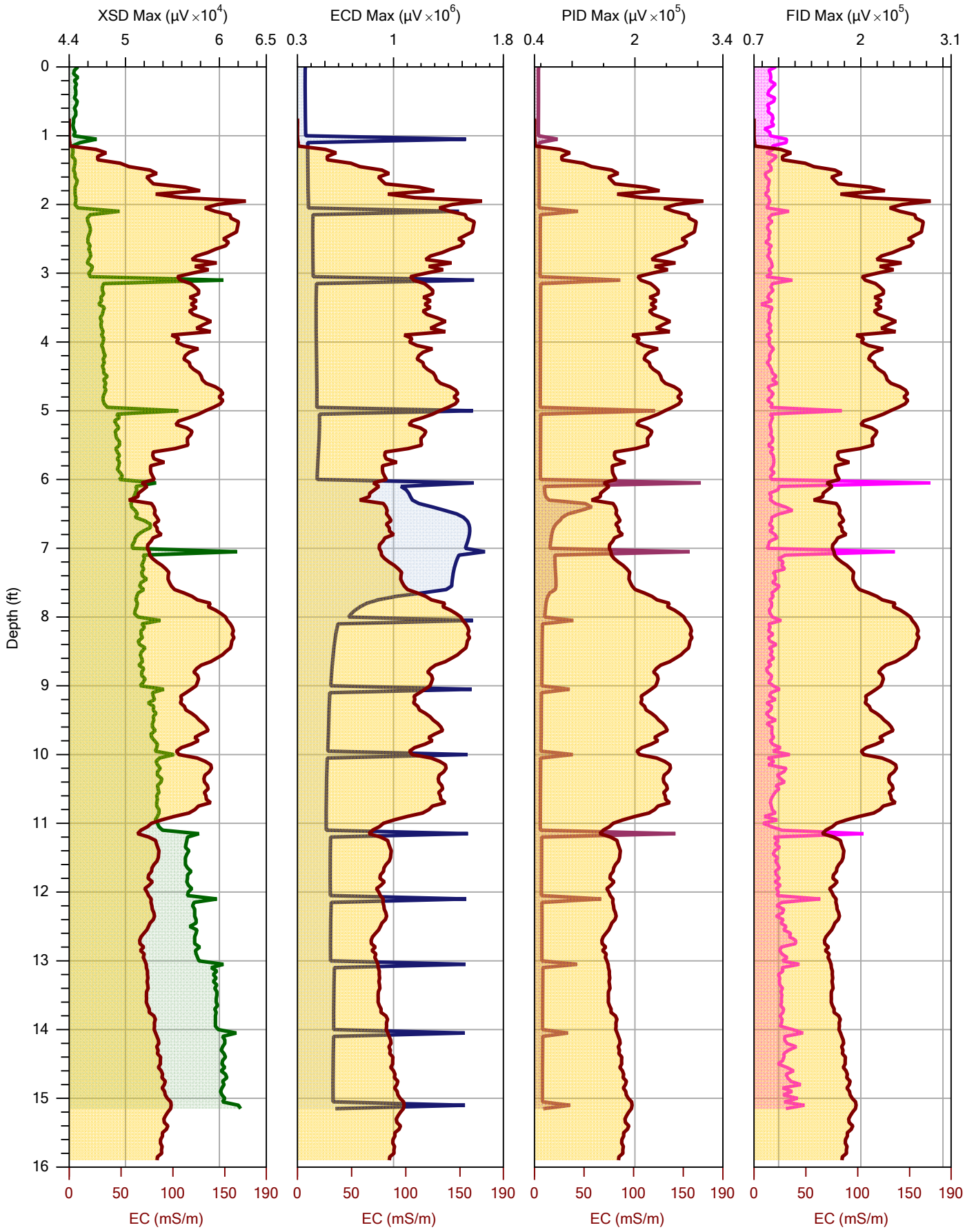
ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

Company: ASC Tech Services	Operator: Jaime Ricci	File: MIP.05.MHP
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Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Location: 37° 40′ 15″ N, 122° 8′ 4″ W



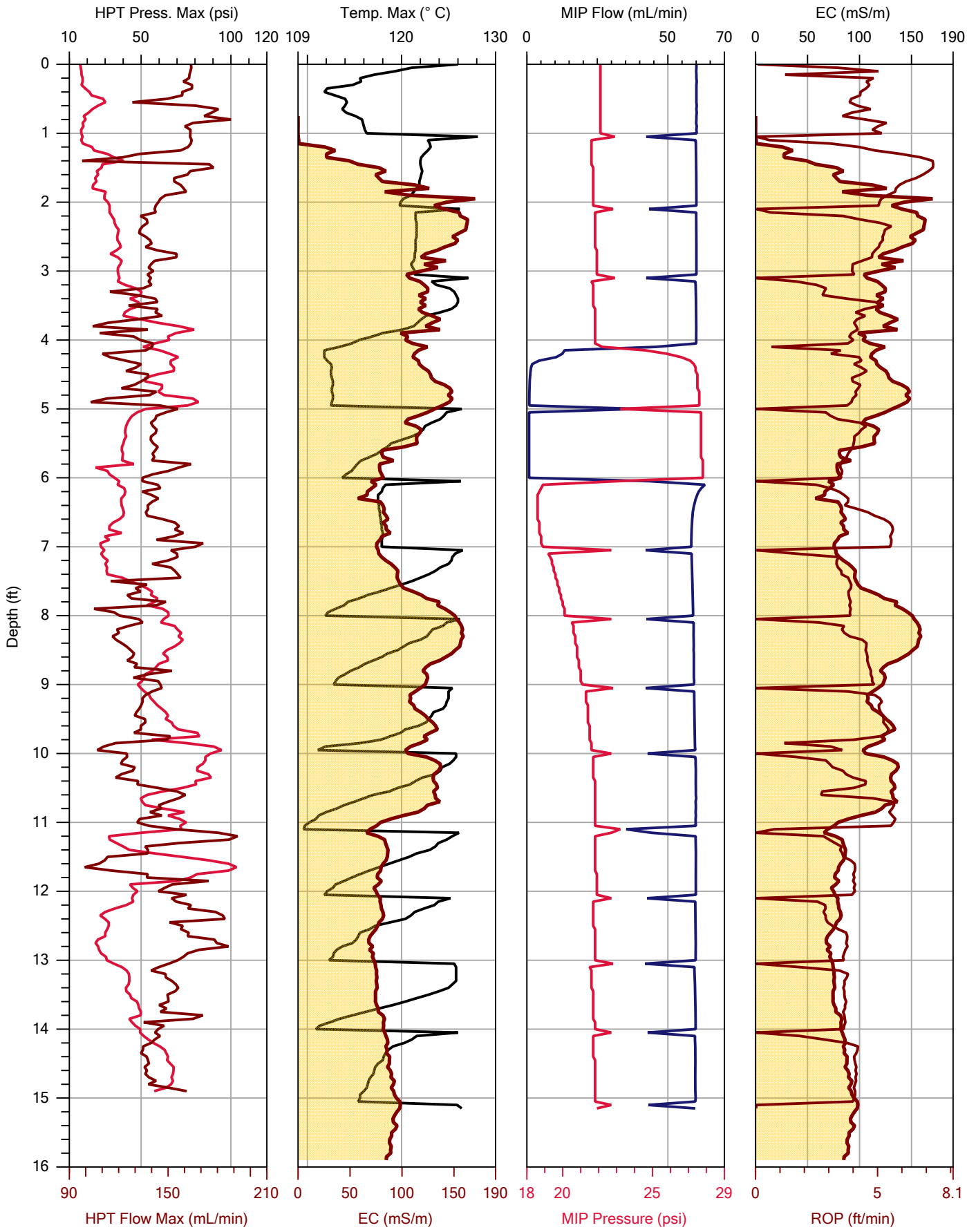
ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

		File: MIP.05.MHP
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Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Location: 37° 40′ 15″ N, 122° 8′ 4″ W



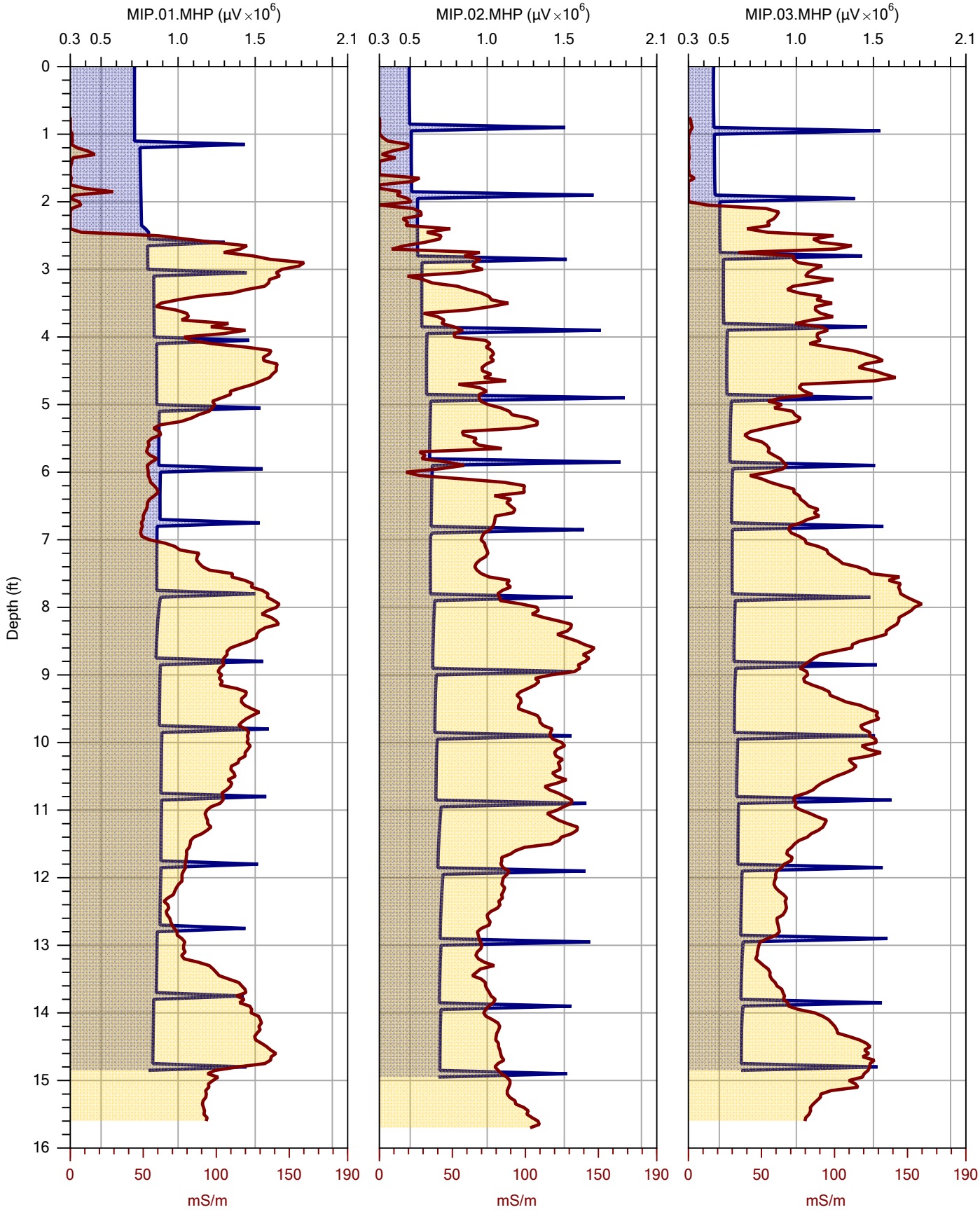
ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

Company: ASC Tech Services	Operator: Jaime Ricci	File: MIP.06.MHP
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Date: 7/25/2016
		Location: 37° 40′ 15″ N, 122° 8′ 4″ W



ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

Company: ASC Tech Services	Operator: Jaime Ricci	File: MIP.06.MHP
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Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea	Location: 37° 40′ 15″ N, 122° 8′ 4″ W

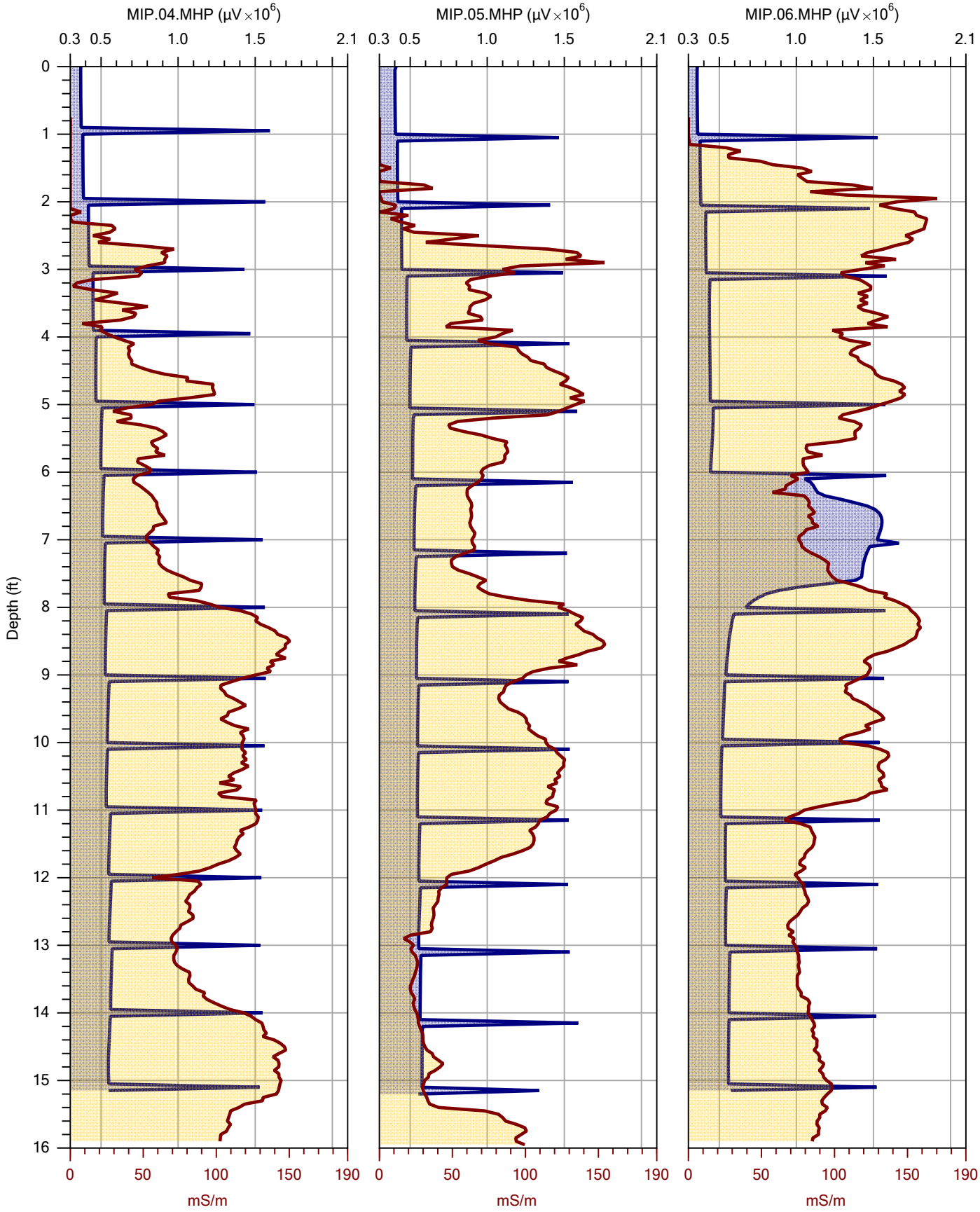


ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

ECD Max / EC

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

MIP.01.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W
MIP.02.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W
MIP.03.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W

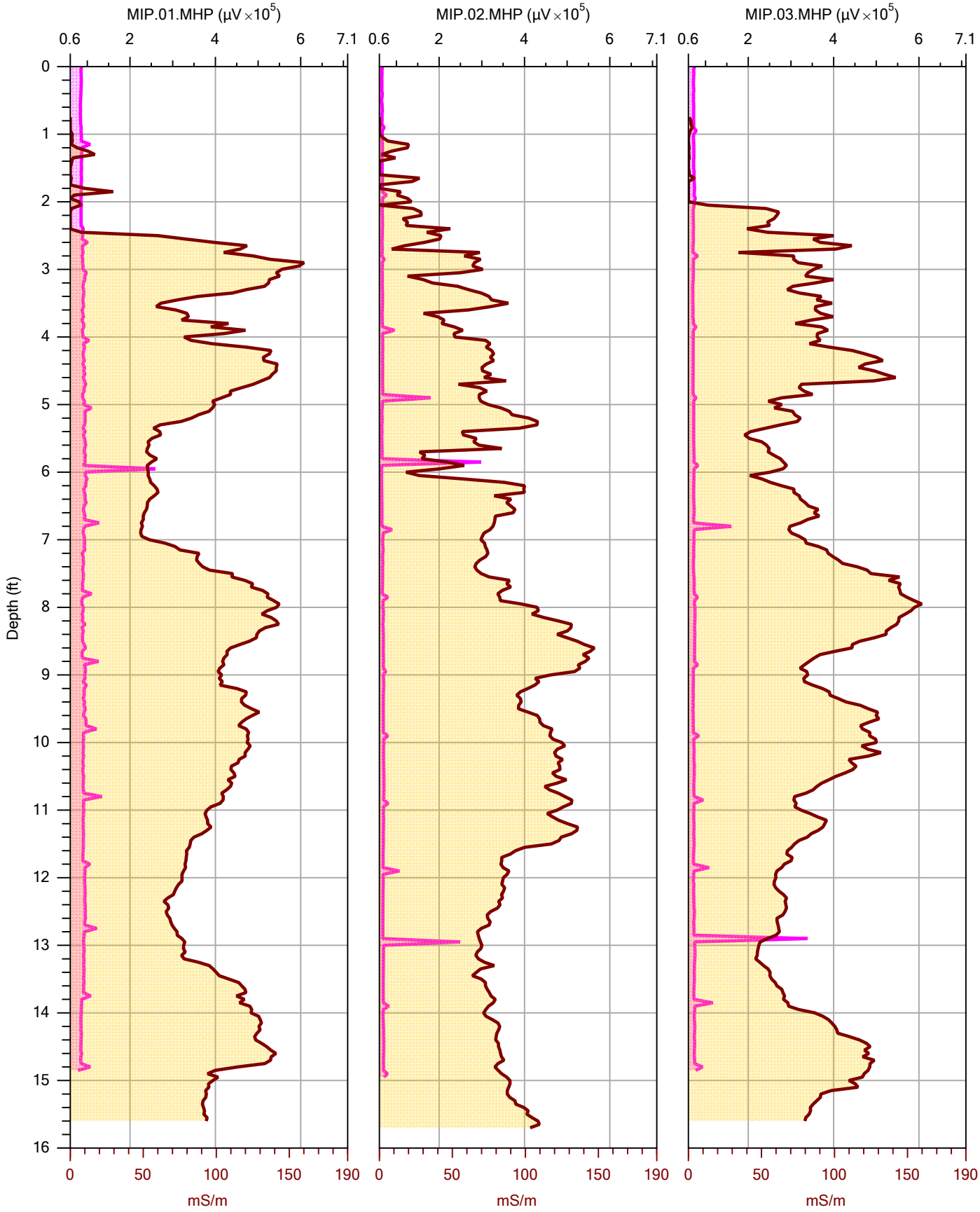


ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

ECD Max / EC

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

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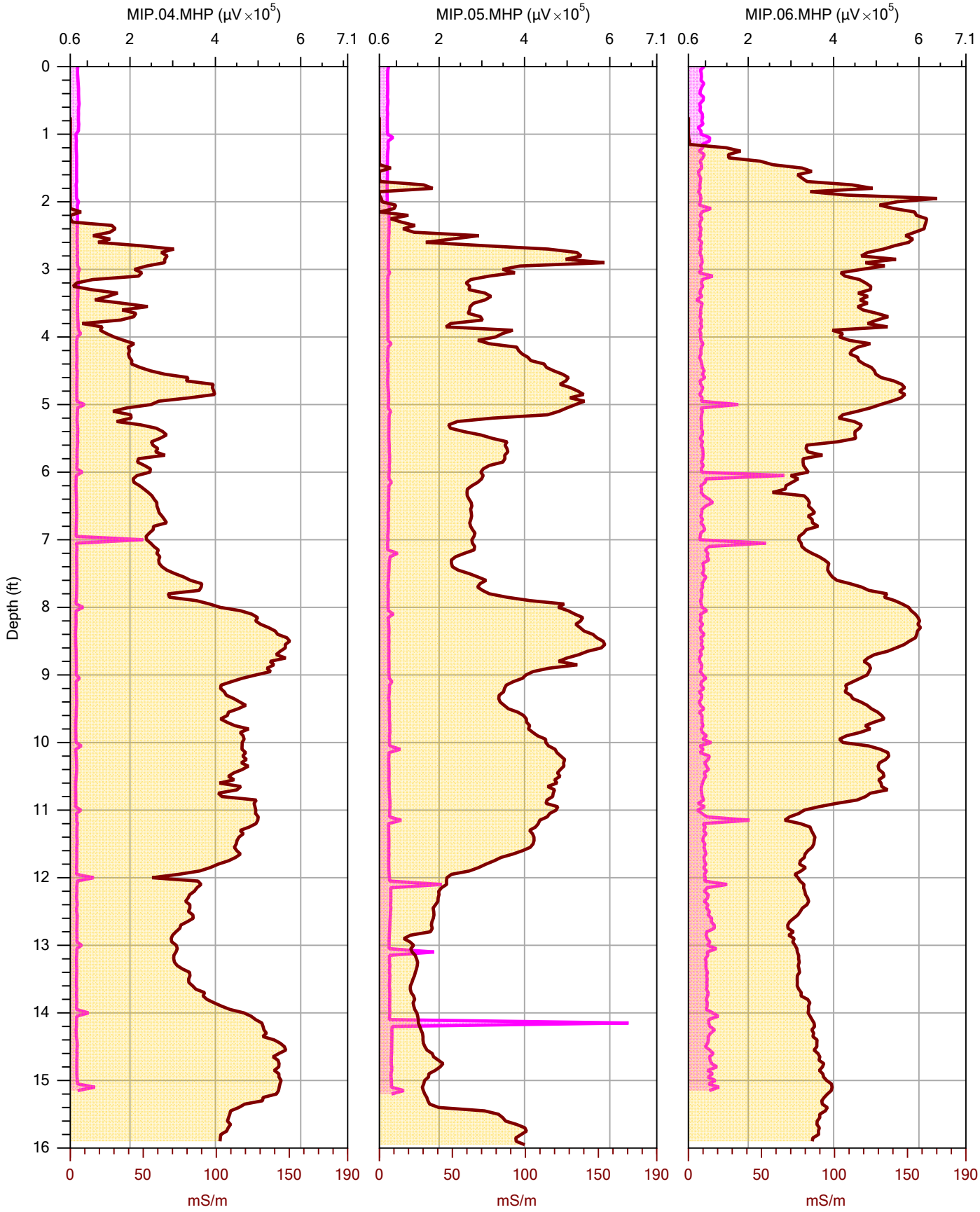


ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

FID Max / EC

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

MIP.01.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W
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37° 40′ 15″ N, 122° 8′ 4″ W
MIP.03.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W

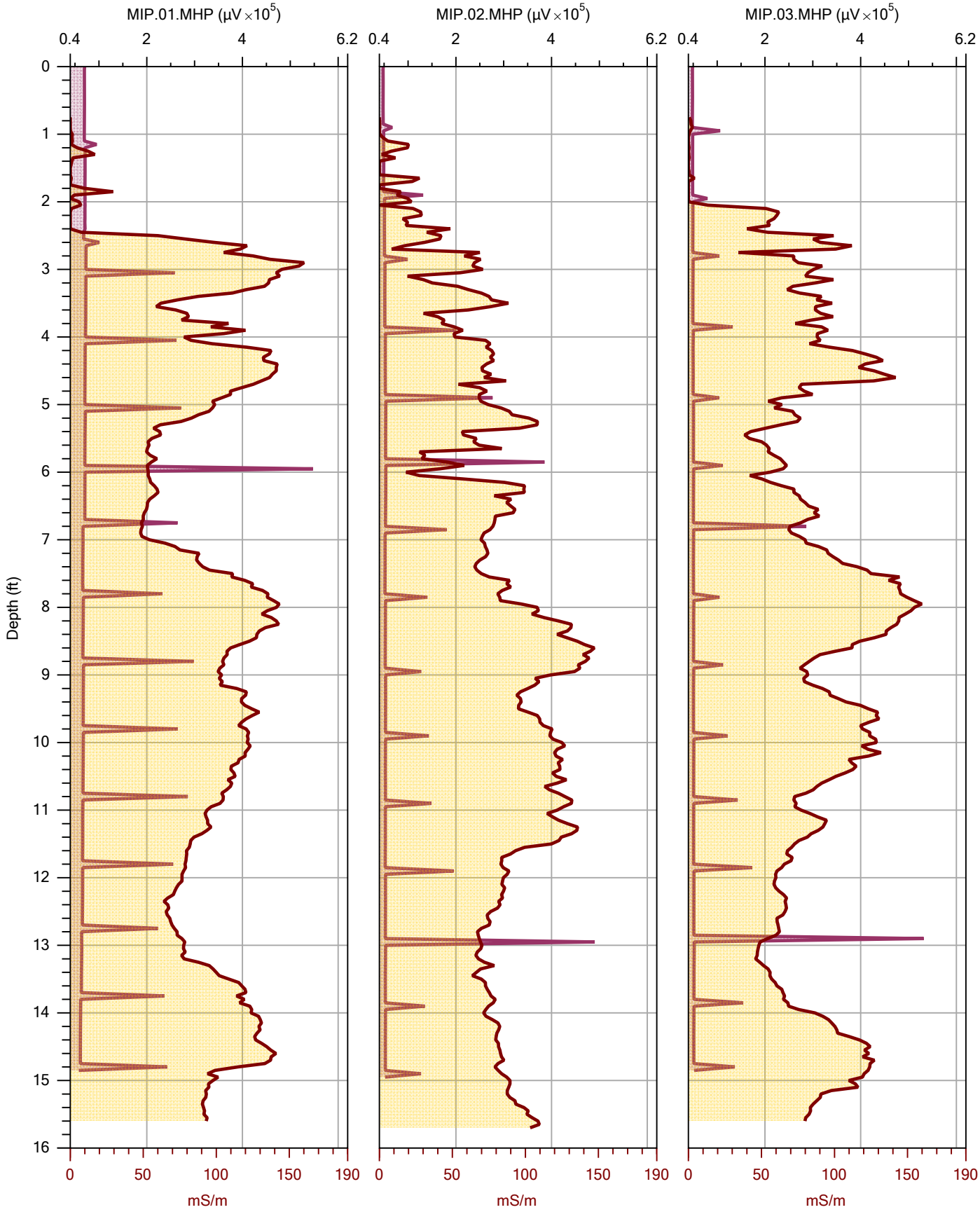


ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

FID Max / EC

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

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MIP.05.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W
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37° 40′ 15″ N, 122° 8′ 4″ W



ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

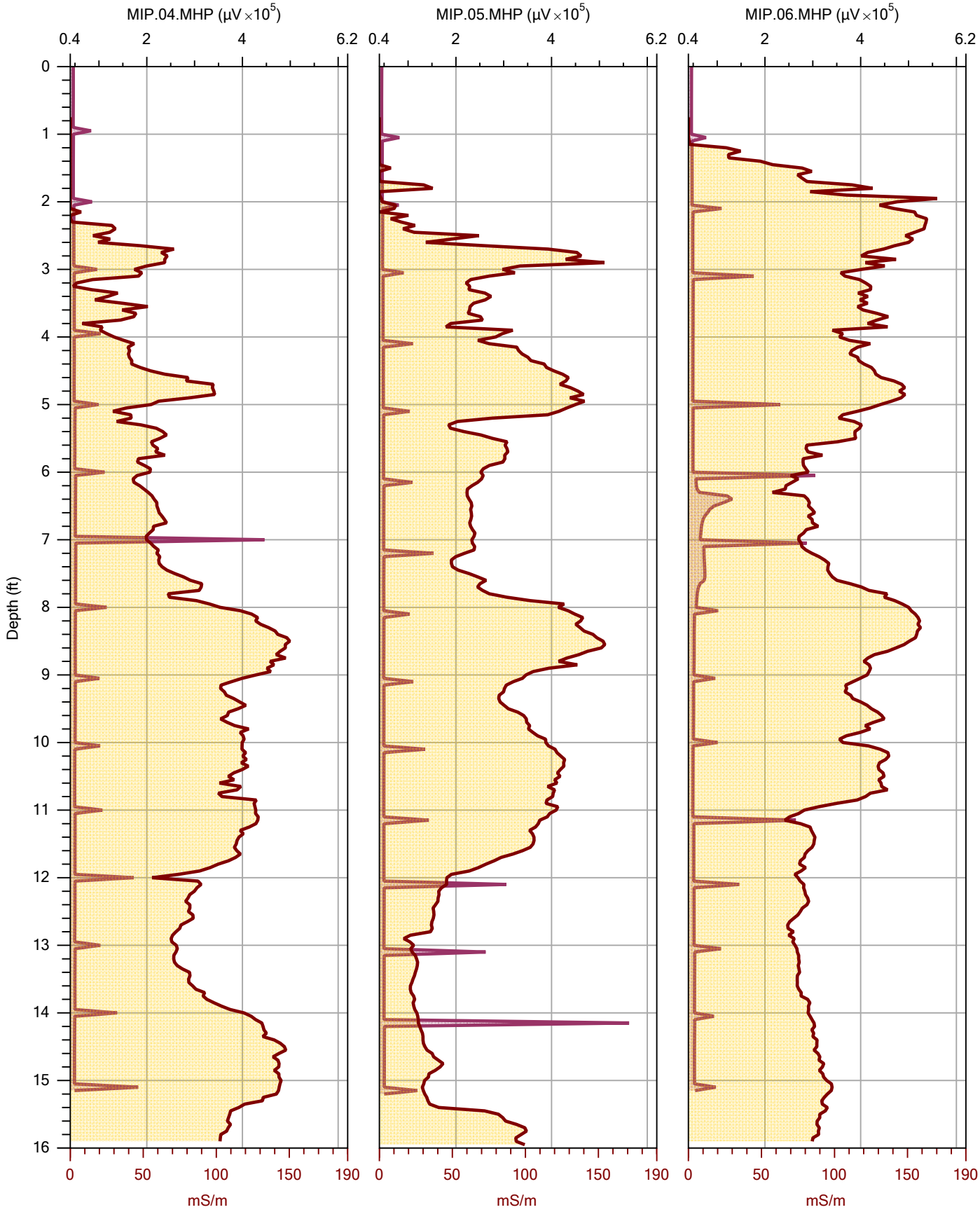
PID Max / EC

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

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MIP.02.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W

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37° 40′ 15″ N, 122° 8′ 4″ W



ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

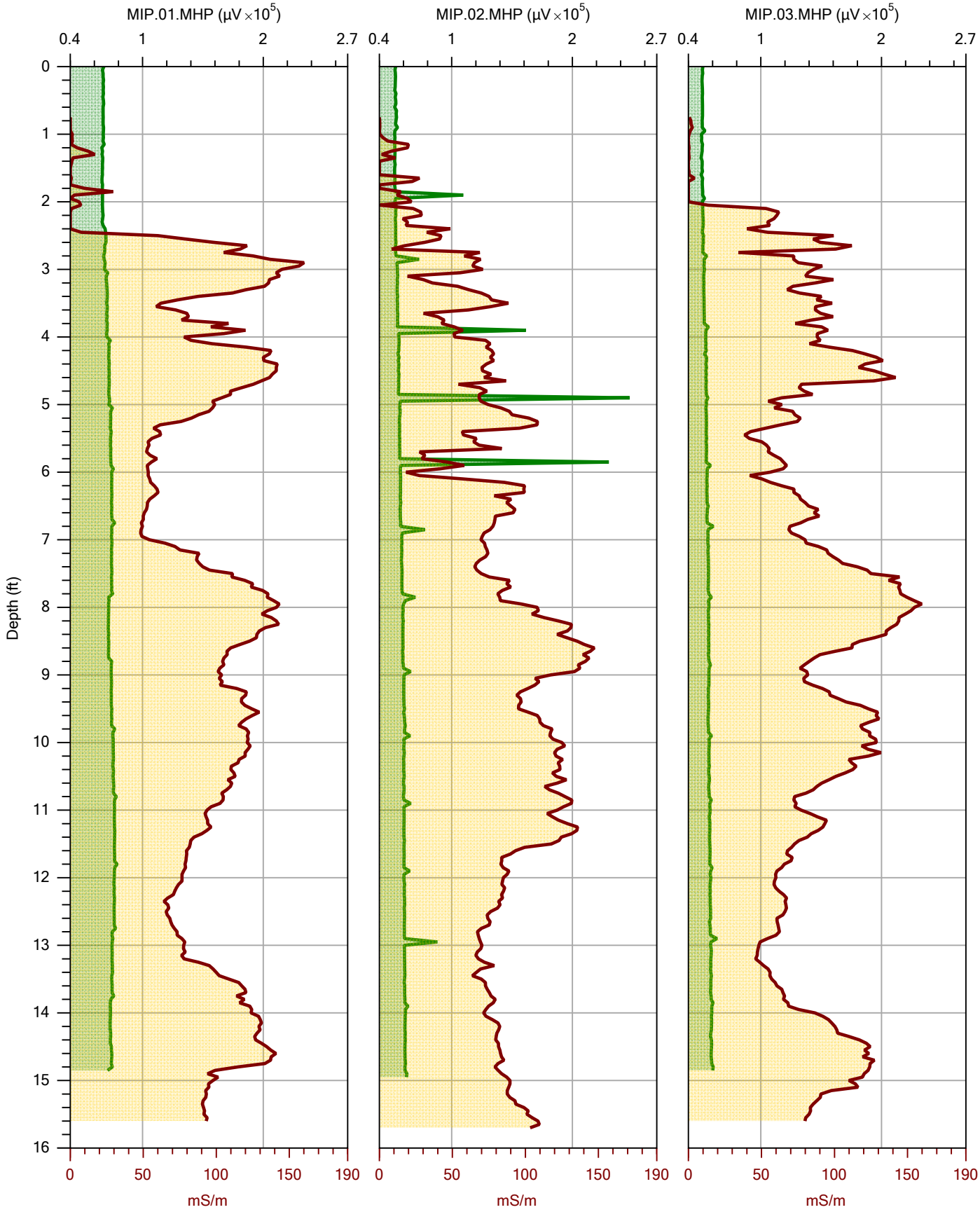
PID Max / EC

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

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MIP.05.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W

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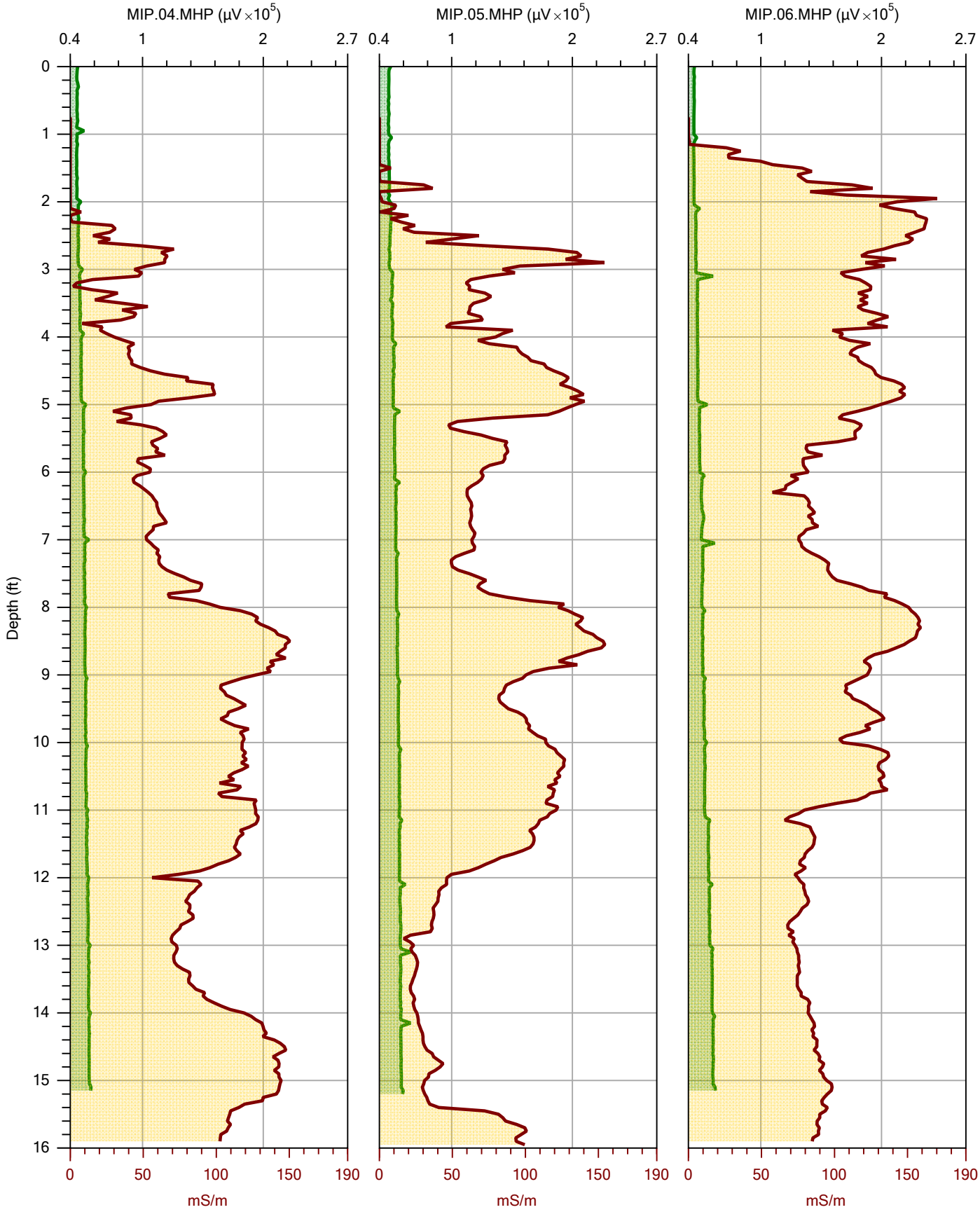


ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

XSD Max / EC

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

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37° 40′ 15″ N, 122° 8′ 4″ W

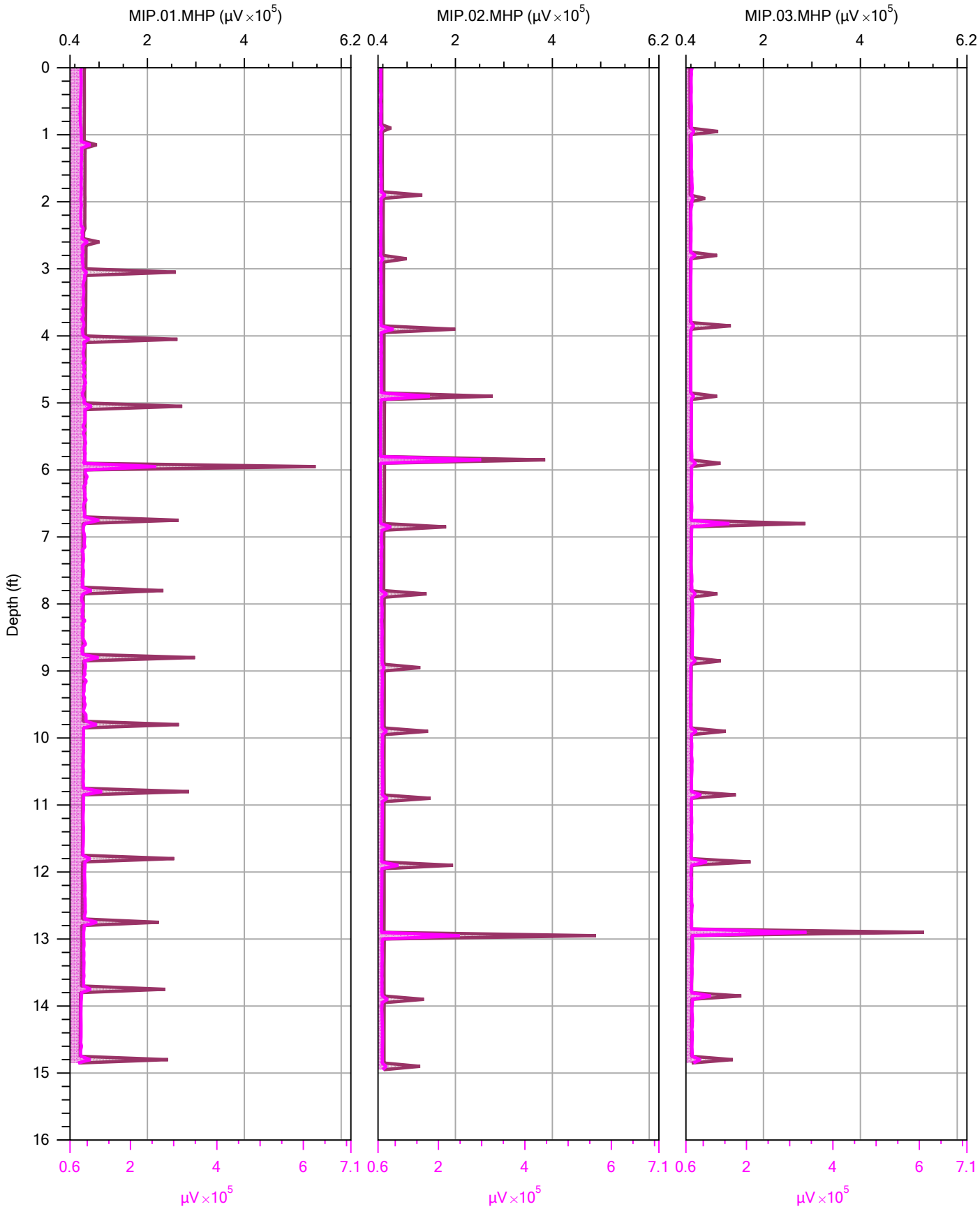


ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

XSD Max / EC

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

MIP.04.MHP 7/25/2016
37° 40′ 14″ N, 122° 8′ 4″ W
MIP.05.MHP 7/25/2016
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37° 40′ 15″ N, 122° 8′ 4″ W



ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

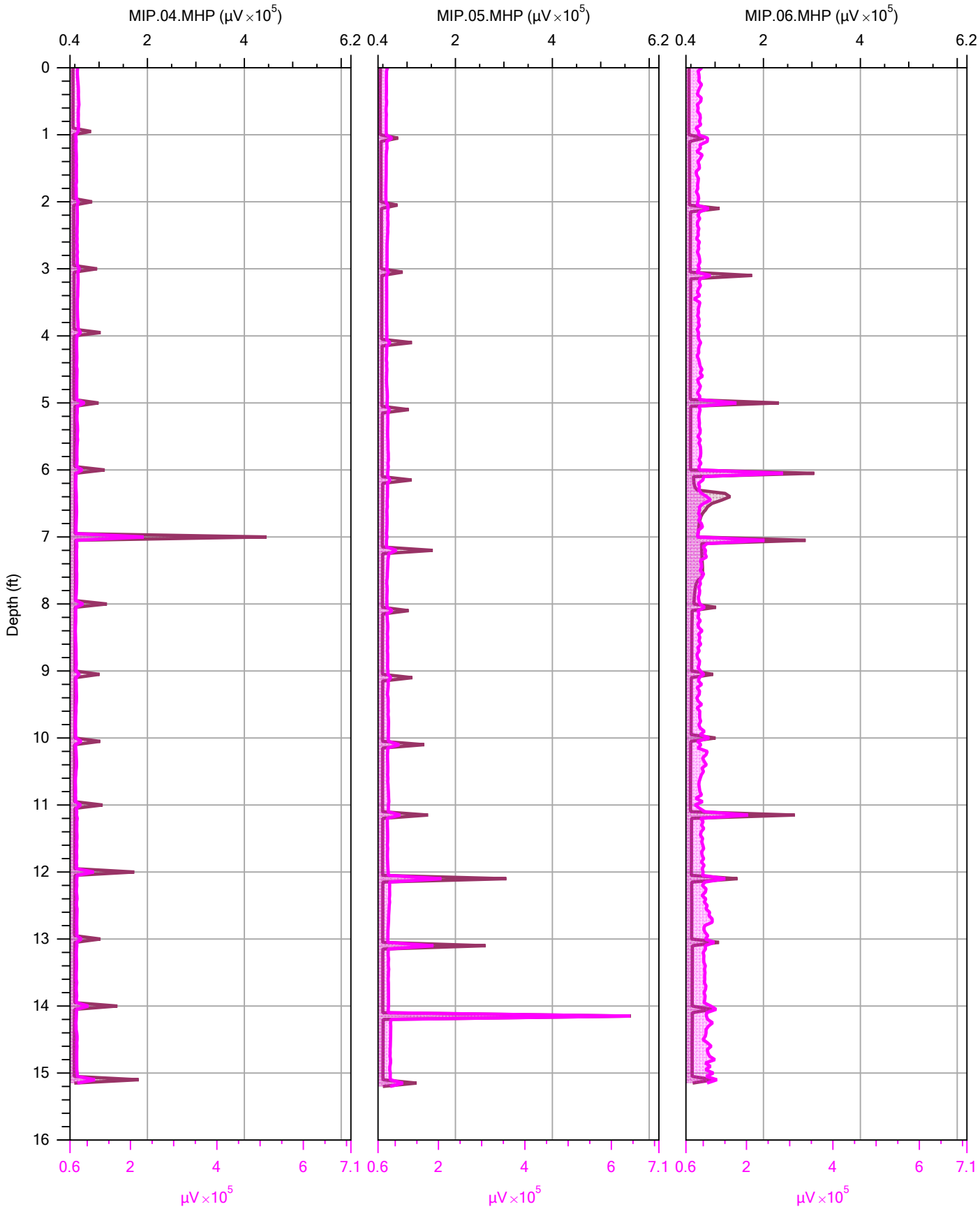
PID Max / FID Max

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

MIP.01.MHP 7/25/2016
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MIP.02.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W

MIP.03.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W



ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

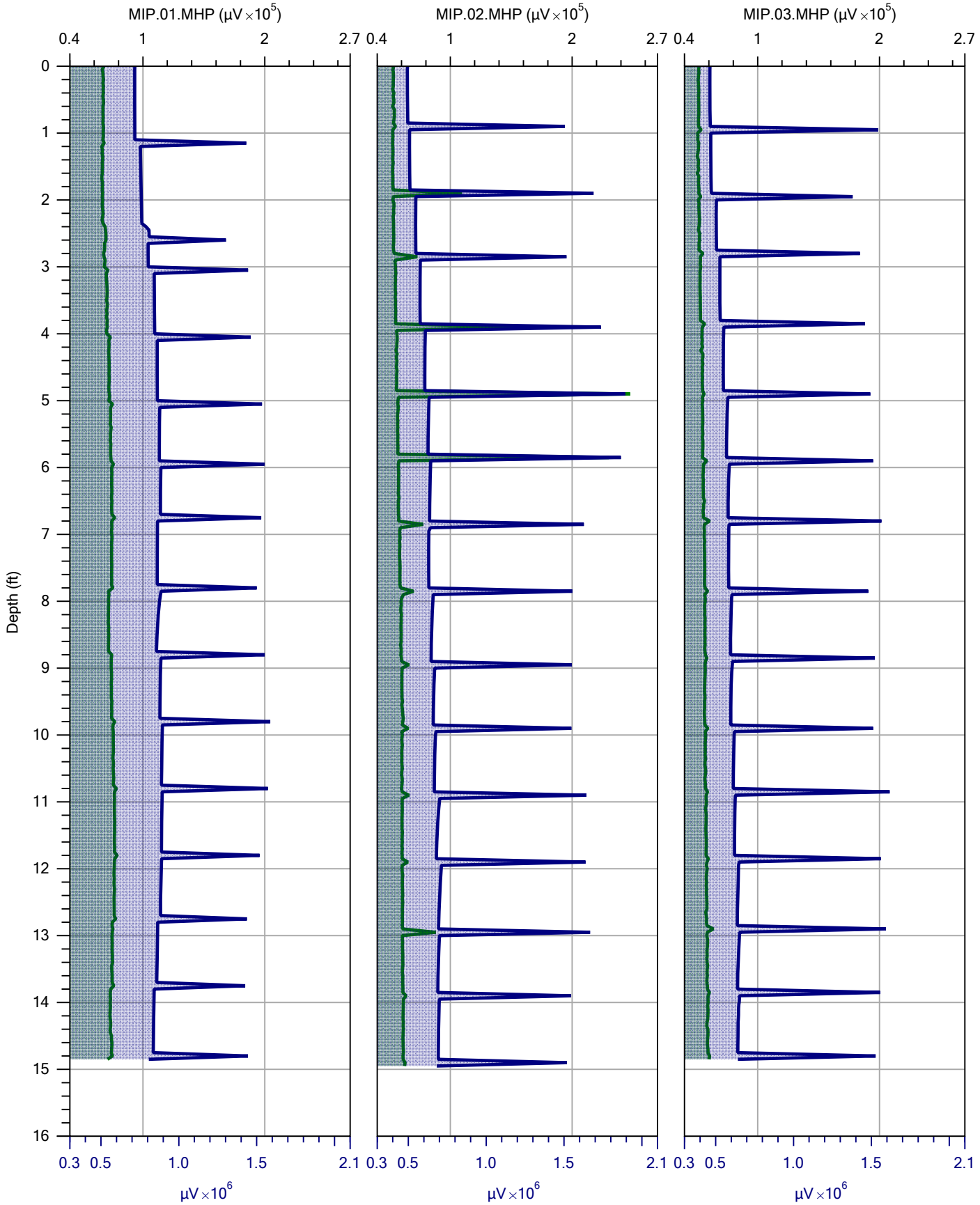
PID Max / FID Max

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

MIP.04.MHP 7/25/2016
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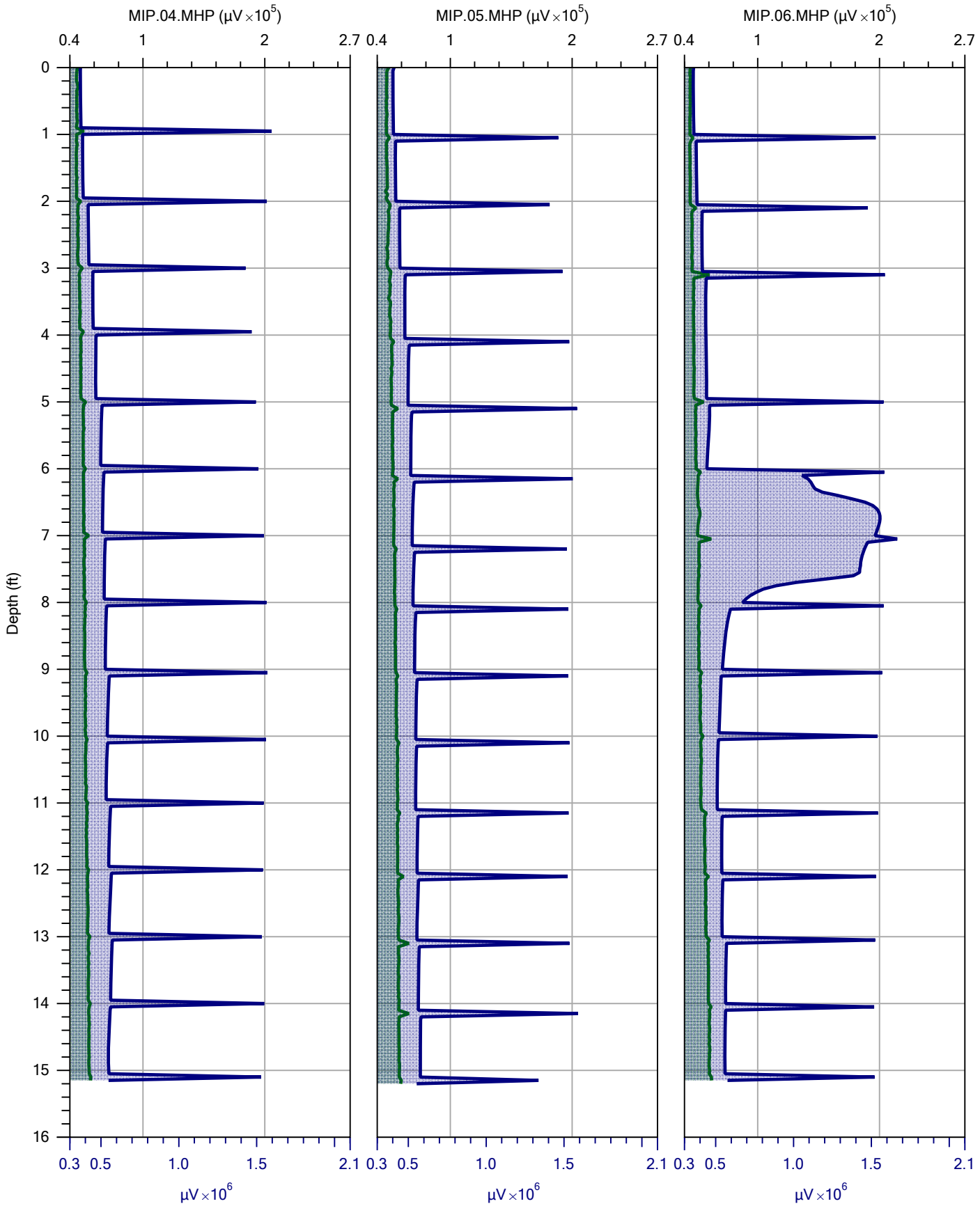


ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

XSD Max / ECD Max

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

MIP.01.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W
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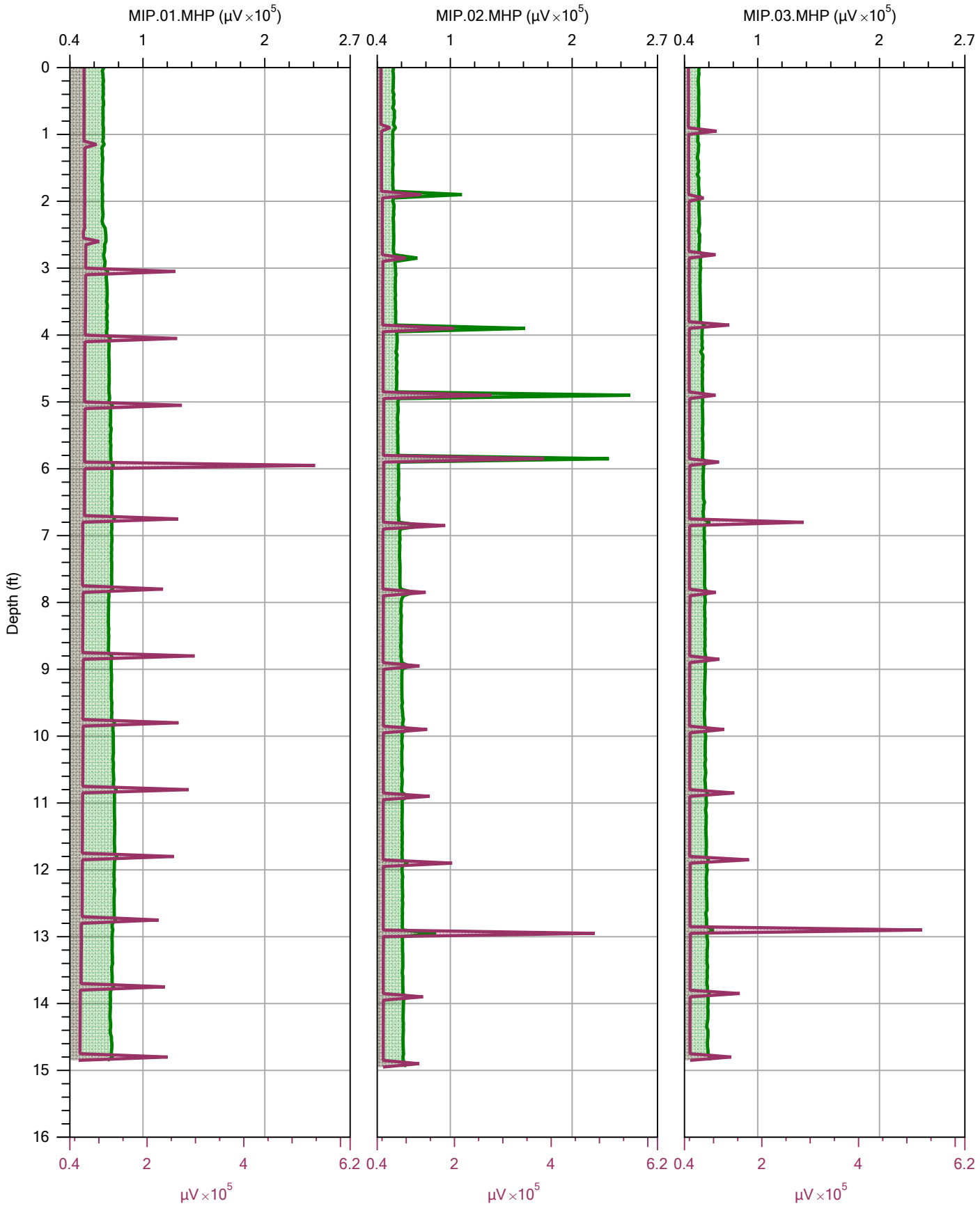


ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

XSD Max / ECD Max

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

MIP.04.MHP 7/25/2016
37° 40′ 14″ N, 122° 8′ 4″ W
MIP.05.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W
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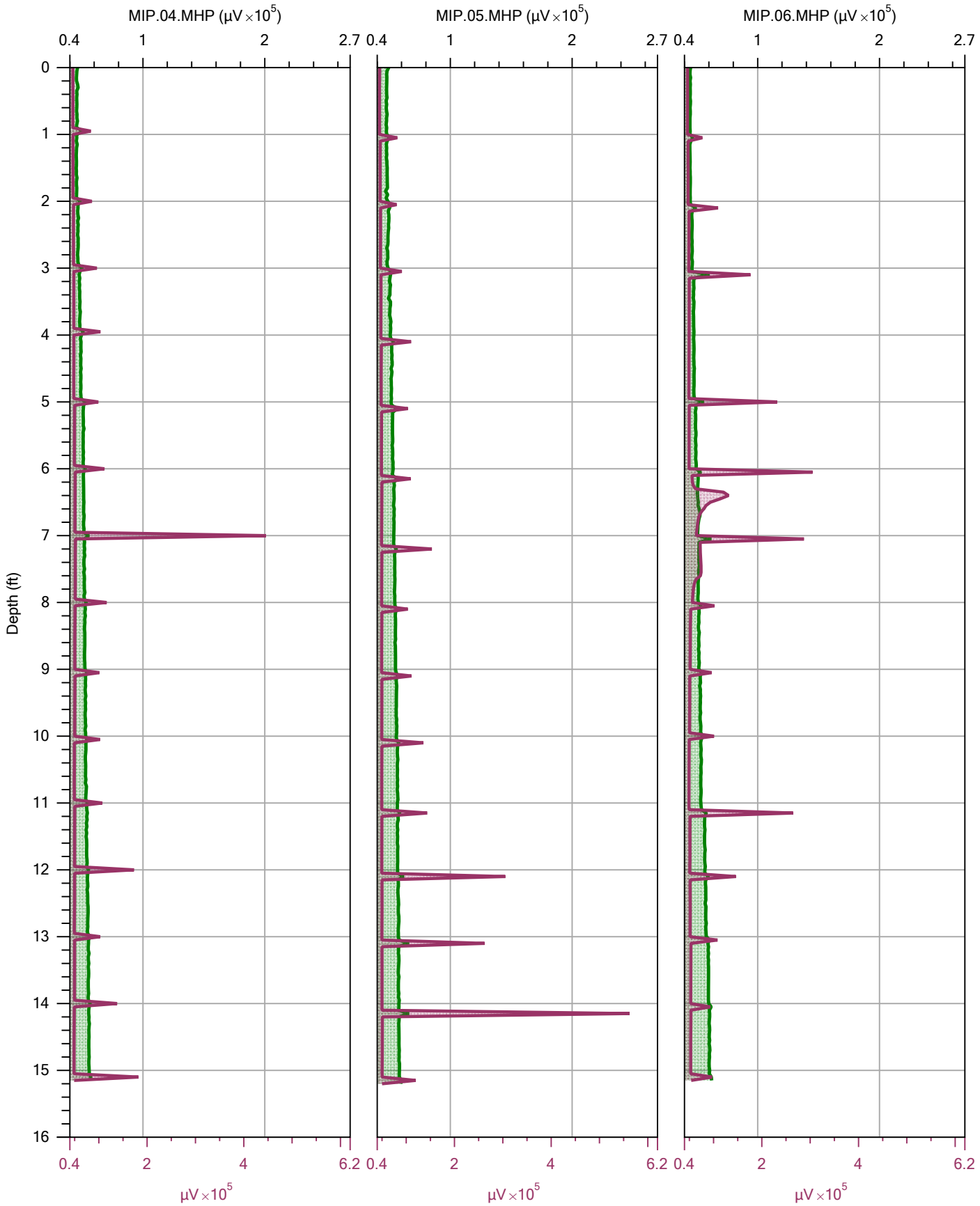


ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

XSD Max / PID Max

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

MIP.01.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W
MIP.02.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W
MIP.03.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W



ASC Tech Services
High-Resolution Site Characterization Technologies
MIP | HPT | CPT | EC | PST

XSD Max / PID Max

Company: ASC Tech Services	Operator: Jaime Ricci
Project ID: 1233 Bockman, San Lorenzo, CA	Client: Pangea

MIP.04.MHP 7/25/2016
37° 40′ 14″ N, 122° 8′ 4″ W

MIP.05.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W

MIP.06.MHP 7/25/2016
37° 40′ 15″ N, 122° 8′ 4″ W

APPENDIX E

Laboratory Analytical Reports


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 279064
ANALYTICAL REPORT

Pangea Environmental	Project : 2030.001
1710 Franklin Street	Location : 1233 Brockman
Oakland, CA 94612	Level : II

Sample ID	Lab ID
SV1	279064-001
SV5	279064-002
SV6	279064-003
SV7	279064-004
SV14	279064-005
SV15	279064-006

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: Will Rice Date: 07/29/2016

Will Rice
Project Manager
will.rice@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**279064**
Client:	**Pangea Environmental**
Project:	**2030.001**
Location:	**1233 Brockman**
Request Date:	**07/27/16**
Samples Received:	**07/27/16**

This data package contains sample and QC results for six air samples, requested for the above referenced project on 07/27/16. The samples were received cold and intact.

Volatile Organics in Air by MS (EPA TO-15):

High responses were observed for many analytes in the CCV analyzed 07/28/16 15:47; affected data was qualified with "b". High recoveries were observed for many analytes in the BS/BSD for batch 237460; the associated RPDs were within limits, and these analytes were not detected at or above the RL in the associated samples. No other analytical problems were encountered.

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street

Berkeley, CA 94710
(510)486-0900 Phone
(510)486-0532 Fax

AIR TESTING CHAIN OF CUSTODY
& PURCHASE ORDER

Page ____ of ____
Chain of Custody # : 1

C&T LOGIN # 279064

Project No: 2030.001
Project Name: 1233 Bockman
EDD Format: _____ Rpt Level: II III IV
Turnaround Time: ☒ RUSH 48hr ☐ Standard

Sampler: Albert Simmons
Report To: Ron Scheele
Company: Pangea Env.
Telephone: (510) 459-6012
Email: rscheele@pangeaenv.com

Lab No.	Sample ID.	Sampling Information: Date Collected	Time Collected	Canister ID (Bar Code #)	Flow Controller ID	Sample Volume (Gauge Reading)	TESTING REQUESTED: TO-15	TO-3: C6-C12 GRO	TO-3M: C1-C6 Hydrocarbons	D1946: (Please Circle Targets) H_2 He N_2 O_2 CO CO_2 CH_4
1	SV 1	7/27/16	1455	70	228	5"	X			
2	SV 5		0935	256	185	4"				
3	SV 6		1337	95	100	5"				
4	SV 7		1351	166	189	5"				
5	SV 14		0853	329	220	4"				
6	SV 15		1438	378	178	5"				

Notes:

RELINQUISHED BY: _____ 7/28/16 1725 DATE/TIME
DATE/TIME
DATE/TIME

RECEIVED BY: _____ 07/27 1725 DATE/TIME
DATE/TIME
DATE/TIME

COOLER RECEIPT CHECKLIST Curtis & Tompkins, Ltd.

Login # 279064 Date Received 7/27/16 Number of coolers 0
Client Barger Project Buckman

Date Opened 7/27/16 By (print) AM (sign)
Date Logged in JV By (print) JK (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)

☐ Samples Received on ice & cold without a temperature blank

☐ 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? 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 9, 10/11

Curtis & Tompkins, Ltd.

Detections Summary for 279064

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

Client : Pangea Environmental
Project : 2030.001
Location : 1233 Brockman

Client Sample ID : SV1 Laboratory Sample ID : 279064-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chloromethane	1.7		1.1	ppbv	As Recd	2.210	EPA TO-15	METHOD
Acetone	9.8		4.4	ppbv	As Recd	2.210	EPA TO-15	METHOD
Carbon Disulfide	3.5		1.1	ppbv	As Recd	2.210	EPA TO-15	METHOD
Tetrachloroethene	7.3		1.1	ppbv	As Recd	2.210	EPA TO-15	METHOD

Client Sample ID : SV5 Laboratory Sample ID : 279064-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	3.4		0.98	ppbv	As Recd	1.960	EPA TO-15	METHOD
Benzene	1.2		0.98	ppbv	As Recd	1.960	EPA TO-15	METHOD
Tetrachloroethene	100		0.98	ppbv	As Recd	1.960	EPA TO-15	METHOD

Client Sample ID : SV6 Laboratory Sample ID : 279064-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Acetone	5.2		4.0	ppbv	As Recd	2.010	EPA TO-15	METHOD
Carbon Disulfide	12		1.0	ppbv	As Recd	2.010	EPA TO-15	METHOD
n-Hexane	5.2		1.0	ppbv	As Recd	2.010	EPA TO-15	METHOD
Cyclohexane	3.9		1.0	ppbv	As Recd	2.010	EPA TO-15	METHOD
Benzene	3.6		1.0	ppbv	As Recd	2.010	EPA TO-15	METHOD
Tetrachloroethene	63		1.0	ppbv	As Recd	2.010	EPA TO-15	METHOD

Client Sample ID : SV7 Laboratory Sample ID : 279064-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
1,3-Butadiene	1.2		1.2	ppbv	As Recd	2.340	EPA TO-15	METHOD
Acetone	8.0		4.7	ppbv	As Recd	2.340	EPA TO-15	METHOD
Carbon Disulfide	46		1.2	ppbv	As Recd	2.340	EPA TO-15	METHOD
n-Hexane	12		1.2	ppbv	As Recd	2.340	EPA TO-15	METHOD
Tetrahydrofuran	4.9		1.2	ppbv	As Recd	2.340	EPA TO-15	METHOD
Cyclohexane	6.1		1.2	ppbv	As Recd	2.340	EPA TO-15	METHOD
Benzene	5.5		1.2	ppbv	As Recd	2.340	EPA TO-15	METHOD
n-Heptane	2.6		1.2	ppbv	As Recd	2.340	EPA TO-15	METHOD
Toluene	7.1		1.2	ppbv	As Recd	2.340	EPA TO-15	METHOD
Tetrachloroethene	2.2		1.2	ppbv	As Recd	2.340	EPA TO-15	METHOD

Curtis & Tompkins, Ltd.

Client Sample ID : SV14 Laboratory Sample ID : 279064-005

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Acetone	8.7		3.8	ppbv	As Recd	1.890	EPA TO-15	METHOD
Carbon Disulfide	5.0		0.95	ppbv	As Recd	1.890	EPA TO-15	METHOD
Isopropanol	26		3.8	ppbv	As Recd	1.890	EPA TO-15	METHOD
n-Hexane	1.0		0.95	ppbv	As Recd	1.890	EPA TO-15	METHOD
2-Butanone	1.9		0.95	ppbv	As Recd	1.890	EPA TO-15	METHOD
Benzene	1.0		0.95	ppbv	As Recd	1.890	EPA TO-15	METHOD
n-Heptane	1.4		0.95	ppbv	As Recd	1.890	EPA TO-15	METHOD
Toluene	0.95		0.95	ppbv	As Recd	1.890	EPA TO-15	METHOD
Tetrachloroethene	2.4		0.95	ppbv	As Recd	1.890	EPA TO-15	METHOD
Ethylbenzene	37		0.95	ppbv	As Recd	1.890	EPA TO-15	METHOD
m,p-Xylenes	170		0.95	ppbv	As Recd	1.890	EPA TO-15	METHOD
o-Xylene	59		0.95	ppbv	As Recd	1.890	EPA TO-15	METHOD

Client Sample ID : SV15 Laboratory Sample ID : 279064-006

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
1,3-Butadiene	2.7		1.1	ppbv	As Recd	2.110	EPA TO-15	METHOD
Carbon Disulfide	36		1.1	ppbv	As Recd	2.110	EPA TO-15	METHOD
n-Hexane	10		1.1	ppbv	As Recd	2.110	EPA TO-15	METHOD
Cyclohexane	3.9		1.1	ppbv	As Recd	2.110	EPA TO-15	METHOD
Benzene	7.9		1.1	ppbv	As Recd	2.110	EPA TO-15	METHOD
n-Heptane	3.7		1.1	ppbv	As Recd	2.110	EPA TO-15	METHOD
Trichloroethene	1.1		1.1	ppbv	As Recd	2.110	EPA TO-15	METHOD
Toluene	2.4		1.1	ppbv	As Recd	2.110	EPA TO-15	METHOD
Tetrachloroethene	13		1.1	ppbv	As Recd	2.110	EPA TO-15	METHOD
m,p-Xylenes	2.0		1.1	ppbv	As Recd	2.110	EPA TO-15	METHOD

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Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV1	Diln Fac:	2.210
Lab ID:	279064-001	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/28/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	1.1	ND	5.5
Freon 114	ND	1.1	ND	7.7
Chloromethane	1.7	1.1	3.5	2.3
Vinyl Chloride	ND	1.1	ND	2.8
1,3-Butadiene	ND	1.1	ND	2.4
Bromomethane	ND	1.1	ND	4.3
Chloroethane	ND	1.1	ND	2.9
Trichlorofluoromethane	ND	1.1	ND	6.2
Acrolein	ND	4.4	ND	10
1,1-Dichloroethene	ND	1.1	ND	4.4
Freon 113	ND	1.1	ND	8.5
Acetone	9.8	4.4	23	10
Carbon Disulfide	3.5	1.1	11	3.4
Isopropanol	ND	4.4	ND	11
Methylene Chloride	ND	1.1	ND	3.8
trans-1,2-Dichloroethene	ND	1.1	ND	4.4
MTBE	ND	1.1	ND	4.0
n-Hexane	ND	1.1	ND	3.9
1,1-Dichloroethane	ND	1.1	ND	4.5
Vinyl Acetate	ND	1.1	ND	3.9
cis-1,2-Dichloroethene	ND	1.1	ND	4.4
2-Butanone	ND	1.1	ND	3.3
Ethyl Acetate	ND	1.1	ND	4.0
Tetrahydrofuran	ND	1.1	ND	3.3
Chloroform	ND	1.1	ND	5.4
1,1,1-Trichloroethane	ND	1.1	ND	6.0
Cyclohexane	ND	1.1	ND	3.8
Carbon Tetrachloride	ND	1.1	ND	7.0
Benzene	ND	1.1	ND	3.5
1,2-Dichloroethane	ND	1.1	ND	4.5
n-Heptane	ND	1.1	ND	4.5
Trichloroethene	ND	1.1	ND	5.9
1,2-Dichloropropane	ND	1.1	ND	5.1
Bromodichloromethane	ND	1.1	ND	7.4
cis-1,3-Dichloropropene	ND	1.1	ND	5.0

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV1	Diln Fac:	2.210
Lab ID:	279064-001	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/28/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	1.1	ND	4.5
Toluene	ND	1.1	ND	4.2
trans-1,3-Dichloropropene	ND	1.1	ND	5.0
1,1,2-Trichloroethane	ND	1.1	ND	6.0
Tetrachloroethene	7.3	1.1	49	7.5
2-Hexanone	ND	1.1	ND	4.5
Dibromochloromethane	ND	1.1	ND	9.4
1,2-Dibromoethane	ND	1.1	ND	8.5
Chlorobenzene	ND	1.1	ND	5.1
Ethylbenzene	ND	1.1	ND	4.8
m,p-Xylenes	ND	1.1	ND	4.8
o-Xylene	ND	1.1	ND	4.8
Styrene	ND	1.1	ND	4.7
Bromoform	ND	1.1	ND	11
1,1,2,2-Tetrachloroethane	ND	1.1	ND	7.6
4-Ethyltoluene	ND	1.1	ND	5.4
1,3,5-Trimethylbenzene	ND	1.1	ND	5.4
1,2,4-Trimethylbenzene	ND	1.1	ND	5.4
1,3-Dichlorobenzene	ND	1.1	ND	6.6
1,4-Dichlorobenzene	ND	1.1	ND	6.6
Benzyl chloride	ND	1.1	ND	5.7
1,2-Dichlorobenzene	ND	1.1	ND	6.6
1,2,4-Trichlorobenzene	ND	1.1	ND	8.2
Hexachlorobutadiene	ND	1.1	ND	12
Naphthalene	ND	4.4	ND	23

Surrogate	%REC	Limits
Bromofluorobenzene	98	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV5	Diln Fac:	1.960
Lab ID:	279064-002	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/28/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.98	ND	4.8
Freon 114	ND	0.98	ND	6.9
Chloromethane	ND	0.98	ND	2.0
Vinyl Chloride	ND	0.98	ND	2.5
1,3-Butadiene	ND	0.98	ND	2.2
Bromomethane	ND	0.98	ND	3.8
Chloroethane	ND	0.98	ND	2.6
Trichlorofluoromethane	ND	0.98	ND	5.5
Acrolein	ND	3.9	ND	9.0
1,1-Dichloroethene	ND	0.98	ND	3.9
Freon 113	ND	0.98	ND	7.5
Acetone	ND	3.9	ND	9.3
Carbon Disulfide	3.4	0.98	11	3.1
Isopropanol	ND	3.9	ND	9.6
Methylene Chloride	ND	0.98	ND	3.4
trans-1,2-Dichloroethene	ND	0.98	ND	3.9
MTBE	ND	0.98	ND	3.5
n-Hexane	ND	0.98	ND	3.5
1,1-Dichloroethane	ND	0.98	ND	4.0
Vinyl Acetate	ND	0.98	ND	3.5
cis-1,2-Dichloroethene	ND	0.98	ND	3.9
2-Butanone	ND	0.98	ND	2.9
Ethyl Acetate	ND	0.98	ND	3.5
Tetrahydrofuran	ND	0.98	ND	2.9
Chloroform	ND	0.98	ND	4.8
1,1,1-Trichloroethane	ND	0.98	ND	5.3
Cyclohexane	ND	0.98	ND	3.4
Carbon Tetrachloride	ND	0.98	ND	6.2
Benzene	1.2	0.98	3.8	3.1
1,2-Dichloroethane	ND	0.98	ND	4.0
n-Heptane	ND	0.98	ND	4.0
Trichloroethene	ND	0.98	ND	5.3
1,2-Dichloropropane	ND	0.98	ND	4.5
Bromodichloromethane	ND	0.98	ND	6.6
cis-1,3-Dichloropropene	ND	0.98	ND	4.4

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV5	Diln Fac:	1.960
Lab ID:	279064-002	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/28/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.98	ND	4.0
Toluene	ND	0.98	ND	3.7
trans-1,3-Dichloropropene	ND	0.98	ND	4.4
1,1,2-Trichloroethane	ND	0.98	ND	5.3
Tetrachloroethene	100	0.98	710	6.6
2-Hexanone	ND	0.98	ND	4.0
Dibromochloromethane	ND	0.98	ND	8.3
1,2-Dibromoethane	ND	0.98	ND	7.5
Chlorobenzene	ND	0.98	ND	4.5
Ethylbenzene	ND	0.98	ND	4.3
m,p-Xylenes	ND	0.98	ND	4.3
o-Xylene	ND	0.98	ND	4.3
Styrene	ND	0.98	ND	4.2
Bromoform	ND	0.98	ND	10
1,1,2,2-Tetrachloroethane	ND	0.98	ND	6.7
4-Ethyltoluene	ND	0.98	ND	4.8
1,3,5-Trimethylbenzene	ND	0.98	ND	4.8
1,2,4-Trimethylbenzene	ND	0.98	ND	4.8
1,3-Dichlorobenzene	ND	0.98	ND	5.9
1,4-Dichlorobenzene	ND	0.98	ND	5.9
Benzyl chloride	ND	0.98	ND	5.1
1,2-Dichlorobenzene	ND	0.98	ND	5.9
1,2,4-Trichlorobenzene	ND	0.98	ND	7.3
Hexachlorobutadiene	ND	0.98	ND	10
Naphthalene	ND	3.9	ND	21

Surrogate	%REC	Limits
Bromofluorobenzene	103	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV6	Diln Fac:	2.010
Lab ID:	279064-003	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/28/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	1.0	ND	5.0
Freon 114	ND	1.0	ND	7.0
Chloromethane	ND	1.0	ND	2.1
Vinyl Chloride	ND	1.0	ND	2.6
1,3-Butadiene	ND	1.0	ND	2.2
Bromomethane	ND	1.0	ND	3.9
Chloroethane	ND	1.0	ND	2.7
Trichlorofluoromethane	ND	1.0	ND	5.6
Acrolein	ND	4.0	ND	9.2
1,1-Dichloroethene	ND	1.0	ND	4.0
Freon 113	ND	1.0	ND	7.7
Acetone	5.2	4.0	12	9.5
Carbon Disulfide	12	1.0	39	3.1
Isopropanol	ND	4.0	ND	9.9
Methylene Chloride	ND	1.0	ND	3.5
trans-1,2-Dichloroethene	ND	1.0	ND	4.0
MTBE	ND	1.0	ND	3.6
n-Hexane	5.2	1.0	18	3.5
1,1-Dichloroethane	ND	1.0	ND	4.1
Vinyl Acetate	ND	1.0	ND	3.5
cis-1,2-Dichloroethene	ND	1.0	ND	4.0
2-Butanone	ND	1.0	ND	3.0
Ethyl Acetate	ND	1.0	ND	3.6
Tetrahydrofuran	ND	1.0	ND	3.0
Chloroform	ND	1.0	ND	4.9
1,1,1-Trichloroethane	ND	1.0	ND	5.5
Cyclohexane	3.9	1.0	13	3.5
Carbon Tetrachloride	ND	1.0	ND	6.3
Benzene	3.6	1.0	12	3.2
1,2-Dichloroethane	ND	1.0	ND	4.1
n-Heptane	ND	1.0	ND	4.1
Trichloroethene	ND	1.0	ND	5.4
1,2-Dichloropropane	ND	1.0	ND	4.6
Bromodichloromethane	ND	1.0	ND	6.7
cis-1,3-Dichloropropene	ND	1.0	ND	4.6

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV6	Diln Fac:	2.010
Lab ID:	279064-003	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/28/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	1.0	ND	4.1
Toluene	ND	1.0	ND	3.8
trans-1,3-Dichloropropene	ND	1.0	ND	4.6
1,1,2-Trichloroethane	ND	1.0	ND	5.5
Tetrachloroethene	63	1.0	430	6.8
2-Hexanone	ND	1.0	ND	4.1
Dibromochloromethane	ND	1.0	ND	8.6
1,2-Dibromoethane	ND	1.0	ND	7.7
Chlorobenzene	ND	1.0	ND	4.6
Ethylbenzene	ND	1.0	ND	4.4
m,p-Xylenes	ND	1.0	ND	4.4
o-Xylene	ND	1.0	ND	4.4
Styrene	ND	1.0	ND	4.3
Bromoform	ND	1.0	ND	10
1,1,2,2-Tetrachloroethane	ND	1.0	ND	6.9
4-Ethyltoluene	ND	1.0	ND	4.9
1,3,5-Trimethylbenzene	ND	1.0	ND	4.9
1,2,4-Trimethylbenzene	ND	1.0	ND	4.9
1,3-Dichlorobenzene	ND	1.0	ND	6.0
1,4-Dichlorobenzene	ND	1.0	ND	6.0
Benzyl chloride	ND	1.0	ND	5.2
1,2-Dichlorobenzene	ND	1.0	ND	6.0
1,2,4-Trichlorobenzene	ND	1.0	ND	7.5
Hexachlorobutadiene	ND	1.0	ND	11
Naphthalene	ND	4.0	ND	21

Surrogate	%REC	Limits
Bromofluorobenzene	95	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV7	Diln Fac:	2.340
Lab ID:	279064-004	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/28/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	1.2	ND	5.8
Freon 114	ND	1.2	ND	8.2
Chloromethane	ND	1.2	ND	2.4
Vinyl Chloride	ND	1.2	ND	3.0
1,3-Butadiene	1.2	1.2	2.7	2.6
Bromomethane	ND	1.2	ND	4.5
Chloroethane	ND	1.2	ND	3.1
Trichlorofluoromethane	ND	1.2	ND	6.6
Acrolein	ND	4.7	ND	11
1,1-Dichloroethene	ND	1.2	ND	4.6
Freon 113	ND	1.2	ND	9.0
Acetone	8.0	4.7	19	11
Carbon Disulfide	46	1.2	140	3.6
Isopropanol	ND	4.7	ND	12
Methylene Chloride	ND	1.2	ND	4.1
trans-1,2-Dichloroethene	ND	1.2	ND	4.6
MTBE	ND	1.2	ND	4.2
n-Hexane	12	1.2	41	4.1
1,1-Dichloroethane	ND	1.2	ND	4.7
Vinyl Acetate	ND	1.2	ND	4.1
cis-1,2-Dichloroethene	ND	1.2	ND	4.6
2-Butanone	ND	1.2	ND	3.5
Ethyl Acetate	ND	1.2	ND	4.2
Tetrahydrofuran	4.9	1.2	14	3.5
Chloroform	ND	1.2	ND	5.7
1,1,1-Trichloroethane	ND	1.2	ND	6.4
Cyclohexane	6.1	1.2	21	4.0
Carbon Tetrachloride	ND	1.2	ND	7.4
Benzene	5.5	1.2	18	3.7
1,2-Dichloroethane	ND	1.2	ND	4.7
n-Heptane	2.6	1.2	11	4.8
Trichloroethene	ND	1.2	ND	6.3
1,2-Dichloropropane	ND	1.2	ND	5.4
Bromodichloromethane	ND	1.2	ND	7.8
cis-1,3-Dichloropropene	ND	1.2	ND	5.3

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV7	Diln Fac:	2.340
Lab ID:	279064-004	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/28/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	1.2	ND	4.8
Toluene	7.1	1.2	27	4.4
trans-1,3-Dichloropropene	ND	1.2	ND	5.3
1,1,2-Trichloroethane	ND	1.2	ND	6.4
Tetrachloroethene	2.2	1.2	15	7.9
2-Hexanone	ND	1.2	ND	4.8
Dibromochloromethane	ND	1.2	ND	10
1,2-Dibromoethane	ND	1.2	ND	9.0
Chlorobenzene	ND	1.2	ND	5.4
Ethylbenzene	ND	1.2	ND	5.1
m,p-Xylenes	ND	1.2	ND	5.1
o-Xylene	ND	1.2	ND	5.1
Styrene	ND	1.2	ND	5.0
Bromoform	ND	1.2	ND	12
1,1,2,2-Tetrachloroethane	ND	1.2	ND	8.0
4-Ethyltoluene	ND	1.2	ND	5.8
1,3,5-Trimethylbenzene	ND	1.2	ND	5.8
1,2,4-Trimethylbenzene	ND	1.2	ND	5.8
1,3-Dichlorobenzene	ND	1.2	ND	7.0
1,4-Dichlorobenzene	ND	1.2	ND	7.0
Benzyl chloride	ND	1.2	ND	6.1
1,2-Dichlorobenzene	ND	1.2	ND	7.0
1,2,4-Trichlorobenzene	ND	1.2	ND	8.7
Hexachlorobutadiene	ND	1.2	ND	12
Naphthalene	ND	4.7	ND	25

Surrogate	%REC	Limits
Bromofluorobenzene	102	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV14	Diln Fac:	1.890
Lab ID:	279064-005	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.95	ND	4.7
Freon 114	ND	0.95	ND	6.6
Chloromethane	ND	0.95	ND	2.0
Vinyl Chloride	ND	0.95	ND	2.4
1,3-Butadiene	ND	0.95	ND	2.1
Bromomethane	ND	0.95	ND	3.7
Chloroethane	ND	0.95	ND	2.5
Trichlorofluoromethane	ND	0.95	ND	5.3
Acrolein	ND	3.8	ND	8.7
1,1-Dichloroethene	ND	0.95	ND	3.7
Freon 113	ND	0.95	ND	7.2
Acetone	8.7	3.8	21	9.0
Carbon Disulfide	5.0	0.95	15	2.9
Isopropanol	26	3.8	64	9.3
Methylene Chloride	ND	0.95	ND	3.3
trans-1,2-Dichloroethene	ND	0.95	ND	3.7
MTBE	ND	0.95	ND	3.4
n-Hexane	1.0	0.95	3.6	3.3
1,1-Dichloroethane	ND	0.95	ND	3.8
Vinyl Acetate	ND	0.95	ND	3.3
cis-1,2-Dichloroethene	ND	0.95	ND	3.7
2-Butanone	1.9	0.95	5.5	2.8
Ethyl Acetate	ND	0.95	ND	3.4
Tetrahydrofuran	ND	0.95	ND	2.8
Chloroform	ND	0.95	ND	4.6
1,1,1-Trichloroethane	ND	0.95	ND	5.2
Cyclohexane	ND	0.95	ND	3.3
Carbon Tetrachloride	ND	0.95	ND	5.9
Benzene	1.0	0.95	3.4	3.0
1,2-Dichloroethane	ND	0.95	ND	3.8
n-Heptane	1.4	0.95	5.6	3.9
Trichloroethene	ND	0.95	ND	5.1
1,2-Dichloropropane	ND	0.95	ND	4.4
Bromodichloromethane	ND	0.95	ND	6.3
cis-1,3-Dichloropropene	ND	0.95	ND	4.3

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV14	Diln Fac:	1.890
Lab ID:	279064-005	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.95	ND	3.9
Toluene	0.95	0.95	3.6	3.6
trans-1,3-Dichloropropene	ND	0.95	ND	4.3
1,1,2-Trichloroethane	ND	0.95	ND	5.2
Tetrachloroethene	2.4	0.95	17	6.4
2-Hexanone	ND	0.95	ND	3.9
Dibromochloromethane	ND	0.95	ND	8.1
1,2-Dibromoethane	ND	0.95	ND	7.3
Chlorobenzene	ND	0.95	ND	4.4
Ethylbenzene	37	0.95	160	4.1
m,p-Xylenes	170	0.95	730	4.1
o-Xylene	59	0.95	250	4.1
Styrene	ND	0.95	ND	4.0
Bromoform	ND	0.95	ND	9.8
1,1,2,2-Tetrachloroethane	ND	0.95	ND	6.5
4-Ethyltoluene	ND	0.95	ND	4.6
1,3,5-Trimethylbenzene	ND	0.95	ND	4.6
1,2,4-Trimethylbenzene	ND	0.95	ND	4.6
1,3-Dichlorobenzene	ND	0.95	ND	5.7
1,4-Dichlorobenzene	ND	0.95	ND	5.7
Benzyl chloride	ND	0.95	ND	4.9
1,2-Dichlorobenzene	ND	0.95	ND	5.7
1,2,4-Trichlorobenzene	ND	0.95	ND	7.0
Hexachlorobutadiene	ND	0.95	ND	10
Naphthalene	ND	3.8	ND	20

Surrogate	%REC	Limits
Bromofluorobenzene	98	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV15	Diln Fac:	2.110
Lab ID:	279064-006	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	1.1	ND	5.2
Freon 114	ND	1.1	ND	7.4
Chloromethane	ND	1.1	ND	2.2
Vinyl Chloride	ND	1.1	ND	2.7
1,3-Butadiene	2.7	1.1	6.0	2.3
Bromomethane	ND	1.1	ND	4.1
Chloroethane	ND	1.1	ND	2.8
Trichlorofluoromethane	ND	1.1	ND	5.9
Acrolein	ND	4.2	ND	9.7
1,1-Dichloroethene	ND	1.1	ND	4.2
Freon 113	ND	1.1	ND	8.1
Acetone	ND	4.2	ND	10
Carbon Disulfide	36	1.1	110	3.3
Isopropanol	ND	4.2	ND	10
Methylene Chloride	ND	1.1	ND	3.7
trans-1,2-Dichloroethene	ND	1.1	ND	4.2
MTBE	ND	1.1	ND	3.8
n-Hexane	10	1.1	37	3.7
1,1-Dichloroethane	ND	1.1	ND	4.3
Vinyl Acetate	ND	1.1	ND	3.7
cis-1,2-Dichloroethene	ND	1.1	ND	4.2
2-Butanone	ND	1.1	ND	3.1
Ethyl Acetate	ND	1.1	ND	3.8
Tetrahydrofuran	ND	1.1	ND	3.1
Chloroform	ND	1.1	ND	5.2
1,1,1-Trichloroethane	ND	1.1	ND	5.8
Cyclohexane	3.9	1.1	13	3.6
Carbon Tetrachloride	ND	1.1	ND	6.6
Benzene	7.9	1.1	25	3.4
1,2-Dichloroethane	ND	1.1	ND	4.3
n-Heptane	3.7	1.1	15	4.3
Trichloroethene	1.1	1.1	6.1	5.7
1,2-Dichloropropane	ND	1.1	ND	4.9
Bromodichloromethane	ND	1.1	ND	7.1
cis-1,3-Dichloropropene	ND	1.1	ND	4.8

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV15	Diln Fac:	2.110
Lab ID:	279064-006	Batch#:	237460
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/27/16
Units (M):	ug/m3	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	1.1	ND	4.3
Toluene	2.4	1.1	9.2	4.0
trans-1,3-Dichloropropene	ND	1.1	ND	4.8
1,1,2-Trichloroethane	ND	1.1	ND	5.8
Tetrachloroethene	13	1.1	85	7.2
2-Hexanone	ND	1.1	ND	4.3
Dibromochloromethane	ND	1.1	ND	9.0
1,2-Dibromoethane	ND	1.1	ND	8.1
Chlorobenzene	ND	1.1	ND	4.9
Ethylbenzene	ND	1.1	ND	4.6
m,p-Xylenes	2.0	1.1	8.6	4.6
o-Xylene	ND	1.1	ND	4.6
Styrene	ND	1.1	ND	4.5
Bromoform	ND	1.1	ND	11
1,1,2,2-Tetrachloroethane	ND	1.1	ND	7.2
4-Ethyltoluene	ND	1.1	ND	5.2
1,3,5-Trimethylbenzene	ND	1.1	ND	5.2
1,2,4-Trimethylbenzene	ND	1.1	ND	5.2
1,3-Dichlorobenzene	ND	1.1	ND	6.3
1,4-Dichlorobenzene	ND	1.1	ND	6.3
Benzyl chloride	ND	1.1	ND	5.5
1,2-Dichlorobenzene	ND	1.1	ND	6.3
1,2,4-Trichlorobenzene	ND	1.1	ND	7.8
Hexachlorobutadiene	ND	1.1	ND	11
Naphthalene	ND	4.2	ND	22

Surrogate	%REC	Limits
Bromofluorobenzene	98	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237460
Units (V):	ppbv	Analyzed:	07/28/16
Diln Fac:	1.000		

Type: BS Lab ID: QC844921

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	5.000	5.293	106	70-130
Freon 114	5.000	5.775	116	70-130
Chloromethane	5.000	4.102	82	70-130
Vinyl Chloride	5.000	4.913	98	70-130
1,3-Butadiene	5.000	4.871	97	70-130
Bromomethane	5.000	5.394	108	70-130
Chloroethane	5.000	4.288	86	70-130
Trichlorofluoromethane	5.000	5.466	109	70-130
Acrolein	5.000	4.591	92	70-130
1,1-Dichloroethene	5.000	5.681	114	70-130
Freon 113	5.000	5.506	110	70-130
Acetone	5.000	4.305	86	70-130
Carbon Disulfide	5.000	5.215	104	70-130
Isopropanol	5.000	4.964	99	70-130
Methylene Chloride	5.000	4.557	91	70-130
trans-1,2-Dichloroethene	5.000	5.989	120	70-130
MTBE	5.000	5.714	114	70-130
n-Hexane	5.000	5.934	119	70-130
1,1-Dichloroethane	5.000	5.137	103	70-130
Vinyl Acetate	5.000	4.261	85	70-130
cis-1,2-Dichloroethene	5.000	6.162	123	70-130
2-Butanone	5.000	5.118	102	70-130
Ethyl Acetate	5.000	6.616 b	132 *	70-130
Tetrahydrofuran	5.000	4.609	92	70-130
Chloroform	5.000	5.439	109	70-130
1,1,1-Trichloroethane	5.000	4.992	100	70-130
Cyclohexane	5.000	4.622	92	70-130
Carbon Tetrachloride	5.000	7.573 b	151 *	70-130
Benzene	5.000	5.036	101	70-130
1,2-Dichloroethane	5.000	4.455	89	70-130
n-Heptane	5.000	5.555	111	70-130
Trichloroethene	5.000	4.915	98	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237460
Units (V):	ppbv	Analyzed:	07/28/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)		%REC		Limits
1,2-Dichloropropane	5.000	4.828		97		70-130
Bromodichloromethane	5.000	4.793		96		70-130
cis-1,3-Dichloropropene	5.000	5.135		103		70-130
4-Methyl-2-Pentanone	5.000	7.253	b	145	*	70-130
Toluene	5.000	5.634		113		70-130
trans-1,3-Dichloropropene	5.000	5.748		115		70-130
1,1,2-Trichloroethane	5.000	5.186		104		70-130
Tetrachloroethene	5.000	5.823		116		70-130
2-Hexanone	5.000	6.975	b	140	*	70-130
Dibromochloromethane	5.000	5.357		107		70-130
1,2-Dibromoethane	5.000	4.964		99		70-130
Chlorobenzene	5.000	5.786		116		70-130
Ethylbenzene	5.000	5.838		117		70-130
m,p-Xylenes	10.00	12.36		124		70-130
o-Xylene	5.000	6.232		125		70-130
Styrene	5.000	6.546	b	131	*	70-130
Bromoform	5.000	7.859	b	157	*	70-130
1,1,2,2-Tetrachloroethane	5.000	5.909		118		70-130
4-Ethyltoluene	5.000	5.896		118		70-130
1,3,5-Trimethylbenzene	5.000	5.119		102		70-130
1,2,4-Trimethylbenzene	5.000	5.271		105		70-130
1,3-Dichlorobenzene	5.000	6.737	b	135	*	70-130
1,4-Dichlorobenzene	5.000	6.734	b	135	*	70-130
Benzyl chloride	5.000	7.452	b	149	*	70-130
1,2-Dichlorobenzene	5.000	6.620	b	132	*	70-130
1,2,4-Trichlorobenzene	5.000	7.392	b	148	*	70-130
Hexachlorobutadiene	5.000	9.744	b	195	*	70-130
Naphthalene	5.000	8.755	b	175	*	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	105	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237460
Units (V):	ppbv	Analyzed:	07/28/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC844922

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	5.000	5.302	106	70-130	0	25
Freon 114	5.000	5.817	116	70-130	1	25
Chloromethane	5.000	4.148	83	70-130	1	25
Vinyl Chloride	5.000	5.004	100	70-130	2	25
1,3-Butadiene	5.000	4.907	98	70-130	1	25
Bromomethane	5.000	5.424	108	70-130	1	25
Chloroethane	5.000	4.279	86	70-130	0	25
Trichlorofluoromethane	5.000	5.563	111	70-130	2	25
Acrolein	5.000	4.551	91	70-130	1	25
1,1-Dichloroethene	5.000	5.559	111	70-130	2	25
Freon 113	5.000	5.569	111	70-130	1	25
Acetone	5.000	4.269	85	70-130	1	25
Carbon Disulfide	5.000	5.263	105	70-130	1	25
Isopropanol	5.000	5.138	103	70-130	3	25
Methylene Chloride	5.000	4.645	93	70-130	2	25
trans-1,2-Dichloroethene	5.000	5.934	119	70-130	1	25
MTBE	5.000	5.760	115	70-130	1	25
n-Hexane	5.000	6.089	122	70-130	3	25
1,1-Dichloroethane	5.000	5.283	106	70-130	3	25
Vinyl Acetate	5.000	4.315	86	70-130	1	25
cis-1,2-Dichloroethene	5.000	6.263	125	70-130	2	25
2-Butanone	5.000	5.290	106	70-130	3	25
Ethyl Acetate	5.000	6.669 b	133 *	70-130	1	25
Tetrahydrofuran	5.000	4.570	91	70-130	1	25
Chloroform	5.000	5.511	110	70-130	1	25
1,1,1-Trichloroethane	5.000	4.961	99	70-130	1	25
Cyclohexane	5.000	4.668	93	70-130	1	25
Carbon Tetrachloride	5.000	7.651 b	153 *	70-130	1	25
Benzene	5.000	4.959	99	70-130	2	25
1,2-Dichloroethane	5.000	4.504	90	70-130	1	25
n-Heptane	5.000	5.442	109	70-130	2	25
Trichloroethene	5.000	4.964	99	70-130	1	25

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237460
Units (V):	ppbv	Analyzed:	07/28/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)		%REC		Limits	RPD	Lim
1,2-Dichloropropane	5.000	4.976		100		70-130	3	25
Bromodichloromethane	5.000	4.867		97		70-130	2	25
cis-1,3-Dichloropropene	5.000	5.176		104		70-130	1	25
4-Methyl-2-Pentanone	5.000	7.169	b	143	*	70-130	1	25
Toluene	5.000	5.407		108		70-130	4	25
trans-1,3-Dichloropropene	5.000	5.793		116		70-130	1	25
1,1,2-Trichloroethane	5.000	5.200		104		70-130	0	25
Tetrachloroethene	5.000	5.439		109		70-130	7	25
2-Hexanone	5.000	6.555	b	131	*	70-130	6	25
Dibromochloromethane	5.000	5.273		105		70-130	2	25
1,2-Dibromoethane	5.000	4.989		100		70-130	1	25
Chlorobenzene	5.000	5.582		112		70-130	4	25
Ethylbenzene	5.000	5.589		112		70-130	4	25
m,p-Xylenes	10.00	11.82		118		70-130	5	25
o-Xylene	5.000	5.917		118		70-130	5	25
Styrene	5.000	6.388	b	128		70-130	2	25
Bromoform	5.000	7.688	b	154	*	70-130	2	25
1,1,2,2-Tetrachloroethane	5.000	5.731		115		70-130	3	25
4-Ethyltoluene	5.000	5.595		112		70-130	5	25
1,3,5-Trimethylbenzene	5.000	5.043		101		70-130	1	25
1,2,4-Trimethylbenzene	5.000	5.109		102		70-130	3	25
1,3-Dichlorobenzene	5.000	6.439	b	129		70-130	5	25
1,4-Dichlorobenzene	5.000	6.364	b	127		70-130	6	25
Benzyl chloride	5.000	7.094	b	142	*	70-130	5	25
1,2-Dichlorobenzene	5.000	6.575	b	132	*	70-130	1	25
1,2,4-Trichlorobenzene	5.000	7.443	b	149	*	70-130	1	25
Hexachlorobutadiene	5.000	9.717	b	194	*	70-130	0	25
Naphthalene	5.000	8.682	b	174	*	70-130	1	25

Surrogate	%REC	Limits
Bromofluorobenzene	102	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC844923	Diln Fac:	1.000
Matrix:	Air	Batch#:	237460
Units (V):	ppbv	Analyzed:	07/28/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Isopropanol	ND	2.0	ND	4.9
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC844923	Diln Fac:	1.000
Matrix:	Air	Batch#:	237460
Units (V):	ppbv	Analyzed:	07/28/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.50	ND	2.0
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

Surrogate	%REC	Limits
Bromofluorobenzene	85	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 279110
ANALYTICAL REPORT

Pangea Environmental	Project : 2030.001
1710 Franklin Street	Location : 1233 Brockman
Oakland, CA 94612	Level : II

Sample ID	Lab ID
SV2	279110-001
SV3	279110-002
SV4	279110-003
SV16	279110-004

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: 08/01/2016

Dina Ali
Project Manager
dina.ali@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**279110**
Client:	**Pangea Environmental**
Project:	**2030.001**
Location:	**1233 Brockman**
Request Date:	**07/28/16**
Samples Received:	**07/28/16**

This data package contains sample and QC results for four air samples, requested for the above referenced project on 07/28/16. The samples were received intact.

Volatile Organics in Air by MS (EPA TO-15):

High responses were observed for many analytes in the CCV analyzed 07/29/16 16:39; affected data was qualified with "b". High recoveries were observed for many analytes in the BS/BSD for batch 237507; the associated RPDs were within limits, and these analytes were not detected at or above the RL in the associated samples. No other analytical problems were encountered.

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street

Berkeley, CA 94710
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AIR TESTING CHAIN OF CUSTODY
& PURCHASE ORDER

Page 1 of 1

Chain of Custody # : 1

C&T LOGIN # 27910

Project No: 2030.001
Project Name: 1233 Brickyard
EDD Format: _____ Rpt Level: II III IV
Turnaround Time: ~~RUSH~~ 48 ☐ Standard

Sampler: Simmons, Albert
Report To: Ron Scheele
Company: Pangea Env.
Telephone: (510) 459-6012
Email: rscheele@pangeaenv.com

Lab No.	Sample ID.	Sampling Information: Date Collected	Time Collected	Canister ID (Bar Code #)	Flow Controller ID	Sample Volume (Gauge Reading)	TESTING REQUESTED: TO-15	TO-3: C6-C12 GRO	TO-3M: C1-C6 Hydrocarbons	D1946: (Please Circle Targets) H_2 He N_2 O_2 CO CO_2 CH_4
1	SV2	7/27/16	1110	187	~~191~~	10	X			
2	SV3	7/27-28/16	1107	317	200	20	X			
3	SV4	7/27-28/16	1321	400	201	5	X			
4	SV16	7/27-28/16	1337	63	205	17	X			

Notes:

RELINQUISHED BY: 7/28/16 955 DATE/TIME

DATE/TIME

DATE/TIME

RECEIVED BY: 7/28/16 1755 DATE/TIME

DATE/TIME

DATE/TIME

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 27910 Date Received 7/28/16 Number of coolers 0
Client Pangea Project 1233 Brockman

Date Opened 7/28/16 By (print) AA (sign)
Date Logged in J By (print) J (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)_____

☐ Samples Received on ice & cold without a temperature blank

☐ 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? _____ 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 9, 10/11

Curtis & Tompkins, Ltd.

Detections Summary for 279110

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

Client : Pangea Environmental
Project : 2030.001
Location : 1233 Brockman

Client Sample ID : SV2 Laboratory Sample ID : 279110-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	33		2.2	ppbv	As Recd	4.420	EPA TO-15	METHOD
n-Hexane	5.1		2.2	ppbv	As Recd	4.420	EPA TO-15	METHOD
Tetrachloroethene	230		2.2	ppbv	As Recd	4.420	EPA TO-15	METHOD

Client Sample ID : SV3 Laboratory Sample ID : 279110-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chloromethane	1.9		1.0	ppbv	As Recd	2.080	EPA TO-15	METHOD
Acetone	8.5		4.2	ppbv	As Recd	2.080	EPA TO-15	METHOD
Carbon Disulfide	15		1.0	ppbv	As Recd	2.080	EPA TO-15	METHOD
Isopropanol	58		4.2	ppbv	As Recd	2.080	EPA TO-15	METHOD
n-Hexane	12		1.0	ppbv	As Recd	2.080	EPA TO-15	METHOD
Cyclohexane	2.6		1.0	ppbv	As Recd	2.080	EPA TO-15	METHOD
Benzene	4.2		1.0	ppbv	As Recd	2.080	EPA TO-15	METHOD
Toluene	3.7		1.0	ppbv	As Recd	2.080	EPA TO-15	METHOD
Tetrachloroethene	120		1.0	ppbv	As Recd	2.080	EPA TO-15	METHOD
Ethylbenzene	1.1		1.0	ppbv	As Recd	2.080	EPA TO-15	METHOD
m,p-Xylenes	1.8		1.0	ppbv	As Recd	2.080	EPA TO-15	METHOD

Client Sample ID : SV4 Laboratory Sample ID : 279110-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chloromethane	1.9		1.7	ppbv	As Recd	3.480	EPA TO-15	METHOD
Acetone	8.4		7.0	ppbv	As Recd	3.480	EPA TO-15	METHOD
Carbon Disulfide	31		1.7	ppbv	As Recd	3.480	EPA TO-15	METHOD
n-Hexane	6.3		1.7	ppbv	As Recd	3.480	EPA TO-15	METHOD
Benzene	5.7		1.7	ppbv	As Recd	3.480	EPA TO-15	METHOD
Toluene	2.0		1.7	ppbv	As Recd	3.480	EPA TO-15	METHOD
Tetrachloroethene	22		1.7	ppbv	As Recd	3.480	EPA TO-15	METHOD

Curtis & Tompkins, Ltd.

Client Sample ID : SV16 Laboratory Sample ID : 279110-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Acetone	17		9.9	ppbv	As Recd	4.930	EPA TO-15	METHOD
Carbon Disulfide	75		2.5	ppbv	As Recd	4.930	EPA TO-15	METHOD
n-Hexane	14		2.5	ppbv	As Recd	4.930	EPA TO-15	METHOD
Cyclohexane	3.6		2.5	ppbv	As Recd	4.930	EPA TO-15	METHOD
Benzene	11		2.5	ppbv	As Recd	4.930	EPA TO-15	METHOD
n-Heptane	4.6		2.5	ppbv	As Recd	4.930	EPA TO-15	METHOD
Toluene	3.5		2.5	ppbv	As Recd	4.930	EPA TO-15	METHOD

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV2	Diln Fac:	4.420
Lab ID:	279110-001	Batch#:	237507
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/28/16
Units (M):	ug/m3	Analyzed:	07/30/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	2.2	ND	11
Freon 114	ND	2.2	ND	15
Chloromethane	ND	2.2	ND	4.6
Vinyl Chloride	ND	2.2	ND	5.6
1,3-Butadiene	ND	2.2	ND	4.9
Bromomethane	ND	2.2	ND	8.6
Chloroethane	ND	2.2	ND	5.8
Trichlorofluoromethane	ND	2.2	ND	12
Acrolein	ND	8.8	ND	20
1,1-Dichloroethene	ND	2.2	ND	8.8
Freon 113	ND	2.2	ND	17
Acetone	ND	8.8	ND	21
Carbon Disulfide	33	2.2	100	6.9
Isopropanol	ND	8.8	ND	22
Methylene Chloride	ND	2.2	ND	7.7
trans-1,2-Dichloroethene	ND	2.2	ND	8.8
MTBE	ND	2.2	ND	8.0
n-Hexane	5.1	2.2	18	7.8
1,1-Dichloroethane	ND	2.2	ND	8.9
Vinyl Acetate	ND	2.2	ND	7.8
cis-1,2-Dichloroethene	ND	2.2	ND	8.8
2-Butanone	ND	2.2	ND	6.5
Ethyl Acetate	ND	2.2	ND	8.0
Tetrahydrofuran	ND	2.2	ND	6.5
Chloroform	ND	2.2	ND	11
1,1,1-Trichloroethane	ND	2.2	ND	12
Cyclohexane	ND	2.2	ND	7.6
Carbon Tetrachloride	ND	2.2	ND	14
Benzene	ND	2.2	ND	7.1
1,2-Dichloroethane	ND	2.2	ND	8.9
n-Heptane	ND	2.2	ND	9.1
Trichloroethene	ND	2.2	ND	12
1,2-Dichloropropane	ND	2.2	ND	10
Bromodichloromethane	ND	2.2	ND	15
cis-1,3-Dichloropropene	ND	2.2	ND	10

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV2	Diln Fac:	4.420
Lab ID:	279110-001	Batch#:	237507
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/28/16
Units (M):	ug/m3	Analyzed:	07/30/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	2.2	ND	9.1
Toluene	ND	2.2	ND	8.3
trans-1,3-Dichloropropene	ND	2.2	ND	10
1,1,2-Trichloroethane	ND	2.2	ND	12
Tetrachloroethene	230	2.2	1,500	15
2-Hexanone	ND	2.2	ND	9.1
Dibromochloromethane	ND	2.2	ND	19
1,2-Dibromoethane	ND	2.2	ND	17
Chlorobenzene	ND	2.2	ND	10
Ethylbenzene	ND	2.2	ND	9.6
m,p-Xylenes	ND	2.2	ND	9.6
o-Xylene	ND	2.2	ND	9.6
Styrene	ND	2.2	ND	9.4
Bromoform	ND	2.2	ND	23
1,1,2,2-Tetrachloroethane	ND	2.2	ND	15
4-Ethyltoluene	ND	2.2	ND	11
1,3,5-Trimethylbenzene	ND	2.2	ND	11
1,2,4-Trimethylbenzene	ND	2.2	ND	11
1,3-Dichlorobenzene	ND	2.2	ND	13
1,4-Dichlorobenzene	ND	2.2	ND	13
Benzyl chloride	ND	2.2	ND	11
1,2-Dichlorobenzene	ND	2.2	ND	13
1,2,4-Trichlorobenzene	ND	2.2	ND	16
Hexachlorobutadiene	ND	2.2	ND	24
Naphthalene	ND	8.8	ND	46

Surrogate	%REC	Limits
Bromofluorobenzene	92	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV3	Diln Fac:	2.080
Lab ID:	279110-002	Batch#:	237507
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/28/16
Units (M):	ug/m3	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	1.0	ND	5.1
Freon 114	ND	1.0	ND	7.3
Chloromethane	1.9	1.0	3.9	2.1
Vinyl Chloride	ND	1.0	ND	2.7
1,3-Butadiene	ND	1.0	ND	2.3
Bromomethane	ND	1.0	ND	4.0
Chloroethane	ND	1.0	ND	2.7
Trichlorofluoromethane	ND	1.0	ND	5.8
Acrolein	ND	4.2	ND	9.5
1,1-Dichloroethene	ND	1.0	ND	4.1
Freon 113	ND	1.0	ND	8.0
Acetone	8.5	4.2	20	9.9
Carbon Disulfide	15	1.0	48	3.2
Isopropanol	58	4.2	140	10
Methylene Chloride	ND	1.0	ND	3.6
trans-1,2-Dichloroethene	ND	1.0	ND	4.1
MTBE	ND	1.0	ND	3.7
n-Hexane	12	1.0	42	3.7
1,1-Dichloroethane	ND	1.0	ND	4.2
Vinyl Acetate	ND	1.0	ND	3.7
cis-1,2-Dichloroethene	ND	1.0	ND	4.1
2-Butanone	ND	1.0	ND	3.1
Ethyl Acetate	ND	1.0	ND	3.7
Tetrahydrofuran	ND	1.0	ND	3.1
Chloroform	ND	1.0	ND	5.1
1,1,1-Trichloroethane	ND	1.0	ND	5.7
Cyclohexane	2.6	1.0	8.8	3.6
Carbon Tetrachloride	ND	1.0	ND	6.5
Benzene	4.2	1.0	14	3.3
1,2-Dichloroethane	ND	1.0	ND	4.2
n-Heptane	ND	1.0	ND	4.3
Trichloroethene	ND	1.0	ND	5.6
1,2-Dichloropropane	ND	1.0	ND	4.8
Bromodichloromethane	ND	1.0	ND	7.0
cis-1,3-Dichloropropene	ND	1.0	ND	4.7

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV3	Diln Fac:	2.080
Lab ID:	279110-002	Batch#:	237507
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/28/16
Units (M):	ug/m3	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	1.0	ND	4.3
Toluene	3.7	1.0	14	3.9
trans-1,3-Dichloropropene	ND	1.0	ND	4.7
1,1,2-Trichloroethane	ND	1.0	ND	5.7
Tetrachloroethene	120	1.0	820	7.1
2-Hexanone	ND	1.0	ND	4.3
Dibromochloromethane	ND	1.0	ND	8.9
1,2-Dibromoethane	ND	1.0	ND	8.0
Chlorobenzene	ND	1.0	ND	4.8
Ethylbenzene	1.1	1.0	4.7	4.5
m,p-Xylenes	1.8	1.0	7.7	4.5
o-Xylene	ND	1.0	ND	4.5
Styrene	ND	1.0	ND	4.4
Bromoform	ND	1.0	ND	11
1,1,2,2-Tetrachloroethane	ND	1.0	ND	7.1
4-Ethyltoluene	ND	1.0	ND	5.1
1,3,5-Trimethylbenzene	ND	1.0	ND	5.1
1,2,4-Trimethylbenzene	ND	1.0	ND	5.1
1,3-Dichlorobenzene	ND	1.0	ND	6.3
1,4-Dichlorobenzene	ND	1.0	ND	6.3
Benzyl chloride	ND	1.0	ND	5.4
1,2-Dichlorobenzene	ND	1.0	ND	6.3
1,2,4-Trichlorobenzene	ND	1.0	ND	7.7
Hexachlorobutadiene	ND	1.0	ND	11
Naphthalene	ND	4.2	ND	22

Surrogate	%REC	Limits
Bromofluorobenzene	101	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV4	Diln Fac:	3.480
Lab ID:	279110-003	Batch#:	237507
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/28/16
Units (M):	ug/m3	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	1.7	ND	8.6
Freon 114	ND	1.7	ND	12
Chloromethane	1.9	1.7	3.9	3.6
Vinyl Chloride	ND	1.7	ND	4.4
1,3-Butadiene	ND	1.7	ND	3.8
Bromomethane	ND	1.7	ND	6.8
Chloroethane	ND	1.7	ND	4.6
Trichlorofluoromethane	ND	1.7	ND	9.8
Acrolein	ND	7.0	ND	16
1,1-Dichloroethene	ND	1.7	ND	6.9
Freon 113	ND	1.7	ND	13
Acetone	8.4	7.0	20	17
Carbon Disulfide	31	1.7	95	5.4
Isopropanol	ND	7.0	ND	17
Methylene Chloride	ND	1.7	ND	6.0
trans-1,2-Dichloroethene	ND	1.7	ND	6.9
MTBE	ND	1.7	ND	6.3
n-Hexane	6.3	1.7	22	6.1
1,1-Dichloroethane	ND	1.7	ND	7.0
Vinyl Acetate	ND	1.7	ND	6.1
cis-1,2-Dichloroethene	ND	1.7	ND	6.9
2-Butanone	ND	1.7	ND	5.1
Ethyl Acetate	ND	1.7	ND	6.3
Tetrahydrofuran	ND	1.7	ND	5.1
Chloroform	ND	1.7	ND	8.5
1,1,1-Trichloroethane	ND	1.7	ND	9.5
Cyclohexane	ND	1.7	ND	6.0
Carbon Tetrachloride	ND	1.7	ND	11
Benzene	5.7	1.7	18	5.6
1,2-Dichloroethane	ND	1.7	ND	7.0
n-Heptane	ND	1.7	ND	7.1
Trichloroethene	ND	1.7	ND	9.4
1,2-Dichloropropane	ND	1.7	ND	8.0
Bromodichloromethane	ND	1.7	ND	12
cis-1,3-Dichloropropene	ND	1.7	ND	7.9

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV4	Diln Fac:	3.480
Lab ID:	279110-003	Batch#:	237507
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/28/16
Units (M):	ug/m3	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	1.7	ND	7.1
Toluene	2.0	1.7	7.5	6.6
trans-1,3-Dichloropropene	ND	1.7	ND	7.9
1,1,2-Trichloroethane	ND	1.7	ND	9.5
Tetrachloroethene	22	1.7	150	12
2-Hexanone	ND	1.7	ND	7.1
Dibromochloromethane	ND	1.7	ND	15
1,2-Dibromoethane	ND	1.7	ND	13
Chlorobenzene	ND	1.7	ND	8.0
Ethylbenzene	ND	1.7	ND	7.6
m,p-Xylenes	ND	1.7	ND	7.6
o-Xylene	ND	1.7	ND	7.6
Styrene	ND	1.7	ND	7.4
Bromoform	ND	1.7	ND	18
1,1,2,2-Tetrachloroethane	ND	1.7	ND	12
4-Ethyltoluene	ND	1.7	ND	8.6
1,3,5-Trimethylbenzene	ND	1.7	ND	8.6
1,2,4-Trimethylbenzene	ND	1.7	ND	8.6
1,3-Dichlorobenzene	ND	1.7	ND	10
1,4-Dichlorobenzene	ND	1.7	ND	10
Benzyl chloride	ND	1.7	ND	9.0
1,2-Dichlorobenzene	ND	1.7	ND	10
1,2,4-Trichlorobenzene	ND	1.7	ND	13
Hexachlorobutadiene	ND	1.7	ND	19
Naphthalene	ND	7.0	ND	36

Surrogate	%REC	Limits
Bromofluorobenzene	94	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV16	Diln Fac:	4.930
Lab ID:	279110-004	Batch#:	237507
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/28/16
Units (M):	ug/m3	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	2.5	ND	12
Freon 114	ND	2.5	ND	17
Chloromethane	ND	2.5	ND	5.1
Vinyl Chloride	ND	2.5	ND	6.3
1,3-Butadiene	ND	2.5	ND	5.5
Bromomethane	ND	2.5	ND	9.6
Chloroethane	ND	2.5	ND	6.5
Trichlorofluoromethane	ND	2.5	ND	14
Acrolein	ND	9.9	ND	23
1,1-Dichloroethene	ND	2.5	ND	9.8
Freon 113	ND	2.5	ND	19
Acetone	17	9.9	41	23
Carbon Disulfide	75	2.5	230	7.7
Isopropanol	ND	9.9	ND	24
Methylene Chloride	ND	2.5	ND	8.6
trans-1,2-Dichloroethene	ND	2.5	ND	9.8
MTBE	ND	2.5	ND	8.9
n-Hexane	14	2.5	48	8.7
1,1-Dichloroethane	ND	2.5	ND	10
Vinyl Acetate	ND	2.5	ND	8.7
cis-1,2-Dichloroethene	ND	2.5	ND	9.8
2-Butanone	ND	2.5	ND	7.3
Ethyl Acetate	ND	2.5	ND	8.9
Tetrahydrofuran	ND	2.5	ND	7.3
Chloroform	ND	2.5	ND	12
1,1,1-Trichloroethane	ND	2.5	ND	13
Cyclohexane	3.6	2.5	12	8.5
Carbon Tetrachloride	ND	2.5	ND	16
Benzene	11	2.5	35	7.9
1,2-Dichloroethane	ND	2.5	ND	10
n-Heptane	4.6	2.5	19	10
Trichloroethene	ND	2.5	ND	13
1,2-Dichloropropane	ND	2.5	ND	11
Bromodichloromethane	ND	2.5	ND	17
cis-1,3-Dichloropropene	ND	2.5	ND	11

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV16	Diln Fac:	4.930
Lab ID:	279110-004	Batch#:	237507
Matrix:	Air	Sampled:	07/27/16
Units (V):	ppbv	Received:	07/28/16
Units (M):	ug/m3	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	2.5	ND	10
Toluene	3.5	2.5	13	9.3
trans-1,3-Dichloropropene	ND	2.5	ND	11
1,1,2-Trichloroethane	ND	2.5	ND	13
Tetrachloroethene	ND	2.5	ND	17
2-Hexanone	ND	2.5	ND	10
Dibromochloromethane	ND	2.5	ND	21
1,2-Dibromoethane	ND	2.5	ND	19
Chlorobenzene	ND	2.5	ND	11
Ethylbenzene	ND	2.5	ND	11
m,p-Xylenes	ND	2.5	ND	11
o-Xylene	ND	2.5	ND	11
Styrene	ND	2.5	ND	11
Bromoform	ND	2.5	ND	25
1,1,2,2-Tetrachloroethane	ND	2.5	ND	17
4-Ethyltoluene	ND	2.5	ND	12
1,3,5-Trimethylbenzene	ND	2.5	ND	12
1,2,4-Trimethylbenzene	ND	2.5	ND	12
1,3-Dichlorobenzene	ND	2.5	ND	15
1,4-Dichlorobenzene	ND	2.5	ND	15
Benzyl chloride	ND	2.5	ND	13
1,2-Dichlorobenzene	ND	2.5	ND	15
1,2,4-Trichlorobenzene	ND	2.5	ND	18
Hexachlorobutadiene	ND	2.5	ND	26
Naphthalene	ND	9.9	ND	52

Surrogate	%REC	Limits
Bromofluorobenzene	99	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237507
Units (V):	ppbv	Analyzed:	07/29/16
Diln Fac:	1.000		

Type: BS Lab ID: QC845102

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	5.000	5.309	106	70-130
Freon 114	5.000	5.762	115	70-130
Chloromethane	5.000	4.230	85	70-130
Vinyl Chloride	5.000	4.871	97	70-130
1,3-Butadiene	5.000	4.804	96	70-130
Bromomethane	5.000	5.327	107	70-130
Chloroethane	5.000	4.158	83	70-130
Trichlorofluoromethane	5.000	5.471	109	70-130
Acrolein	5.000	4.459	89	70-130
1,1-Dichloroethene	5.000	5.669	113	70-130
Freon 113	5.000	5.555	111	70-130
Acetone	5.000	4.294	86	70-130
Carbon Disulfide	5.000	5.277	106	70-130
Isopropanol	5.000	4.947	99	70-130
Methylene Chloride	5.000	4.571	91	70-130
trans-1,2-Dichloroethene	5.000	5.862	117	70-130
MTBE	5.000	5.747	115	70-130
n-Hexane	5.000	6.067	121	70-130
1,1-Dichloroethane	5.000	5.202	104	70-130
Vinyl Acetate	5.000	4.247	85	70-130
cis-1,2-Dichloroethene	5.000	6.229	125	70-130
2-Butanone	5.000	5.250	105	70-130
Ethyl Acetate	5.000	6.772 b	135 *	70-130
Tetrahydrofuran	5.000	4.692	94	70-130
Chloroform	5.000	5.412	108	70-130
1,1,1-Trichloroethane	5.000	5.009	100	70-130
Cyclohexane	5.000	4.717	94	70-130
Carbon Tetrachloride	5.000	7.733 b	155 *	70-130
Benzene	5.000	4.981	100	70-130
1,2-Dichloroethane	5.000	4.557	91	70-130
n-Heptane	5.000	5.448	109	70-130
Trichloroethene	5.000	5.034	101	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237507
Units (V):	ppbv	Analyzed:	07/29/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
1,2-Dichloropropane	5.000	5.100	102	70-130
Bromodichloromethane	5.000	4.857	97	70-130
cis-1,3-Dichloropropene	5.000	5.146	103	70-130
4-Methyl-2-Pentanone	5.000	7.098 b	142 *	70-130
Toluene	5.000	5.449	109	70-130
trans-1,3-Dichloropropene	5.000	5.724	114	70-130
1,1,2-Trichloroethane	5.000	5.212	104	70-130
Tetrachloroethene	5.000	5.641	113	70-130
2-Hexanone	5.000	6.645 b	133 *	70-130
Dibromochloromethane	5.000	5.362	107	70-130
1,2-Dibromoethane	5.000	4.881	98	70-130
Chlorobenzene	5.000	5.470	109	70-130
Ethylbenzene	5.000	5.510	110	70-130
m,p-Xylenes	10.00	12.22	122	70-130
o-Xylene	5.000	6.154	123	70-130
Styrene	5.000	6.268	125	70-130
Bromoform	5.000	7.565 b	151 *	70-130
1,1,2,2-Tetrachloroethane	5.000	5.578	112	70-130
4-Ethyltoluene	5.000	5.966	119	70-130
1,3,5-Trimethylbenzene	5.000	5.273	105	70-130
1,2,4-Trimethylbenzene	5.000	5.389	108	70-130
1,3-Dichlorobenzene	5.000	6.570 b	131 *	70-130
1,4-Dichlorobenzene	5.000	6.629 b	133 *	70-130
Benzyl chloride	5.000	7.131 b	143 *	70-130
1,2-Dichlorobenzene	5.000	6.725 b	135 *	70-130
1,2,4-Trichlorobenzene	5.000	7.369 b	147 *	70-130
Hexachlorobutadiene	5.000	10.33 b	207 *	70-130
Naphthalene	5.000	8.398 b	168 *	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	104	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237507
Units (V):	ppbv	Analyzed:	07/29/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC845103

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	5.000	5.277	106	70-130	1	25
Freon 114	5.000	5.701	114	70-130	1	25
Chloromethane	5.000	4.318	86	70-130	2	25
Vinyl Chloride	5.000	4.844	97	70-130	1	25
1,3-Butadiene	5.000	4.856	97	70-130	1	25
Bromomethane	5.000	5.289	106	70-130	1	25
Chloroethane	5.000	4.074	81	70-130	2	25
Trichlorofluoromethane	5.000	5.402	108	70-130	1	25
Acrolein	5.000	4.528	91	70-130	2	25
1,1-Dichloroethene	5.000	5.618	112	70-130	1	25
Freon 113	5.000	5.485	110	70-130	1	25
Acetone	5.000	4.250	85	70-130	1	25
Carbon Disulfide	5.000	5.193	104	70-130	2	25
Isopropanol	5.000	5.084	102	70-130	3	25
Methylene Chloride	5.000	4.510	90	70-130	1	25
trans-1,2-Dichloroethene	5.000	5.886	118	70-130	0	25
MTBE	5.000	5.763	115	70-130	0	25
n-Hexane	5.000	5.975	120	70-130	2	25
1,1-Dichloroethane	5.000	5.175	104	70-130	1	25
Vinyl Acetate	5.000	4.287	86	70-130	1	25
cis-1,2-Dichloroethene	5.000	6.219	124	70-130	0	25
2-Butanone	5.000	5.281	106	70-130	1	25
Ethyl Acetate	5.000	6.692 b	134 *	70-130	1	25
Tetrahydrofuran	5.000	4.563	91	70-130	3	25
Chloroform	5.000	5.423	108	70-130	0	25
1,1,1-Trichloroethane	5.000	4.894	98	70-130	2	25
Cyclohexane	5.000	4.621	92	70-130	2	25
Carbon Tetrachloride	5.000	7.588 b	152 *	70-130	2	25
Benzene	5.000	5.012	100	70-130	1	25
1,2-Dichloroethane	5.000	4.449	89	70-130	2	25
n-Heptane	5.000	5.455	109	70-130	0	25
Trichloroethene	5.000	4.908	98	70-130	3	25

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237507
Units (V):	ppbv	Analyzed:	07/29/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)		%REC		Limits	RPD	Lim
1,2-Dichloropropane	5.000	4.918		98		70-130	4	25
Bromodichloromethane	5.000	4.851		97		70-130	0	25
cis-1,3-Dichloropropene	5.000	5.080		102		70-130	1	25
4-Methyl-2-Pentanone	5.000	7.225	b	145	*	70-130	2	25
Toluene	5.000	5.372		107		70-130	1	25
trans-1,3-Dichloropropene	5.000	5.673		113		70-130	1	25
1,1,2-Trichloroethane	5.000	5.124		102		70-130	2	25
Tetrachloroethene	5.000	5.544		111		70-130	2	25
2-Hexanone	5.000	6.640	b	133	*	70-130	0	25
Dibromochloromethane	5.000	5.222		104		70-130	3	25
1,2-Dibromoethane	5.000	4.856		97		70-130	1	25
Chlorobenzene	5.000	5.477		110		70-130	0	25
Ethylbenzene	5.000	5.513		110		70-130	0	25
m,p-Xylenes	10.00	11.80		118		70-130	3	25
o-Xylene	5.000	6.029		121		70-130	2	25
Styrene	5.000	6.417		128		70-130	2	25
Bromoform	5.000	7.480	b	150	*	70-130	1	25
1,1,2,2-Tetrachloroethane	5.000	5.529		111		70-130	1	25
4-Ethyltoluene	5.000	5.952		119		70-130	0	25
1,3,5-Trimethylbenzene	5.000	5.240		105		70-130	1	25
1,2,4-Trimethylbenzene	5.000	5.403		108		70-130	0	25
1,3-Dichlorobenzene	5.000	6.567	b	131	*	70-130	0	25
1,4-Dichlorobenzene	5.000	6.527	b	131	*	70-130	2	25
Benzyl chloride	5.000	6.987	b	140	*	70-130	2	25
1,2-Dichlorobenzene	5.000	6.533	b	131	*	70-130	3	25
1,2,4-Trichlorobenzene	5.000	7.321	b	146	*	70-130	1	25
Hexachlorobutadiene	5.000	9.885	b	198	*	70-130	4	25
Naphthalene	5.000	8.429	b	169	*	70-130	0	25

Surrogate	%REC	Limits
Bromofluorobenzene	101	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC845104	Diln Fac:	1.000
Matrix:	Air	Batch#:	237507
Units (V):	ppbv	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Isopropanol	ND	2.0	ND	4.9
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279110	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC845104	Diln Fac:	1.000
Matrix:	Air	Batch#:	237507
Units (V):	ppbv	Analyzed:	07/29/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.50	ND	2.0
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

Surrogate	%REC	Limits
Bromofluorobenzene	99	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

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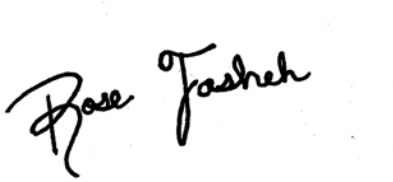
02 August 2016

Bob Clark-Riddell
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA 94612

RE: 1233 Bockman Rd

Enclosed are the results of analyses for samples received by the laboratory on 07/30/16 10:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Rose Fasheh
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

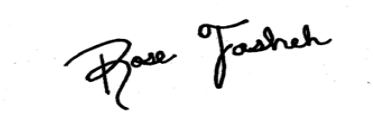
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949.297.5027 Fax

Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SV-8	T161773-01	Air	07/28/16 17:18	07/30/16 10:00
SV-10	T161773-02	Air	07/28/16 13:56	07/30/16 10:00
SV-11	T161773-03	Air	07/28/16 17:09	07/30/16 10:00
SV-12	T161773-04	Air	07/28/16 16:54	07/30/16 10:00
SV-13	T161773-05	Air	07/28/16 07:53	07/30/16 10:00
SV-17	T161773-06	Air	07/28/16 18:00	07/30/16 10:00
SV-18	T161773-07	Air	07/28/16 16:30	07/30/16 10:00
SV-19	T161773-08	Air	07/28/16 17:11	07/30/16 10:00
Shroud	T161773-09	Air	07/28/16 17:20	07/30/16 10:00

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Rose Fasheh, Project Manager

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

DETECTIONS SUMMARY

Sample ID: SV-8 **Laboratory ID:** T161773-01

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**180**	160	ug/m³ Air	TO-15	TO-14
Tetrachloroethene	**640**	350	ug/m³ Air	TO-15	TO-14

Sample ID: SV-10 **Laboratory ID:** T161773-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Tetrachloroethene	**2000**	350	ug/m³ Air	TO-15	TO-14

Sample ID: SV-11 **Laboratory ID:** T161773-03

Analyte	Result	Reporting Limit	Units	Method	Notes
Tetrachloroethene	**2600**	350	ug/m³ Air	TO-15	TO-14

Sample ID: SV-12 **Laboratory ID:** T161773-04

Analyte	Result	Reporting Limit	Units	Method	Notes
Tetrachloroethene	**930**	350	ug/m³ Air	TO-15	TO-14

Sample ID: SV-13 **Laboratory ID:** T161773-05

Analyte	Result	Reporting Limit	Units	Method	Notes
Ethylbenzene	**380**	220	ug/m³ Air	TO-15	TO-14
m,p-Xylene	**1100**	220	ug/m³ Air	TO-15	TO-14
o-Xylene	**370**	220	ug/m³ Air	TO-15	TO-14

Sample ID: SV-17 **Laboratory ID:** T161773-06

Analyte	Result	Reporting Limit	Units	Method	Notes

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Rose Fasheh, Project Manager

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1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

Sample ID: SV-17 **Laboratory ID:** T161773-06

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**170**	3.2	ug/m³ Air	TO-15	
Isopropyl alcohol	**150**	13	ug/m³ Air	TO-15	
Heptane	**11**	4.2	ug/m³ Air	TO-15	
Tetrachloroethene	**20**	6.9	ug/m³ Air	TO-15	
Trichloroethene	**9.7**	5.5	ug/m³ Air	TO-15	
Benzene	**34**	3.3	ug/m³ Air	TO-15	
Toluene	**13**	3.8	ug/m³ Air	TO-15	
Ethylbenzene	**28**	4.4	ug/m³ Air	TO-15	
m,p-Xylene	**160**	8.8	ug/m³ Air	TO-15	
o-Xylene	**31**	4.4	ug/m³ Air	TO-15	

Sample ID: SV-18 **Laboratory ID:** T161773-07

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**570**	3.2	ug/m³ Air	TO-15	
Heptane	**89**	4.2	ug/m³ Air	TO-15	
Hexane	**110**	3.6	ug/m³ Air	TO-15	
Tetrachloroethene	**66**	6.9	ug/m³ Air	TO-15	
1,2,4-Trimethylbenzene	**8.3**	5.0	ug/m³ Air	TO-15	
Benzene	**54**	3.3	ug/m³ Air	TO-15	
Toluene	**59**	3.8	ug/m³ Air	TO-15	
Ethylbenzene	**1100**	4.4	ug/m³ Air	TO-15	
m,p-Xylene	**2300**	8.8	ug/m³ Air	TO-15	
o-Xylene	**890**	4.4	ug/m³ Air	TO-15	

Sample ID: SV-19 **Laboratory ID:** T161773-08

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**65**	3.2	ug/m³ Air	TO-15	
Heptane	**54**	4.2	ug/m³ Air	TO-15	
Hexane	**26**	3.6	ug/m³ Air	TO-15	
Tetrachloroethene	**20**	6.9	ug/m³ Air	TO-15	
Trichloroethene	**11**	5.5	ug/m³ Air	TO-15	
1,2,4-Trimethylbenzene	**8.7**	5.0	ug/m³ Air	TO-15	
Benzene	**15**	3.3	ug/m³ Air	TO-15	

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

Sample ID: SV-19 **Laboratory ID:** T161773-08

Analyte	Result	Reporting Limit	Units	Method	Notes
Toluene	**40**	3.8	ug/m³ Air	TO-15	
Ethylbenzene	**900**	4.4	ug/m³ Air	TO-15	
m,p-Xylene	**1800**	8.8	ug/m³ Air	TO-15	
o-Xylene	**690**	4.4	ug/m³ Air	TO-15	

Sample ID: Shroud **Laboratory ID:** T161773-09

Analyte	Result	Reporting Limit	Units	Method	Notes
Isopropyl alcohol	**130000**	130	ug/m³ Air	TO-15	TO-14

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1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-8

T161773-01 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	120	ug/m³ Air	2.9	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	**180**	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	340	"	"	"	"	"	"	TO-14
Bromoform	ND	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	130	"	"	"	"	"	"	TO-14
Chloroform	ND	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	170	"	"	"	"	"	"	TO-14
Heptane	ND	210	"	"	"	"	"	"	TO-14
Hexane	ND	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	250	"	"	"	"	"	"	TO-14

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1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-8

T161773-01 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methylene chloride	ND	180	ug/m³ Air	2.9	6080113	08/01/16	08/01/16	TO-15	TO-14
Styrene	ND	220	"	"	"	"	"	"	TO-14
1,1,2,2-Tetrachloroethane	ND	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	**640**	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	210	"	"	"	"	"	"	TO-14
Benzene	ND	160	"	"	"	"	"	"	TO-14
Toluene	ND	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	220	"	"	"	"	"	"	TO-14

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Rose Fasheh

Rose Fasheh, Project Manager

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-10

T161773-02 (Air)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TO-15									
Acetone	ND	120	ug/m³ Air	3.04	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	340	"	"	"	"	"	"	TO-14
Bromoform	ND	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	130	"	"	"	"	"	"	TO-14
Chloroform	ND	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	170	"	"	"	"	"	"	TO-14
Heptane	ND	210	"	"	"	"	"	"	TO-14
Hexane	ND	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	250	"	"	"	"	"	"	TO-14

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-10

T161773-02 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methylene chloride	ND	180	ug/m³ Air	3.04	6080113	08/01/16	08/01/16	TO-15	TO-14
Styrene	ND	220	"	"	"	"	"	"	TO-14
1,1,2,2-Tetrachloroethane	ND	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	**2000**	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	210	"	"	"	"	"	"	TO-14
Benzene	ND	160	"	"	"	"	"	"	TO-14
Toluene	ND	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	220	"	"	"	"	"	"	TO-14

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Rose Fasheh, Project Manager

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-11

T161773-03 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	120	ug/m³ Air	2.69	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	340	"	"	"	"	"	"	TO-14
Bromoform	ND	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	130	"	"	"	"	"	"	TO-14
Chloroform	ND	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	170	"	"	"	"	"	"	TO-14
Heptane	ND	210	"	"	"	"	"	"	TO-14
Hexane	ND	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	250	"	"	"	"	"	"	TO-14

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Rose Fasheh, Project Manager

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-11

T161773-03 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methylene chloride	ND	180	ug/m³ Air	2.69	6080113	08/01/16	08/01/16	TO-15	TO-14
Styrene	ND	220	"	"	"	"	"	"	TO-14
1,1,2,2-Tetrachloroethane	ND	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	**2600**	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	210	"	"	"	"	"	"	TO-14
Benzene	ND	160	"	"	"	"	"	"	TO-14
Toluene	ND	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	220	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Rose Fasheh

Rose Fasheh, Project Manager

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-12

T161773-04 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	120	ug/m³ Air	2.61	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	340	"	"	"	"	"	"	TO-14
Bromoform	ND	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	130	"	"	"	"	"	"	TO-14
Chloroform	ND	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	170	"	"	"	"	"	"	TO-14
Heptane	ND	210	"	"	"	"	"	"	TO-14
Hexane	ND	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	250	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-12

T161773-04 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methylene chloride	ND	180	ug/m³ Air	2.61	6080113	08/01/16	08/01/16	TO-15	TO-14
Styrene	ND	220	"	"	"	"	"	"	TO-14
1,1,2,2-Tetrachloroethane	ND	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	**930**	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	210	"	"	"	"	"	"	TO-14
Benzene	ND	160	"	"	"	"	"	"	TO-14
Toluene	ND	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	220	"	"	"	"	"	"	TO-14

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-13

T161773-05 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	120	ug/m³ Air	1.56	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	340	"	"	"	"	"	"	TO-14
Bromoform	ND	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	130	"	"	"	"	"	"	TO-14
Chloroform	ND	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	170	"	"	"	"	"	"	TO-14
Heptane	ND	210	"	"	"	"	"	"	TO-14
Hexane	ND	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	250	"	"	"	"	"	"	TO-14

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-13

T161773-05 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methylene chloride	ND	180	ug/m³ Air	1.56	6080113	08/01/16	08/01/16	TO-15	TO-14
Styrene	ND	220	"	"	"	"	"	"	TO-14
1,1,2,2-Tetrachloroethane	ND	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	ND	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	210	"	"	"	"	"	"	TO-14
Benzene	ND	160	"	"	"	"	"	"	TO-14
Toluene	ND	190	"	"	"	"	"	"	TO-14
Ethylbenzene	**380**	220	"	"	"	"	"	"	TO-14
m,p-Xylene	**1100**	220	"	"	"	"	"	"	TO-14
o-Xylene	**370**	220	"	"	"	"	"	"	TO-14

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Rose Fasheh, Project Manager

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-17

T161773-06 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	12	ug/m³ Air	1.65	6080113	08/01/16	08/01/16	TO-15	
1,3-Butadiene	ND	4.5	"	"	"	"	"	"	
Carbon Disulfide	**170**	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	7.7	"	"	"	"	"	"	
Isopropyl alcohol	**150**	13	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
Bromoform	ND	11	"	"	"	"	"	"	
Bromomethane	ND	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Chloroethane	ND	2.7	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	11	"	"	"	"	"	"	
Cyclohexane	ND	3.5	"	"	"	"	"	"	
Heptane	**11**	4.2	"	"	"	"	"	"	
Hexane	ND	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	

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Rose Fasheh

Rose Fasheh, Project Manager

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-17

T161773-06 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methylene chloride	ND	3.5	ug/m³ Air	1.65	6080113	08/01/16	08/01/16	TO-15	
Styrene	ND	4.3	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	3.0	"	"	"	"	"	"	
Tetrachloroethene	**20**	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.6	"	"	"	"	"	"	
Trichloroethene	**9.7**	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	42	"	"	"	"	"	"	
Benzene	**34**	3.3	"	"	"	"	"	"	
Toluene	**13**	3.8	"	"	"	"	"	"	
Ethylbenzene	**28**	4.4	"	"	"	"	"	"	
m,p-Xylene	**160**	8.8	"	"	"	"	"	"	
o-Xylene	**31**	4.4	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*68.0 %*		*40-160*	"	"	"	"	

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-18

T161773-07 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	12	ug/m³ Air	2.73	6080113	08/01/16	08/01/16	TO-15	
1,3-Butadiene	ND	4.5	"	"	"	"	"	"	
Carbon Disulfide	**570**	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	7.7	"	"	"	"	"	"	
Isopropyl alcohol	ND	13	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
Bromoform	ND	11	"	"	"	"	"	"	
Bromomethane	ND	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Chloroethane	ND	2.7	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	11	"	"	"	"	"	"	
Cyclohexane	ND	3.5	"	"	"	"	"	"	
Heptane	**89**	4.2	"	"	"	"	"	"	
Hexane	**110**	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	

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Rose Fasheh

Rose Fasheh, Project Manager

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-18

T161773-07 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methylene chloride	ND	3.5	ug/m³ Air	2.73	6080113	08/01/16	08/01/16	TO-15	
Styrene	ND	4.3	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	3.0	"	"	"	"	"	"	
Tetrachloroethene	**66**	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.6	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**8.3**	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	42	"	"	"	"	"	"	
Benzene	**54**	3.3	"	"	"	"	"	"	
Toluene	**59**	3.8	"	"	"	"	"	"	
Ethylbenzene	**1100**	4.4	"	"	"	"	"	"	
m,p-Xylene	**2300**	8.8	"	"	"	"	"	"	
o-Xylene	**890**	4.4	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*77.3 %*	*40-160*		"	"	"	"	

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-19

T161773-08 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	12	ug/m³ Air	1.73	6080113	08/01/16	08/01/16	TO-15	
1,3-Butadiene	ND	4.5	"	"	"	"	"	"	
Carbon Disulfide	**65**	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	7.7	"	"	"	"	"	"	
Isopropyl alcohol	ND	13	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
Bromoform	ND	11	"	"	"	"	"	"	
Bromomethane	ND	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Chloroethane	ND	2.7	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	11	"	"	"	"	"	"	
Cyclohexane	ND	3.5	"	"	"	"	"	"	
Heptane	**54**	4.2	"	"	"	"	"	"	
Hexane	**26**	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	

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Rose Fasheh

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1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

SV-19

T161773-08 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methylene chloride	ND	3.5	ug/m³ Air	1.73	6080113	08/01/16	08/01/16	TO-15	
Styrene	ND	4.3	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	3.0	"	"	"	"	"	"	
Tetrachloroethene	**20**	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.6	"	"	"	"	"	"	
Trichloroethene	**11**	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**8.7**	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	42	"	"	"	"	"	"	
Benzene	**15**	3.3	"	"	"	"	"	"	
Toluene	**40**	3.8	"	"	"	"	"	"	
Ethylbenzene	**900**	4.4	"	"	"	"	"	"	
m,p-Xylene	**1800**	8.8	"	"	"	"	"	"	
o-Xylene	**690**	4.4	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*85.1 %*	*40-160*		"	"	"	"	

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1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

Shroud

T161773-09 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	120	ug/m³ Air	1.64	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	**130000**	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	340	"	"	"	"	"	"	TO-14
Bromoform	ND	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	130	"	"	"	"	"	"	TO-14
Chloroform	ND	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	170	"	"	"	"	"	"	TO-14
Heptane	ND	210	"	"	"	"	"	"	TO-14
Hexane	ND	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	250	"	"	"	"	"	"	TO-14

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

Shroud

T161773-09 (Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methylene chloride	ND	180	ug/m³ Air	1.64	6080113	08/01/16	08/01/16	TO-15	TO-14
Styrene	ND	220	"	"	"	"	"	"	TO-14
1,1,2,2-Tetrachloroethane	ND	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	ND	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	210	"	"	"	"	"	"	TO-14
Benzene	ND	160	"	"	"	"	"	"	TO-14
Toluene	ND	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	220	"	"	"	"	"	"	TO-14

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

TO-15 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080113 - Canister Analysis										
Blank (6080113-BLK1)			Prepared & Analyzed: 08/01/16							
Acetone	ND	120	ug/m³ Air							TO-14
1,3-Butadiene	ND	110	"							TO-14
Carbon Disulfide	ND	160	"							TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390	"							TO-14
Isopropyl alcohol	ND	130	"							TO-14
Bromodichloromethane	ND	340	"							TO-14
Bromoform	ND	530	"							TO-14
Bromomethane	ND	200	"							TO-14
Carbon tetrachloride	ND	320	"							TO-14
Chlorobenzene	ND	230	"							TO-14
Chloroethane	ND	130	"							TO-14
Chloroform	ND	250	"							TO-14
Chloromethane	ND	110	"							TO-14
Cyclohexane	ND	170	"							TO-14
Heptane	ND	210	"							TO-14
Hexane	ND	180	"							TO-14
Dibromochloromethane	ND	430	"							TO-14
1,2-Dibromoethane (EDB)	ND	390	"							TO-14
1,2-Dichlorobenzene	ND	310	"							TO-14
1,3-Dichlorobenzene	ND	310	"							TO-14
1,4-Dichlorobenzene	ND	310	"							TO-14
Dichlorodifluoromethane	ND	250	"							TO-14
1,1-Dichloroethane	ND	210	"							TO-14
1,2-Dichloroethane	ND	210	"							TO-14
1,1-Dichloroethene	ND	200	"							TO-14
cis-1,2-Dichloroethene	ND	200	"							TO-14
trans-1,2-Dichloroethene	ND	200	"							TO-14
1,2-Dichloropropane	ND	240	"							TO-14
cis-1,3-Dichloropropene	ND	230	"							TO-14
trans-1,3-Dichloropropene	ND	230	"							TO-14
4-Ethyltoluene	ND	250	"							TO-14
Methylene chloride	ND	180	"							TO-14
Styrene	ND	220	"							TO-14
1,1,2,2-Tetrachloroethane	ND	350	"							TO-14
Tetrahydrofuran	ND	150	"							TO-14

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Rose Fasheh

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

TO-15 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080113 - Canister Analysis										
Blank (6080113-BLK1)				Prepared & Analyzed: 08/01/16						
Tetrachloroethene	ND	350	ug/m³ Air							TO-14
1,1,2-Trichloroethane	ND	280	"							TO-14
1,1,1-Trichloroethane	ND	280	"							TO-14
Trichloroethene	ND	270	"							TO-14
Trichlorofluoromethane	ND	290	"							TO-14
1,3,5-Trimethylbenzene	ND	250	"							TO-14
1,2,4-Trimethylbenzene	ND	250	"							TO-14
Vinyl acetate	ND	180	"							TO-14
Vinyl chloride	ND	130	"							TO-14
1,4-Dioxane	ND	180	"							TO-14
2-Butanone (MEK)	ND	150	"							TO-14
Methyl isobutyl ketone	ND	210	"							TO-14
Benzene	ND	160	"							TO-14
Toluene	ND	190	"							TO-14
Ethylbenzene	ND	220	"							TO-14
m,p-Xylene	ND	220	"							TO-14
o-Xylene	ND	220	"							TO-14
Duplicate (6080113-DUP1)				**Source: T161773-01** Prepared & Analyzed: 08/01/16						
Acetone	ND	120	ug/m³ Air		ND				30	TO-14
1,3-Butadiene	ND	110	"		ND				30	TO-14
Carbon Disulfide	185	160	"		177			4.55	30	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390	"		ND				30	TO-14
Isopropyl alcohol	ND	130	"		ND				30	TO-14
Bromodichloromethane	ND	340	"		ND				30	TO-14
Bromoform	ND	530	"		ND				30	TO-14
Bromomethane	ND	200	"		ND				30	TO-14
Carbon tetrachloride	ND	320	"		ND				30	TO-14
Chlorobenzene	ND	230	"		ND				30	TO-14
Chloroethane	ND	130	"		ND				30	TO-14
Chloroform	ND	250	"		ND				30	TO-14
Chloromethane	ND	110	"		ND				30	TO-14
Cyclohexane	ND	170	"		ND				30	TO-14
Heptane	ND	210	"		ND				30	TO-14
Hexane	ND	180	"		ND				30	TO-14

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1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

TO-15 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080113 - Canister Analysis										
Duplicate (6080113-DUP1)		**Source: T161773-01**		Prepared & Analyzed: 08/01/16						
Dibromochloromethane	ND	430	ug/m³ Air		ND				30	TO-14
1,2-Dibromoethane (EDB)	ND	390	"		ND				30	TO-14
1,2-Dichlorobenzene	ND	310	"		ND				30	TO-14
1,3-Dichlorobenzene	ND	310	"		ND				30	TO-14
1,4-Dichlorobenzene	ND	310	"		ND				30	TO-14
Dichlorodifluoromethane	ND	250	"		ND				30	TO-14
1,1-Dichloroethane	ND	210	"		ND				30	TO-14
1,2-Dichloroethane	ND	210	"		ND				30	TO-14
1,1-Dichloroethene	ND	200	"		ND				30	TO-14
cis-1,2-Dichloroethene	ND	200	"		ND				30	TO-14
trans-1,2-Dichloroethene	ND	200	"		ND				30	TO-14
1,2-Dichloropropane	ND	240	"		ND				30	TO-14
cis-1,3-Dichloropropene	ND	230	"		ND				30	TO-14
trans-1,3-Dichloropropene	ND	230	"		ND				30	TO-14
4-Ethyltoluene	ND	250	"		ND				30	TO-14
Methylene chloride	ND	180	"		ND				30	TO-14
Styrene	ND	220	"		ND				30	TO-14
1,1,2,2-Tetrachloroethane	ND	350	"		ND				30	TO-14
Tetrahydrofuran	ND	150	"		ND				30	TO-14
Tetrachloroethene	568	350	"		645			12.6	30	TO-14
1,1,2-Trichloroethane	ND	280	"		ND				30	TO-14
1,1,1-Trichloroethane	ND	280	"		ND				30	TO-14
Trichloroethene	ND	270	"		ND				30	TO-14
Trichlorofluoromethane	ND	290	"		ND				30	TO-14
1,3,5-Trimethylbenzene	ND	250	"		ND				30	TO-14
1,2,4-Trimethylbenzene	ND	250	"		ND				30	TO-14
Vinyl acetate	ND	180	"		ND				30	TO-14
Vinyl chloride	ND	130	"		ND				30	TO-14
1,4-Dioxane	ND	180	"		ND				30	TO-14
2-Butanone (MEK)	ND	150	"		ND				30	TO-14
Methyl isobutyl ketone	ND	210	"		ND				30	TO-14
Benzene	ND	160	"		ND				30	TO-14
Toluene	ND	190	"		ND				30	TO-14
Ethylbenzene	ND	220	"		ND				30	TO-14
m,p-Xylene	ND	220	"		ND				30	TO-14
o-Xylene	ND	220	"		ND				30	TO-14

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rose Fasheh, Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

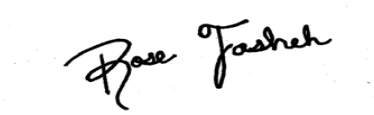
Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

TO-15 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch 6080113 - Canister Analysis



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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/02/16 11:29

Notes and Definitions

TO-14	TO-15 analysis of sample was not performed due to high concentration of analyte(s). Sample was analyzed utilizing method TO-14 and reporting limit has been adjusted accordingly.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rose Fasheh

Rose Fasheh, Project Manager

AIR LABORATORY

Chain of Custody Record

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Client: Pangea Env. Svs
Address: 1710 Franklin St. Oakland
Phone: 510-836-3700 Fax:
Project Manager: Bob Clark-Riddell

Date: 7.29.16 Page: 1 Of 1
Project Name: 1233 Beckman Rd
Collector: B. Lervaag Client Project #:
Batch #: 761773 EDF #:

briddell@pangeaenv.com

Sample ID	Date Sampled	Start Time	Finish Time	Sample Type: Soil Gas / Indoor Air	Container Type: Summa Can / Tedlar	Initial Pressure	Final Pressure	TO-3	TO-14	TO-15	8015m Methane	8015m Gasoline	Fixed Gases by TCD	H2S	Summa Can # / Comments	Laboratory ID #
SV-8	7.28.16	1718	1842	SG	Summa	30	15			X				X	SSAT-658	01
SV-10		1356	1439			30	15			X				X	SSAT-0395	02
SV-11		1709	1817			30	15			X					SSAT-0738	03
SV-12		1654	1754			30	15			X					SSAT-0398	04
SV-13		0753	0918			30	5			X				X	SSAT-0346	05
SV-17		1800	1808			30	5			X					SSAT-612	06
SV-18		1630	1640			30	15			X				X	SSAT-0345	07
SV-19		1911	1918	SG		30	5			X				X	SSAT-0763	08
Shroud	7.28.16	1720	1728		Summa	30	5							X	SSAT-0199	09

48 HRS

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	7.29.16 0810	Ed Stevens	7/29/16 810
GSO	7.30.16 10:00		7-30-16 10:00
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold
Turn around time: 48hr

Notes
2 DAY TAT with results by Monday 8/1/16 per Bill

* TO-15 SIM analysis available upon prior notification. **(Precertified Summa cans needed)**

COCAL 146487

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: 7161773

Client Name: PANGEA ENV. Project: 1233 BOCKMAN RD

Delivered by: ☐ Client ☐ SunStar Courier ☒ GSO ☐ FedEx ☐ Other

If Courier, Received by: _____ Date/Time Courier Received: _____

Lab Received by: SUNNY Date/Time Lab Received: 7.30.16 / 10:00

Total number of coolers received: 0

Temperature: Cooler #1	—	°C +/- the CF (- 0.2°C) =	— °C corrected temperature
Temperature: Cooler #2		°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature: Cooler #3		°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria?	☐ **Yes** ☐ **No**
If NO:			
Samples received on ice?		☐ Yes	☐ **No → Complete Non-Conformance Sheet**
If on ice, samples received same day collected?		☐ Yes → Acceptable	☐ **No → Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample	☒ Yes	☐ No*	☐ N/A
Sample containers intact	☒ Yes	☐ No*	
Sample labels match Chain of Custody IDs	☒ Yes	☐ No*	
Total number of containers received match COC	☒ Yes	☐ No*	
Proper containers received for analyses requested on COC	☒ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☐ Yes	☐ No*	☒ N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☒ **Yes**	☐ **No***	

* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date: SL 7.30.16

Comments:

(949) 297-5020 ■ www.sunstarlabs.com ■ 25712 Commercentre Drive ■ Lake Forest, CA 92630

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

Project Name:				
Company: PANGEA		Name: MORGAN GILLIES		
		Phone:		
Item		Quantity		Unit
2 oz Jars 24/CS				
4 oz Jars 24/CS				
8 oz Jars 12/CS				
40 ml unpreserved VOAs 100/box				
40 ml HCL-preserved VOAs 72/box				
250 ml Poly 24/CS				
1 Liter Poly 12/CS				
500 ml Poly 16/CS				
500 ml Amber Bottle Wide 12/CS				
1 Liter Amber Bottle 12/CS				
1 Gallon Poly 4/box				
5035 kits:(2)Sodium Bisulfate VOAs 72/box				
	(1) Methanol VOA 72/box			
	(1)Syringe 50/pack			
Lock-N-Load Handle 1/pack				
Tedlar Bags 10/pack				
Manifold, Inst. Sampler, Variable Sampler		3 -150 MANIFOLDS		CHARGE - 2
Sub Slab Insert w/ washer & N/F				
Soil Gas SS 16" Drop Tubes				
Gas Extraction Fittings				
Soil Gas Filters				
		# SENT	USED	UNUSED
Batch Certified Summa Canisters	400cc			
	1L	5 - P, 3-N	5-P, 3-N	
	3L			
	6L			
Individually Certified Summa Canisters	400cc			
	1L	8	8	
	3L			
	6L			
Cooler (Sm, Med, Lrg) Number & Quantity				
Swagelok Fittings: Nuts/Ferrules, Ts		8 X NUT/FERRLES		8 RETURNED
Other: Poly Tube, Valves,Silicon Tape, etc.				
Prepared By: BRIAN		Date: 7/22/16		
Reviewed By:		Date :		

949-297-5020
www.SunStarLabs.com
25712 Commercentre Dr, Lake Forest CA 92630

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

Project Name:				
Company: PANGEA		Name: MORGAN GILLIES		
		Phone:		
Item		Quantity		Unit
2 oz Jars 24/CS				
4 oz Jars 24/CS				
8 oz Jars 12/CS				
40 ml unpreserved VOAs 100/box				
40 ml HCL-preserved VOAs 72/box				
250 ml Poly 24/CS				
1 Liter Poly 12/CS				
500 ml Poly 16/CS				
500 ml Amber Bottle Wide 12/CS				
1 Liter Amber Bottle 12/CS				
1 Gallon Poly 4/box				
5035 kits:(2)Sodium Bisulfate VOAs 72/box				
	(1) Methanol VOA 72/box			
	(1)Syringe 50/pack			
Lock-N-Load Handle 1/pack				
Tedlar Bags 10/pack				
Manifold, Inst. Sampler, Variable Sampler				
Sub Slab Insert w/ washer & N/F				
Soil Gas SS 16" Drop Tubes				
Gas Extraction Fittings				
Soil Gas Filters				
		# SENT	USED	UNUSED
Batch Certified Summa Canisters	400cc			
	1L			
	3L			
	6L			
Individually Certified Summa Canisters	400cc			
	1L	4	1	3
	3L			
	6L			
Cooler (Sm, Med, Lrg) Number & Quantity				
Swagelok Fittings: Nuts/Ferrules, Ts		4 X NUT/FERRLES		4 RETURNED
Other: Poly Tube, Valves,Silicon Tape, etc.				
Prepared By: BRIAN		Date: 7/25/16		
Reviewed By:		Date :		

949-297-5020
www.SunStarLabs.com
25712 Commercentre Dr, Lake Forest CA 92630

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T161773

Client:	**Pangea Environmental Services, Inc.**	**Project Manager:**	**Rose Fasheh**
Project:	**1233 Bockman Rd**	**Project Number:**	**[none]**

Report To:

Pangea Environmental Services, Inc.
Bob Clark-Riddell
1710 Franklin Street, Suite 200
Oakland, CA 94612

Date Due:	08/01/16 17:00 (0 day TAT)		
Received By:	Sunny Lounethone	Date Received:	07/30/16 10:00
Logged In By:	Sunny Lounethone	Date Logged In:	07/30/16 10:59

Samples Received at:

Custody Seals	Yes	Received On Ice	No
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	No		

Analysis	Due	TAT	Expires	Comments
T161773-01 SV-8 [Air] Sampled 07/28/16 17:18 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 17:18	
T161773-02 SV-10 [Air] Sampled 07/28/16 13:56 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 13:56	
T161773-03 SV-11 [Air] Sampled 07/28/16 17:09 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 17:09	
T161773-04 SV-12 [Air] Sampled 07/28/16 16:54 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 16:54	
T161773-05 SV-13 [Air] Sampled 07/28/16 07:53 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 07:53	
T161773-06 SV-17 [Air] Sampled 07/28/16 18:00 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 18:00	
T161773-07 SV-18 [Air] Sampled 07/28/16 16:30 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 16:30	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T161773

Client:	**Pangea Environmental Services, Inc.**	**Project Manager:**	**Rose Fasheh**
Project:	**1233 Bockman Rd**	**Project Number:**	**[none]**

Analysis	Due	TAT	Expires	Comments
T161773-08 SV-19 [Air] Sampled 07/28/16 17:11 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 17:11	
T161773-09 Shroud [Air] Sampled 07/28/16 17:20 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 17:20	

Reviewed By

Date


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 279298
ANALYTICAL REPORT

Pangea Environmental	Project : 2030.001
1710 Franklin Street	Location : 1233 Brockman
Oakland, CA 94612	Level : II

Sample ID	Lab ID
SB-2-1'	279298-001
SB-2-3'	279298-002
SB-2-6'	279298-003
SB-6-1'	279298-004
SB-6-3'	279298-005
SB-6-6'	279298-006

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: Will Rice Date: 08/08/2016

Will Rice
Project Manager
will.rice@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**279298**
Client:	**Pangea Environmental**
Project:	**2030.001**
Location:	**1233 Brockman**
Request Date:	**08/04/16**
Samples Received:	**08/03/16**

This data package contains sample and QC results for six soil samples, requested for the above referenced project on 08/04/16. The samples were received cold and intact.

Metals (EPA 6010B):
No analytical problems were encountered.

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

Page ___ of ___

Chain of Custody # ___

C&T LOGIN # 279298

Project No: 2030.001
Project Name: 1233 Boadman
EDD Format: Report Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH 48 ☐ Standard

Sampler: Groff, Patrick
Report To: Ron Scheele
Company: Pangea Env.
Telephone: (510) 459-6012
Email: rscheele@pangeaenv.com

Lab No.	Sample ID.	SAMPLING		MATRIX		PRESERVATIVE					ANALYTICAL REQUEST
		Date Collected	Time Collected	Water	Solid	HCl	H2SO4	HNO3	NaOH	None	Total Pb 6010
	SB-2-1'	8/3/16	1600		X						X
	SB-2-3'		1607		X						X
	SB-2-6'		1610		X						X
	SB-6-1'		1810		X						X
	SB-6-3'		1810		X						X
	SB-6-6'		1810		X						X

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☐ On Ice
☐ Ambient

RELINQUISHED BY:
PA Groff — DATE: 8/3/16 TIME: 19:45
DATE: TIME:
DATE: TIME:

RECEIVED BY:
dnguyen — DATE: 8/3 TIME: 19:45
DATE: TIME:
DATE: TIME:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 274298 Date Received 8/3/16 Number of coolers 1
Client Pangea Environmental Project 1233 Brockman

Date Opened 8/3 By (print) CB (sign) [signature]
Date Logged in ✓ By (print) DTN (sign) [signature]
Date Labelled ✓ By (print) ✓ (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)

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

☒ 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

Curtis & Tompkins, Ltd.

Detections Summary for 279298

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

Client : Pangea Environmental
Project : 2030.001
Location : 1233 Brockman

Client Sample ID : SB-2-1' Laboratory Sample ID : 279298-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Lead	3.5		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : SB-2-3' Laboratory Sample ID : 279298-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Lead	8.7		0.23	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : SB-2-6' Laboratory Sample ID : 279298-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Lead	6.2		0.23	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : SB-6-1' Laboratory Sample ID : 279298-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Lead	7.4		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : SB-6-3' Laboratory Sample ID : 279298-005

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Lead	5.7		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : SB-6-6' Laboratory Sample ID : 279298-006

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Lead	4.1		0.24	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Curtis & Tompkins, Ltd.

Lead

Lab #:	279298	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 3050B
Project#:	2030.001	Analysis:	EPA 6010B
Analyte:	Lead	Batch#:	237697
Matrix:	Soil	Sampled:	08/03/16
Units:	mg/Kg	Received:	08/03/16
Basis:	as received	Prepared:	08/04/16
Diln Fac:	1.000		

Field ID	Type	Lab ID	Result	RL	Analyzed
SB-2-1'	SAMPLE	279298-001	3.5	0.27	08/05/16
SB-2-3'	SAMPLE	279298-002	8.7	0.23	08/04/16
SB-2-6'	SAMPLE	279298-003	6.2	0.23	08/04/16
SB-6-1'	SAMPLE	279298-004	7.4	0.25	08/04/16
SB-6-3'	SAMPLE	279298-005	5.7	0.25	08/04/16
SB-6-6'	SAMPLE	279298-006	4.1	0.24	08/04/16
	BLANK	QC845882	ND	0.27	08/04/16

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Lead

Lab #:	279298	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 3050B
Project#:	2030.001	Analysis:	EPA 6010B
Analyte:	Lead	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	237697
MSS Lab ID:	279266-001	Sampled:	08/03/16
Matrix:	Soil	Received:	08/03/16
Units:	mg/Kg	Prepared:	08/04/16
Basis:	as received	Analyzed:	08/04/16

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC845883		55.56	54.59	98	80-120		
BSD	QC845884		54.95	57.40	104	80-120	6	20
MS	QC845885	6.575	46.73	50.97	95	53-125		
MSD	QC845886		54.35	58.41	95	53-125	0	42

RPD= Relative Percent Difference


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Analytical Laboratories, Since 1878

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

Laboratory Job Number 279369
ANALYTICAL REPORT

Pangea Environmental	Project : 2030.001
1710 Franklin Street	Location : 1233 Brockman
Oakland, CA 94612	Level : II

Sample ID	Lab ID
SV-20	279369-001
SV-21	279369-002
SV-22	279369-003
SV-23	279369-004
SV-24	279369-005
SV-25	279369-006
SV-26	279369-007
SV-27	279369-008
SHROUD	279369-009

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: 08/09/2016

John Goyette
Laboratory Director
goyette@ctberk.com
(510) 204-2233

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**279369**
Client:	**Pangea Environmental**
Project:	**2030.001**
Location:	**1233 Brockman**
Request Date:	**08/05/16**
Samples Received:	**08/05/16**

This data package contains sample and QC results for nine air samples, requested for the above referenced project on 08/05/16. The samples were received intact.

Volatile Organics in Air by MS (EPA TO-15):

High recoveries were observed for trichlorofluoromethane in the BSD for batch 237759 and the BSD for batch 237797; the associated RPDs were within limits, and this analyte was not detected at or above the RL in the associated samples. No other analytical problems were encountered.

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street

Berkeley, CA 94710
(510)486-0900 Phone
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AIR TESTING CHAIN OF CUSTODY
& PURCHASE ORDER

Chain of Custody # : 1

C&T LOGIN # 279369

Project No: 2030.001
Project Name: 1233 Backmen
EDD Format: _____ Rpt Level: II III IV
Turnaround Time: X RUSH 48 ☐ Standard

Sampler: Simmons, Albert
Report To: Ron Scheele
Company: Pangea Env.
Telephone:
Email: rscheele@pangeaenv.com

Lab No.	Sample ID.	Sampling Information: Date Collected	Time Collected	Canister ID (Bar Code #)	Flow Controller ID	Sample Volume (Gauge Reading)	TESTING REQUESTED: TO-15	TO-3: C6-C12 GRO	TO-3M: C1-C6 Hydrocarbons	D1946: (Please Circle Targets) H_2 He N_2 O_2 CO CO_2 CH_4	
1	SV-20	8/5/16	1007	096	208	20.5	X				
2	SV-21		0904	053	271	5					moisture in line
3	SV-22		0927	[redacted]	154/272	5					
4	SV-23		1523	074	223	22					
5	SV-24		1520	322	XY2	22					
6	SV-25		1516	134	233	21.5					
7	SV-26		1318	129	184	5					
8	SV-27		1402	244	178	19.5					
9	shroud		1115	335	269	5					

Notes:
Just TO15 analysis

RELINQUISHED BY: _____ 8/5/16 1656 DATE/TIME

RECEIVED BY: _____ 08/05/16 1656 DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

COOLER RECEIPT CHECKLIST Curtis & Tompkins, Ltd.

Login # 279369 Date Received 8/5/16 Number of coolers 0
Client Pangea Project 1233 Brockman

Date Opened 8/5/16 By (print) AA (sign)
Date Logged in ↓ By (print) ↓ (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)

   ☐ Samples Received on ice & cold without a temperature blank

   ☐ 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? 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 9, 10/11

Curtis & Tompkins, Ltd.

Detections Summary for 279369

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

Client : Pangea Environmental
Project : 2030.001
Location : 1233 Brockman

Client Sample ID : SV-20 Laboratory Sample ID : 279369-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	140		32	ppbv	As Recd	63.72	EPA TO-15	METHOD
n-Hexane	61		32	ppbv	As Recd	63.72	EPA TO-15	METHOD
Cyclohexane	56		32	ppbv	As Recd	63.72	EPA TO-15	METHOD
n-Heptane	120		32	ppbv	As Recd	63.72	EPA TO-15	METHOD
Toluene	42		32	ppbv	As Recd	63.72	EPA TO-15	METHOD
Ethylbenzene	990		32	ppbv	As Recd	63.72	EPA TO-15	METHOD
m,p-Xylenes	3,300		32	ppbv	As Recd	63.72	EPA TO-15	METHOD
o-Xylene	1,000		32	ppbv	As Recd	63.72	EPA TO-15	METHOD

Client Sample ID : SV-21 Laboratory Sample ID : 279369-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Cyclohexane	3.6		3.0	ppbv	As Recd	5.970	EPA TO-15	METHOD
Tetrachloroethene	24		3.0	ppbv	As Recd	5.970	EPA TO-15	METHOD
Ethylbenzene	76		3.0	ppbv	As Recd	5.970	EPA TO-15	METHOD
m,p-Xylenes	490		3.0	ppbv	As Recd	5.970	EPA TO-15	METHOD
o-Xylene	230		3.0	ppbv	As Recd	5.970	EPA TO-15	METHOD

Client Sample ID : SV-22 Laboratory Sample ID : 279369-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	36		22	ppbv	As Recd	43.40	EPA TO-15	METHOD
n-Hexane	27		22	ppbv	As Recd	43.40	EPA TO-15	METHOD
Cyclohexane	29		22	ppbv	As Recd	43.40	EPA TO-15	METHOD
Ethylbenzene	78		22	ppbv	As Recd	43.40	EPA TO-15	METHOD
m,p-Xylenes	3,100		22	ppbv	As Recd	43.40	EPA TO-15	METHOD
o-Xylene	1,200		22	ppbv	As Recd	43.40	EPA TO-15	METHOD

Client Sample ID : SV-23 Laboratory Sample ID : 279369-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
n-Hexane	39		32	ppbv	As Recd	63.36	EPA TO-15	METHOD
n-Heptane	58		32	ppbv	As Recd	63.36	EPA TO-15	METHOD
Toluene	40		32	ppbv	As Recd	63.36	EPA TO-15	METHOD
Ethylbenzene	2,000		32	ppbv	As Recd	63.36	EPA TO-15	METHOD
m,p-Xylenes	5,800		32	ppbv	As Recd	63.36	EPA TO-15	METHOD
o-Xylene	2,100		32	ppbv	As Recd	63.36	EPA TO-15	METHOD

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Client Sample ID : SV-24 Laboratory Sample ID : 279369-005

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	73		8.7	ppbv	As Recd	17.43	EPA TO-15	METHOD
n-Hexane	14		8.7	ppbv	As Recd	17.43	EPA TO-15	METHOD
Cyclohexane	14		8.7	ppbv	As Recd	17.43	EPA TO-15	METHOD
Benzene	13		8.7	ppbv	As Recd	17.43	EPA TO-15	METHOD
n-Heptane	15		8.7	ppbv	As Recd	17.43	EPA TO-15	METHOD
Toluene	12		8.7	ppbv	As Recd	17.43	EPA TO-15	METHOD
Ethylbenzene	300		8.7	ppbv	As Recd	17.43	EPA TO-15	METHOD
m,p-Xylenes	970		8.7	ppbv	As Recd	17.43	EPA TO-15	METHOD
o-Xylene	310		8.7	ppbv	As Recd	17.43	EPA TO-15	METHOD

Client Sample ID : SV-25 Laboratory Sample ID : 279369-006

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	100		2.7	ppbv	As Recd	5.310	EPA TO-15	METHOD
n-Hexane	15		2.7	ppbv	As Recd	5.310	EPA TO-15	METHOD
Cyclohexane	11		2.7	ppbv	As Recd	5.310	EPA TO-15	METHOD
Benzene	12		2.7	ppbv	As Recd	5.310	EPA TO-15	METHOD
n-Heptane	7.1		2.7	ppbv	As Recd	5.310	EPA TO-15	METHOD
Toluene	12		2.7	ppbv	As Recd	5.310	EPA TO-15	METHOD
Ethylbenzene	62		2.7	ppbv	As Recd	5.310	EPA TO-15	METHOD
m,p-Xylenes	240		2.7	ppbv	As Recd	5.310	EPA TO-15	METHOD
o-Xylene	78		2.7	ppbv	As Recd	5.310	EPA TO-15	METHOD

Client Sample ID : SV-26 Laboratory Sample ID : 279369-007

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Acetone	5.4		4.3	ppbv	As Recd	2.170	EPA TO-15	METHOD
Carbon Disulfide	33		1.1	ppbv	As Recd	2.170	EPA TO-15	METHOD
n-Hexane	4.0		1.1	ppbv	As Recd	2.170	EPA TO-15	METHOD
2-Butanone	1.1		1.1	ppbv	As Recd	2.170	EPA TO-15	METHOD
Cyclohexane	3.6		1.1	ppbv	As Recd	2.170	EPA TO-15	METHOD
Benzene	7.2		1.1	ppbv	As Recd	2.170	EPA TO-15	METHOD
n-Heptane	2.5		1.1	ppbv	As Recd	2.170	EPA TO-15	METHOD
Toluene	7.6		1.1	ppbv	As Recd	2.170	EPA TO-15	METHOD
Tetrachloroethene	1.1		1.1	ppbv	As Recd	2.170	EPA TO-15	METHOD
Ethylbenzene	40		1.1	ppbv	As Recd	2.170	EPA TO-15	METHOD
m,p-Xylenes	150		1.1	ppbv	As Recd	2.170	EPA TO-15	METHOD
o-Xylene	61		1.1	ppbv	As Recd	2.170	EPA TO-15	METHOD

Client Sample ID : SV-27 Laboratory Sample ID : 279369-008

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	92		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
n-Hexane	18		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
Cyclohexane	15		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
Benzene	23		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
n-Heptane	7.5		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
Toluene	13		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
Ethylbenzene	54		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
m,p-Xylenes	210		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
o-Xylene	75		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD

Client Sample ID : SHROUD Laboratory Sample ID : 279369-009

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Isopropanol	74,000		2,400	ppbv	As Recd	1188	EPA TO-15	METHOD

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Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-20	Diln Fac:	63.72
Lab ID:	279369-001	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	32	ND	160
Freon 114	ND	32	ND	220
Chloromethane	ND	32	ND	66
Vinyl Chloride	ND	32	ND	81
1,3-Butadiene	ND	32	ND	70
Bromomethane	ND	32	ND	120
Chloroethane	ND	32	ND	84
Trichlorofluoromethane	ND	32	ND	180
Acrolein	ND	130	ND	290
1,1-Dichloroethene	ND	32	ND	130
Freon 113	ND	32	ND	240
Acetone	ND	130	ND	300
Carbon Disulfide	140	32	450	99
Isopropanol	ND	130	ND	310
Methylene Chloride	ND	32	ND	110
trans-1,2-Dichloroethene	ND	32	ND	130
MTBE	ND	32	ND	110
n-Hexane	61	32	210	110
1,1-Dichloroethane	ND	32	ND	130
Vinyl Acetate	ND	32	ND	110
cis-1,2-Dichloroethene	ND	32	ND	130
2-Butanone	ND	32	ND	94
Ethyl Acetate	ND	32	ND	110
Tetrahydrofuran	ND	32	ND	94
Chloroform	ND	32	ND	160
1,1,1-Trichloroethane	ND	32	ND	170
Cyclohexane	56	32	190	110
Carbon Tetrachloride	ND	32	ND	200
Benzene	ND	32	ND	100
1,2-Dichloroethane	ND	32	ND	130
n-Heptane	120	32	510	130
Trichloroethene	ND	32	ND	170
1,2-Dichloropropane	ND	32	ND	150
Bromodichloromethane	ND	32	ND	210
cis-1,3-Dichloropropene	ND	32	ND	140

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-20	Diln Fac:	63.72
Lab ID:	279369-001	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	32	ND	130
Toluene	42	32	160	120
trans-1,3-Dichloropropene	ND	32	ND	140
1,1,2-Trichloroethane	ND	32	ND	170
Tetrachloroethene	ND	32	ND	220
2-Hexanone	ND	32	ND	130
Dibromochloromethane	ND	32	ND	270
1,2-Dibromoethane	ND	32	ND	240
Chlorobenzene	ND	32	ND	150
Ethylbenzene	990	32	4,300	140
m,p-Xylenes	3,300	32	14,000	140
o-Xylene	1,000	32	4,400	140
Styrene	ND	32	ND	140
Bromoform	ND	32	ND	330
1,1,2,2-Tetrachloroethane	ND	32	ND	220
4-Ethyltoluene	ND	32	ND	160
1,3,5-Trimethylbenzene	ND	32	ND	160
1,2,4-Trimethylbenzene	ND	32	ND	160
1,3-Dichlorobenzene	ND	32	ND	190
1,4-Dichlorobenzene	ND	32	ND	190
Benzyl chloride	ND	32	ND	160
1,2-Dichlorobenzene	ND	32	ND	190
1,2,4-Trichlorobenzene	ND	32	ND	240
Hexachlorobutadiene	ND	32	ND	340
Naphthalene	ND	130	ND	670

Surrogate	%REC	Limits
Bromofluorobenzene	84	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-21	Diln Fac:	5.970
Lab ID:	279369-002	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	3.0	ND	15
Freon 114	ND	3.0	ND	21
Chloromethane	ND	3.0	ND	6.2
Vinyl Chloride	ND	3.0	ND	7.6
1,3-Butadiene	ND	3.0	ND	6.6
Bromomethane	ND	3.0	ND	12
Chloroethane	ND	3.0	ND	7.9
Trichlorofluoromethane	ND	3.0	ND	17
Acrolein	ND	12	ND	27
1,1-Dichloroethene	ND	3.0	ND	12
Freon 113	ND	3.0	ND	23
Acetone	ND	12	ND	28
Carbon Disulfide	ND	3.0	ND	9.3
Isopropanol	ND	12	ND	29
Methylene Chloride	ND	3.0	ND	10
trans-1,2-Dichloroethene	ND	3.0	ND	12
MTBE	ND	3.0	ND	11
n-Hexane	ND	3.0	ND	11
1,1-Dichloroethane	ND	3.0	ND	12
Vinyl Acetate	ND	3.0	ND	11
cis-1,2-Dichloroethene	ND	3.0	ND	12
2-Butanone	ND	3.0	ND	8.8
Ethyl Acetate	ND	3.0	ND	11
Tetrahydrofuran	ND	3.0	ND	8.8
Chloroform	ND	3.0	ND	15
1,1,1-Trichloroethane	ND	3.0	ND	16
Cyclohexane	3.6	3.0	12	10
Carbon Tetrachloride	ND	3.0	ND	19
Benzene	ND	3.0	ND	9.5
1,2-Dichloroethane	ND	3.0	ND	12
n-Heptane	ND	3.0	ND	12
Trichloroethene	ND	3.0	ND	16
1,2-Dichloropropane	ND	3.0	ND	14
Bromodichloromethane	ND	3.0	ND	20
cis-1,3-Dichloropropene	ND	3.0	ND	14

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-21	Diln Fac:	5.970
Lab ID:	279369-002	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	3.0	ND	12
Toluene	ND	3.0	ND	11
trans-1,3-Dichloropropene	ND	3.0	ND	14
1,1,2-Trichloroethane	ND	3.0	ND	16
Tetrachloroethene	24	3.0	160	20
2-Hexanone	ND	3.0	ND	12
Dibromochloromethane	ND	3.0	ND	25
1,2-Dibromoethane	ND	3.0	ND	23
Chlorobenzene	ND	3.0	ND	14
Ethylbenzene	76	3.0	330	13
m,p-Xylenes	490	3.0	2,100	13
o-Xylene	230	3.0	990	13
Styrene	ND	3.0	ND	13
Bromoform	ND	3.0	ND	31
1,1,2,2-Tetrachloroethane	ND	3.0	ND	20
4-Ethyltoluene	ND	3.0	ND	15
1,3,5-Trimethylbenzene	ND	3.0	ND	15
1,2,4-Trimethylbenzene	ND	3.0	ND	15
1,3-Dichlorobenzene	ND	3.0	ND	18
1,4-Dichlorobenzene	ND	3.0	ND	18
Benzyl chloride	ND	3.0	ND	15
1,2-Dichlorobenzene	ND	3.0	ND	18
1,2,4-Trichlorobenzene	ND	3.0	ND	22
Hexachlorobutadiene	ND	3.0	ND	32
Naphthalene	ND	12	ND	63

Surrogate	%REC	Limits
Bromofluorobenzene	89	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-22	Diln Fac:	43.40
Lab ID:	279369-003	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	22	ND	110
Freon 114	ND	22	ND	150
Chloromethane	ND	22	ND	45
Vinyl Chloride	ND	22	ND	55
1,3-Butadiene	ND	22	ND	48
Bromomethane	ND	22	ND	84
Chloroethane	ND	22	ND	57
Trichlorofluoromethane	ND	22	ND	120
Acrolein	ND	87	ND	200
1,1-Dichloroethene	ND	22	ND	86
Freon 113	ND	22	ND	170
Acetone	ND	87	ND	210
Carbon Disulfide	36	22	110	68
Isopropanol	ND	87	ND	210
Methylene Chloride	ND	22	ND	75
trans-1,2-Dichloroethene	ND	22	ND	86
MTBE	ND	22	ND	78
n-Hexane	27	22	94	76
1,1-Dichloroethane	ND	22	ND	88
Vinyl Acetate	ND	22	ND	76
cis-1,2-Dichloroethene	ND	22	ND	86
2-Butanone	ND	22	ND	64
Ethyl Acetate	ND	22	ND	78
Tetrahydrofuran	ND	22	ND	64
Chloroform	ND	22	ND	110
1,1,1-Trichloroethane	ND	22	ND	120
Cyclohexane	29	22	100	75
Carbon Tetrachloride	ND	22	ND	140
Benzene	ND	22	ND	69
1,2-Dichloroethane	ND	22	ND	88
n-Heptane	ND	22	ND	89
Trichloroethene	ND	22	ND	120
1,2-Dichloropropane	ND	22	ND	100
Bromodichloromethane	ND	22	ND	150
cis-1,3-Dichloropropene	ND	22	ND	98

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-22	Diln Fac:	43.40
Lab ID:	279369-003	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	22	ND	89
Toluene	ND	22	ND	82
trans-1,3-Dichloropropene	ND	22	ND	98
1,1,2-Trichloroethane	ND	22	ND	120
Tetrachloroethene	ND	22	ND	150
2-Hexanone	ND	22	ND	89
Dibromochloromethane	ND	22	ND	180
1,2-Dibromoethane	ND	22	ND	170
Chlorobenzene	ND	22	ND	100
Ethylbenzene	78	22	340	94
m,p-Xylenes	3,100	22	13,000	94
o-Xylene	1,200	22	5,100	94
Styrene	ND	22	ND	92
Bromoform	ND	22	ND	220
1,1,2,2-Tetrachloroethane	ND	22	ND	150
4-Ethyltoluene	ND	22	ND	110
1,3,5-Trimethylbenzene	ND	22	ND	110
1,2,4-Trimethylbenzene	ND	22	ND	110
1,3-Dichlorobenzene	ND	22	ND	130
1,4-Dichlorobenzene	ND	22	ND	130
Benzyl chloride	ND	22	ND	110
1,2-Dichlorobenzene	ND	22	ND	130
1,2,4-Trichlorobenzene	ND	22	ND	160
Hexachlorobutadiene	ND	22	ND	230
Naphthalene	ND	87	ND	460

Surrogate	%REC	Limits
Bromofluorobenzene	85	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-23	Diln Fac:	63.36
Lab ID:	279369-004	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	32	ND	160
Freon 114	ND	32	ND	220
Chloromethane	ND	32	ND	65
Vinyl Chloride	ND	32	ND	81
1,3-Butadiene	ND	32	ND	70
Bromomethane	ND	32	ND	120
Chloroethane	ND	32	ND	84
Trichlorofluoromethane	ND	32	ND	180
Acrolein	ND	130	ND	290
1,1-Dichloroethene	ND	32	ND	130
Freon 113	ND	32	ND	240
Acetone	ND	130	ND	300
Carbon Disulfide	ND	32	ND	99
Isopropanol	ND	130	ND	310
Methylene Chloride	ND	32	ND	110
trans-1,2-Dichloroethene	ND	32	ND	130
MTBE	ND	32	ND	110
n-Hexane	39	32	140	110
1,1-Dichloroethane	ND	32	ND	130
Vinyl Acetate	ND	32	ND	110
cis-1,2-Dichloroethene	ND	32	ND	130
2-Butanone	ND	32	ND	93
Ethyl Acetate	ND	32	ND	110
Tetrahydrofuran	ND	32	ND	93
Chloroform	ND	32	ND	150
1,1,1-Trichloroethane	ND	32	ND	170
Cyclohexane	ND	32	ND	110
Carbon Tetrachloride	ND	32	ND	200
Benzene	ND	32	ND	100
1,2-Dichloroethane	ND	32	ND	130
n-Heptane	58	32	240	130
Trichloroethene	ND	32	ND	170
1,2-Dichloropropane	ND	32	ND	150
Bromodichloromethane	ND	32	ND	210
cis-1,3-Dichloropropene	ND	32	ND	140

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-23	Diln Fac:	63.36
Lab ID:	279369-004	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	32	ND	130
Toluene	40	32	150	120
trans-1,3-Dichloropropene	ND	32	ND	140
1,1,2-Trichloroethane	ND	32	ND	170
Tetrachloroethene	ND	32	ND	210
2-Hexanone	ND	32	ND	130
Dibromochloromethane	ND	32	ND	270
1,2-Dibromoethane	ND	32	ND	240
Chlorobenzene	ND	32	ND	150
Ethylbenzene	2,000	32	8,700	140
m,p-Xylenes	5,800	32	25,000	140
o-Xylene	2,100	32	9,000	140
Styrene	ND	32	ND	130
Bromoform	ND	32	ND	330
1,1,2,2-Tetrachloroethane	ND	32	ND	220
4-Ethyltoluene	ND	32	ND	160
1,3,5-Trimethylbenzene	ND	32	ND	160
1,2,4-Trimethylbenzene	ND	32	ND	160
1,3-Dichlorobenzene	ND	32	ND	190
1,4-Dichlorobenzene	ND	32	ND	190
Benzyl chloride	ND	32	ND	160
1,2-Dichlorobenzene	ND	32	ND	190
1,2,4-Trichlorobenzene	ND	32	ND	240
Hexachlorobutadiene	ND	32	ND	340
Naphthalene	ND	130	ND	660

Surrogate	%REC	Limits
Bromofluorobenzene	83	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-24	Diln Fac:	17.43
Lab ID:	279369-005	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	8.7	ND	43
Freon 114	ND	8.7	ND	61
Chloromethane	ND	8.7	ND	18
Vinyl Chloride	ND	8.7	ND	22
1,3-Butadiene	ND	8.7	ND	19
Bromomethane	ND	8.7	ND	34
Chloroethane	ND	8.7	ND	23
Trichlorofluoromethane	ND	8.7	ND	49
Acrolein	ND	35	ND	80
1,1-Dichloroethene	ND	8.7	ND	35
Freon 113	ND	8.7	ND	67
Acetone	ND	35	ND	83
Carbon Disulfide	73	8.7	230	27
Isopropanol	ND	35	ND	86
Methylene Chloride	ND	8.7	ND	30
trans-1,2-Dichloroethene	ND	8.7	ND	35
MTBE	ND	8.7	ND	31
n-Hexane	14	8.7	49	31
1,1-Dichloroethane	ND	8.7	ND	35
Vinyl Acetate	ND	8.7	ND	31
cis-1,2-Dichloroethene	ND	8.7	ND	35
2-Butanone	ND	8.7	ND	26
Ethyl Acetate	ND	8.7	ND	31
Tetrahydrofuran	ND	8.7	ND	26
Chloroform	ND	8.7	ND	43
1,1,1-Trichloroethane	ND	8.7	ND	48
Cyclohexane	14	8.7	48	30
Carbon Tetrachloride	ND	8.7	ND	55
Benzene	13	8.7	42	28
1,2-Dichloroethane	ND	8.7	ND	35
n-Heptane	15	8.7	60	36
Trichloroethene	ND	8.7	ND	47
1,2-Dichloropropane	ND	8.7	ND	40
Bromodichloromethane	ND	8.7	ND	58
cis-1,3-Dichloropropene	ND	8.7	ND	40

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-24	Diln Fac:	17.43
Lab ID:	279369-005	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	8.7	ND	36
Toluene	12	8.7	45	33
trans-1,3-Dichloropropene	ND	8.7	ND	40
1,1,2-Trichloroethane	ND	8.7	ND	48
Tetrachloroethene	ND	8.7	ND	59
2-Hexanone	ND	8.7	ND	36
Dibromochloromethane	ND	8.7	ND	74
1,2-Dibromoethane	ND	8.7	ND	67
Chlorobenzene	ND	8.7	ND	40
Ethylbenzene	300	8.7	1,300	38
m,p-Xylenes	970	8.7	4,200	38
o-Xylene	310	8.7	1,300	38
Styrene	ND	8.7	ND	37
Bromoform	ND	8.7	ND	90
1,1,2,2-Tetrachloroethane	ND	8.7	ND	60
4-Ethyltoluene	ND	8.7	ND	43
1,3,5-Trimethylbenzene	ND	8.7	ND	43
1,2,4-Trimethylbenzene	ND	8.7	ND	43
1,3-Dichlorobenzene	ND	8.7	ND	52
1,4-Dichlorobenzene	ND	8.7	ND	52
Benzyl chloride	ND	8.7	ND	45
1,2-Dichlorobenzene	ND	8.7	ND	52
1,2,4-Trichlorobenzene	ND	8.7	ND	65
Hexachlorobutadiene	ND	8.7	ND	93
Naphthalene	ND	35	ND	180

Surrogate	%REC	Limits
Bromofluorobenzene	88	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-25	Diln Fac:	5.310
Lab ID:	279369-006	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	2.7	ND	13
Freon 114	ND	2.7	ND	19
Chloromethane	ND	2.7	ND	5.5
Vinyl Chloride	ND	2.7	ND	6.8
1,3-Butadiene	ND	2.7	ND	5.9
Bromomethane	ND	2.7	ND	10
Chloroethane	ND	2.7	ND	7.0
Trichlorofluoromethane	ND	2.7	ND	15
Acrolein	ND	11	ND	24
1,1-Dichloroethene	ND	2.7	ND	11
Freon 113	ND	2.7	ND	20
Acetone	ND	11	ND	25
Carbon Disulfide	100	2.7	310	8.3
Isopropanol	ND	11	ND	26
Methylene Chloride	ND	2.7	ND	9.2
trans-1,2-Dichloroethene	ND	2.7	ND	11
MTBE	ND	2.7	ND	9.6
n-Hexane	15	2.7	55	9.4
1,1-Dichloroethane	ND	2.7	ND	11
Vinyl Acetate	ND	2.7	ND	9.3
cis-1,2-Dichloroethene	ND	2.7	ND	11
2-Butanone	ND	2.7	ND	7.8
Ethyl Acetate	ND	2.7	ND	9.6
Tetrahydrofuran	ND	2.7	ND	7.8
Chloroform	ND	2.7	ND	13
1,1,1-Trichloroethane	ND	2.7	ND	14
Cyclohexane	11	2.7	37	9.1
Carbon Tetrachloride	ND	2.7	ND	17
Benzene	12	2.7	39	8.5
1,2-Dichloroethane	ND	2.7	ND	11
n-Heptane	7.1	2.7	29	11
Trichloroethene	ND	2.7	ND	14
1,2-Dichloropropane	ND	2.7	ND	12
Bromodichloromethane	ND	2.7	ND	18
cis-1,3-Dichloropropene	ND	2.7	ND	12

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-25	Diln Fac:	5.310
Lab ID:	279369-006	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	2.7	ND	11
Toluene	12	2.7	47	10
trans-1,3-Dichloropropene	ND	2.7	ND	12
1,1,2-Trichloroethane	ND	2.7	ND	14
Tetrachloroethene	ND	2.7	ND	18
2-Hexanone	ND	2.7	ND	11
Dibromochloromethane	ND	2.7	ND	23
1,2-Dibromoethane	ND	2.7	ND	20
Chlorobenzene	ND	2.7	ND	12
Ethylbenzene	62	2.7	270	12
m,p-Xylenes	240	2.7	1,100	12
o-Xylene	78	2.7	340	12
Styrene	ND	2.7	ND	11
Bromoform	ND	2.7	ND	27
1,1,2,2-Tetrachloroethane	ND	2.7	ND	18
4-Ethyltoluene	ND	2.7	ND	13
1,3,5-Trimethylbenzene	ND	2.7	ND	13
1,2,4-Trimethylbenzene	ND	2.7	ND	13
1,3-Dichlorobenzene	ND	2.7	ND	16
1,4-Dichlorobenzene	ND	2.7	ND	16
Benzyl chloride	ND	2.7	ND	14
1,2-Dichlorobenzene	ND	2.7	ND	16
1,2,4-Trichlorobenzene	ND	2.7	ND	20
Hexachlorobutadiene	ND	2.7	ND	28
Naphthalene	ND	11	ND	56

Surrogate	%REC	Limits
Bromofluorobenzene	98	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-26	Diln Fac:	2.170
Lab ID:	279369-007	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	1.1	ND	5.4
Freon 114	ND	1.1	ND	7.6
Chloromethane	ND	1.1	ND	2.2
Vinyl Chloride	ND	1.1	ND	2.8
1,3-Butadiene	ND	1.1	ND	2.4
Bromomethane	ND	1.1	ND	4.2
Chloroethane	ND	1.1	ND	2.9
Trichlorofluoromethane	ND	1.1	ND	6.1
Acrolein	ND	4.3	ND	10
1,1-Dichloroethene	ND	1.1	ND	4.3
Freon 113	ND	1.1	ND	8.3
Acetone	5.4	4.3	13	10
Carbon Disulfide	33	1.1	100	3.4
Isopropanol	ND	4.3	ND	11
Methylene Chloride	ND	1.1	ND	3.8
trans-1,2-Dichloroethene	ND	1.1	ND	4.3
MTBE	ND	1.1	ND	3.9
n-Hexane	4.0	1.1	14	3.8
1,1-Dichloroethane	ND	1.1	ND	4.4
Vinyl Acetate	ND	1.1	ND	3.8
cis-1,2-Dichloroethene	ND	1.1	ND	4.3
2-Butanone	1.1	1.1	3.2	3.2
Ethyl Acetate	ND	1.1	ND	3.9
Tetrahydrofuran	ND	1.1	ND	3.2
Chloroform	ND	1.1	ND	5.3
1,1,1-Trichloroethane	ND	1.1	ND	5.9
Cyclohexane	3.6	1.1	12	3.7
Carbon Tetrachloride	ND	1.1	ND	6.8
Benzene	7.2	1.1	23	3.5
1,2-Dichloroethane	ND	1.1	ND	4.4
n-Heptane	2.5	1.1	10	4.4
Trichloroethene	ND	1.1	ND	5.8
1,2-Dichloropropane	ND	1.1	ND	5.0
Bromodichloromethane	ND	1.1	ND	7.3
cis-1,3-Dichloropropene	ND	1.1	ND	4.9

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-26	Diln Fac:	2.170
Lab ID:	279369-007	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	1.1	ND	4.4
Toluene	7.6	1.1	28	4.1
trans-1,3-Dichloropropene	ND	1.1	ND	4.9
1,1,2-Trichloroethane	ND	1.1	ND	5.9
Tetrachloroethene	1.1	1.1	7.6	7.4
2-Hexanone	ND	1.1	ND	4.4
Dibromochloromethane	ND	1.1	ND	9.2
1,2-Dibromoethane	ND	1.1	ND	8.3
Chlorobenzene	ND	1.1	ND	5.0
Ethylbenzene	40	1.1	180	4.7
m,p-Xylenes	150	1.1	660	4.7
o-Xylene	61	1.1	260	4.7
Styrene	ND	1.1	ND	4.6
Bromoform	ND	1.1	ND	11
1,1,2,2-Tetrachloroethane	ND	1.1	ND	7.4
4-Ethyltoluene	ND	1.1	ND	5.3
1,3,5-Trimethylbenzene	ND	1.1	ND	5.3
1,2,4-Trimethylbenzene	ND	1.1	ND	5.3
1,3-Dichlorobenzene	ND	1.1	ND	6.5
1,4-Dichlorobenzene	ND	1.1	ND	6.5
Benzyl chloride	ND	1.1	ND	5.6
1,2-Dichlorobenzene	ND	1.1	ND	6.5
1,2,4-Trichlorobenzene	ND	1.1	ND	8.1
Hexachlorobutadiene	ND	1.1	ND	12
Naphthalene	ND	4.3	ND	23

Surrogate	%REC	Limits
Bromofluorobenzene	98	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-27	Diln Fac:	3.920
Lab ID:	279369-008	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	2.0	ND	9.7
Freon 114	ND	2.0	ND	14
Chloromethane	ND	2.0	ND	4.0
Vinyl Chloride	ND	2.0	ND	5.0
1,3-Butadiene	ND	2.0	ND	4.3
Bromomethane	ND	2.0	ND	7.6
Chloroethane	ND	2.0	ND	5.2
Trichlorofluoromethane	ND	2.0	ND	11
Acrolein	ND	7.8	ND	18
1,1-Dichloroethene	ND	2.0	ND	7.8
Freon 113	ND	2.0	ND	15
Acetone	ND	7.8	ND	19
Carbon Disulfide	92	2.0	290	6.1
Isopropanol	ND	7.8	ND	19
Methylene Chloride	ND	2.0	ND	6.8
trans-1,2-Dichloroethene	ND	2.0	ND	7.8
MTBE	ND	2.0	ND	7.1
n-Hexane	18	2.0	64	6.9
1,1-Dichloroethane	ND	2.0	ND	7.9
Vinyl Acetate	ND	2.0	ND	6.9
cis-1,2-Dichloroethene	ND	2.0	ND	7.8
2-Butanone	ND	2.0	ND	5.8
Ethyl Acetate	ND	2.0	ND	7.1
Tetrahydrofuran	ND	2.0	ND	5.8
Chloroform	ND	2.0	ND	9.6
1,1,1-Trichloroethane	ND	2.0	ND	11
Cyclohexane	15	2.0	51	6.7
Carbon Tetrachloride	ND	2.0	ND	12
Benzene	23	2.0	73	6.3
1,2-Dichloroethane	ND	2.0	ND	7.9
n-Heptane	7.5	2.0	31	8.0
Trichloroethene	ND	2.0	ND	11
1,2-Dichloropropane	ND	2.0	ND	9.1
Bromodichloromethane	ND	2.0	ND	13
cis-1,3-Dichloropropene	ND	2.0	ND	8.9

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-27	Diln Fac:	3.920
Lab ID:	279369-008	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	2.0	ND	8.0
Toluene	13	2.0	48	7.4
trans-1,3-Dichloropropene	ND	2.0	ND	8.9
1,1,2-Trichloroethane	ND	2.0	ND	11
Tetrachloroethene	ND	2.0	ND	13
2-Hexanone	ND	2.0	ND	8.0
Dibromochloromethane	ND	2.0	ND	17
1,2-Dibromoethane	ND	2.0	ND	15
Chlorobenzene	ND	2.0	ND	9.0
Ethylbenzene	54	2.0	230	8.5
m,p-Xylenes	210	2.0	920	8.5
o-Xylene	75	2.0	330	8.5
Styrene	ND	2.0	ND	8.3
Bromoform	ND	2.0	ND	20
1,1,2,2-Tetrachloroethane	ND	2.0	ND	13
4-Ethyltoluene	ND	2.0	ND	9.6
1,3,5-Trimethylbenzene	ND	2.0	ND	9.6
1,2,4-Trimethylbenzene	ND	2.0	ND	9.6
1,3-Dichlorobenzene	ND	2.0	ND	12
1,4-Dichlorobenzene	ND	2.0	ND	12
Benzyl chloride	ND	2.0	ND	10
1,2-Dichlorobenzene	ND	2.0	ND	12
1,2,4-Trichlorobenzene	ND	2.0	ND	15
Hexachlorobutadiene	ND	2.0	ND	21
Naphthalene	ND	7.8	ND	41

Surrogate	%REC	Limits
Bromofluorobenzene	102	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SHROUD	Diln Fac:	1,188
Lab ID:	279369-009	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	590	ND	2,900
Freon 114	ND	590	ND	4,200
Chloromethane	ND	590	ND	1,200
Vinyl Chloride	ND	590	ND	1,500
1,3-Butadiene	ND	590	ND	1,300
Bromomethane	ND	590	ND	2,300
Chloroethane	ND	590	ND	1,600
Trichlorofluoromethane	ND	590	ND	3,300
Acrolein	ND	2,400	ND	5,400
1,1-Dichloroethene	ND	590	ND	2,400
Freon 113	ND	590	ND	4,600
Acetone	ND	2,400	ND	5,600
Carbon Disulfide	ND	590	ND	1,800
Isopropanol	74,000	2,400	180,000	5,800
Methylene Chloride	ND	590	ND	2,100
trans-1,2-Dichloroethene	ND	590	ND	2,400
MTBE	ND	590	ND	2,100
n-Hexane	ND	590	ND	2,100
1,1-Dichloroethane	ND	590	ND	2,400
Vinyl Acetate	ND	590	ND	2,100
cis-1,2-Dichloroethene	ND	590	ND	2,400
2-Butanone	ND	590	ND	1,800
Ethyl Acetate	ND	590	ND	2,100
Tetrahydrofuran	ND	590	ND	1,800
Chloroform	ND	590	ND	2,900
1,1,1-Trichloroethane	ND	590	ND	3,200
Cyclohexane	ND	590	ND	2,000
Carbon Tetrachloride	ND	590	ND	3,700
Benzene	ND	590	ND	1,900
1,2-Dichloroethane	ND	590	ND	2,400
n-Heptane	ND	590	ND	2,400
Trichloroethene	ND	590	ND	3,200
1,2-Dichloropropane	ND	590	ND	2,700
Bromodichloromethane	ND	590	ND	4,000
cis-1,3-Dichloropropene	ND	590	ND	2,700

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SHROUD	Diln Fac:	1,188
Lab ID:	279369-009	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	590	ND	2,400
Toluene	ND	590	ND	2,200
trans-1,3-Dichloropropene	ND	590	ND	2,700
1,1,2-Trichloroethane	ND	590	ND	3,200
Tetrachloroethene	ND	590	ND	4,000
2-Hexanone	ND	590	ND	2,400
Dibromochloromethane	ND	590	ND	5,100
1,2-Dibromoethane	ND	590	ND	4,600
Chlorobenzene	ND	590	ND	2,700
Ethylbenzene	ND	590	ND	2,600
m,p-Xylenes	ND	590	ND	2,600
o-Xylene	ND	590	ND	2,600
Styrene	ND	590	ND	2,500
Bromoform	ND	590	ND	6,100
1,1,2,2-Tetrachloroethane	ND	590	ND	4,100
4-Ethyltoluene	ND	590	ND	2,900
1,3,5-Trimethylbenzene	ND	590	ND	2,900
1,2,4-Trimethylbenzene	ND	590	ND	2,900
1,3-Dichlorobenzene	ND	590	ND	3,600
1,4-Dichlorobenzene	ND	590	ND	3,600
Benzyl chloride	ND	590	ND	3,100
1,2-Dichlorobenzene	ND	590	ND	3,600
1,2,4-Trichlorobenzene	ND	590	ND	4,400
Hexachlorobutadiene	ND	590	ND	6,300
Naphthalene	ND	2,400	ND	12,000

Surrogate	%REC	Limits
Bromofluorobenzene	83	80-121

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Type: BS Lab ID: QC846127

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	11.18	112	70-130
Freon 114	10.00	12.41	124	70-130
Chloromethane	10.00	7.678	77	70-130
Vinyl Chloride	10.00	8.227	82	70-130
1,3-Butadiene	10.00	9.598	96	70-130
Bromomethane	10.00	9.072	91	70-130
Chloroethane	10.00	10.34	103	70-130
Trichlorofluoromethane	10.00	12.65	126	70-130
Acrolein	10.00	6.964	70	70-130
1,1-Dichloroethene	10.00	10.45	104	70-130
Freon 113	10.00	12.18	122	70-130
Acetone	10.00	9.963	100	70-130
Carbon Disulfide	10.00	8.586	86	70-130
Isopropanol	10.00	8.594	86	70-130
Methylene Chloride	10.00	8.996	90	70-130
trans-1,2-Dichloroethene	10.00	10.04	100	70-130
MTBE	10.00	9.676	97	70-130
n-Hexane	10.00	10.04	100	70-130
1,1-Dichloroethane	10.00	10.61	106	70-130
Vinyl Acetate	10.00	9.411	94	70-130
cis-1,2-Dichloroethene	10.00	8.861	89	70-130
2-Butanone	10.00	10.95	109	70-130
Ethyl Acetate	10.00	12.09	121	70-130
Tetrahydrofuran	10.00	9.428	94	70-130
Chloroform	10.00	9.789	98	70-130
1,1,1-Trichloroethane	10.00	10.23	102	70-130
Cyclohexane	10.00	9.697	97	70-130
Carbon Tetrachloride	10.00	9.021	90	70-130
Benzene	10.00	8.669	87	70-130
1,2-Dichloroethane	10.00	8.508	85	70-130
n-Heptane	10.00	8.927	89	70-130
Trichloroethene	10.00	9.682	97	70-130
1,2-Dichloropropane	10.00	8.659	87	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
Bromodichloromethane	10.00	9.295	93	70-130
cis-1,3-Dichloropropene	10.00	8.122	81	70-130
4-Methyl-2-Pentanone	10.00	9.222	92	70-130
Toluene	10.00	8.854	89	70-130
trans-1,3-Dichloropropene	10.00	7.784	78	70-130
1,1,2-Trichloroethane	10.00	10.09	101	70-130
Tetrachloroethene	10.00	10.35	104	70-130
2-Hexanone	10.00	7.414	74	70-130
Dibromochloromethane	10.00	9.075	91	70-130
1,2-Dibromoethane	10.00	9.351	94	70-130
Chlorobenzene	10.00	8.532	85	70-130
Ethylbenzene	10.00	8.172	82	70-130
m,p-Xylenes	20.00	16.88	84	70-130
o-Xylene	10.00	8.549	85	70-130
Styrene	10.00	8.674	87	70-130
Bromoform	10.00	9.081	91	70-130
1,1,2,2-Tetrachloroethane	10.00	8.075	81	70-130
4-Ethyltoluene	10.00	7.772	78	70-130
1,3,5-Trimethylbenzene	10.00	8.402	84	70-130
1,2,4-Trimethylbenzene	10.00	7.615	76	70-130
1,3-Dichlorobenzene	10.00	8.841	88	70-130
1,4-Dichlorobenzene	10.00	8.935	89	70-130
Benzyl chloride	10.00	7.195	72	70-130
1,2-Dichlorobenzene	10.00	8.740	87	70-130
1,2,4-Trichlorobenzene	10.00	9.371	94	70-130
Hexachlorobutadiene	10.00	8.933	89	70-130
Naphthalene	10.00	10.03	100	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	95	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC846128

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	11.49	115	70-130	3	25
Freon 114	10.00	12.97	130	70-130	4	25
Chloromethane	10.00	7.729	77	70-130	1	25
Vinyl Chloride	10.00	8.493	85	70-130	3	25
1,3-Butadiene	10.00	9.911	99	70-130	3	25
Bromomethane	10.00	9.358	94	70-130	3	25
Chloroethane	10.00	10.80	108	70-130	4	25
Trichlorofluoromethane	10.00	13.22	132 *	70-130	4	25
Acrolein	10.00	7.232	72	70-130	4	25
1,1-Dichloroethene	10.00	10.81	108	70-130	3	25
Freon 113	10.00	12.57	126	70-130	3	25
Acetone	10.00	10.20	102	70-130	2	25
Carbon Disulfide	10.00	8.900	89	70-130	4	25
Isopropanol	10.00	9.213	92	70-130	7	25
Methylene Chloride	10.00	9.355	94	70-130	4	25
trans-1,2-Dichloroethene	10.00	10.39	104	70-130	3	25
MTBE	10.00	10.24	102	70-130	6	25
n-Hexane	10.00	10.60	106	70-130	5	25
1,1-Dichloroethane	10.00	11.07	111	70-130	4	25
Vinyl Acetate	10.00	9.640	96	70-130	2	25
cis-1,2-Dichloroethene	10.00	9.195	92	70-130	4	25
2-Butanone	10.00	11.24	112	70-130	3	25
Ethyl Acetate	10.00	12.42	124	70-130	3	25
Tetrahydrofuran	10.00	8.996	90	70-130	5	25
Chloroform	10.00	10.12	101	70-130	3	25
1,1,1-Trichloroethane	10.00	9.967	100	70-130	3	25
Cyclohexane	10.00	9.472	95	70-130	2	25
Carbon Tetrachloride	10.00	8.708	87	70-130	4	25
Benzene	10.00	8.530	85	70-130	2	25
1,2-Dichloroethane	10.00	8.315	83	70-130	2	25
n-Heptane	10.00	8.742	87	70-130	2	25
Trichloroethene	10.00	9.606	96	70-130	1	25
1,2-Dichloropropane	10.00	8.495	85	70-130	2	25

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Bromodichloromethane	10.00	9.145	91	70-130	2	25
cis-1,3-Dichloropropene	10.00	8.145	81	70-130	0	25
4-Methyl-2-Pentanone	10.00	8.953	90	70-130	3	25
Toluene	10.00	9.095	91	70-130	3	25
trans-1,3-Dichloropropene	10.00	7.898	79	70-130	1	25
1,1,2-Trichloroethane	10.00	10.31	103	70-130	2	25
Tetrachloroethene	10.00	10.59	106	70-130	2	25
2-Hexanone	10.00	7.736	77	70-130	4	25
Dibromochloromethane	10.00	9.404	94	70-130	4	25
1,2-Dibromoethane	10.00	9.606	96	70-130	3	25
Chlorobenzene	10.00	8.732	87	70-130	2	25
Ethylbenzene	10.00	8.522	85	70-130	4	25
m,p-Xylenes	20.00	17.41	87	70-130	3	25
o-Xylene	10.00	8.905	89	70-130	4	25
Styrene	10.00	9.183	92	70-130	6	25
Bromoform	10.00	9.165	92	70-130	1	25
1,1,2,2-Tetrachloroethane	10.00	8.174	82	70-130	1	25
4-Ethyltoluene	10.00	8.111	81	70-130	4	25
1,3,5-Trimethylbenzene	10.00	8.740	87	70-130	4	25
1,2,4-Trimethylbenzene	10.00	8.059	81	70-130	6	25
1,3-Dichlorobenzene	10.00	9.355	94	70-130	6	25
1,4-Dichlorobenzene	10.00	9.476	95	70-130	6	25
Benzyl chloride	10.00	7.423	74	70-130	3	25
1,2-Dichlorobenzene	10.00	9.091	91	70-130	4	25
1,2,4-Trichlorobenzene	10.00	9.903	99	70-130	6	25
Hexachlorobutadiene	10.00	9.471	95	70-130	6	25
Naphthalene	10.00	10.68	107	70-130	6	25

Surrogate	%REC	Limits
Bromofluorobenzene	98	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846129	Diln Fac:	1.000
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Isopropanol	ND	2.0	ND	4.9
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846129	Diln Fac:	1.000
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.50	ND	2.0
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

Surrogate	%REC	Limits
Bromofluorobenzene	86	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Type: BS Lab ID: QC846272

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	11.19	112	70-130
Freon 114	10.00	12.58	126	70-130
Chloromethane	10.00	7.585	76	70-130
Vinyl Chloride	10.00	8.189	82	70-130
1,3-Butadiene	10.00	9.802	98	70-130
Bromomethane	10.00	9.152	92	70-130
Chloroethane	10.00	10.74	107	70-130
Trichlorofluoromethane	10.00	12.93	129	70-130
Acrolein	10.00	7.027	70	70-130
1,1-Dichloroethene	10.00	10.61	106	70-130
Freon 113	10.00	12.18	122	70-130
Acetone	10.00	10.46	105	70-130
Carbon Disulfide	10.00	8.664	87	70-130
Isopropanol	10.00	8.655	87	70-130
Methylene Chloride	10.00	9.049	90	70-130
trans-1,2-Dichloroethene	10.00	10.20	102	70-130
MTBE	10.00	9.940	99	70-130
n-Hexane	10.00	10.39	104	70-130
1,1-Dichloroethane	10.00	10.76	108	70-130
Vinyl Acetate	10.00	9.643	96	70-130
cis-1,2-Dichloroethene	10.00	8.990	90	70-130
2-Butanone	10.00	11.03	110	70-130
Ethyl Acetate	10.00	12.18	122	70-130
Tetrahydrofuran	10.00	8.943	89	70-130
Chloroform	10.00	9.958	100	70-130
1,1,1-Trichloroethane	10.00	10.05	101	70-130
Cyclohexane	10.00	9.553	96	70-130
Carbon Tetrachloride	10.00	8.571	86	70-130
Benzene	10.00	8.554	86	70-130
1,2-Dichloroethane	10.00	8.425	84	70-130
n-Heptane	10.00	8.826	88	70-130
Trichloroethene	10.00	9.889	99	70-130
1,2-Dichloropropane	10.00	8.683	87	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
Bromodichloromethane	10.00	9.195	92	70-130
cis-1,3-Dichloropropene	10.00	8.246	82	70-130
4-Methyl-2-Pentanone	10.00	9.098	91	70-130
Toluene	10.00	9.256	93	70-130
trans-1,3-Dichloropropene	10.00	7.903	79	70-130
1,1,2-Trichloroethane	10.00	10.97	110	70-130
Tetrachloroethene	10.00	11.03	110	70-130
2-Hexanone	10.00	7.430	74	70-130
Dibromochloromethane	10.00	9.546	95	70-130
1,2-Dibromoethane	10.00	9.856	99	70-130
Chlorobenzene	10.00	9.091	91	70-130
Ethylbenzene	10.00	8.787	88	70-130
m,p-Xylenes	20.00	17.62	88	70-130
o-Xylene	10.00	8.985	90	70-130
Styrene	10.00	9.275	93	70-130
Bromoform	10.00	8.885	89	70-130
1,1,2,2-Tetrachloroethane	10.00	8.464	85	70-130
4-Ethyltoluene	10.00	8.184	82	70-130
1,3,5-Trimethylbenzene	10.00	8.725	87	70-130
1,2,4-Trimethylbenzene	10.00	8.294	83	70-130
1,3-Dichlorobenzene	10.00	9.530	95	70-130
1,4-Dichlorobenzene	10.00	9.722	97	70-130
Benzyl chloride	10.00	7.427	74	70-130
1,2-Dichlorobenzene	10.00	9.325	93	70-130
1,2,4-Trichlorobenzene	10.00	9.821	98	70-130
Hexachlorobutadiene	10.00	9.757	98	70-130
Naphthalene	10.00	10.78	108	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	96	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC846273

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	11.78	118	70-130	5	25
Freon 114	10.00	12.53	125	70-130	0	25
Chloromethane	10.00	8.917	89	70-130	16	25
Vinyl Chloride	10.00	9.474	95	70-130	15	25
1,3-Butadiene	10.00	10.64	106	70-130	8	25
Bromomethane	10.00	10.42	104	70-130	13	25
Chloroethane	10.00	11.15	112	70-130	4	25
Trichlorofluoromethane	10.00	13.50	135 *	70-130	4	25
Acrolein	10.00	7.187	72	70-130	2	25
1,1-Dichloroethene	10.00	10.89	109	70-130	3	25
Freon 113	10.00	12.53	125	70-130	3	25
Acetone	10.00	10.43	104	70-130	0	25
Carbon Disulfide	10.00	9.322	93	70-130	7	25
Isopropanol	10.00	8.846	88	70-130	2	25
Methylene Chloride	10.00	9.576	96	70-130	6	25
trans-1,2-Dichloroethene	10.00	10.75	108	70-130	5	25
MTBE	10.00	10.32	103	70-130	4	25
n-Hexane	10.00	10.41	104	70-130	0	25
1,1-Dichloroethane	10.00	11.00	110	70-130	2	25
Vinyl Acetate	10.00	9.935	99	70-130	3	25
cis-1,2-Dichloroethene	10.00	9.244	92	70-130	3	25
2-Butanone	10.00	11.12	111	70-130	1	25
Ethyl Acetate	10.00	12.53	125	70-130	3	25
Tetrahydrofuran	10.00	8.791	88	70-130	2	25
Chloroform	10.00	10.18	102	70-130	2	25
1,1,1-Trichloroethane	10.00	9.988	100	70-130	1	25
Cyclohexane	10.00	9.488	95	70-130	1	25
Carbon Tetrachloride	10.00	8.434	84	70-130	2	25
Benzene	10.00	8.657	87	70-130	1	25
1,2-Dichloroethane	10.00	8.408	84	70-130	0	25
n-Heptane	10.00	8.871	89	70-130	1	25
Trichloroethene	10.00	9.689	97	70-130	2	25
1,2-Dichloropropane	10.00	8.502	85	70-130	2	25

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Bromodichloromethane	10.00	9.045	90	70-130	2	25
cis-1,3-Dichloropropene	10.00	8.241	82	70-130	0	25
4-Methyl-2-Pentanone	10.00	9.112	91	70-130	0	25
Toluene	10.00	9.528	95	70-130	3	25
trans-1,3-Dichloropropene	10.00	8.100	81	70-130	2	25
1,1,2-Trichloroethane	10.00	11.23	112	70-130	2	25
Tetrachloroethene	10.00	11.23	112	70-130	2	25
2-Hexanone	10.00	7.796	78	70-130	5	25
Dibromochloromethane	10.00	9.747	97	70-130	2	25
1,2-Dibromoethane	10.00	10.25	102	70-130	4	25
Chlorobenzene	10.00	9.134	91	70-130	0	25
Ethylbenzene	10.00	8.684	87	70-130	1	25
m,p-Xylenes	20.00	17.96	90	70-130	2	25
o-Xylene	10.00	9.168	92	70-130	2	25
Styrene	10.00	9.345	93	70-130	1	25
Bromoform	10.00	9.147	91	70-130	3	25
1,1,2,2-Tetrachloroethane	10.00	8.821	88	70-130	4	25
4-Ethyltoluene	10.00	8.381	84	70-130	2	25
1,3,5-Trimethylbenzene	10.00	8.967	90	70-130	3	25
1,2,4-Trimethylbenzene	10.00	8.534	85	70-130	3	25
1,3-Dichlorobenzene	10.00	9.668	97	70-130	1	25
1,4-Dichlorobenzene	10.00	9.432	94	70-130	3	25
Benzyl chloride	10.00	7.344	73	70-130	1	25
1,2-Dichlorobenzene	10.00	9.540	95	70-130	2	25
1,2,4-Trichlorobenzene	10.00	10.16	102	70-130	3	25
Hexachlorobutadiene	10.00	9.849	98	70-130	1	25
Naphthalene	10.00	10.83	108	70-130	0	25

Surrogate	%REC	Limits
Bromofluorobenzene	95	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846274	Diln Fac:	1.000
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Isopropanol	ND	2.0	ND	4.9
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846274	Diln Fac:	1.000
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.50	ND	2.0
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

Surrogate	%REC	Limits
Bromofluorobenzene	86	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
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10 August 2016

Bob Clark-Riddell
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA 94612

RE: 1233 Bockman Rd

Enclosed are the results of analyses for samples received by the laboratory on 07/30/16 10:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Katherine RunningCrane For Rose Fasheh
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SV-8	T161773-01	Air	07/28/16 17:18	07/30/16 10:00
SV-10	T161773-02	Air	07/28/16 13:56	07/30/16 10:00
SV-11	T161773-03	Air	07/28/16 17:09	07/30/16 10:00
SV-12	T161773-04	Air	07/28/16 16:54	07/30/16 10:00
SV-13	T161773-05	Air	07/28/16 07:53	07/30/16 10:00
SV-17	T161773-06	Air	07/28/16 18:00	07/30/16 10:00
SV-18	T161773-07	Air	07/28/16 16:30	07/30/16 10:00
SV-19	T161773-08	Air	07/28/16 17:11	07/30/16 10:00
Shroud	T161773-09	Air	07/28/16 17:20	07/30/16 10:00

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Katherine RunningCrane

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

DETECTIONS SUMMARY

Sample ID: SV-8 **Laboratory ID:** T161773-01

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**180**	160	ug/m³ Air	TO-15	TO-14
Tetrachloroethene	**640**	350	ug/m³ Air	TO-15	TO-14

Sample ID: SV-10 **Laboratory ID:** T161773-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**64**	160	ug/m³ Air	TO-15	TO-14, J
Tetrachloroethene	**2000**	350	ug/m³ Air	TO-15	TO-14
Trichloroethene	**170**	270	ug/m³ Air	TO-15	TO-14, J

Sample ID: SV-11 **Laboratory ID:** T161773-03

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**98**	160	ug/m³ Air	TO-15	TO-14, J
Tetrachloroethene	**2600**	350	ug/m³ Air	TO-15	TO-14
Trichloroethene	**150**	270	ug/m³ Air	TO-15	TO-14, J

Sample ID: SV-12 **Laboratory ID:** T161773-04

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**150**	160	ug/m³ Air	TO-15	TO-14, J
Tetrachloroethene	**930**	350	ug/m³ Air	TO-15	TO-14
Trichloroethene	**76**	270	ug/m³ Air	TO-15	TO-14, J
m,p-Xylene	**110**	220	ug/m³ Air	TO-15	TO-14, J

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

Sample ID: SV-13 **Laboratory ID:** T161773-05

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**110**	160	ug/m³ Air	TO-15	TO-14, J
Tetrachloroethene	**100**	350	ug/m³ Air	TO-15	TO-14, J
Ethylbenzene	**380**	220	ug/m³ Air	TO-15	TO-14
m,p-Xylene	**1100**	220	ug/m³ Air	TO-15	TO-14
o-Xylene	**370**	220	ug/m³ Air	TO-15	TO-14

Sample ID: SV-17 **Laboratory ID:** T161773-06

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**170**	3.2	ug/m³ Air	TO-15	
Isopropyl alcohol	**150**	13	ug/m³ Air	TO-15	
Heptane	**11**	4.2	ug/m³ Air	TO-15	
Tetrachloroethene	**20**	6.9	ug/m³ Air	TO-15	
Trichloroethene	**9.7**	5.5	ug/m³ Air	TO-15	
Benzene	**34**	3.3	ug/m³ Air	TO-15	
Toluene	**13**	3.8	ug/m³ Air	TO-15	
Ethylbenzene	**28**	4.4	ug/m³ Air	TO-15	
m,p-Xylene	**160**	8.8	ug/m³ Air	TO-15	
o-Xylene	**31**	4.4	ug/m³ Air	TO-15	

Sample ID: SV-18 **Laboratory ID:** T161773-07

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**570**	3.2	ug/m³ Air	TO-15	
Isopropyl alcohol	**7.9**	13	ug/m³ Air	TO-15	J
Heptane	**89**	4.2	ug/m³ Air	TO-15	
Hexane	**110**	3.6	ug/m³ Air	TO-15	
Tetrachloroethene	**66**	6.9	ug/m³ Air	TO-15	
1,2,4-Trimethylbenzene	**8.3**	5.0	ug/m³ Air	TO-15	
Benzene	**54**	3.3	ug/m³ Air	TO-15	
Toluene	**59**	3.8	ug/m³ Air	TO-15	
Ethylbenzene	**1100**	4.4	ug/m³ Air	TO-15	
m,p-Xylene	**2300**	8.8	ug/m³ Air	TO-15	
o-Xylene	**890**	4.4	ug/m³ Air	TO-15	

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PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

Sample ID: SV-19 **Laboratory ID:** T161773-08

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon Disulfide	**65**	3.2	ug/m³ Air	TO-15	
Isopropyl alcohol	**8.7**	13	ug/m³ Air	TO-15	J
Heptane	**54**	4.2	ug/m³ Air	TO-15	
Hexane	**26**	3.6	ug/m³ Air	TO-15	
Tetrachloroethene	**20**	6.9	ug/m³ Air	TO-15	
Trichloroethene	**11**	5.5	ug/m³ Air	TO-15	
1,2,4-Trimethylbenzene	**8.7**	5.0	ug/m³ Air	TO-15	
Benzene	**15**	3.3	ug/m³ Air	TO-15	
Toluene	**40**	3.8	ug/m³ Air	TO-15	
Ethylbenzene	**900**	4.4	ug/m³ Air	TO-15	
m,p-Xylene	**1800**	8.8	ug/m³ Air	TO-15	
o-Xylene	**690**	4.4	ug/m³ Air	TO-15	

Sample ID: Shroud **Laboratory ID:** T161773-09

Analyte	Result	Reporting Limit	Units	Method	Notes
Isopropyl alcohol	**130000**	130	ug/m³ Air	TO-15	TO-14
Tetrachloroethene	**98**	350	ug/m³ Air	TO-15	TO-14, J

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Providing Quality Analytical Services Nationwide

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-8

T161773-01(Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	17	120	ug/m³ Air	2.9	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	**180**	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Katherine RunningCrane

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-8

T161773-01(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.										
TO-15										
Styrene	ND	13	220	ug/m³ Air	2.9	6080113	08/01/16	08/01/16	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	**640**	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-10

T161773-02(Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	17	120	ug/m³ Air	3.04	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	**64**	11	160	"	"	"	"	"	"	TO-14, J
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-10

T161773-02(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.										
TO-15										
Styrene	ND	13	220	ug/m³ Air	3.04	6080113	08/01/16	08/01/16	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	**2000**	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	**170**	8.7	270	"	"	"	"	"	"	TO-14, J
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

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SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-11

T161773-03(Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	17	120	ug/m³ Air	2.69	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	**98**	11	160	"	"	"	"	"	"	TO-14, J
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-11

T161773-03(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.										
TO-15										
Styrene	ND	13	220	ug/m³ Air	2.69	6080113	08/01/16	08/01/16	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	**2600**	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	**150**	8.7	270	"	"	"	"	"	"	TO-14, J
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-12

T161773-04(Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	17	120	ug/m³ Air	2.61	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	**150**	11	160	"	"	"	"	"	"	TO-14, J
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-12

T161773-04(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
				SunStar Laboratories, Inc.						
TO-15										
Styrene	ND	13	220	ug/m³ Air	2.61	6080113	08/01/16	08/01/16	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	**930**	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	**76**	8.7	270	"	"	"	"	"	"	TO-14, J
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	**110**	15	220	"	"	"	"	"	"	TO-14, J
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

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Lake Forest, California 92630
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949.297.5027 Fax

Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-13

T161773-05(Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	17	120	ug/m³ Air	1.56	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	**110**	11	160	"	"	"	"	"	"	TO-14, J
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-13

T161773-05(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
				SunStar Laboratories, Inc.						
TO-15										
Styrene	ND	13	220	ug/m³ Air	1.56	6080113	08/01/16	08/01/16	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	**100**	19	350	"	"	"	"	"	"	TO-14, J
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	**380**	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	**1100**	15	220	"	"	"	"	"	"	TO-14
o-Xylene	**370**	9.3	220	"	"	"	"	"	"	TO-14

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-17

T161773-06(Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	0.49	12	ug/m³ Air	1.65	6080113	08/01/16	08/01/16	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	**170**	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	**150**	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	**11**	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-17

T161773-06(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
				SunStar Laboratories, Inc.						
TO-15										
Styrene	ND	0.19	4.3	ug/m³ Air	1.65	6080113	08/01/16	08/01/16	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	**20**	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	**9.7**	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	**34**	0.14	3.3	"	"	"	"	"	"	
Toluene	**13**	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	**28**	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	**160**	0.20	8.8	"	"	"	"	"	"	
o-Xylene	**31**	0.085	4.4	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*68.0 %*	*40-160*		*"*	*"*	*"*	*"*	

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-18

T161773-07(Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	0.49	12	ug/m³ Air	2.73	6080113	08/01/16	08/01/16	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	**570**	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	**7.9**	0.56	13	"	"	"	"	"	"	J
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	**89**	0.15	4.2	"	"	"	"	"	"	
Hexane	**110**	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-18

T161773-07(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
				SunStar Laboratories, Inc.						
TO-15										
Styrene	ND	0.19	4.3	ug/m³ Air	2.73	6080113	08/01/16	08/01/16	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	**66**	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	ND	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**8.3**	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	**54**	0.14	3.3	"	"	"	"	"	"	
Toluene	**59**	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	**1100**	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	**2300**	0.20	8.8	"	"	"	"	"	"	
o-Xylene	**890**	0.085	4.4	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*77.3 %*	*40-160*		*"*	*"*	*"*	*"*	

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-19

T161773-08(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.										
TO-15										
Acetone	ND	0.49	12	ug/m³ Air	1.73	6080113	08/01/16	08/01/16	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	**65**	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	**8.7**	0.56	13	"	"	"	"	"	"	J
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	**54**	0.15	4.2	"	"	"	"	"	"	
Hexane	**26**	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

SV-19

T161773-08(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
				SunStar Laboratories, Inc.						
TO-15										
Styrene	ND	0.19	4.3	ug/m³ Air	1.73	6080113	08/01/16	08/01/16	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	**20**	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	**11**	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**8.7**	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	**15**	0.14	3.3	"	"	"	"	"	"	
Toluene	**40**	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	**900**	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	**1800**	0.20	8.8	"	"	"	"	"	"	
o-Xylene	**690**	0.085	4.4	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*85.1 %*	*40-160*		*"*	*"*	*"*	*"*	

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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

Shroud

T161773-09(Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	17	120	ug/m³ Air	1.64	6080113	08/01/16	08/01/16	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	**130000**	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Katherine RunningCrane

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

Shroud

T161773-09(Air)

SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Styrene	ND	13	220	ug/m³ Air	1.64	6080113	08/01/16	08/01/16	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	**98**	19	350	"	"	"	"	"	"	TO-14, J
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

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PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

TO-15 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080113 - Canister Analysis											
Blank (6080113-BLK1)				Prepared & Analyzed: 08/01/16							
Acetone	ND	17	120	ug/m³ Air							TO-14
1,3-Butadiene	ND	8.3	110	"							TO-14
Carbon Disulfide	ND	11	160	"							TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"							TO-14
Isopropyl alcohol	ND	22	130	"							TO-14
Bromodichloromethane	ND	15	340	"							TO-14
Bromoform	ND	26	530	"							TO-14
Bromomethane	ND	15	200	"							TO-14
Carbon tetrachloride	ND	12	320	"							TO-14
Chlorobenzene	ND	5.6	230	"							TO-14
Chloroethane	ND	11	130	"							TO-14
Chloroform	ND	9.4	250	"							TO-14
Chloromethane	ND	7.4	110	"							TO-14
Cyclohexane	ND	12	170	"							TO-14
Heptane	ND	21	210	"							TO-14
Hexane	ND	10	180	"							TO-14
Dibromochloromethane	ND	24	430	"							TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"							TO-14
1,2-Dichlorobenzene	ND	18	310	"							TO-14
1,3-Dichlorobenzene	ND	24	310	"							TO-14
1,4-Dichlorobenzene	ND	22	310	"							TO-14
Dichlorodifluoromethane	ND	15	250	"							TO-14
1,1-Dichloroethane	ND	10	210	"							TO-14
1,2-Dichloroethane	ND	14	210	"							TO-14
1,1-Dichloroethene	ND	6.5	200	"							TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"							TO-14
trans-1,2-Dichloroethene	ND	13	200	"							TO-14

SunStar Laboratories, Inc.

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PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

TO-15 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080113 - Canister Analysis											
Blank (6080113-BLK1)					Prepared & Analyzed: 08/01/16						
1,2-Dichloropropane	ND	24	240	ug/m³ Air							TO-14
cis-1,3-Dichloropropene	ND	13	230	"							TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"							TO-14
4-Ethyltoluene	ND	15	250	"							TO-14
Methylene chloride	ND	17	180	"							TO-14
Styrene	ND	13	220	"							TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"							TO-14
Tetrahydrofuran	ND	15	150	"							TO-14
Tetrachloroethene	ND	19	350	"							TO-14
1,1,2-Trichloroethane	ND	12	280	"							TO-14
1,1,1-Trichloroethane	ND	11	280	"							TO-14
Trichloroethene	ND	8.7	270	"							TO-14
Trichlorofluoromethane	ND	13	290	"							TO-14
1,3,5-Trimethylbenzene	ND	15	250	"							TO-14
1,2,4-Trimethylbenzene	ND	15	250	"							TO-14
Vinyl acetate	ND	9.7	180	"							TO-14
Vinyl chloride	ND	9.6	130	"							TO-14
1,4-Dioxane	ND	59	180	"							TO-14
2-Butanone (MEK)	ND	11	150	"							TO-14
Methyl isobutyl ketone	ND	50	210	"							TO-14
Benzene	ND	4.9	160	"							TO-14
Toluene	ND	11	190	"							TO-14
Ethylbenzene	ND	10	220	"							TO-14
m,p-Xylene	ND	15	220	"							TO-14
o-Xylene	ND	9.3	220	"							TO-14
Duplicate (6080113-DUP1)		**Source: T161773-01**			Prepared & Analyzed: 08/01/16						
Acetone	ND	17	120	ug/m³ Air		ND				30	TO-14

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SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
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Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

TO-15 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080113 - Canister Analysis											
Duplicate (6080113-DUP1)		**Source: T161773-01**			Prepared & Analyzed: 08/01/16						
1,3-Butadiene	ND	8.3	110	ug/m³ Air		ND				30	TO-14
Carbon Disulfide	167	11	160	"		177			5.48	30	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"		ND				30	TO-14
Isopropyl alcohol	ND	22	130	"		ND				30	TO-14
Bromodichloromethane	ND	15	340	"		ND				30	TO-14
Bromoform	ND	26	530	"		ND				30	TO-14
Bromomethane	ND	15	200	"		ND				30	TO-14
Carbon tetrachloride	ND	12	320	"		ND				30	TO-14
Chlorobenzene	ND	5.6	230	"		ND				30	TO-14
Chloroethane	ND	11	130	"		ND				30	TO-14
Chloroform	ND	9.4	250	"		ND				30	TO-14
Chloromethane	ND	7.4	110	"		ND				30	TO-14
Cyclohexane	ND	12	170	"		ND				30	TO-14
Heptane	ND	21	210	"		ND				30	TO-14
Hexane	ND	10	180	"		ND				30	TO-14
Dibromochloromethane	ND	24	430	"		ND				30	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"		ND				30	TO-14
1,2-Dichlorobenzene	ND	18	310	"		ND				30	TO-14
1,3-Dichlorobenzene	ND	24	310	"		ND				30	TO-14
1,4-Dichlorobenzene	ND	22	310	"		ND				30	TO-14
Dichlorodifluoromethane	ND	15	250	"		ND				30	TO-14
1,1-Dichloroethane	ND	10	210	"		ND				30	TO-14
1,2-Dichloroethane	ND	14	210	"		ND				30	TO-14
1,1-Dichloroethene	ND	6.5	200	"		ND				30	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"		ND				30	TO-14
trans-1,2-Dichloroethene	ND	13	200	"		ND				30	TO-14
1,2-Dichloropropane	ND	24	240	"		ND				30	TO-14

SunStar Laboratories, Inc.

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Katherine RunningCrane

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

TO-15 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6080113 - Canister Analysis											
Duplicate (6080113-DUP1)		**Source: T161773-01**		Prepared & Analyzed: 08/01/16							
cis-1,3-Dichloropropene	ND	13	230	ug/m³ Air		ND				30	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"		ND				30	TO-14
4-Ethyltoluene	ND	15	250	"		ND				30	TO-14
Methylene chloride	ND	17	180	"		ND				30	TO-14
Styrene	ND	13	220	"		ND				30	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"		ND				30	TO-14
Tetrahydrofuran	ND	15	150	"		ND				30	TO-14
Tetrachloroethene	568	19	350	"		645			12.6	30	TO-14
1,1,2-Trichloroethane	ND	12	280	"		ND				30	TO-14
1,1,1-Trichloroethane	ND	11	280	"		ND				30	TO-14
Trichloroethene	ND	8.7	270	"		ND				30	TO-14
Trichlorofluoromethane	ND	13	290	"		ND				30	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"		ND				30	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"		ND				30	TO-14
Vinyl acetate	ND	9.7	180	"		ND				30	TO-14
Vinyl chloride	ND	9.6	130	"		ND				30	TO-14
1,4-Dioxane	ND	59	180	"		ND				30	TO-14
2-Butanone (MEK)	ND	11	150	"		ND				30	TO-14
Methyl isobutyl ketone	ND	50	210	"		ND				30	TO-14
Benzene	ND	4.9	160	"		ND				30	TO-14
Toluene	ND	11	190	"		ND				30	TO-14
Ethylbenzene	ND	10	220	"		ND				30	TO-14
m,p-Xylene	ND	15	220	"		ND				30	TO-14
o-Xylene	ND	9.3	220	"		ND				30	TO-14

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Pangea Environmental Services, Inc.	Project: 1233 Bockman Rd	
1710 Franklin Street, Suite 200	Project Number: [none]	**Reported:**
Oakland CA, 94612	Project Manager: Bob Clark-Riddell	08/10/16 15:11

Notes and Definitions

TO-14	TO-15 analysis of sample was not performed due to high concentration of analyte(s). Sample was analyzed utilizing method TO-14 and reporting limit has been adjusted accordingly.
J	Detected but below the Standard Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the Method Detection Limit (MDL)
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Katherine RunningCrane

AIR LABORATORY

Chain of Custody Record

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE
25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Client: Pangea Env. Svs
Address: 1710 Franklin St. Oakland
Phone: 510-836-3700 Fax:
Project Manager: Bob Clark-Riddell

Date: 7.29.16 Page: 1 Of 1
Project Name: 1233 Beckman Rd
Collector: B. Lervaag Client Project #:
Batch #: 761773 EDF #:

briddell@pangeaenv.com

Sample ID	Date Sampled	Start Time	Finish Time	Sample Type: Soil Gas / Indoor Air	Container Type: Summa Can / Tedlar	Initial Pressure	Final Pressure	TO-3	TO-14	TO-15	8015m Methane	8015m Gasoline	Fixed Gases by TCD	H2S	Summa Can # / Comments	Laboratory ID #
SV-8	7.28.16	1718	1842	SG	Summa	30	15			X				X	SSAT-658	01
SV-10		1356	1439			30	15			X				X	SSAT-0395	02
SV-11		1709	1817			30	15			X					SSAT-0738	03
SV-12		1654	1754			30	15			X					SSAT-0398	04
SV-13		0753	0918			30	5			X				X	SSAT-0346	05
SV-17		1800	1808			30	5			X					SSAT-612	06
SV-18		1630	1640			30	15			X				X	SSAT-0345	07
SV-19		1911	1918	SG		30	5			X				X	SSAT-0763	08
Shroud	7.28.16	1720	1728		Summa	30	5							X	SSAT-0199	09

48 HRS

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	7.29.16 0810	Ed Stevens	7/29/16 810
GSO	7.30.16 10:00		7-30-16 10:00
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold
Turn around time: 48hr

Notes
2 DAY TAT with results by Monday 8/1/16 per Bill

* TO-15 SIM analysis available upon prior notification. **(Precertified Summa cans needed)**

COCAL 146487

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: 7161773

Client Name: PANGEA ENV. Project: 1233 BOCKMAN RD

Delivered by: ☐ Client ☐ SunStar Courier ☒ GSO ☐ FedEx ☐ Other

If Courier, Received by: _____ Date/Time Courier Received: _____

Lab Received by: SUNNY Date/Time Lab Received: 7.30.16 / 10:00

Total number of coolers received: 0

Temperature: Cooler #1	—	°C +/- the CF (- 0.2°C) =	— °C corrected temperature
Temperature: Cooler #2		°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature: Cooler #3		°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria?	☐ **Yes** ☐ **No**
If NO:			
Samples received on ice?		☐ Yes	☐ **No → Complete Non-Conformance Sheet**
If on ice, samples received same day collected?		☐ Yes → Acceptable	☐ **No → Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample	☒ Yes	☐ No*	☐ N/A
Sample containers intact	☒ Yes	☐ No*	
Sample labels match Chain of Custody IDs	☒ Yes	☐ No*	
Total number of containers received match COC	☒ Yes	☐ No*	
Proper containers received for analyses requested on COC	☒ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☐ Yes	☐ No*	☒ N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☒ **Yes**	☐ **No***	

* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date: SL 7.30.16

Comments:

(949) 297-5020 ■ www.sunstarlabs.com ■ 25712 Commercentre Drive ■ Lake Forest, CA 92630

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

Project Name:				
Company: PANGEA		Name: MORGAN GILLIES		
		Phone:		
Item		Quantity		Unit
2 oz Jars 24/CS				
4 oz Jars 24/CS				
8 oz Jars 12/CS				
40 ml unpreserved VOAs 100/box				
40 ml HCL-preserved VOAs 72/box				
250 ml Poly 24/CS				
1 Liter Poly 12/CS				
500 ml Poly 16/CS				
500 ml Amber Bottle Wide 12/CS				
1 Liter Amber Bottle 12/CS				
1 Gallon Poly 4/box				
5035 kits:(2)Sodium Bisulfate VOAs 72/box				
	(1) Methanol VOA 72/box			
	(1)Syringe 50/pack			
Lock-N-Load Handle 1/pack				
Tedlar Bags 10/pack				
Manifold, Inst. Sampler, Variable Sampler		3 -150 MANIFOLDS		CHARGE - 2
Sub Slab Insert w/ washer & N/F				
Soil Gas SS 16" Drop Tubes				
Gas Extraction Fittings				
Soil Gas Filters				
		# SENT	USED	UNUSED
Batch Certified Summa Canisters	400cc			
	1L	5 - P, 3-N	5-P, 3-N	
	3L			
	6L			
Individually Certified Summa Canisters	400cc			
	1L	8	8	
	3L			
	6L			
Cooler (Sm, Med, Lrg) Number & Quantity				
Swagelok Fittings: Nuts/Ferrules, Ts		8 X NUT/FERRLES		8 RETURNED
Other: Poly Tube, Valves,Silicon Tape, etc.				
Prepared By: BRIAN		Date: 7/22/16		
Reviewed By:		Date :		

949-297-5020
www.SunStarLabs.com
25712 Commercentre Dr, Lake Forest CA 92630

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

Project Name:				
Company: PANGEA		Name: MORGAN GILLIES		
		Phone:		
Item		Quantity		Unit
2 oz Jars 24/CS				
4 oz Jars 24/CS				
8 oz Jars 12/CS				
40 ml unpreserved VOAs 100/box				
40 ml HCL-preserved VOAs 72/box				
250 ml Poly 24/CS				
1 Liter Poly 12/CS				
500 ml Poly 16/CS				
500 ml Amber Bottle Wide 12/CS				
1 Liter Amber Bottle 12/CS				
1 Gallon Poly 4/box				
5035 kits:(2)Sodium Bisulfate VOAs 72/box				
	(1) Methanol VOA 72/box			
	(1)Syringe 50/pack			
Lock-N-Load Handle 1/pack				
Tedlar Bags 10/pack				
Manifold, Inst. Sampler, Variable Sampler				
Sub Slab Insert w/ washer & N/F				
Soil Gas SS 16" Drop Tubes				
Gas Extraction Fittings				
Soil Gas Filters				
		# SENT	USED	UNUSED
Batch Certified Summa Canisters	400cc			
	1L			
	3L			
	6L			
Individually Certified Summa Canisters	400cc			
	1L	4	1	3
	3L			
	6L			
Cooler (Sm, Med, Lrg) Number & Quantity				
Swagelok Fittings: Nuts/Ferrules, Ts		4 X NUT/FERRLES		4 RETURNED
Other: Poly Tube, Valves,Silicon Tape, etc.				
Prepared By: BRIAN		Date: 7/25/16		
Reviewed By:		Date :		

949-297-5020
www.SunStarLabs.com
25712 Commercentre Dr, Lake Forest CA 92630

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T161773

Client:	**Pangea Environmental Services, Inc.**	**Project Manager:**	**Rose Fasheh**
Project:	**1233 Bockman Rd**	**Project Number:**	**[none]**

Report To:

Pangea Environmental Services, Inc.
Bob Clark-Riddell
1710 Franklin Street, Suite 200
Oakland, CA 94612

Date Due:	08/01/16 17:00 (0 day TAT)		
Received By:	Sunny Lounethone	Date Received:	07/30/16 10:00
Logged In By:	Sunny Lounethone	Date Logged In:	07/30/16 10:59

Samples Received at:

Custody Seals	Yes	Received On Ice	No
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	No		

Analysis	Due	TAT	Expires	Comments
T161773-01 SV-8 [Air] Sampled 07/28/16 17:18 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 17:18	
T161773-02 SV-10 [Air] Sampled 07/28/16 13:56 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 13:56	
T161773-03 SV-11 [Air] Sampled 07/28/16 17:09 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 17:09	
T161773-04 SV-12 [Air] Sampled 07/28/16 16:54 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 16:54	
T161773-05 SV-13 [Air] Sampled 07/28/16 07:53 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 07:53	
T161773-06 SV-17 [Air] Sampled 07/28/16 18:00 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 18:00	
T161773-07 SV-18 [Air] Sampled 07/28/16 16:30 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 16:30	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T161773

Client:	**Pangea Environmental Services, Inc.**	**Project Manager:**	**Rose Fasheh**
Project:	**1233 Bockman Rd**	**Project Number:**	**[none]**

Analysis	Due	TAT	Expires	Comments
T161773-08 SV-19 [Air] Sampled 07/28/16 17:11 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 17:11	
T161773-09 Shroud [Air] Sampled 07/28/16 17:20 (GMT-08:00) Pacific Time (US &				
TO-15	08/01/16 15:00	0	08/27/16 17:20	

Reviewed By

Date


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 279297
ANALYTICAL REPORT

Pangea Environmental	Project : 2030.001
1710 Franklin Street	Location : 1233 Brockman
Oakland, CA 94612	Level : II

Sample ID	Lab ID
SB-1-3.5'	279297-001
SB-1-6.5'	279297-002
SB-1-8.0'	279297-003
SB-1-15'	279297-004
SB-1-W	279297-005
SB-2-3.5'	279297-006
SB-2-6.5'	279297-007
SB-2-8'	279297-008
SB-3-3.5'	279297-009
SB-3-6.5'	279297-010
SB-3-8'	279297-011
SB-4-3.5'	279297-012
SB-4-5.5'	279297-013
SB-4-8'	279297-014
SB-5-3.5'	279297-015
SB-5-5.5'	279297-016
SB-5-8'	279297-017
SB-6-3.5'	279297-018
SB-6-6'	279297-019
SB-6-8'	279297-020

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: Will Rice Date: 08/08/2016

Will Rice
Project Manager
will.rice@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**279297**
Client:	**Pangea Environmental**
Project:	**2030.001**
Location:	**1233 Brockman**
Request Date:	**08/04/16**
Samples Received:	**08/03/16**

This data package contains sample and QC results for eighteen soil samples and one water sample, requested for the above referenced project on 08/04/16. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B) Water:
No analytical problems were encountered.

TPH-Purgeables and/or BTXE by GC (EPA 8015B) Soil:
No analytical problems were encountered.

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

Volatile Organics by GC/MS (EPA 8260B) Soil:
High surrogate recoveries were observed for bromofluorobenzene in SB-2-3.5' (lab # 279297-006), SB-2-8' (lab # 279297-008), and SB-3-3.5' (lab # 279297-009). No other analytical problems were encountered.

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

Page ___ of ___

Chain of Custody # _____

C&T LOGIN # 279297

2030.001

Project No: ~~1233 Bockman~~

Project Name: 1233 Bockman

EDD Format: Report Level: ☐ II ☐ III ☐ IV

Turnaround Time: ☒ RUSH 48 ☐ Standard

Sampler: Groff, Patrick

Report To: Ron Scheele

Company: Pangea Env.

Telephone: (510) 459-6012

Email: rscheele@pangeaenv.com

ANALYTICAL REQUEST

Lab No.	Sample ID.	SAMPLING		MATRIX				PRESERVATIVE					8260 Full suite	8015 TPHg	HOLD
		Date Collected	Time Collected	Water	Solid			HCl	H2SO4	HNO3	NaOH	None			
1	SB-1-3.5'	8/3/16	1450		X								X		
2	SB-1-6.5'		1450		X								X	X	
3	SB-1-8.0'		1455		X								X		
4	SB-1-15'		1520		X								X		X
5	SB-1-W		1530	X				X					X	X	
6	SB-2-~~[redacted]~~3.5'		1607		X								X		
7	SB-2-6.5'		1613		X								X	X	
8	SB-2-8'		1616		X								X		
9	SB-3-3.5'		1645		X								X		
10	SB-3-6.5'		1648		X								X	X	
11	SB-3-8'		1651		X								X		

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☐ On Ice
☐ Ambient

RELINQUISHED BY:
Pat Groff DATE: 8/3/16 TIME: 19:45
DATE: TIME:
DATE: TIME:

RECEIVED BY:
Nguyen DATE: 8/3 TIME: 19:45
DATE: TIME:
DATE: TIME:

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2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

Page ___ of ___

Chain of Custody # _____

C&T LOGIN # 279297

Project No: 2030.001
Project Name: 1733 Boulman
EDD Format: Report Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☒ RUSH 48 ☐ Standard

Sampler: Groff, Patrick
Report To: Ren Scheele
Company: Panzea Env.
Telephone: (510) 459-6012
Email: rscheele@panzeaenv.com

Lab No.	Sample ID.	SAMPLING		MATRIX		PRESERVATIVE					ANALYTICAL REQUEST	
		Date Collected	Time Collected	Water	Solid	HCl	H2SO4	HNO3	NaOH	None	8260 VOCs Full list	8015 TPH-g
12	SB-4-3.5'	8/3/16	1720		X						X	
13	SB-4-5.5'		1720		X						X	X
14	SB-4-8'		1720		X						X	
15	SB-5-3.5'		1745		X						X	
16	SB-5-5.5'		1745		X						X	X
17	SB-5-8'		1745		X						X	
18	SB-6-3.5'		1810		X						X	
19	SB-6-6'		1810		X						X	X
20	SB-6-8'		1810		X						X	

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☐ On Ice
☐ Ambient

RELINQUISHED BY:
DATE: 8/3/16 TIME: 19:45
DATE: TIME:
DATE: TIME:

RECEIVED BY:
DATE: 8/3 TIME: 19:45
DATE: TIME:
DATE: TIME:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 279297 Date Received 8/3/16 Number of coolers 1
Client Pangea Env Project 1233 Brockman

Date Opened 8/3 By (print) CB (sign) [signature]
Date Logged in ↓ By (print) DTN (sign) [signature]
Date Labelled ↓ By (print) [signature] (sign) [signature]

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) ____

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

☒ 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 13. Sample 003, Labled as SB-1-7.5', Sample 019 Labled as SB-6-5.5, Sample 020 Labled as SB-6-6.5

Curtis & Tompkins, Ltd.

Detections Summary for 279297

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

Client : Pangea Environmental
Project : 2030.001
Location : 1233 Brockman

Client Sample ID : SB-1-3.5' Laboratory Sample ID : 279297-001

No Detections

Client Sample ID : SB-1-6.5' Laboratory Sample ID : 279297-002

No Detections

Client Sample ID : SB-1-8.0' Laboratory Sample ID : 279297-003

No Detections

Client Sample ID : SB-1-W Laboratory Sample ID : 279297-005

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Ethylbenzene	1.0		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
m,p-Xylenes	4.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
o-Xylene	1.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : SB-2-3.5' Laboratory Sample ID : 279297-006

No Detections

Client Sample ID : SB-2-6.5' Laboratory Sample ID : 279297-007

No Detections

Client Sample ID : SB-2-8' Laboratory Sample ID : 279297-008

No Detections

Client Sample ID : SB-3-3.5' Laboratory Sample ID : 279297-009

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Acetone	27		20	ug/Kg	As Recd	0.9804	EPA 8260B	EPA 5030B

Curtis & Tompkins, Ltd.

Client Sample ID : SB-3-6.5' Laboratory Sample ID : 279297-010

No Detections

Client Sample ID : SB-3-8' Laboratory Sample ID : 279297-011

No Detections

Client Sample ID : SB-4-3.5' Laboratory Sample ID : 279297-012

No Detections

Client Sample ID : SB-4-5.5' Laboratory Sample ID : 279297-013

No Detections

Client Sample ID : SB-4-8' Laboratory Sample ID : 279297-014

No Detections

Client Sample ID : SB-5-3.5' Laboratory Sample ID : 279297-015

No Detections

Client Sample ID : SB-5-5.5' Laboratory Sample ID : 279297-016

No Detections

Client Sample ID : SB-5-8' Laboratory Sample ID : 279297-017

No Detections

Client Sample ID : SB-6-3.5' Laboratory Sample ID : 279297-018

No Detections

Client Sample ID : SB-6-6' Laboratory Sample ID : 279297-019

No Detections

Curtis & Tompkins, Ltd.

Client Sample ID : SB-6-8' Laboratory Sample ID : 279297-020

No Detections

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8015B
Field ID:	SB-1-W	Batch#:	237692
Matrix:	Water	Sampled:	08/03/16
Units:	ug/L	Received:	08/03/16
Diln Fac:	1.000	Analyzed:	08/05/16

Type: SAMPLE Lab ID: 279297-005

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	80-132

Type: BLANK Lab ID: QC845862

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	80-132

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC845863	Batch#:	237692
Matrix:	Water	Analyzed:	08/04/16
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	3,000	2,842	95	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	108	80-132

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8015B
Field ID:	SB-1-W	Batch#:	237692
MSS Lab ID:	279297-005	Sampled:	08/03/16
Matrix:	Water	Received:	08/03/16
Units:	ug/L	Analyzed:	08/05/16
Diln Fac:	1.000		

Type: MS Lab ID: QC845864

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	41.24	2,000	1,825	89	76-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	80-132

Type: MSD Lab ID: QC845865

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,803	88	76-120	1	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	80-132

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	237680
Units:	mg/Kg	Sampled:	08/03/16
Basis:	as received	Received:	08/03/16
Diln Fac:	1.000		

Field ID: SB-1-6.5' Lab ID: 279297-002
Type: SAMPLE Analyzed: 08/04/16

Analyte	Result	RL
Gasoline C7-C12	ND	0.96

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	78-138

Field ID: SB-2-6.5' Lab ID: 279297-007
Type: SAMPLE Analyzed: 08/05/16

Analyte	Result	RL
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	78-138

Field ID: SB-3-6.5' Lab ID: 279297-010
Type: SAMPLE Analyzed: 08/04/16

Analyte	Result	RL
Gasoline C7-C12	ND	0.99

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	92	78-138

Field ID: SB-4-5.5' Lab ID: 279297-013
Type: SAMPLE Analyzed: 08/04/16

Analyte	Result	RL
Gasoline C7-C12	ND	0.99

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	92	78-138

Field ID: SB-5-5.5' Lab ID: 279297-016
Type: SAMPLE Analyzed: 08/05/16

Analyte	Result	RL
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	91	78-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	237680
Units:	mg/Kg	Sampled:	08/03/16
Basis:	as received	Received:	08/03/16
Diln Fac:	1.000		

Field ID:	SB-6-6'	Lab ID:	279297-019
Type:	SAMPLE	Analyzed:	08/04/16

Analyte	Result	RL
Gasoline C7-C12	ND	0.98

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	92	78-138

Type:	BLANK	Analyzed:	08/04/16
Lab ID:	QC845807		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	88	78-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC845808	Batch#:	237680
Matrix:	Soil	Analyzed:	08/04/16
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9923	99	80-121

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	93	78-138

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	279281-001	Batch#:	237680
Matrix:	Soil	Sampled:	08/03/16
Units:	mg/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Type: MS Lab ID: QC845809

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.08967	10.20	8.765	85	50-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	78-138

Type: MSD Lab ID: QC845810

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	8.397	83	50-120	2	31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	78-138

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-1-W	Batch#:	237687
Lab ID:	279297-005	Sampled:	08/03/16
Matrix:	Water	Received:	08/03/16
Units:	ug/L	Analyzed:	08/04/16
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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-1-W	Batch#:	237687
Lab ID:	279297-005	Sampled:	08/03/16
Matrix:	Water	Received:	08/03/16
Units:	ug/L	Analyzed:	08/04/16
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	1.0	0.5
m,p-Xylenes	4.5	0.5
o-Xylene	1.7	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	80-128
1,2-Dichloroethane-d4	102	75-139
Toluene-d8	102	80-120
Bromofluorobenzene	112	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	237687
Units:	ug/L	Analyzed:	08/04/16
Diln Fac:	1.000		

Type: BS Lab ID: QC845840

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	12.12	97	66-135
Benzene	12.50	13.51	108	80-123
Trichloroethene	12.50	12.49	100	80-123
Toluene	12.50	13.64	109	80-121
Chlorobenzene	12.50	13.32	107	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-128
1,2-Dichloroethane-d4	101	75-139
Toluene-d8	102	80-120
Bromofluorobenzene	99	80-120

Type: BSD Lab ID: QC845841

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	10.95	88	66-135	10	24
Benzene	12.50	12.39	99	80-123	9	20
Trichloroethene	12.50	12.17	97	80-123	3	20
Toluene	12.50	12.64	101	80-121	8	20
Chlorobenzene	12.50	12.49	100	80-123	6	20

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-128
1,2-Dichloroethane-d4	98	75-139
Toluene-d8	100	80-120
Bromofluorobenzene	101	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC845842	Batch#:	237687
Matrix:	Water	Analyzed:	08/04/16
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

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC845842	Batch#:	237687
Matrix:	Water	Analyzed:	08/04/16
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	101	80-128
1,2-Dichloroethane-d4	104	75-139
Toluene-d8	102	80-120
Bromofluorobenzene	112	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-1-3.5'	Diln Fac:	0.9823
Lab ID:	279297-001	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	9.8
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Acetone	ND	20
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.8
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.8
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.8
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-1-3.5'	Diln Fac:	0.9823
Lab ID:	279297-001	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	113	78-134
1,2-Dichloroethane-d4	111	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	121	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-1-6.5'	Diln Fac:	0.8666
Lab ID:	279297-002	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	8.7
Chloromethane	ND	8.7
Vinyl Chloride	ND	8.7
Bromomethane	ND	8.7
Chloroethane	ND	8.7
Trichlorofluoromethane	ND	4.3
Acetone	ND	17
Freon 113	ND	4.3
1,1-Dichloroethene	ND	4.3
Methylene Chloride	ND	17
Carbon Disulfide	ND	4.3
MTBE	ND	4.3
trans-1,2-Dichloroethene	ND	4.3
Vinyl Acetate	ND	43
1,1-Dichloroethane	ND	4.3
2-Butanone	ND	8.7
cis-1,2-Dichloroethene	ND	4.3
2,2-Dichloropropane	ND	4.3
Chloroform	ND	4.3
Bromochloromethane	ND	4.3
1,1,1-Trichloroethane	ND	4.3
1,1-Dichloropropene	ND	4.3
Carbon Tetrachloride	ND	4.3
1,2-Dichloroethane	ND	4.3
Benzene	ND	4.3
Trichloroethene	ND	4.3
1,2-Dichloropropane	ND	4.3
Bromodichloromethane	ND	4.3
Dibromomethane	ND	4.3
4-Methyl-2-Pentanone	ND	8.7
cis-1,3-Dichloropropene	ND	4.3
Toluene	ND	4.3
trans-1,3-Dichloropropene	ND	4.3
1,1,2-Trichloroethane	ND	4.3
2-Hexanone	ND	8.7
1,3-Dichloropropane	ND	4.3
Tetrachloroethene	ND	4.3

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-1-6.5'	Diln Fac:	0.8666
Lab ID:	279297-002	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Dibromochloromethane	ND	4.3
1,2-Dibromoethane	ND	4.3
Chlorobenzene	ND	4.3
1,1,1,2-Tetrachloroethane	ND	4.3
Ethylbenzene	ND	4.3
m,p-Xylenes	ND	4.3
o-Xylene	ND	4.3
Styrene	ND	4.3
Bromoform	ND	4.3
Isopropylbenzene	ND	4.3
1,1,2,2-Tetrachloroethane	ND	4.3
1,2,3-Trichloropropane	ND	4.3
Propylbenzene	ND	4.3
Bromobenzene	ND	4.3
1,3,5-Trimethylbenzene	ND	4.3
2-Chlorotoluene	ND	4.3
4-Chlorotoluene	ND	4.3
tert-Butylbenzene	ND	4.3
1,2,4-Trimethylbenzene	ND	4.3
sec-Butylbenzene	ND	4.3
para-Isopropyl Toluene	ND	4.3
1,3-Dichlorobenzene	ND	4.3
1,4-Dichlorobenzene	ND	4.3
n-Butylbenzene	ND	4.3
1,2-Dichlorobenzene	ND	4.3
1,2-Dibromo-3-Chloropropane	ND	4.3
1,2,4-Trichlorobenzene	ND	4.3
Hexachlorobutadiene	ND	4.3
Naphthalene	ND	4.3
1,2,3-Trichlorobenzene	ND	4.3

Surrogate	%REC	Limits
Dibromofluoromethane	116	78-134
1,2-Dichloroethane-d4	116	80-138
Toluene-d8	103	80-120
Bromofluorobenzene	121	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-1-8.0'	Diln Fac:	0.9901
Lab ID:	279297-003	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	9.9
Chloromethane	ND	9.9
Vinyl Chloride	ND	9.9
Bromomethane	ND	9.9
Chloroethane	ND	9.9
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	9.9
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	9.9
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	9.9
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-1-8.0'	Diln Fac:	0.9901
Lab ID:	279297-003	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	117	78-134
1,2-Dichloroethane-d4	115	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	121	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-2-3.5'	Diln Fac:	0.9074
Lab ID:	279297-006	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	9.1
Chloromethane	ND	9.1
Vinyl Chloride	ND	9.1
Bromomethane	ND	9.1
Chloroethane	ND	9.1
Trichlorofluoromethane	ND	4.5
Acetone	ND	18
Freon 113	ND	4.5
1,1-Dichloroethene	ND	4.5
Methylene Chloride	ND	18
Carbon Disulfide	ND	4.5
MTBE	ND	4.5
trans-1,2-Dichloroethene	ND	4.5
Vinyl Acetate	ND	45
1,1-Dichloroethane	ND	4.5
2-Butanone	ND	9.1
cis-1,2-Dichloroethene	ND	4.5
2,2-Dichloropropane	ND	4.5
Chloroform	ND	4.5
Bromochloromethane	ND	4.5
1,1,1-Trichloroethane	ND	4.5
1,1-Dichloropropene	ND	4.5
Carbon Tetrachloride	ND	4.5
1,2-Dichloroethane	ND	4.5
Benzene	ND	4.5
Trichloroethene	ND	4.5
1,2-Dichloropropane	ND	4.5
Bromodichloromethane	ND	4.5
Dibromomethane	ND	4.5
4-Methyl-2-Pentanone	ND	9.1
cis-1,3-Dichloropropene	ND	4.5
Toluene	ND	4.5
trans-1,3-Dichloropropene	ND	4.5
1,1,2-Trichloroethane	ND	4.5
2-Hexanone	ND	9.1
1,3-Dichloropropane	ND	4.5
Tetrachloroethene	ND	4.5
Dibromochloromethane	ND	4.5
1,2-Dibromoethane	ND	4.5
Chlorobenzene	ND	4.5
1,1,1,2-Tetrachloroethane	ND	4.5
Ethylbenzene	ND	4.5
m,p-Xylenes	ND	4.5
o-Xylene	ND	4.5
Styrene	ND	4.5
Bromoform	ND	4.5
Isopropylbenzene	ND	4.5
1,1,2,2-Tetrachloroethane	ND	4.5
1,2,3-Trichloropropane	ND	4.5
Propylbenzene	ND	4.5
Bromobenzene	ND	4.5
1,3,5-Trimethylbenzene	ND	4.5
2-Chlorotoluene	ND	4.5

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-2-3.5'	Dil'n Fac:	0.9074
Lab ID:	279297-006	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
4-Chlorotoluene	ND	4.5
tert-Butylbenzene	ND	4.5
1,2,4-Trimethylbenzene	ND	4.5
sec-Butylbenzene	ND	4.5
para-Isopropyl Toluene	ND	4.5
1,3-Dichlorobenzene	ND	4.5
1,4-Dichlorobenzene	ND	4.5
n-Butylbenzene	ND	4.5
1,2-Dichlorobenzene	ND	4.5
1,2-Dibromo-3-Chloropropane	ND	4.5
1,2,4-Trichlorobenzene	ND	4.5
Hexachlorobutadiene	ND	4.5
Naphthalene	ND	4.5
1,2,3-Trichlorobenzene	ND	4.5

Surrogate	%REC	Limits
Dibromofluoromethane	116	78-134
1,2-Dichloroethane-d4	115	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	125 *	78-123

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-2-6.5'	Diln Fac:	0.9960
Lab ID:	279297-007	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-2-6.5'	Diln Fac:	0.9960
Lab ID:	279297-007	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	113	78-134
1,2-Dichloroethane-d4	112	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	122	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-2-8'	Diln Fac:	0.9259
Lab ID:	279297-008	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	9.3
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.6
Acetone	ND	19
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.6
MTBE	ND	4.6
trans-1,2-Dichloroethene	ND	4.6
Vinyl Acetate	ND	46
1,1-Dichloroethane	ND	4.6
2-Butanone	ND	9.3
cis-1,2-Dichloroethene	ND	4.6
2,2-Dichloropropane	ND	4.6
Chloroform	ND	4.6
Bromochloromethane	ND	4.6
1,1,1-Trichloroethane	ND	4.6
1,1-Dichloropropene	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Benzene	ND	4.6
Trichloroethene	ND	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
Dibromomethane	ND	4.6
4-Methyl-2-Pentanone	ND	9.3
cis-1,3-Dichloropropene	ND	4.6
Toluene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
2-Hexanone	ND	9.3
1,3-Dichloropropane	ND	4.6
Tetrachloroethene	ND	4.6
Dibromochloromethane	ND	4.6
1,2-Dibromoethane	ND	4.6
Chlorobenzene	ND	4.6
1,1,1,2-Tetrachloroethane	ND	4.6
Ethylbenzene	ND	4.6
m,p-Xylenes	ND	4.6
o-Xylene	ND	4.6
Styrene	ND	4.6
Bromoform	ND	4.6
Isopropylbenzene	ND	4.6
1,1,2,2-Tetrachloroethane	ND	4.6
1,2,3-Trichloropropane	ND	4.6
Propylbenzene	ND	4.6
Bromobenzene	ND	4.6
1,3,5-Trimethylbenzene	ND	4.6
2-Chlorotoluene	ND	4.6

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-2-8'	Diln Fac:	0.9259
Lab ID:	279297-008	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
4-Chlorotoluene	ND	4.6
tert-Butylbenzene	ND	4.6
1,2,4-Trimethylbenzene	ND	4.6
sec-Butylbenzene	ND	4.6
para-Isopropyl Toluene	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
n-Butylbenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6
1,2-Dibromo-3-Chloropropane	ND	4.6
1,2,4-Trichlorobenzene	ND	4.6
Hexachlorobutadiene	ND	4.6
Naphthalene	ND	4.6
1,2,3-Trichlorobenzene	ND	4.6

Surrogate	%REC	Limits
Dibromofluoromethane	111	78-134
1,2-Dichloroethane-d4	111	80-138
Toluene-d8	103	80-120
Bromofluorobenzene	124 *	78-123

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-3-3.5'	Diln Fac:	0.9804
Lab ID:	279297-009	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	9.8
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Acetone	27	20
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.8
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.8
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.8
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-3-3.5'	Diln Fac:	0.9804
Lab ID:	279297-009	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	113	78-134
1,2-Dichloroethane-d4	112	80-138
Toluene-d8	105	80-120
Bromofluorobenzene	125 *	78-123

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-3-6.5'	Diln Fac:	0.9091
Lab ID:	279297-010	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	9.1
Chloromethane	ND	9.1
Vinyl Chloride	ND	9.1
Bromomethane	ND	9.1
Chloroethane	ND	9.1
Trichlorofluoromethane	ND	4.5
Acetone	ND	18
Freon 113	ND	4.5
1,1-Dichloroethene	ND	4.5
Methylene Chloride	ND	18
Carbon Disulfide	ND	4.5
MTBE	ND	4.5
trans-1,2-Dichloroethene	ND	4.5
Vinyl Acetate	ND	45
1,1-Dichloroethane	ND	4.5
2-Butanone	ND	9.1
cis-1,2-Dichloroethene	ND	4.5
2,2-Dichloropropane	ND	4.5
Chloroform	ND	4.5
Bromochloromethane	ND	4.5
1,1,1-Trichloroethane	ND	4.5
1,1-Dichloropropene	ND	4.5
Carbon Tetrachloride	ND	4.5
1,2-Dichloroethane	ND	4.5
Benzene	ND	4.5
Trichloroethene	ND	4.5
1,2-Dichloropropane	ND	4.5
Bromodichloromethane	ND	4.5
Dibromomethane	ND	4.5
4-Methyl-2-Pentanone	ND	9.1
cis-1,3-Dichloropropene	ND	4.5
Toluene	ND	4.5
trans-1,3-Dichloropropene	ND	4.5
1,1,2-Trichloroethane	ND	4.5
2-Hexanone	ND	9.1
1,3-Dichloropropane	ND	4.5
Tetrachloroethene	ND	4.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-3-6.5'	Diln Fac:	0.9091
Lab ID:	279297-010	Batch#:	237671
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Dibromochloromethane	ND	4.5
1,2-Dibromoethane	ND	4.5
Chlorobenzene	ND	4.5
1,1,1,2-Tetrachloroethane	ND	4.5
Ethylbenzene	ND	4.5
m,p-Xylenes	ND	4.5
o-Xylene	ND	4.5
Styrene	ND	4.5
Bromoform	ND	4.5
Isopropylbenzene	ND	4.5
1,1,2,2-Tetrachloroethane	ND	4.5
1,2,3-Trichloropropane	ND	4.5
Propylbenzene	ND	4.5
Bromobenzene	ND	4.5
1,3,5-Trimethylbenzene	ND	4.5
2-Chlorotoluene	ND	4.5
4-Chlorotoluene	ND	4.5
tert-Butylbenzene	ND	4.5
1,2,4-Trimethylbenzene	ND	4.5
sec-Butylbenzene	ND	4.5
para-Isopropyl Toluene	ND	4.5
1,3-Dichlorobenzene	ND	4.5
1,4-Dichlorobenzene	ND	4.5
n-Butylbenzene	ND	4.5
1,2-Dichlorobenzene	ND	4.5
1,2-Dibromo-3-Chloropropane	ND	4.5
1,2,4-Trichlorobenzene	ND	4.5
Hexachlorobutadiene	ND	4.5
Naphthalene	ND	4.5
1,2,3-Trichlorobenzene	ND	4.5

Surrogate	%REC	Limits
Dibromofluoromethane	115	78-134
1,2-Dichloroethane-d4	115	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	121	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-3-8'	Diln Fac:	0.9766
Lab ID:	279297-011	Batch#:	237710
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	9.8
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Acetone	ND	20
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.8
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.8
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.8
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-3-8'	Diln Fac:	0.9766
Lab ID:	279297-011	Batch#:	237710
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	101	78-134
1,2-Dichloroethane-d4	110	80-138
Toluene-d8	102	80-120
Bromofluorobenzene	105	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-4-3.5'	Diln Fac:	0.9653
Lab ID:	279297-012	Batch#:	237710
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	9.7
Chloromethane	ND	9.7
Vinyl Chloride	ND	9.7
Bromomethane	ND	9.7
Chloroethane	ND	9.7
Trichlorofluoromethane	ND	4.8
Acetone	ND	19
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.8
MTBE	ND	4.8
trans-1,2-Dichloroethene	ND	4.8
Vinyl Acetate	ND	48
1,1-Dichloroethane	ND	4.8
2-Butanone	ND	9.7
cis-1,2-Dichloroethene	ND	4.8
2,2-Dichloropropane	ND	4.8
Chloroform	ND	4.8
Bromochloromethane	ND	4.8
1,1,1-Trichloroethane	ND	4.8
1,1-Dichloropropene	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Benzene	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
Dibromomethane	ND	4.8
4-Methyl-2-Pentanone	ND	9.7
cis-1,3-Dichloropropene	ND	4.8
Toluene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
2-Hexanone	ND	9.7
1,3-Dichloropropane	ND	4.8
Tetrachloroethene	ND	4.8

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-4-3.5'	Diln Fac:	0.9653
Lab ID:	279297-012	Batch#:	237710
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Dibromochloromethane	ND	4.8
1,2-Dibromoethane	ND	4.8
Chlorobenzene	ND	4.8
1,1,1,2-Tetrachloroethane	ND	4.8
Ethylbenzene	ND	4.8
m,p-Xylenes	ND	4.8
o-Xylene	ND	4.8
Styrene	ND	4.8
Bromoform	ND	4.8
Isopropylbenzene	ND	4.8
1,1,2,2-Tetrachloroethane	ND	4.8
1,2,3-Trichloropropane	ND	4.8
Propylbenzene	ND	4.8
Bromobenzene	ND	4.8
1,3,5-Trimethylbenzene	ND	4.8
2-Chlorotoluene	ND	4.8
4-Chlorotoluene	ND	4.8
tert-Butylbenzene	ND	4.8
1,2,4-Trimethylbenzene	ND	4.8
sec-Butylbenzene	ND	4.8
para-Isopropyl Toluene	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
n-Butylbenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8
1,2-Dibromo-3-Chloropropane	ND	4.8
1,2,4-Trichlorobenzene	ND	4.8
Hexachlorobutadiene	ND	4.8
Naphthalene	ND	4.8
1,2,3-Trichlorobenzene	ND	4.8

Surrogate	%REC	Limits
Dibromofluoromethane	103	78-134
1,2-Dichloroethane-d4	112	80-138
Toluene-d8	102	80-120
Bromofluorobenzene	104	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-4-5.5'	Diln Fac:	0.9728
Lab ID:	279297-013	Batch#:	237710
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	9.7
Chloromethane	ND	9.7
Vinyl Chloride	ND	9.7
Bromomethane	ND	9.7
Chloroethane	ND	9.7
Trichlorofluoromethane	ND	4.9
Acetone	ND	19
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.7
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.7
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.7
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-4-5.5'	Diln Fac:	0.9728
Lab ID:	279297-013	Batch#:	237710
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	106	78-134
1,2-Dichloroethane-d4	112	80-138
Toluene-d8	102	80-120
Bromofluorobenzene	106	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-4-8'	Diln Fac:	0.9766
Lab ID:	279297-014	Batch#:	237710
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Freon 12	ND	9.8
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Acetone	ND	20
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.8
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.8
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.8
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-4-8'	Diln Fac:	0.9766
Lab ID:	279297-014	Batch#:	237710
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/04/16

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	106	78-134
1,2-Dichloroethane-d4	113	80-138
Toluene-d8	101	80-120
Bromofluorobenzene	107	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-5-3.5'	Diln Fac:	0.9921
Lab ID:	279297-015	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Freon 12	ND	9.9
Chloromethane	ND	9.9
Vinyl Chloride	ND	9.9
Bromomethane	ND	9.9
Chloroethane	ND	9.9
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	9.9
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	9.9
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	9.9
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-5-3.5'	Diln Fac:	0.9921
Lab ID:	279297-015	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	99	78-134
1,2-Dichloroethane-d4	114	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	103	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-5-5.5'	Diln Fac:	0.9671
Lab ID:	279297-016	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Freon 12	ND	9.7
Chloromethane	ND	9.7
Vinyl Chloride	ND	9.7
Bromomethane	ND	9.7
Chloroethane	ND	9.7
Trichlorofluoromethane	ND	4.8
Acetone	ND	19
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.8
MTBE	ND	4.8
trans-1,2-Dichloroethene	ND	4.8
Vinyl Acetate	ND	48
1,1-Dichloroethane	ND	4.8
2-Butanone	ND	9.7
cis-1,2-Dichloroethene	ND	4.8
2,2-Dichloropropane	ND	4.8
Chloroform	ND	4.8
Bromochloromethane	ND	4.8
1,1,1-Trichloroethane	ND	4.8
1,1-Dichloropropene	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Benzene	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
Dibromomethane	ND	4.8
4-Methyl-2-Pentanone	ND	9.7
cis-1,3-Dichloropropene	ND	4.8
Toluene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
2-Hexanone	ND	9.7
1,3-Dichloropropane	ND	4.8
Tetrachloroethene	ND	4.8

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-5-5.5'	Diln Fac:	0.9671
Lab ID:	279297-016	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Dibromochloromethane	ND	4.8
1,2-Dibromoethane	ND	4.8
Chlorobenzene	ND	4.8
1,1,1,2-Tetrachloroethane	ND	4.8
Ethylbenzene	ND	4.8
m,p-Xylenes	ND	4.8
o-Xylene	ND	4.8
Styrene	ND	4.8
Bromoform	ND	4.8
Isopropylbenzene	ND	4.8
1,1,2,2-Tetrachloroethane	ND	4.8
1,2,3-Trichloropropane	ND	4.8
Propylbenzene	ND	4.8
Bromobenzene	ND	4.8
1,3,5-Trimethylbenzene	ND	4.8
2-Chlorotoluene	ND	4.8
4-Chlorotoluene	ND	4.8
tert-Butylbenzene	ND	4.8
1,2,4-Trimethylbenzene	ND	4.8
sec-Butylbenzene	ND	4.8
para-Isopropyl Toluene	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
n-Butylbenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8
1,2-Dibromo-3-Chloropropane	ND	4.8
1,2,4-Trichlorobenzene	ND	4.8
Hexachlorobutadiene	ND	4.8
Naphthalene	ND	4.8
1,2,3-Trichlorobenzene	ND	4.8

Surrogate	%REC	Limits
Dibromofluoromethane	100	78-134
1,2-Dichloroethane-d4	115	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	102	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-5-8'	Diln Fac:	0.9785
Lab ID:	279297-017	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Freon 12	ND	9.8
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Acetone	ND	20
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.8
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.8
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.8
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-5-8'	Diln Fac:	0.9785
Lab ID:	279297-017	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	100	78-134
1,2-Dichloroethane-d4	113	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	104	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-6-3.5'	Diln Fac:	0.9709
Lab ID:	279297-018	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Freon 12	ND	9.7
Chloromethane	ND	9.7
Vinyl Chloride	ND	9.7
Bromomethane	ND	9.7
Chloroethane	ND	9.7
Trichlorofluoromethane	ND	4.9
Acetone	ND	19
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.7
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.7
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.7
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-6-3.5'	Diln Fac:	0.9709
Lab ID:	279297-018	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	100	78-134
1,2-Dichloroethane-d4	111	80-138
Toluene-d8	101	80-120
Bromofluorobenzene	105	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-6-6'	Diln Fac:	0.9328
Lab ID:	279297-019	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Freon 12	ND	9.3
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.7
Acetone	ND	19
Freon 113	ND	4.7
1,1-Dichloroethene	ND	4.7
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.7
MTBE	ND	4.7
trans-1,2-Dichloroethene	ND	4.7
Vinyl Acetate	ND	47
1,1-Dichloroethane	ND	4.7
2-Butanone	ND	9.3
cis-1,2-Dichloroethene	ND	4.7
2,2-Dichloropropane	ND	4.7
Chloroform	ND	4.7
Bromochloromethane	ND	4.7
1,1,1-Trichloroethane	ND	4.7
1,1-Dichloropropene	ND	4.7
Carbon Tetrachloride	ND	4.7
1,2-Dichloroethane	ND	4.7
Benzene	ND	4.7
Trichloroethene	ND	4.7
1,2-Dichloropropane	ND	4.7
Bromodichloromethane	ND	4.7
Dibromomethane	ND	4.7
4-Methyl-2-Pentanone	ND	9.3
cis-1,3-Dichloropropene	ND	4.7
Toluene	ND	4.7
trans-1,3-Dichloropropene	ND	4.7
1,1,2-Trichloroethane	ND	4.7
2-Hexanone	ND	9.3
1,3-Dichloropropane	ND	4.7
Tetrachloroethene	ND	4.7

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-6-6'	Diln Fac:	0.9328
Lab ID:	279297-019	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Dibromochloromethane	ND	4.7
1,2-Dibromoethane	ND	4.7
Chlorobenzene	ND	4.7
1,1,1,2-Tetrachloroethane	ND	4.7
Ethylbenzene	ND	4.7
m,p-Xylenes	ND	4.7
o-Xylene	ND	4.7
Styrene	ND	4.7
Bromoform	ND	4.7
Isopropylbenzene	ND	4.7
1,1,2,2-Tetrachloroethane	ND	4.7
1,2,3-Trichloropropane	ND	4.7
Propylbenzene	ND	4.7
Bromobenzene	ND	4.7
1,3,5-Trimethylbenzene	ND	4.7
2-Chlorotoluene	ND	4.7
4-Chlorotoluene	ND	4.7
tert-Butylbenzene	ND	4.7
1,2,4-Trimethylbenzene	ND	4.7
sec-Butylbenzene	ND	4.7
para-Isopropyl Toluene	ND	4.7
1,3-Dichlorobenzene	ND	4.7
1,4-Dichlorobenzene	ND	4.7
n-Butylbenzene	ND	4.7
1,2-Dichlorobenzene	ND	4.7
1,2-Dibromo-3-Chloropropane	ND	4.7
1,2,4-Trichlorobenzene	ND	4.7
Hexachlorobutadiene	ND	4.7
Naphthalene	ND	4.7
1,2,3-Trichlorobenzene	ND	4.7

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-134
1,2-Dichloroethane-d4	115	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	102	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-6-8'	Diln Fac:	0.8897
Lab ID:	279297-020	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Freon 12	ND	8.9
Chloromethane	ND	8.9
Vinyl Chloride	ND	8.9
Bromomethane	ND	8.9
Chloroethane	ND	8.9
Trichlorofluoromethane	ND	4.4
Acetone	ND	18
Freon 113	ND	4.4
1,1-Dichloroethene	ND	4.4
Methylene Chloride	ND	18
Carbon Disulfide	ND	4.4
MTBE	ND	4.4
trans-1,2-Dichloroethene	ND	4.4
Vinyl Acetate	ND	44
1,1-Dichloroethane	ND	4.4
2-Butanone	ND	8.9
cis-1,2-Dichloroethene	ND	4.4
2,2-Dichloropropane	ND	4.4
Chloroform	ND	4.4
Bromochloromethane	ND	4.4
1,1,1-Trichloroethane	ND	4.4
1,1-Dichloropropene	ND	4.4
Carbon Tetrachloride	ND	4.4
1,2-Dichloroethane	ND	4.4
Benzene	ND	4.4
Trichloroethene	ND	4.4
1,2-Dichloropropane	ND	4.4
Bromodichloromethane	ND	4.4
Dibromomethane	ND	4.4
4-Methyl-2-Pentanone	ND	8.9
cis-1,3-Dichloropropene	ND	4.4
Toluene	ND	4.4
trans-1,3-Dichloropropene	ND	4.4
1,1,2-Trichloroethane	ND	4.4
2-Hexanone	ND	8.9
1,3-Dichloropropane	ND	4.4
Tetrachloroethene	ND	4.4

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-6-8'	Diln Fac:	0.8897
Lab ID:	279297-020	Batch#:	237719
Matrix:	Soil	Sampled:	08/03/16
Units:	ug/Kg	Received:	08/03/16
Basis:	as received	Analyzed:	08/05/16

Analyte	Result	RL
Dibromochloromethane	ND	4.4
1,2-Dibromoethane	ND	4.4
Chlorobenzene	ND	4.4
1,1,1,2-Tetrachloroethane	ND	4.4
Ethylbenzene	ND	4.4
m,p-Xylenes	ND	4.4
o-Xylene	ND	4.4
Styrene	ND	4.4
Bromoform	ND	4.4
Isopropylbenzene	ND	4.4
1,1,2,2-Tetrachloroethane	ND	4.4
1,2,3-Trichloropropane	ND	4.4
Propylbenzene	ND	4.4
Bromobenzene	ND	4.4
1,3,5-Trimethylbenzene	ND	4.4
2-Chlorotoluene	ND	4.4
4-Chlorotoluene	ND	4.4
tert-Butylbenzene	ND	4.4
1,2,4-Trimethylbenzene	ND	4.4
sec-Butylbenzene	ND	4.4
para-Isopropyl Toluene	ND	4.4
1,3-Dichlorobenzene	ND	4.4
1,4-Dichlorobenzene	ND	4.4
n-Butylbenzene	ND	4.4
1,2-Dichlorobenzene	ND	4.4
1,2-Dibromo-3-Chloropropane	ND	4.4
1,2,4-Trichlorobenzene	ND	4.4
Hexachlorobutadiene	ND	4.4
Naphthalene	ND	4.4
1,2,3-Trichlorobenzene	ND	4.4

Surrogate	%REC	Limits
Dibromofluoromethane	103	78-134
1,2-Dichloroethane-d4	116	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	105	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC845778	Batch#:	237671
Matrix:	Soil	Analyzed:	08/04/16
Units:	ug/Kg		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	28.35	113	70-134
Benzene	25.00	28.24	113	80-123
Trichloroethene	25.00	26.89	108	80-128
Toluene	25.00	26.67	107	80-120
Chlorobenzene	25.00	25.96	104	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	109	78-134
1,2-Dichloroethane-d4	114	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	119	78-123

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC845779	Batch#:	237671
Matrix:	Soil	Analyzed:	08/04/16
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC845779	Batch#:	237671
Matrix:	Soil	Analyzed:	08/04/16
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	111	78-134
1,2-Dichloroethane-d4	111	80-138
Toluene-d8	103	80-120
Bromofluorobenzene	120	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-2-6.5'	Batch#:	237671
MSS Lab ID:	279297-007	Sampled:	08/03/16
Matrix:	Soil	Received:	08/03/16
Units:	ug/Kg	Analyzed:	08/04/16
Basis:	as received		

Type: MS Diln Fac: 0.9597
Lab ID: QC845857

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.5963	47.98	52.27	109	56-133
Benzene	<0.6947	47.98	48.76	102	57-120
Trichloroethene	<0.7236	47.98	48.63	101	49-145
Toluene	<0.7610	47.98	44.97	94	51-120
Chlorobenzene	<0.6238	47.98	43.04	90	47-120

Surrogate	%REC	Limits
Dibromofluoromethane	110	78-134
1,2-Dichloroethane-d4	112	80-138
Toluene-d8	103	80-120
Bromofluorobenzene	117	78-123

Type: MSD Diln Fac: 0.9074
Lab ID: QC845858

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	45.37	47.68	105	56-133	4	46
Benzene	45.37	45.18	100	57-120	2	44
Trichloroethene	45.37	45.00	99	49-145	2	46
Toluene	45.37	41.23	91	51-120	3	47
Chlorobenzene	45.37	39.27	87	47-120	4	50

Surrogate	%REC	Limits
Dibromofluoromethane	112	78-134
1,2-Dichloroethane-d4	117	80-138
Toluene-d8	102	80-120
Bromofluorobenzene	116	78-123

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	237710
Units:	ug/Kg	Analyzed:	08/04/16
Diln Fac:	1.000		

Type: BS Lab ID: QC845925

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	24.77	99	70-134
Benzene	25.00	25.09	100	80-123
Trichloroethene	25.00	24.81	99	80-128
Toluene	25.00	24.91	100	80-120
Chlorobenzene	25.00	24.18	97	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	98	78-134
1,2-Dichloroethane-d4	103	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	101	78-123

Type: BSD Lab ID: QC845926

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	23.28	93	70-134	6	22
Benzene	25.00	24.07	96	80-123	4	21
Trichloroethene	25.00	23.25	93	80-128	7	23
Toluene	25.00	23.73	95	80-120	5	20
Chlorobenzene	25.00	23.28	93	80-123	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	98	78-134
1,2-Dichloroethane-d4	104	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	99	78-123

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC845927	Batch#:	237710
Matrix:	Soil	Analyzed:	08/04/16
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC845927	Batch#:	237710
Matrix:	Soil	Analyzed:	08/04/16
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	100	78-134
1,2-Dichloroethane-d4	109	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	105	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	SB-4-8'	Batch#:	237710
MSS Lab ID:	279297-014	Sampled:	08/03/16
Matrix:	Soil	Received:	08/03/16
Units:	ug/Kg	Analyzed:	08/05/16
Basis:	as received		

Type: MS Diln Fac: 0.9804
Lab ID: QC845931

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.4504	49.02	45.53	93	56-133
Benzene	<0.5012	49.02	42.94	88	57-120
Trichloroethene	<0.4989	49.02	43.84	89	49-145
Toluene	<0.4125	49.02	41.92	86	51-120
Chlorobenzene	<0.7094	49.02	39.46	81	47-120

Surrogate	%REC	Limits
Dibromofluoromethane	96	78-134
1,2-Dichloroethane-d4	105	80-138
Toluene-d8	97	80-120
Bromofluorobenzene	98	78-123

Type: MSD Diln Fac: 0.9709
Lab ID: QC845932

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	48.54	46.23	95	56-133	3	46
Benzene	48.54	44.15	91	57-120	4	44
Trichloroethene	48.54	45.52	94	49-145	5	46
Toluene	48.54	43.18	89	51-120	4	47
Chlorobenzene	48.54	40.43	83	47-120	3	50

Surrogate	%REC	Limits
Dibromofluoromethane	97	78-134
1,2-Dichloroethane-d4	104	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	98	78-123

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	237719
Units:	ug/Kg	Analyzed:	08/05/16
Diln Fac:	1.000		

Type: BS Lab ID: QC845962

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	24.67	99	70-134
Benzene	25.00	25.34	101	80-123
Trichloroethene	25.00	24.90	100	80-128
Toluene	25.00	25.34	101	80-120
Chlorobenzene	25.00	24.34	97	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	99	78-134
1,2-Dichloroethane-d4	107	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	102	78-123

Type: BSD Lab ID: QC845963

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	26.02	104	70-134	5	22
Benzene	25.00	26.53	106	80-123	5	21
Trichloroethene	25.00	25.97	104	80-128	4	23
Toluene	25.00	26.32	105	80-120	4	20
Chlorobenzene	25.00	25.40	102	80-123	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	101	78-134
1,2-Dichloroethane-d4	106	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	100	78-123

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC845964	Batch#:	237719
Matrix:	Soil	Analyzed:	08/05/16
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC845964	Batch#:	237719
Matrix:	Soil	Analyzed:	08/05/16
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	99	78-134
1,2-Dichloroethane-d4	113	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	103	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	279297	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Basis:	as received
MSS Lab ID:	279320-003	Batch#:	237719
Matrix:	Soil	Sampled:	08/01/16
Units:	ug/Kg	Received:	08/01/16

Type: MS Diln Fac: 0.9766
Lab ID: QC846021 Analyzed: 08/05/16

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.4540	48.83	53.45	109	56-133
Benzene	<0.5052	48.83	50.20	103	57-120
Trichloroethene	<0.5028	48.83	48.30	99	49-145
Toluene	<0.4158	48.83	45.63	93	51-120
Chlorobenzene	<0.7150	48.83	41.08	84	47-120

Surrogate	%REC	Limits
Dibromofluoromethane	104	78-134
1,2-Dichloroethane-d4	110	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	99	78-123

Type: MSD Diln Fac: 0.9653
Lab ID: QC846022 Analyzed: 08/07/16

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	48.26	44.90	93	56-133	16	46
Benzene	48.26	45.29	94	57-120	9	44
Trichloroethene	48.26	42.77	89	49-145	11	46
Toluene	48.26	41.85	87	51-120	7	47
Chlorobenzene	48.26	37.95	79	47-120	7	50

Surrogate	%REC	Limits
Dibromofluoromethane	104	78-134
1,2-Dichloroethane-d4	110	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	105	78-123

RPD= Relative Percent Difference


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

Laboratory Job Number 279369
ANALYTICAL REPORT

Pangea Environmental	Project : 2030.001
1710 Franklin Street	Location : 1233 Brockman
Oakland, CA 94612	Level : II

Sample ID	Lab ID
SV-20	279369-001
SV-21	279369-002
SV-22	279369-003
SV-23	279369-004
SV-24	279369-005
SV-25	279369-006
SV-26	279369-007
SV-27	279369-008
SHROUD	279369-009

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: Will Rice Date: 08/11/2016

Will Rice
Project Manager
will.rice@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**279369**
Client:	**Pangea Environmental**
Project:	**2030.001**
Location:	**1233 Brockman**
Request Date:	**08/05/16**
Samples Received:	**08/05/16**

This data package contains sample and QC results for nine air samples, requested for the above referenced project on 08/05/16. The samples were received intact.

Volatile Organics in Air by MS (EPA TO-15):

High recoveries were observed for trichlorofluoromethane in the BSD for batch 237759 and the BSD for batch 237797; the associated RPDs were within limits, and this analyte was not detected at or above the RL in the associated samples. No other analytical problems were encountered.

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Analytical Laboratory Since 1878
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Berkeley, CA 94710
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(510)486-0532 Fax

AIR TESTING CHAIN OF CUSTODY
& PURCHASE ORDER

Chain of Custody # : 1

C&T LOGIN # 279369

Project No: 2030.001
Project Name: 1233 Backmen
EDD Format: _____ Rpt Level: II III IV
Turnaround Time: X RUSH 48 ☐ Standard

Sampler: Simmons, Albert
Report To: Ron Scheele
Company: Pangea Env.
Telephone:
Email: rscheele@pangeaenv.com

Lab No.	Sample ID.	Sampling Information: Date Collected	Time Collected	Canister ID (Bar Code #)	Flow Controller ID	Sample Volume (Gauge Reading)	TESTING REQUESTED: TO-15	TO-3: C6-C12 GRO	TO-3M: C1-C6 Hydrocarbons	D1946: (Please Circle Targets) H_2 He N_2 O_2 CO CO_2 CH_4	
1	SV-20	8/5/16	1007	096	208	20.5	X				
2	SV-21		0904	053	271	5					moisture in line
3	SV-22		0927	[redacted]	154/272	5					
4	SV-23		1523	074	223	22					
5	SV-24		1520	322	XY2	22					
6	SV-25		1516	134	233	21.5					
7	SV-26		1318	129	184	5					
8	SV-27		1402	244	178	19.5					
9	shroud		1115	335	269	5					

Notes:
Just TO15 analysis

RELINQUISHED BY: _____ 8/5/16 1656 DATE/TIME

RECEIVED BY: _____ 08/05/16 1656 DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

COOLER RECEIPT CHECKLIST Curtis & Tompkins, Ltd.

Login # 279369 Date Received 8/5/16 Number of coolers 0
Client Pangea Project 1233 Brockman

Date Opened 8/5/16 By (print) AA (sign)
Date Logged in ↓ By (print) ↓ (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)

   ☐ Samples Received on ice & cold without a temperature blank

   ☐ 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? 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 9, 10/11

Curtis & Tompkins, Ltd.

Detections Summary for 279369

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

Client : Pangea Environmental
Project : 2030.001
Location : 1233 Brockman

Client Sample ID : SV-20 Laboratory Sample ID : 279369-001

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	140		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
n-Hexane	61		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
Cyclohexane	56		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
Benzene	21	J	32	1.4	ppbv	As Recd	63.72	EPA TO-15	METHOD
n-Heptane	120		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
Toluene	42		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
Ethylbenzene	990		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
m,p-Xylenes	3,300		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
o-Xylene	1,000		32		ppbv	As Recd	63.72	EPA TO-15	METHOD

Client Sample ID : SV-21 Laboratory Sample ID : 279369-002

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Cyclohexane	3.6		3.0		ppbv	As Recd	5.970	EPA TO-15	METHOD
Benzene	1.8	J	3.0	0.13	ppbv	As Recd	5.970	EPA TO-15	METHOD
Tetrachloroethene	24		3.0	0.12	ppbv	As Recd	5.970	EPA TO-15	METHOD
Ethylbenzene	76		3.0		ppbv	As Recd	5.970	EPA TO-15	METHOD
m,p-Xylenes	490		3.0		ppbv	As Recd	5.970	EPA TO-15	METHOD
o-Xylene	230		3.0		ppbv	As Recd	5.970	EPA TO-15	METHOD

Client Sample ID : SV-22 Laboratory Sample ID : 279369-003

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	36		22		ppbv	As Recd	43.40	EPA TO-15	METHOD
n-Hexane	27		22		ppbv	As Recd	43.40	EPA TO-15	METHOD
Cyclohexane	29		22		ppbv	As Recd	43.40	EPA TO-15	METHOD
Benzene	6.6	J	22	0.94	ppbv	As Recd	43.40	EPA TO-15	METHOD
Tetrachloroethene	3.6	J	22	0.87	ppbv	As Recd	43.40	EPA TO-15	METHOD
Ethylbenzene	78		22		ppbv	As Recd	43.40	EPA TO-15	METHOD
m,p-Xylenes	3,100		22		ppbv	As Recd	43.40	EPA TO-15	METHOD
o-Xylene	1,200		22		ppbv	As Recd	43.40	EPA TO-15	METHOD

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Client Sample ID : SV-23 Laboratory Sample ID : 279369-004

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
n-Hexane	39		32		ppbv	As Recd	63.36	EPA TO-15	METHOD
Benzene	7.5	J	32	1.4	ppbv	As Recd	63.36	EPA TO-15	METHOD
n-Heptane	58		32		ppbv	As Recd	63.36	EPA TO-15	METHOD
Toluene	40		32		ppbv	As Recd	63.36	EPA TO-15	METHOD
Tetrachloroethene	1.3	J	32	1.3	ppbv	As Recd	63.36	EPA TO-15	METHOD
Ethylbenzene	2,000		32		ppbv	As Recd	63.36	EPA TO-15	METHOD
m,p-Xylenes	5,800		32		ppbv	As Recd	63.36	EPA TO-15	METHOD
o-Xylene	2,100		32		ppbv	As Recd	63.36	EPA TO-15	METHOD

Client Sample ID : SV-24 Laboratory Sample ID : 279369-005

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	73		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
n-Hexane	14		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
Cyclohexane	14		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
Benzene	13		8.7	0.38	ppbv	As Recd	17.43	EPA TO-15	METHOD
n-Heptane	15		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
Toluene	12		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
Ethylbenzene	300		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
m,p-Xylenes	970		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
o-Xylene	310		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD

Client Sample ID : SV-25 Laboratory Sample ID : 279369-006

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	100		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
n-Hexane	15		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
Cyclohexane	11		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
Benzene	12		2.7	0.12	ppbv	As Recd	5.310	EPA TO-15	METHOD
n-Heptane	7.1		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
Toluene	12		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
Tetrachloroethene	0.18	J	2.7	0.11	ppbv	As Recd	5.310	EPA TO-15	METHOD
Ethylbenzene	62		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
m,p-Xylenes	240		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
o-Xylene	78		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD

Curtis & Tompkins, Ltd.

Client Sample ID : SV-26 Laboratory Sample ID : 279369-007

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	5.4		4.3		ppbv	As Recd	2.170	EPA TO-15	METHOD
Carbon Disulfide	33		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
n-Hexane	4.0		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
2-Butanone	1.1		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
Cyclohexane	3.6		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
Benzene	7.2		1.1	0.047	ppbv	As Recd	2.170	EPA TO-15	METHOD
n-Heptane	2.5		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
Toluene	7.6		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
Tetrachloroethene	1.1		1.1	0.043	ppbv	As Recd	2.170	EPA TO-15	METHOD
Ethylbenzene	40		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
m,p-Xylenes	150		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
o-Xylene	61		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD

Client Sample ID : SV-27 Laboratory Sample ID : 279369-008

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	92		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
n-Hexane	18		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
Cyclohexane	15		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
Benzene	23		2.0	0.085	ppbv	As Recd	3.920	EPA TO-15	METHOD
n-Heptane	7.5		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
Toluene	13		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
Ethylbenzene	54		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
m,p-Xylenes	210		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
o-Xylene	75		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD

Client Sample ID : SHROUD Laboratory Sample ID : 279369-009

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Isopropanol	74,000		2,400		ppbv	As Recd	1188	EPA TO-15	METHOD

J = Estimated value

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-20	Diln Fac:	63.72
Lab ID:	279369-001	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	32		ND	160	
Freon 114	ND	32		ND	220	
Chloromethane	ND	32		ND	66	
Vinyl Chloride	ND	32		ND	81	
1,3-Butadiene	ND	32		ND	70	
Bromomethane	ND	32		ND	120	
Chloroethane	ND	32		ND	84	
Trichlorofluoromethane	ND	32		ND	180	
Acrolein	ND	130		ND	290	
1,1-Dichloroethene	ND	32		ND	130	
Freon 113	ND	32		ND	240	
Acetone	ND	130		ND	300	
Carbon Disulfide	140	32		450	99	
Isopropanol	ND	130		ND	310	
Methylene Chloride	ND	32		ND	110	
trans-1,2-Dichloroethene	ND	32		ND	130	
MTBE	ND	32		ND	110	
n-Hexane	61	32		210	110	
1,1-Dichloroethane	ND	32		ND	130	
Vinyl Acetate	ND	32		ND	110	
cis-1,2-Dichloroethene	ND	32		ND	130	
2-Butanone	ND	32		ND	94	
Ethyl Acetate	ND	32		ND	110	
Tetrahydrofuran	ND	32		ND	94	
Chloroform	ND	32		ND	160	
1,1,1-Trichloroethane	ND	32		ND	170	
Cyclohexane	56	32		190	110	
Carbon Tetrachloride	ND	32		ND	200	
Benzene	21 J	32	1.4	66 J	100	4.4
1,2-Dichloroethane	ND	32		ND	130	
n-Heptane	120	32		510	130	
Trichloroethene	ND	32		ND	170	
1,2-Dichloropropane	ND	32		ND	150	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-20	Diln Fac:	63.72
Lab ID:	279369-001	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	32		ND	210	
cis-1,3-Dichloropropene	ND	32		ND	140	
4-Methyl-2-Pentanone	ND	32		ND	130	
Toluene	42	32		160	120	
trans-1,3-Dichloropropene	ND	32		ND	140	
1,1,2-Trichloroethane	ND	32		ND	170	
Tetrachloroethene	ND	32	1.3	ND	220	8.6
2-Hexanone	ND	32		ND	130	
Dibromochloromethane	ND	32		ND	270	
1,2-Dibromoethane	ND	32		ND	240	
Chlorobenzene	ND	32		ND	150	
Ethylbenzene	990	32		4,300	140	
m,p-Xylenes	3,300	32		14,000	140	
o-Xylene	1,000	32		4,400	140	
Styrene	ND	32		ND	140	
Bromoform	ND	32		ND	330	
1,1,2,2-Tetrachloroethane	ND	32		ND	220	
4-Ethyltoluene	ND	32		ND	160	
1,3,5-Trimethylbenzene	ND	32		ND	160	
1,2,4-Trimethylbenzene	ND	32		ND	160	
1,3-Dichlorobenzene	ND	32		ND	190	
1,4-Dichlorobenzene	ND	32		ND	190	
Benzyl chloride	ND	32		ND	160	
1,2-Dichlorobenzene	ND	32		ND	190	
1,2,4-Trichlorobenzene	ND	32		ND	240	
Hexachlorobutadiene	ND	32		ND	340	
Naphthalene	ND	130		ND	670	

Surrogate	%REC	Limits
Bromofluorobenzene	84	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-21	Diln Fac:	5.970
Lab ID:	279369-002	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	3.0		ND	15	
Freon 114	ND	3.0		ND	21	
Chloromethane	ND	3.0		ND	6.2	
Vinyl Chloride	ND	3.0		ND	7.6	
1,3-Butadiene	ND	3.0		ND	6.6	
Bromomethane	ND	3.0		ND	12	
Chloroethane	ND	3.0		ND	7.9	
Trichlorofluoromethane	ND	3.0		ND	17	
Acrolein	ND	12		ND	27	
1,1-Dichloroethene	ND	3.0		ND	12	
Freon 113	ND	3.0		ND	23	
Acetone	ND	12		ND	28	
Carbon Disulfide	ND	3.0		ND	9.3	
Isopropanol	ND	12		ND	29	
Methylene Chloride	ND	3.0		ND	10	
trans-1,2-Dichloroethene	ND	3.0		ND	12	
MTBE	ND	3.0		ND	11	
n-Hexane	ND	3.0		ND	11	
1,1-Dichloroethane	ND	3.0		ND	12	
Vinyl Acetate	ND	3.0		ND	11	
cis-1,2-Dichloroethene	ND	3.0		ND	12	
2-Butanone	ND	3.0		ND	8.8	
Ethyl Acetate	ND	3.0		ND	11	
Tetrahydrofuran	ND	3.0		ND	8.8	
Chloroform	ND	3.0		ND	15	
1,1,1-Trichloroethane	ND	3.0		ND	16	
Cyclohexane	3.6	3.0		12	10	
Carbon Tetrachloride	ND	3.0		ND	19	
Benzene	1.8 J	3.0	0.13	5.6 J	9.5	0.41
1,2-Dichloroethane	ND	3.0		ND	12	
n-Heptane	ND	3.0		ND	12	
Trichloroethene	ND	3.0		ND	16	
1,2-Dichloropropane	ND	3.0		ND	14	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-21	Diln Fac:	5.970
Lab ID:	279369-002	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	3.0		ND	20	
cis-1,3-Dichloropropene	ND	3.0		ND	14	
4-Methyl-2-Pentanone	ND	3.0		ND	12	
Toluene	ND	3.0		ND	11	
trans-1,3-Dichloropropene	ND	3.0		ND	14	
1,1,2-Trichloroethane	ND	3.0		ND	16	
Tetrachloroethene	24	3.0	0.12	160	20	0.81
2-Hexanone	ND	3.0		ND	12	
Dibromochloromethane	ND	3.0		ND	25	
1,2-Dibromoethane	ND	3.0		ND	23	
Chlorobenzene	ND	3.0		ND	14	
Ethylbenzene	76	3.0		330	13	
m,p-Xylenes	490	3.0		2,100	13	
o-Xylene	230	3.0		990	13	
Styrene	ND	3.0		ND	13	
Bromoform	ND	3.0		ND	31	
1,1,2,2-Tetrachloroethane	ND	3.0		ND	20	
4-Ethyltoluene	ND	3.0		ND	15	
1,3,5-Trimethylbenzene	ND	3.0		ND	15	
1,2,4-Trimethylbenzene	ND	3.0		ND	15	
1,3-Dichlorobenzene	ND	3.0		ND	18	
1,4-Dichlorobenzene	ND	3.0		ND	18	
Benzyl chloride	ND	3.0		ND	15	
1,2-Dichlorobenzene	ND	3.0		ND	18	
1,2,4-Trichlorobenzene	ND	3.0		ND	22	
Hexachlorobutadiene	ND	3.0		ND	32	
Naphthalene	ND	12		ND	63	

Surrogate	%REC	Limits
Bromofluorobenzene	89	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-22	Diln Fac:	43.40
Lab ID:	279369-003	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	22		ND	110	
Freon 114	ND	22		ND	150	
Chloromethane	ND	22		ND	45	
Vinyl Chloride	ND	22		ND	55	
1,3-Butadiene	ND	22		ND	48	
Bromomethane	ND	22		ND	84	
Chloroethane	ND	22		ND	57	
Trichlorofluoromethane	ND	22		ND	120	
Acrolein	ND	87		ND	200	
1,1-Dichloroethene	ND	22		ND	86	
Freon 113	ND	22		ND	170	
Acetone	ND	87		ND	210	
Carbon Disulfide	36	22		110	68	
Isopropanol	ND	87		ND	210	
Methylene Chloride	ND	22		ND	75	
trans-1,2-Dichloroethene	ND	22		ND	86	
MTBE	ND	22		ND	78	
n-Hexane	27	22		94	76	
1,1-Dichloroethane	ND	22		ND	88	
Vinyl Acetate	ND	22		ND	76	
cis-1,2-Dichloroethene	ND	22		ND	86	
2-Butanone	ND	22		ND	64	
Ethyl Acetate	ND	22		ND	78	
Tetrahydrofuran	ND	22		ND	64	
Chloroform	ND	22		ND	110	
1,1,1-Trichloroethane	ND	22		ND	120	
Cyclohexane	29	22		100	75	
Carbon Tetrachloride	ND	22		ND	140	
Benzene	6.6 J	22	0.94	21 J	69	3.0
1,2-Dichloroethane	ND	22		ND	88	
n-Heptane	ND	22		ND	89	
Trichloroethene	ND	22		ND	120	
1,2-Dichloropropane	ND	22		ND	100	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-22	Diln Fac:	43.40
Lab ID:	279369-003	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	22		ND	150	
cis-1,3-Dichloropropene	ND	22		ND	98	
4-Methyl-2-Pentanone	ND	22		ND	89	
Toluene	ND	22		ND	82	
trans-1,3-Dichloropropene	ND	22		ND	98	
1,1,2-Trichloroethane	ND	22		ND	120	
Tetrachloroethene	3.6 J	22	0.87	24 J	150	5.9
2-Hexanone	ND	22		ND	89	
Dibromochloromethane	ND	22		ND	180	
1,2-Dibromoethane	ND	22		ND	170	
Chlorobenzene	ND	22		ND	100	
Ethylbenzene	78	22		340	94	
m,p-Xylenes	3,100	22		13,000	94	
o-Xylene	1,200	22		5,100	94	
Styrene	ND	22		ND	92	
Bromoform	ND	22		ND	220	
1,1,2,2-Tetrachloroethane	ND	22		ND	150	
4-Ethyltoluene	ND	22		ND	110	
1,3,5-Trimethylbenzene	ND	22		ND	110	
1,2,4-Trimethylbenzene	ND	22		ND	110	
1,3-Dichlorobenzene	ND	22		ND	130	
1,4-Dichlorobenzene	ND	22		ND	130	
Benzyl chloride	ND	22		ND	110	
1,2-Dichlorobenzene	ND	22		ND	130	
1,2,4-Trichlorobenzene	ND	22		ND	160	
Hexachlorobutadiene	ND	22		ND	230	
Naphthalene	ND	87		ND	460	

Surrogate	%REC	Limits
Bromofluorobenzene	85	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-23	Diln Fac:	63.36
Lab ID:	279369-004	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	32		ND	160	
Freon 114	ND	32		ND	220	
Chloromethane	ND	32		ND	65	
Vinyl Chloride	ND	32		ND	81	
1,3-Butadiene	ND	32		ND	70	
Bromomethane	ND	32		ND	120	
Chloroethane	ND	32		ND	84	
Trichlorofluoromethane	ND	32		ND	180	
Acrolein	ND	130		ND	290	
1,1-Dichloroethene	ND	32		ND	130	
Freon 113	ND	32		ND	240	
Acetone	ND	130		ND	300	
Carbon Disulfide	ND	32		ND	99	
Isopropanol	ND	130		ND	310	
Methylene Chloride	ND	32		ND	110	
trans-1,2-Dichloroethene	ND	32		ND	130	
MTBE	ND	32		ND	110	
n-Hexane	39	32		140	110	
1,1-Dichloroethane	ND	32		ND	130	
Vinyl Acetate	ND	32		ND	110	
cis-1,2-Dichloroethene	ND	32		ND	130	
2-Butanone	ND	32		ND	93	
Ethyl Acetate	ND	32		ND	110	
Tetrahydrofuran	ND	32		ND	93	
Chloroform	ND	32		ND	150	
1,1,1-Trichloroethane	ND	32		ND	170	
Cyclohexane	ND	32		ND	110	
Carbon Tetrachloride	ND	32		ND	200	
Benzene	7.5 J	32	1.4	24 J	100	4.4
1,2-Dichloroethane	ND	32		ND	130	
n-Heptane	58	32		240	130	
Trichloroethene	ND	32		ND	170	
1,2-Dichloropropane	ND	32		ND	150	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-23	Diln Fac:	63.36
Lab ID:	279369-004	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	32		ND	210	
cis-1,3-Dichloropropene	ND	32		ND	140	
4-Methyl-2-Pentanone	ND	32		ND	130	
Toluene	40	32		150	120	
trans-1,3-Dichloropropene	ND	32		ND	140	
1,1,2-Trichloroethane	ND	32		ND	170	
Tetrachloroethene	1.3 J	32	1.3	9.0 J	210	8.6
2-Hexanone	ND	32		ND	130	
Dibromochloromethane	ND	32		ND	270	
1,2-Dibromoethane	ND	32		ND	240	
Chlorobenzene	ND	32		ND	150	
Ethylbenzene	2,000	32		8,700	140	
m,p-Xylenes	5,800	32		25,000	140	
o-Xylene	2,100	32		9,000	140	
Styrene	ND	32		ND	130	
Bromoform	ND	32		ND	330	
1,1,2,2-Tetrachloroethane	ND	32		ND	220	
4-Ethyltoluene	ND	32		ND	160	
1,3,5-Trimethylbenzene	ND	32		ND	160	
1,2,4-Trimethylbenzene	ND	32		ND	160	
1,3-Dichlorobenzene	ND	32		ND	190	
1,4-Dichlorobenzene	ND	32		ND	190	
Benzyl chloride	ND	32		ND	160	
1,2-Dichlorobenzene	ND	32		ND	190	
1,2,4-Trichlorobenzene	ND	32		ND	240	
Hexachlorobutadiene	ND	32		ND	340	
Naphthalene	ND	130		ND	660	

Surrogate	%REC	Limits
Bromofluorobenzene	83	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-24	Diln Fac:	17.43
Lab ID:	279369-005	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	8.7		ND	43	
Freon 114	ND	8.7		ND	61	
Chloromethane	ND	8.7		ND	18	
Vinyl Chloride	ND	8.7		ND	22	
1,3-Butadiene	ND	8.7		ND	19	
Bromomethane	ND	8.7		ND	34	
Chloroethane	ND	8.7		ND	23	
Trichlorofluoromethane	ND	8.7		ND	49	
Acrolein	ND	35		ND	80	
1,1-Dichloroethene	ND	8.7		ND	35	
Freon 113	ND	8.7		ND	67	
Acetone	ND	35		ND	83	
Carbon Disulfide	73	8.7		230	27	
Isopropanol	ND	35		ND	86	
Methylene Chloride	ND	8.7		ND	30	
trans-1,2-Dichloroethene	ND	8.7		ND	35	
MTBE	ND	8.7		ND	31	
n-Hexane	14	8.7		49	31	
1,1-Dichloroethane	ND	8.7		ND	35	
Vinyl Acetate	ND	8.7		ND	31	
cis-1,2-Dichloroethene	ND	8.7		ND	35	
2-Butanone	ND	8.7		ND	26	
Ethyl Acetate	ND	8.7		ND	31	
Tetrahydrofuran	ND	8.7		ND	26	
Chloroform	ND	8.7		ND	43	
1,1,1-Trichloroethane	ND	8.7		ND	48	
Cyclohexane	14	8.7		48	30	
Carbon Tetrachloride	ND	8.7		ND	55	
Benzene	13	8.7	0.38	42	28	1.2
1,2-Dichloroethane	ND	8.7		ND	35	
n-Heptane	15	8.7		60	36	
Trichloroethene	ND	8.7		ND	47	
1,2-Dichloropropane	ND	8.7		ND	40	
Bromodichloromethane	ND	8.7		ND	58	

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-24	Diln Fac:	17.43
Lab ID:	279369-005	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
cis-1,3-Dichloropropene	ND	8.7		ND	40	
4-Methyl-2-Pentanone	ND	8.7		ND	36	
Toluene	12	8.7		45	33	
trans-1,3-Dichloropropene	ND	8.7		ND	40	
1,1,2-Trichloroethane	ND	8.7		ND	48	
Tetrachloroethene	ND	8.7	0.35	ND	59	2.4
2-Hexanone	ND	8.7		ND	36	
Dibromochloromethane	ND	8.7		ND	74	
1,2-Dibromoethane	ND	8.7		ND	67	
Chlorobenzene	ND	8.7		ND	40	
Ethylbenzene	300	8.7		1,300	38	
m,p-Xylenes	970	8.7		4,200	38	
o-Xylene	310	8.7		1,300	38	
Styrene	ND	8.7		ND	37	
Bromoform	ND	8.7		ND	90	
1,1,2,2-Tetrachloroethane	ND	8.7		ND	60	
4-Ethyltoluene	ND	8.7		ND	43	
1,3,5-Trimethylbenzene	ND	8.7		ND	43	
1,2,4-Trimethylbenzene	ND	8.7		ND	43	
1,3-Dichlorobenzene	ND	8.7		ND	52	
1,4-Dichlorobenzene	ND	8.7		ND	52	
Benzyl chloride	ND	8.7		ND	45	
1,2-Dichlorobenzene	ND	8.7		ND	52	
1,2,4-Trichlorobenzene	ND	8.7		ND	65	
Hexachlorobutadiene	ND	8.7		ND	93	
Naphthalene	ND	35		ND	180	

Surrogate	%REC	Limits
Bromofluorobenzene	88	80-121

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-25	Diln Fac:	5.310
Lab ID:	279369-006	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	2.7		ND	13	
Freon 114	ND	2.7		ND	19	
Chloromethane	ND	2.7		ND	5.5	
Vinyl Chloride	ND	2.7		ND	6.8	
1,3-Butadiene	ND	2.7		ND	5.9	
Bromomethane	ND	2.7		ND	10	
Chloroethane	ND	2.7		ND	7.0	
Trichlorofluoromethane	ND	2.7		ND	15	
Acrolein	ND	11		ND	24	
1,1-Dichloroethene	ND	2.7		ND	11	
Freon 113	ND	2.7		ND	20	
Acetone	ND	11		ND	25	
Carbon Disulfide	100	2.7		310	8.3	
Isopropanol	ND	11		ND	26	
Methylene Chloride	ND	2.7		ND	9.2	
trans-1,2-Dichloroethene	ND	2.7		ND	11	
MTBE	ND	2.7		ND	9.6	
n-Hexane	15	2.7		55	9.4	
1,1-Dichloroethane	ND	2.7		ND	11	
Vinyl Acetate	ND	2.7		ND	9.3	
cis-1,2-Dichloroethene	ND	2.7		ND	11	
2-Butanone	ND	2.7		ND	7.8	
Ethyl Acetate	ND	2.7		ND	9.6	
Tetrahydrofuran	ND	2.7		ND	7.8	
Chloroform	ND	2.7		ND	13	
1,1,1-Trichloroethane	ND	2.7		ND	14	
Cyclohexane	11	2.7		37	9.1	
Carbon Tetrachloride	ND	2.7		ND	17	
Benzene	12	2.7	0.12	39	8.5	0.37
1,2-Dichloroethane	ND	2.7		ND	11	
n-Heptane	7.1	2.7		29	11	
Trichloroethene	ND	2.7		ND	14	
1,2-Dichloropropane	ND	2.7		ND	12	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-25	Diln Fac:	5.310
Lab ID:	279369-006	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	2.7		ND	18	
cis-1,3-Dichloropropene	ND	2.7		ND	12	
4-Methyl-2-Pentanone	ND	2.7		ND	11	
Toluene	12	2.7		47	10	
trans-1,3-Dichloropropene	ND	2.7		ND	12	
1,1,2-Trichloroethane	ND	2.7		ND	14	
Tetrachloroethene	0.18 J	2.7	0.11	1.2 J	18	0.72
2-Hexanone	ND	2.7		ND	11	
Dibromochloromethane	ND	2.7		ND	23	
1,2-Dibromoethane	ND	2.7		ND	20	
Chlorobenzene	ND	2.7		ND	12	
Ethylbenzene	62	2.7		270	12	
m,p-Xylenes	240	2.7		1,100	12	
o-Xylene	78	2.7		340	12	
Styrene	ND	2.7		ND	11	
Bromoform	ND	2.7		ND	27	
1,1,2,2-Tetrachloroethane	ND	2.7		ND	18	
4-Ethyltoluene	ND	2.7		ND	13	
1,3,5-Trimethylbenzene	ND	2.7		ND	13	
1,2,4-Trimethylbenzene	ND	2.7		ND	13	
1,3-Dichlorobenzene	ND	2.7		ND	16	
1,4-Dichlorobenzene	ND	2.7		ND	16	
Benzyl chloride	ND	2.7		ND	14	
1,2-Dichlorobenzene	ND	2.7		ND	16	
1,2,4-Trichlorobenzene	ND	2.7		ND	20	
Hexachlorobutadiene	ND	2.7		ND	28	
Naphthalene	ND	11		ND	56	

Surrogate	%REC	Limits
Bromofluorobenzene	98	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-26	Diln Fac:	2.170
Lab ID:	279369-007	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	1.1		ND	5.4	
Freon 114	ND	1.1		ND	7.6	
Chloromethane	ND	1.1		ND	2.2	
Vinyl Chloride	ND	1.1		ND	2.8	
1,3-Butadiene	ND	1.1		ND	2.4	
Bromomethane	ND	1.1		ND	4.2	
Chloroethane	ND	1.1		ND	2.9	
Trichlorofluoromethane	ND	1.1		ND	6.1	
Acrolein	ND	4.3		ND	10	
1,1-Dichloroethene	ND	1.1		ND	4.3	
Freon 113	ND	1.1		ND	8.3	
Acetone	5.4	4.3		13	10	
Carbon Disulfide	33	1.1		100	3.4	
Isopropanol	ND	4.3		ND	11	
Methylene Chloride	ND	1.1		ND	3.8	
trans-1,2-Dichloroethene	ND	1.1		ND	4.3	
MTBE	ND	1.1		ND	3.9	
n-Hexane	4.0	1.1		14	3.8	
1,1-Dichloroethane	ND	1.1		ND	4.4	
Vinyl Acetate	ND	1.1		ND	3.8	
cis-1,2-Dichloroethene	ND	1.1		ND	4.3	
2-Butanone	1.1	1.1		3.2	3.2	
Ethyl Acetate	ND	1.1		ND	3.9	
Tetrahydrofuran	ND	1.1		ND	3.2	
Chloroform	ND	1.1		ND	5.3	
1,1,1-Trichloroethane	ND	1.1		ND	5.9	
Cyclohexane	3.6	1.1		12	3.7	
Carbon Tetrachloride	ND	1.1		ND	6.8	
Benzene	7.2	1.1	0.047	23	3.5	0.15
1,2-Dichloroethane	ND	1.1		ND	4.4	
n-Heptane	2.5	1.1		10	4.4	
Trichloroethene	ND	1.1		ND	5.8	
1,2-Dichloropropane	ND	1.1		ND	5.0	
Bromodichloromethane	ND	1.1		ND	7.3	

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-26	Diln Fac:	2.170
Lab ID:	279369-007	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
cis-1,3-Dichloropropene	ND	1.1		ND	4.9	
4-Methyl-2-Pentanone	ND	1.1		ND	4.4	
Toluene	7.6	1.1		28	4.1	
trans-1,3-Dichloropropene	ND	1.1		ND	4.9	
1,1,2-Trichloroethane	ND	1.1		ND	5.9	
Tetrachloroethene	1.1	1.1	0.043	7.6	7.4	0.29
2-Hexanone	ND	1.1		ND	4.4	
Dibromochloromethane	ND	1.1		ND	9.2	
1,2-Dibromoethane	ND	1.1		ND	8.3	
Chlorobenzene	ND	1.1		ND	5.0	
Ethylbenzene	40	1.1		180	4.7	
m,p-Xylenes	150	1.1		660	4.7	
o-Xylene	61	1.1		260	4.7	
Styrene	ND	1.1		ND	4.6	
Bromoform	ND	1.1		ND	11	
1,1,2,2-Tetrachloroethane	ND	1.1		ND	7.4	
4-Ethyltoluene	ND	1.1		ND	5.3	
1,3,5-Trimethylbenzene	ND	1.1		ND	5.3	
1,2,4-Trimethylbenzene	ND	1.1		ND	5.3	
1,3-Dichlorobenzene	ND	1.1		ND	6.5	
1,4-Dichlorobenzene	ND	1.1		ND	6.5	
Benzyl chloride	ND	1.1		ND	5.6	
1,2-Dichlorobenzene	ND	1.1		ND	6.5	
1,2,4-Trichlorobenzene	ND	1.1		ND	8.1	
Hexachlorobutadiene	ND	1.1		ND	12	
Naphthalene	ND	4.3		ND	23	

Surrogate	%REC	Limits
Bromofluorobenzene	98	80-121

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-27	Diln Fac:	3.920
Lab ID:	279369-008	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	2.0		ND	9.7	
Freon 114	ND	2.0		ND	14	
Chloromethane	ND	2.0		ND	4.0	
Vinyl Chloride	ND	2.0		ND	5.0	
1,3-Butadiene	ND	2.0		ND	4.3	
Bromomethane	ND	2.0		ND	7.6	
Chloroethane	ND	2.0		ND	5.2	
Trichlorofluoromethane	ND	2.0		ND	11	
Acrolein	ND	7.8		ND	18	
1,1-Dichloroethene	ND	2.0		ND	7.8	
Freon 113	ND	2.0		ND	15	
Acetone	ND	7.8		ND	19	
Carbon Disulfide	92	2.0		290	6.1	
Isopropanol	ND	7.8		ND	19	
Methylene Chloride	ND	2.0		ND	6.8	
trans-1,2-Dichloroethene	ND	2.0		ND	7.8	
MTBE	ND	2.0		ND	7.1	
n-Hexane	18	2.0		64	6.9	
1,1-Dichloroethane	ND	2.0		ND	7.9	
Vinyl Acetate	ND	2.0		ND	6.9	
cis-1,2-Dichloroethene	ND	2.0		ND	7.8	
2-Butanone	ND	2.0		ND	5.8	
Ethyl Acetate	ND	2.0		ND	7.1	
Tetrahydrofuran	ND	2.0		ND	5.8	
Chloroform	ND	2.0		ND	9.6	
1,1,1-Trichloroethane	ND	2.0		ND	11	
Cyclohexane	15	2.0		51	6.7	
Carbon Tetrachloride	ND	2.0		ND	12	
Benzene	23	2.0	0.085	73	6.3	0.27
1,2-Dichloroethane	ND	2.0		ND	7.9	
n-Heptane	7.5	2.0		31	8.0	
Trichloroethene	ND	2.0		ND	11	
1,2-Dichloropropane	ND	2.0		ND	9.1	
Bromodichloromethane	ND	2.0		ND	13	

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-27	Diln Fac:	3.920
Lab ID:	279369-008	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
cis-1,3-Dichloropropene	ND	2.0		ND	8.9	
4-Methyl-2-Pentanone	ND	2.0		ND	8.0	
Toluene	13	2.0		48	7.4	
trans-1,3-Dichloropropene	ND	2.0		ND	8.9	
1,1,2-Trichloroethane	ND	2.0		ND	11	
Tetrachloroethene	ND	2.0	0.078	ND	13	0.53
2-Hexanone	ND	2.0		ND	8.0	
Dibromochloromethane	ND	2.0		ND	17	
1,2-Dibromoethane	ND	2.0		ND	15	
Chlorobenzene	ND	2.0		ND	9.0	
Ethylbenzene	54	2.0		230	8.5	
m,p-Xylenes	210	2.0		920	8.5	
o-Xylene	75	2.0		330	8.5	
Styrene	ND	2.0		ND	8.3	
Bromoform	ND	2.0		ND	20	
1,1,2,2-Tetrachloroethane	ND	2.0		ND	13	
4-Ethyltoluene	ND	2.0		ND	9.6	
1,3,5-Trimethylbenzene	ND	2.0		ND	9.6	
1,2,4-Trimethylbenzene	ND	2.0		ND	9.6	
1,3-Dichlorobenzene	ND	2.0		ND	12	
1,4-Dichlorobenzene	ND	2.0		ND	12	
Benzyl chloride	ND	2.0		ND	10	
1,2-Dichlorobenzene	ND	2.0		ND	12	
1,2,4-Trichlorobenzene	ND	2.0		ND	15	
Hexachlorobutadiene	ND	2.0		ND	21	
Naphthalene	ND	7.8		ND	41	

Surrogate	%REC	Limits
Bromofluorobenzene	102	80-121

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SHROUD	Diln Fac:	1,188
Lab ID:	279369-009	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	590		ND	2,900	
Freon 114	ND	590		ND	4,200	
Chloromethane	ND	590		ND	1,200	
Vinyl Chloride	ND	590		ND	1,500	
1,3-Butadiene	ND	590		ND	1,300	
Bromomethane	ND	590		ND	2,300	
Chloroethane	ND	590		ND	1,600	
Trichlorofluoromethane	ND	590		ND	3,300	
Acrolein	ND	2,400		ND	5,400	
1,1-Dichloroethene	ND	590		ND	2,400	
Freon 113	ND	590		ND	4,600	
Acetone	ND	2,400		ND	5,600	
Carbon Disulfide	ND	590		ND	1,800	
Isopropanol	74,000	2,400		180,000	5,800	
Methylene Chloride	ND	590		ND	2,100	
trans-1,2-Dichloroethene	ND	590		ND	2,400	
MTBE	ND	590		ND	2,100	
n-Hexane	ND	590		ND	2,100	
1,1-Dichloroethane	ND	590		ND	2,400	
Vinyl Acetate	ND	590		ND	2,100	
cis-1,2-Dichloroethene	ND	590		ND	2,400	
2-Butanone	ND	590		ND	1,800	
Ethyl Acetate	ND	590		ND	2,100	
Tetrahydrofuran	ND	590		ND	1,800	
Chloroform	ND	590		ND	2,900	
1,1,1-Trichloroethane	ND	590		ND	3,200	
Cyclohexane	ND	590		ND	2,000	
Carbon Tetrachloride	ND	590		ND	3,700	
Benzene	ND	590	26	ND	1,900	83
1,2-Dichloroethane	ND	590		ND	2,400	
n-Heptane	ND	590		ND	2,400	
Trichloroethene	ND	590		ND	3,200	
1,2-Dichloropropane	ND	590		ND	2,700	
Bromodichloromethane	ND	590		ND	4,000	

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SHROUD	Diln Fac:	1,188
Lab ID:	279369-009	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
cis-1,3-Dichloropropene	ND	590		ND	2,700	
4-Methyl-2-Pentanone	ND	590		ND	2,400	
Toluene	ND	590		ND	2,200	
trans-1,3-Dichloropropene	ND	590		ND	2,700	
1,1,2-Trichloroethane	ND	590		ND	3,200	
Tetrachloroethene	ND	590	24	ND	4,000	160
2-Hexanone	ND	590		ND	2,400	
Dibromochloromethane	ND	590		ND	5,100	
1,2-Dibromoethane	ND	590		ND	4,600	
Chlorobenzene	ND	590		ND	2,700	
Ethylbenzene	ND	590		ND	2,600	
m,p-Xylenes	ND	590		ND	2,600	
o-Xylene	ND	590		ND	2,600	
Styrene	ND	590		ND	2,500	
Bromoform	ND	590		ND	6,100	
1,1,2,2-Tetrachloroethane	ND	590		ND	4,100	
4-Ethyltoluene	ND	590		ND	2,900	
1,3,5-Trimethylbenzene	ND	590		ND	2,900	
1,2,4-Trimethylbenzene	ND	590		ND	2,900	
1,3-Dichlorobenzene	ND	590		ND	3,600	
1,4-Dichlorobenzene	ND	590		ND	3,600	
Benzyl chloride	ND	590		ND	3,100	
1,2-Dichlorobenzene	ND	590		ND	3,600	
1,2,4-Trichlorobenzene	ND	590		ND	4,400	
Hexachlorobutadiene	ND	590		ND	6,300	
Naphthalene	ND	2,400		ND	12,000	

Surrogate	%REC	Limits
Bromofluorobenzene	83	80-121

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Type: BS Lab ID: QC846127

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	11.18	112	70-130
Freon 114	10.00	12.41	124	70-130
Chloromethane	10.00	7.678	77	70-130
Vinyl Chloride	10.00	8.227	82	70-130
1,3-Butadiene	10.00	9.598	96	70-130
Bromomethane	10.00	9.072	91	70-130
Chloroethane	10.00	10.34	103	70-130
Trichlorofluoromethane	10.00	12.65	126	70-130
Acrolein	10.00	6.964	70	70-130
1,1-Dichloroethene	10.00	10.45	104	70-130
Freon 113	10.00	12.18	122	70-130
Acetone	10.00	9.963	100	70-130
Carbon Disulfide	10.00	8.586	86	70-130
Isopropanol	10.00	8.594	86	70-130
Methylene Chloride	10.00	8.996	90	70-130
trans-1,2-Dichloroethene	10.00	10.04	100	70-130
MTBE	10.00	9.676	97	70-130
n-Hexane	10.00	10.04	100	70-130
1,1-Dichloroethane	10.00	10.61	106	70-130
Vinyl Acetate	10.00	9.411	94	70-130
cis-1,2-Dichloroethene	10.00	8.861	89	70-130
2-Butanone	10.00	10.95	109	70-130
Ethyl Acetate	10.00	12.09	121	70-130
Tetrahydrofuran	10.00	9.428	94	70-130
Chloroform	10.00	9.789	98	70-130
1,1,1-Trichloroethane	10.00	10.23	102	70-130
Cyclohexane	10.00	9.697	97	70-130
Carbon Tetrachloride	10.00	9.021	90	70-130
Benzene	10.00	8.669	87	70-130
1,2-Dichloroethane	10.00	8.508	85	70-130
n-Heptane	10.00	8.927	89	70-130
Trichloroethene	10.00	9.682	97	70-130
1,2-Dichloropropane	10.00	8.659	87	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
Bromodichloromethane	10.00	9.295	93	70-130
cis-1,3-Dichloropropene	10.00	8.122	81	70-130
4-Methyl-2-Pentanone	10.00	9.222	92	70-130
Toluene	10.00	8.854	89	70-130
trans-1,3-Dichloropropene	10.00	7.784	78	70-130
1,1,2-Trichloroethane	10.00	10.09	101	70-130
Tetrachloroethene	10.00	10.35	104	70-130
2-Hexanone	10.00	7.414	74	70-130
Dibromochloromethane	10.00	9.075	91	70-130
1,2-Dibromoethane	10.00	9.351	94	70-130
Chlorobenzene	10.00	8.532	85	70-130
Ethylbenzene	10.00	8.172	82	70-130
m,p-Xylenes	20.00	16.88	84	70-130
o-Xylene	10.00	8.549	85	70-130
Styrene	10.00	8.674	87	70-130
Bromoform	10.00	9.081	91	70-130
1,1,2,2-Tetrachloroethane	10.00	8.075	81	70-130
4-Ethyltoluene	10.00	7.772	78	70-130
1,3,5-Trimethylbenzene	10.00	8.402	84	70-130
1,2,4-Trimethylbenzene	10.00	7.615	76	70-130
1,3-Dichlorobenzene	10.00	8.841	88	70-130
1,4-Dichlorobenzene	10.00	8.935	89	70-130
Benzyl chloride	10.00	7.195	72	70-130
1,2-Dichlorobenzene	10.00	8.740	87	70-130
1,2,4-Trichlorobenzene	10.00	9.371	94	70-130
Hexachlorobutadiene	10.00	8.933	89	70-130
Naphthalene	10.00	10.03	100	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	95	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC846128

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	11.49	115	70-130	3	25
Freon 114	10.00	12.97	130	70-130	4	25
Chloromethane	10.00	7.729	77	70-130	1	25
Vinyl Chloride	10.00	8.493	85	70-130	3	25
1,3-Butadiene	10.00	9.911	99	70-130	3	25
Bromomethane	10.00	9.358	94	70-130	3	25
Chloroethane	10.00	10.80	108	70-130	4	25
Trichlorofluoromethane	10.00	13.22	132 *	70-130	4	25
Acrolein	10.00	7.232	72	70-130	4	25
1,1-Dichloroethene	10.00	10.81	108	70-130	3	25
Freon 113	10.00	12.57	126	70-130	3	25
Acetone	10.00	10.20	102	70-130	2	25
Carbon Disulfide	10.00	8.900	89	70-130	4	25
Isopropanol	10.00	9.213	92	70-130	7	25
Methylene Chloride	10.00	9.355	94	70-130	4	25
trans-1,2-Dichloroethene	10.00	10.39	104	70-130	3	25
MTBE	10.00	10.24	102	70-130	6	25
n-Hexane	10.00	10.60	106	70-130	5	25
1,1-Dichloroethane	10.00	11.07	111	70-130	4	25
Vinyl Acetate	10.00	9.640	96	70-130	2	25
cis-1,2-Dichloroethene	10.00	9.195	92	70-130	4	25
2-Butanone	10.00	11.24	112	70-130	3	25
Ethyl Acetate	10.00	12.42	124	70-130	3	25
Tetrahydrofuran	10.00	8.996	90	70-130	5	25
Chloroform	10.00	10.12	101	70-130	3	25
1,1,1-Trichloroethane	10.00	9.967	100	70-130	3	25
Cyclohexane	10.00	9.472	95	70-130	2	25
Carbon Tetrachloride	10.00	8.708	87	70-130	4	25
Benzene	10.00	8.530	85	70-130	2	25
1,2-Dichloroethane	10.00	8.315	83	70-130	2	25
n-Heptane	10.00	8.742	87	70-130	2	25
Trichloroethene	10.00	9.606	96	70-130	1	25
1,2-Dichloropropane	10.00	8.495	85	70-130	2	25

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Bromodichloromethane	10.00	9.145	91	70-130	2	25
cis-1,3-Dichloropropene	10.00	8.145	81	70-130	0	25
4-Methyl-2-Pentanone	10.00	8.953	90	70-130	3	25
Toluene	10.00	9.095	91	70-130	3	25
trans-1,3-Dichloropropene	10.00	7.898	79	70-130	1	25
1,1,2-Trichloroethane	10.00	10.31	103	70-130	2	25
Tetrachloroethene	10.00	10.59	106	70-130	2	25
2-Hexanone	10.00	7.736	77	70-130	4	25
Dibromochloromethane	10.00	9.404	94	70-130	4	25
1,2-Dibromoethane	10.00	9.606	96	70-130	3	25
Chlorobenzene	10.00	8.732	87	70-130	2	25
Ethylbenzene	10.00	8.522	85	70-130	4	25
m,p-Xylenes	20.00	17.41	87	70-130	3	25
o-Xylene	10.00	8.905	89	70-130	4	25
Styrene	10.00	9.183	92	70-130	6	25
Bromoform	10.00	9.165	92	70-130	1	25
1,1,2,2-Tetrachloroethane	10.00	8.174	82	70-130	1	25
4-Ethyltoluene	10.00	8.111	81	70-130	4	25
1,3,5-Trimethylbenzene	10.00	8.740	87	70-130	4	25
1,2,4-Trimethylbenzene	10.00	8.059	81	70-130	6	25
1,3-Dichlorobenzene	10.00	9.355	94	70-130	6	25
1,4-Dichlorobenzene	10.00	9.476	95	70-130	6	25
Benzyl chloride	10.00	7.423	74	70-130	3	25
1,2-Dichlorobenzene	10.00	9.091	91	70-130	4	25
1,2,4-Trichlorobenzene	10.00	9.903	99	70-130	6	25
Hexachlorobutadiene	10.00	9.471	95	70-130	6	25
Naphthalene	10.00	10.68	107	70-130	6	25

Surrogate	%REC	Limits
Bromofluorobenzene	98	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846129	Diln Fac:	1.000
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	0.50		ND	2.5	
Freon 114	ND	0.50		ND	3.5	
Chloromethane	ND	0.50		ND	1.0	
Vinyl Chloride	ND	0.50		ND	1.3	
1,3-Butadiene	ND	0.50		ND	1.1	
Bromomethane	ND	0.50		ND	1.9	
Chloroethane	ND	0.50		ND	1.3	
Trichlorofluoromethane	ND	0.50		ND	2.8	
Acrolein	ND	2.0		ND	4.6	
1,1-Dichloroethene	ND	0.50		ND	2.0	
Freon 113	ND	0.50		ND	3.8	
Acetone	ND	2.0		ND	4.8	
Carbon Disulfide	ND	0.50		ND	1.6	
Isopropanol	ND	2.0		ND	4.9	
Methylene Chloride	ND	0.50		ND	1.7	
trans-1,2-Dichloroethene	ND	0.50		ND	2.0	
MTBE	ND	0.50		ND	1.8	
n-Hexane	ND	0.50		ND	1.8	
1,1-Dichloroethane	ND	0.50		ND	2.0	
Vinyl Acetate	ND	0.50		ND	1.8	
cis-1,2-Dichloroethene	ND	0.50		ND	2.0	
2-Butanone	ND	0.50		ND	1.5	
Ethyl Acetate	ND	0.50		ND	1.8	
Tetrahydrofuran	ND	0.50		ND	1.5	
Chloroform	ND	0.50		ND	2.4	
1,1,1-Trichloroethane	ND	0.50		ND	2.7	
Cyclohexane	ND	0.50		ND	1.7	
Carbon Tetrachloride	ND	0.50		ND	3.1	
Benzene	ND	0.50	0.022	ND	1.6	0.069
1,2-Dichloroethane	ND	0.50		ND	2.0	
n-Heptane	ND	0.50		ND	2.0	
Trichloroethene	ND	0.50		ND	2.7	
1,2-Dichloropropane	ND	0.50		ND	2.3	
Bromodichloromethane	ND	0.50		ND	3.4	

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846129	Diln Fac:	1.000
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
cis-1,3-Dichloropropene	ND	0.50		ND	2.3	
4-Methyl-2-Pentanone	ND	0.50		ND	2.0	
Toluene	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	ND	0.50		ND	2.7	
Tetrachloroethene	ND	0.50	0.020	ND	3.4	0.14
2-Hexanone	ND	0.50		ND	2.0	
Dibromochloromethane	ND	0.50		ND	4.3	
1,2-Dibromoethane	ND	0.50		ND	3.8	
Chlorobenzene	ND	0.50		ND	2.3	
Ethylbenzene	ND	0.50		ND	2.2	
m,p-Xylenes	ND	0.50		ND	2.2	
o-Xylene	ND	0.50		ND	2.2	
Styrene	ND	0.50		ND	2.1	
Bromoform	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	ND	0.50		ND	3.4	
4-Ethyltoluene	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	ND	0.50		ND	2.5	
1,2,4-Trimethylbenzene	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	ND	0.50		ND	3.0	
Benzyl chloride	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	ND	0.50		ND	3.7	
Hexachlorobutadiene	ND	0.50		ND	5.3	
Naphthalene	ND	2.0		ND	10	

Surrogate	%REC	Limits
Bromofluorobenzene	86	70-130

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Type: BS Lab ID: QC846272

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	11.19	112	70-130
Freon 114	10.00	12.58	126	70-130
Chloromethane	10.00	7.585	76	70-130
Vinyl Chloride	10.00	8.189	82	70-130
1,3-Butadiene	10.00	9.802	98	70-130
Bromomethane	10.00	9.152	92	70-130
Chloroethane	10.00	10.74	107	70-130
Trichlorofluoromethane	10.00	12.93	129	70-130
Acrolein	10.00	7.027	70	70-130
1,1-Dichloroethene	10.00	10.61	106	70-130
Freon 113	10.00	12.18	122	70-130
Acetone	10.00	10.46	105	70-130
Carbon Disulfide	10.00	8.664	87	70-130
Isopropanol	10.00	8.655	87	70-130
Methylene Chloride	10.00	9.049	90	70-130
trans-1,2-Dichloroethene	10.00	10.20	102	70-130
MTBE	10.00	9.940	99	70-130
n-Hexane	10.00	10.39	104	70-130
1,1-Dichloroethane	10.00	10.76	108	70-130
Vinyl Acetate	10.00	9.643	96	70-130
cis-1,2-Dichloroethene	10.00	8.990	90	70-130
2-Butanone	10.00	11.03	110	70-130
Ethyl Acetate	10.00	12.18	122	70-130
Tetrahydrofuran	10.00	8.943	89	70-130
Chloroform	10.00	9.958	100	70-130
1,1,1-Trichloroethane	10.00	10.05	101	70-130
Cyclohexane	10.00	9.553	96	70-130
Carbon Tetrachloride	10.00	8.571	86	70-130
Benzene	10.00	8.554	86	70-130
1,2-Dichloroethane	10.00	8.425	84	70-130
n-Heptane	10.00	8.826	88	70-130
Trichloroethene	10.00	9.889	99	70-130
1,2-Dichloropropane	10.00	8.683	87	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
Bromodichloromethane	10.00	9.195	92	70-130
cis-1,3-Dichloropropene	10.00	8.246	82	70-130
4-Methyl-2-Pentanone	10.00	9.098	91	70-130
Toluene	10.00	9.256	93	70-130
trans-1,3-Dichloropropene	10.00	7.903	79	70-130
1,1,2-Trichloroethane	10.00	10.97	110	70-130
Tetrachloroethene	10.00	11.03	110	70-130
2-Hexanone	10.00	7.430	74	70-130
Dibromochloromethane	10.00	9.546	95	70-130
1,2-Dibromoethane	10.00	9.856	99	70-130
Chlorobenzene	10.00	9.091	91	70-130
Ethylbenzene	10.00	8.787	88	70-130
m,p-Xylenes	20.00	17.62	88	70-130
o-Xylene	10.00	8.985	90	70-130
Styrene	10.00	9.275	93	70-130
Bromoform	10.00	8.885	89	70-130
1,1,2,2-Tetrachloroethane	10.00	8.464	85	70-130
4-Ethyltoluene	10.00	8.184	82	70-130
1,3,5-Trimethylbenzene	10.00	8.725	87	70-130
1,2,4-Trimethylbenzene	10.00	8.294	83	70-130
1,3-Dichlorobenzene	10.00	9.530	95	70-130
1,4-Dichlorobenzene	10.00	9.722	97	70-130
Benzyl chloride	10.00	7.427	74	70-130
1,2-Dichlorobenzene	10.00	9.325	93	70-130
1,2,4-Trichlorobenzene	10.00	9.821	98	70-130
Hexachlorobutadiene	10.00	9.757	98	70-130
Naphthalene	10.00	10.78	108	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	96	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC846273

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	11.78	118	70-130	5	25
Freon 114	10.00	12.53	125	70-130	0	25
Chloromethane	10.00	8.917	89	70-130	16	25
Vinyl Chloride	10.00	9.474	95	70-130	15	25
1,3-Butadiene	10.00	10.64	106	70-130	8	25
Bromomethane	10.00	10.42	104	70-130	13	25
Chloroethane	10.00	11.15	112	70-130	4	25
Trichlorofluoromethane	10.00	13.50	135 *	70-130	4	25
Acrolein	10.00	7.187	72	70-130	2	25
1,1-Dichloroethene	10.00	10.89	109	70-130	3	25
Freon 113	10.00	12.53	125	70-130	3	25
Acetone	10.00	10.43	104	70-130	0	25
Carbon Disulfide	10.00	9.322	93	70-130	7	25
Isopropanol	10.00	8.846	88	70-130	2	25
Methylene Chloride	10.00	9.576	96	70-130	6	25
trans-1,2-Dichloroethene	10.00	10.75	108	70-130	5	25
MTBE	10.00	10.32	103	70-130	4	25
n-Hexane	10.00	10.41	104	70-130	0	25
1,1-Dichloroethane	10.00	11.00	110	70-130	2	25
Vinyl Acetate	10.00	9.935	99	70-130	3	25
cis-1,2-Dichloroethene	10.00	9.244	92	70-130	3	25
2-Butanone	10.00	11.12	111	70-130	1	25
Ethyl Acetate	10.00	12.53	125	70-130	3	25
Tetrahydrofuran	10.00	8.791	88	70-130	2	25
Chloroform	10.00	10.18	102	70-130	2	25
1,1,1-Trichloroethane	10.00	9.988	100	70-130	1	25
Cyclohexane	10.00	9.488	95	70-130	1	25
Carbon Tetrachloride	10.00	8.434	84	70-130	2	25
Benzene	10.00	8.657	87	70-130	1	25
1,2-Dichloroethane	10.00	8.408	84	70-130	0	25
n-Heptane	10.00	8.871	89	70-130	1	25
Trichloroethene	10.00	9.689	97	70-130	2	25
1,2-Dichloropropane	10.00	8.502	85	70-130	2	25

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Bromodichloromethane	10.00	9.045	90	70-130	2	25
cis-1,3-Dichloropropene	10.00	8.241	82	70-130	0	25
4-Methyl-2-Pentanone	10.00	9.112	91	70-130	0	25
Toluene	10.00	9.528	95	70-130	3	25
trans-1,3-Dichloropropene	10.00	8.100	81	70-130	2	25
1,1,2-Trichloroethane	10.00	11.23	112	70-130	2	25
Tetrachloroethene	10.00	11.23	112	70-130	2	25
2-Hexanone	10.00	7.796	78	70-130	5	25
Dibromochloromethane	10.00	9.747	97	70-130	2	25
1,2-Dibromoethane	10.00	10.25	102	70-130	4	25
Chlorobenzene	10.00	9.134	91	70-130	0	25
Ethylbenzene	10.00	8.684	87	70-130	1	25
m,p-Xylenes	20.00	17.96	90	70-130	2	25
o-Xylene	10.00	9.168	92	70-130	2	25
Styrene	10.00	9.345	93	70-130	1	25
Bromoform	10.00	9.147	91	70-130	3	25
1,1,2,2-Tetrachloroethane	10.00	8.821	88	70-130	4	25
4-Ethyltoluene	10.00	8.381	84	70-130	2	25
1,3,5-Trimethylbenzene	10.00	8.967	90	70-130	3	25
1,2,4-Trimethylbenzene	10.00	8.534	85	70-130	3	25
1,3-Dichlorobenzene	10.00	9.668	97	70-130	1	25
1,4-Dichlorobenzene	10.00	9.432	94	70-130	3	25
Benzyl chloride	10.00	7.344	73	70-130	1	25
1,2-Dichlorobenzene	10.00	9.540	95	70-130	2	25
1,2,4-Trichlorobenzene	10.00	10.16	102	70-130	3	25
Hexachlorobutadiene	10.00	9.849	98	70-130	1	25
Naphthalene	10.00	10.83	108	70-130	0	25

Surrogate	%REC	Limits
Bromofluorobenzene	95	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846274	Diln Fac:	1.000
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	0.50		ND	2.5	
Freon 114	ND	0.50		ND	3.5	
Chloromethane	ND	0.50		ND	1.0	
Vinyl Chloride	ND	0.50		ND	1.3	
1,3-Butadiene	ND	0.50		ND	1.1	
Bromomethane	ND	0.50		ND	1.9	
Chloroethane	ND	0.50		ND	1.3	
Trichlorofluoromethane	ND	0.50		ND	2.8	
Acrolein	ND	2.0		ND	4.6	
1,1-Dichloroethene	ND	0.50		ND	2.0	
Freon 113	ND	0.50		ND	3.8	
Acetone	ND	2.0		ND	4.8	
Carbon Disulfide	ND	0.50		ND	1.6	
Isopropanol	ND	2.0		ND	4.9	
Methylene Chloride	ND	0.50		ND	1.7	
trans-1,2-Dichloroethene	ND	0.50		ND	2.0	
MTBE	ND	0.50		ND	1.8	
n-Hexane	ND	0.50		ND	1.8	
1,1-Dichloroethane	ND	0.50		ND	2.0	
Vinyl Acetate	ND	0.50		ND	1.8	
cis-1,2-Dichloroethene	ND	0.50		ND	2.0	
2-Butanone	ND	0.50		ND	1.5	
Ethyl Acetate	ND	0.50		ND	1.8	
Tetrahydrofuran	ND	0.50		ND	1.5	
Chloroform	ND	0.50		ND	2.4	
1,1,1-Trichloroethane	ND	0.50		ND	2.7	
Cyclohexane	ND	0.50		ND	1.7	
Carbon Tetrachloride	ND	0.50		ND	3.1	
Benzene	ND	0.50	0.022	ND	1.6	0.069
1,2-Dichloroethane	ND	0.50		ND	2.0	
n-Heptane	ND	0.50		ND	2.0	
Trichloroethene	ND	0.50		ND	2.7	
1,2-Dichloropropane	ND	0.50		ND	2.3	
Bromodichloromethane	ND	0.50		ND	3.4	

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846274	Diln Fac:	1.000
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
cis-1,3-Dichloropropene	ND	0.50		ND	2.3	
4-Methyl-2-Pentanone	ND	0.50		ND	2.0	
Toluene	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	ND	0.50		ND	2.7	
Tetrachloroethene	ND	0.50	0.020	ND	3.4	0.14
2-Hexanone	ND	0.50		ND	2.0	
Dibromochloromethane	ND	0.50		ND	4.3	
1,2-Dibromoethane	ND	0.50		ND	3.8	
Chlorobenzene	ND	0.50		ND	2.3	
Ethylbenzene	ND	0.50		ND	2.2	
m,p-Xylenes	ND	0.50		ND	2.2	
o-Xylene	ND	0.50		ND	2.2	
Styrene	ND	0.50		ND	2.1	
Bromoform	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	ND	0.50		ND	3.4	
4-Ethyltoluene	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	ND	0.50		ND	2.5	
1,2,4-Trimethylbenzene	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	ND	0.50		ND	3.0	
Benzyl chloride	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	ND	0.50		ND	3.7	
Hexachlorobutadiene	ND	0.50		ND	5.3	
Naphthalene	ND	2.0		ND	10	

Surrogate	%REC	Limits
Bromofluorobenzene	86	70-130

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units


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

Laboratory Job Number 278939
ANALYTICAL REPORT

Pangea Environmental	Project : 2030.001.300
1710 Franklin Street	Location : 1233 Brockman
Oakland, CA 94612	Level : II

Sample ID	Lab ID
MIP 1	278939-001
MIP 2	278939-002
MIP 3	278939-003
MIP 4	278939-004
MIP 5	278939-005
MIP 6	278939-006

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: Will Rice Date: 07/27/2016

Will Rice
Project Manager
will.rice@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**278939**
Client:	**Pangea Environmental**
Project:	**2030.001.300**
Location:	**1233 Brockman**
Request Date:	**07/25/16**
Samples Received:	**07/25/16**

This data package contains sample and QC results for six water samples, requested for the above referenced project on 07/25/16. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):
A number of samples had pH greater than 2. No other analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
High surrogate recovery was observed for bromofluorobenzene in MIP 5 (lab # 278939-005); no target analytes were detected in the sample. Many samples had pH greater than 2. MIP 3 (lab # 278939-003) had multiple vials combined due to sediment. MIP 4 (lab # 278939-004) had multiple vials combined due to sediment. No other analytical problems were encountered.

CHAIN OF CUSTODY

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Page ___ of ___

Chain of Custody # ___

C&T LOGIN # 278939

Project No: 2030.001, 300
Project Name: 1233 Brockman
EDD Format: Report Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☒ RUSH 48 HR ☐ Standard

Sampler: Simmons, Albert
Report To: Bob Clark-Riddell
Company: Pangea Env.
Telephone: (510) 435-8664
Email: Briddell@pangeaenv.com

Lab No.	Sample ID.	SAMPLING		MATRIX		PRESERVATIVE					ANALYTICAL REQUEST	
		Date Collected	Time Collected	Water	Solid	HCl	H2SO4	HNO3	NaOH	None	8260 Full scan	8015 TPHg
	MIP 1	7/25/16	~~1015~~	+		X					X	X
	MIP 2		1320									
	MIP 3		1330									
	MIP 4		1615									
	MIP 5		1630									
	MIP 6		1840									

Notes:

SAMPLE RECEIPT
☐ Intact
☒ Cold
☒ On Ice
☐ Ambient

RELINQUISHED BY:
7/25/16 DATE: TIME: 1953
DATE: TIME:
DATE: TIME:

RECEIVED BY:
DATE: 7/25 TIME: 1953
DATE: TIME:
DATE: TIME:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 278939 Date Received 7/25/16 Number of coolers 1
Client Pangea Env. Project 1233 Brock Main

Date Opened 7/25 By (print) CB (sign) [signature]
Date Logged in ↓ By (print) DTN (sign) [signature]
Date Labelled ↓ By (print) CB (sign) [signature]

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) ____

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

☒ 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 20. 3/3 VOAs Received with bubbles >6mm on Sample 1, 3, 6
1/3 VOA Received with bubbles >6mm on Sample 2, 4

Curtis & Tompkins, Ltd.

Detections Summary for 278939

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

Client : Pangea Environmental
Project : 2030.001.300
Location : 1233 Brockman

Client Sample ID : MIP 1 Laboratory Sample ID : 278939-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chloroform	2.3		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Toluene	0.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : MIP 2 Laboratory Sample ID : 278939-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chloroform	3.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Tetrachloroethene	0.8		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : MIP 3 Laboratory Sample ID : 278939-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chloroform	8.1		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Toluene	3.3		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : MIP 4 Laboratory Sample ID : 278939-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chloroform	13		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Toluene	1.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
m,p-Xylenes	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : MIP 5 Laboratory Sample ID : 278939-005

No Detections

Client Sample ID : MIP 6 Laboratory Sample ID : 278939-006

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chloroform	2.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	07/25/16
Units:	ug/L	Received:	07/25/16
Diln Fac:	1.000	Analyzed:	07/26/16
Batch#:	237375		

Field ID: MIP 1 Lab ID: 278939-001
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	116	80-132

Field ID: MIP 2 Lab ID: 278939-002
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	106	80-132

Field ID: MIP 3 Lab ID: 278939-003
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	114	80-132

Field ID: MIP 4 Lab ID: 278939-004
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	116	80-132

Field ID: MIP 5 Lab ID: 278939-005
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	112	80-132

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	07/25/16
Units:	ug/L	Received:	07/25/16
Diln Fac:	1.000	Analyzed:	07/26/16
Batch#:	237375		

Field ID: MIP 6 Lab ID: 278939-006
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	115	80-132

Type: BLANK Lab ID: QC844553

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	108	80-132

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC844554	Batch#:	237375
Matrix:	Water	Analyzed:	07/26/16
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,027	103	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	117	80-132

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8015B
Field ID:	MIP 2	Batch#:	237375
MSS Lab ID:	278939-002	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
Diln Fac:	1.000		

Type: MS Lab ID: QC844555

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	24.61	2,000	1,984	98	76-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	120	80-132

Type: MSD Lab ID: QC844556

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,015	100	76-120	2	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	125	80-132

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 1	Batch#:	237372
Lab ID:	278939-001	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
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	2.3	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	0.7	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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 1	Batch#:	237372
Lab ID:	278939-001	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
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	101	80-128
1,2-Dichloroethane-d4	91	75-139
Toluene-d8	94	80-120
Bromofluorobenzene	99	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 2	Batch#:	237372
Lab ID:	278939-002	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
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	3.6	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	0.8	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 2	Batch#:	237372
Lab ID:	278939-002	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
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	95	80-128
1,2-Dichloroethane-d4	81	75-139
Toluene-d8	95	80-120
Bromofluorobenzene	99	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 3	Batch#:	237372
Lab ID:	278939-003	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
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	8.1	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	3.3	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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 3	Batch#:	237372
Lab ID:	278939-003	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
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	95	80-128
1,2-Dichloroethane-d4	92	75-139
Toluene-d8	84	80-120
Bromofluorobenzene	98	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 4	Batch#:	237372
Lab ID:	278939-004	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
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	13	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	1.5	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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 4	Batch#:	237372
Lab ID:	278939-004	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
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	0.6	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	80-128
1,2-Dichloroethane-d4	96	75-139
Toluene-d8	94	80-120
Bromofluorobenzene	95	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 5	Batch#:	237372
Lab ID:	278939-005	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
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
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

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 5	Batch#:	237372
Lab ID:	278939-005	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
Diln Fac:	1.000		

Analyte	Result	RL
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	97	80-128
1,2-Dichloroethane-d4	83	75-139
Toluene-d8	95	80-120
Bromofluorobenzene	122 *	80-120

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 6	Batch#:	237372
Lab ID:	278939-006	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
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	2.6	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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Field ID:	MIP 6	Batch#:	237372
Lab ID:	278939-006	Sampled:	07/25/16
Matrix:	Water	Received:	07/25/16
Units:	ug/L	Analyzed:	07/26/16
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	95	80-128
1,2-Dichloroethane-d4	82	75-139
Toluene-d8	95	80-120
Bromofluorobenzene	100	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	237372
Units:	ug/L	Analyzed:	07/26/16
Diln Fac:	1.000		

Type: BS Lab ID: QC844542

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	11.98	96	66-135
Benzene	12.50	13.19	106	80-123
Trichloroethene	12.50	12.57	101	80-123
Toluene	12.50	12.70	102	80-121
Chlorobenzene	12.50	12.69	101	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	93	80-128
1,2-Dichloroethane-d4	81	75-139
Toluene-d8	94	80-120
Bromofluorobenzene	97	80-120

Type: BSD Lab ID: QC844543

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	11.43	91	66-135	5	24
Benzene	12.50	12.48	100	80-123	6	20
Trichloroethene	12.50	11.79	94	80-123	6	20
Toluene	12.50	12.31	98	80-121	3	20
Chlorobenzene	12.50	12.50	100	80-123	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-128
1,2-Dichloroethane-d4	93	75-139
Toluene-d8	96	80-120
Bromofluorobenzene	93	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC844544	Batch#:	237372
Matrix:	Water	Analyzed:	07/26/16
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

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	278939	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.300	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC844544	Batch#:	237372
Matrix:	Water	Analyzed:	07/26/16
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	102	80-128
1,2-Dichloroethane-d4	81	75-139
Toluene-d8	96	80-120
Bromofluorobenzene	99	80-120

ND= Not Detected
RL= Reporting Limit


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 279369
ANALYTICAL REPORT

Pangea Environmental	Project : 2030.001
1710 Franklin Street	Location : 1233 Brockman
Oakland, CA 94612	Level : II

Sample ID	Lab ID
SV-20	279369-001
SV-21	279369-002
SV-22	279369-003
SV-23	279369-004
SV-24	279369-005
SV-25	279369-006
SV-26	279369-007
SV-27	279369-008
SHROUD	279369-009

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: Will Rice Date: 08/16/2016

Will Rice
Project Manager
will.rice@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**279369**
Client:	**Pangea Environmental**
Project:	**2030.001**
Location:	**1233 Brockman**
Request Date:	**08/05/16**
Samples Received:	**08/05/16**

This data package contains sample and QC results for nine air samples, requested for the above referenced project on 08/05/16. The samples were received intact.

Volatile Organics in Air by MS (EPA TO-15):

High recoveries were observed for trichlorofluoromethane in the BSD for batch 237759 and the BSD for batch 237797; the associated RPDs were within limits, and this analyte was not detected at or above the RL in the associated samples. No other analytical problems were encountered.

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street

Berkeley, CA 94710
(510)486-0900 Phone
(510)486-0532 Fax

AIR TESTING CHAIN OF CUSTODY
& PURCHASE ORDER

Chain of Custody # : 1

C&T LOGIN # 279369

Project No: 2030.001
Project Name: 1233 Backmen
EDD Format: _____ Rpt Level: II III IV
Turnaround Time: X RUSH 48 ☐ Standard

Sampler: Simmons, Albert
Report To: Ron Scheele
Company: Pangea Env.
Telephone:
Email: rscheele@pangeaenv.com

Lab No.	Sample ID.	Sampling Information: Date Collected	Time Collected	Canister ID (Bar Code #)	Flow Controller ID	Sample Volume (Gauge Reading)	TESTING REQUESTED: TO-15	TO-3: C6-C12 GRO	TO-3M: C1-C6 Hydrocarbons	D1946: (Please Circle Targets) H_2 He N_2 O_2 CO CO_2 CH_4	
1	SV-20	8/5/16	1007	096	208	20.5	X				
2	SV-21		0904	053	271	5					moisture in line
3	SV-22		0927	[redacted]	154/272	5					
4	SV-23		1523	074	223	22					
5	SV-24		1520	322	XY2	22					
6	SV-25		1516	134	233	21.5					
7	SV-26		1318	129	184	5					
8	SV-27		1402	244	178	19.5					
9	shroud		1115	335	269	5					

Notes:
Just TO15 analysis

RELINQUISHED BY: _____ 8/5/16 1656 DATE/TIME

RECEIVED BY: _____ 08/05/16 1656 DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

COOLER RECEIPT CHECKLIST Curtis & Tompkins, Ltd.

Login # 279369 Date Received 8/5/16 Number of coolers 0
Client Pangea Project 1233 Brockman

Date Opened 8/5/16 By (print) AA (sign)
Date Logged in ↓ By (print) ↓ (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)

   ☐ Samples Received on ice & cold without a temperature blank

   ☐ 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? 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 9, 10/11

Curtis & Tompkins, Ltd.

Detections Summary for 279369

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

Client : Pangea Environmental
Project : 2030.001
Location : 1233 Brockman

Client Sample ID : SV-20 Laboratory Sample ID : 279369-001

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	140		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
n-Hexane	61		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
Cyclohexane	56		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
Benzene	21	J	32	1.4	ppbv	As Recd	63.72	EPA TO-15	METHOD
n-Heptane	120		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
Toluene	42		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
Ethylbenzene	990		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
m,p-Xylenes	3,300		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
o-Xylene	1,000		32		ppbv	As Recd	63.72	EPA TO-15	METHOD
Naphthalene	3.3	J	130	2.8	ppbv	As Recd	63.72	EPA TO-15	METHOD

Client Sample ID : SV-21 Laboratory Sample ID : 279369-002

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Cyclohexane	3.6		3.0		ppbv	As Recd	5.970	EPA TO-15	METHOD
Benzene	1.8	J	3.0	0.13	ppbv	As Recd	5.970	EPA TO-15	METHOD
Tetrachloroethene	24		3.0	0.12	ppbv	As Recd	5.970	EPA TO-15	METHOD
Ethylbenzene	76		3.0		ppbv	As Recd	5.970	EPA TO-15	METHOD
m,p-Xylenes	490		3.0		ppbv	As Recd	5.970	EPA TO-15	METHOD
o-Xylene	230		3.0		ppbv	As Recd	5.970	EPA TO-15	METHOD
Naphthalene	0.61	J	12	0.26	ppbv	As Recd	5.970	EPA TO-15	METHOD

Client Sample ID : SV-22 Laboratory Sample ID : 279369-003

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	36		22		ppbv	As Recd	43.40	EPA TO-15	METHOD
n-Hexane	27		22		ppbv	As Recd	43.40	EPA TO-15	METHOD
Cyclohexane	29		22		ppbv	As Recd	43.40	EPA TO-15	METHOD
Benzene	6.6	J	22	0.94	ppbv	As Recd	43.40	EPA TO-15	METHOD
Tetrachloroethene	3.6	J	22	0.87	ppbv	As Recd	43.40	EPA TO-15	METHOD
Ethylbenzene	78		22		ppbv	As Recd	43.40	EPA TO-15	METHOD
m,p-Xylenes	3,100		22		ppbv	As Recd	43.40	EPA TO-15	METHOD
o-Xylene	1,200		22		ppbv	As Recd	43.40	EPA TO-15	METHOD
Naphthalene	1.9	J	87	1.9	ppbv	As Recd	43.40	EPA TO-15	METHOD

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Client Sample ID : SV-23 Laboratory Sample ID : 279369-004

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
n-Hexane	39		32		ppbv	As Recd	63.36	EPA TO-15	METHOD
Benzene	7.5	J	32	1.4	ppbv	As Recd	63.36	EPA TO-15	METHOD
n-Heptane	58		32		ppbv	As Recd	63.36	EPA TO-15	METHOD
Toluene	40		32		ppbv	As Recd	63.36	EPA TO-15	METHOD
Tetrachloroethene	1.3	J	32	1.3	ppbv	As Recd	63.36	EPA TO-15	METHOD
Ethylbenzene	2,000		32		ppbv	As Recd	63.36	EPA TO-15	METHOD
m,p-Xylenes	5,800		32		ppbv	As Recd	63.36	EPA TO-15	METHOD
o-Xylene	2,100		32		ppbv	As Recd	63.36	EPA TO-15	METHOD
Naphthalene	3.5	J	130	2.8	ppbv	As Recd	63.36	EPA TO-15	METHOD

Client Sample ID : SV-24 Laboratory Sample ID : 279369-005

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	73		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
n-Hexane	14		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
Cyclohexane	14		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
Benzene	13		8.7	0.38	ppbv	As Recd	17.43	EPA TO-15	METHOD
n-Heptane	15		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
Toluene	12		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
Ethylbenzene	300		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
m,p-Xylenes	970		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
o-Xylene	310		8.7		ppbv	As Recd	17.43	EPA TO-15	METHOD
Naphthalene	2.5	J	35	0.76	ppbv	As Recd	17.43	EPA TO-15	METHOD

Client Sample ID : SV-25 Laboratory Sample ID : 279369-006

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	100		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
n-Hexane	15		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
Cyclohexane	11		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
Benzene	12		2.7	0.12	ppbv	As Recd	5.310	EPA TO-15	METHOD
n-Heptane	7.1		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
Toluene	12		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
Tetrachloroethene	0.18	J	2.7	0.11	ppbv	As Recd	5.310	EPA TO-15	METHOD
Ethylbenzene	62		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
m,p-Xylenes	240		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD
o-Xylene	78		2.7		ppbv	As Recd	5.310	EPA TO-15	METHOD

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Client Sample ID : SV-26 Laboratory Sample ID : 279369-007

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	5.4		4.3		ppbv	As Recd	2.170	EPA TO-15	METHOD
Carbon Disulfide	33		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
n-Hexane	4.0		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
2-Butanone	1.1		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
Cyclohexane	3.6		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
Benzene	7.2		1.1	0.047	ppbv	As Recd	2.170	EPA TO-15	METHOD
n-Heptane	2.5		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
Toluene	7.6		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
Tetrachloroethene	1.1		1.1	0.043	ppbv	As Recd	2.170	EPA TO-15	METHOD
Ethylbenzene	40		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
m,p-Xylenes	150		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
o-Xylene	61		1.1		ppbv	As Recd	2.170	EPA TO-15	METHOD
Naphthalene	0.50	J	4.3	0.095	ppbv	As Recd	2.170	EPA TO-15	METHOD

Client Sample ID : SV-27 Laboratory Sample ID : 279369-008

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	92		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
n-Hexane	18		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
Cyclohexane	15		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
Benzene	23		2.0	0.085	ppbv	As Recd	3.920	EPA TO-15	METHOD
n-Heptane	7.5		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
Toluene	13		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
Ethylbenzene	54		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
m,p-Xylenes	210		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
o-Xylene	75		2.0		ppbv	As Recd	3.920	EPA TO-15	METHOD
Naphthalene	0.75	J	7.8	0.17	ppbv	As Recd	3.920	EPA TO-15	METHOD

Client Sample ID : SHROUD Laboratory Sample ID : 279369-009

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Isopropanol	74,000		2,400		ppbv	As Recd	1188	EPA TO-15	METHOD

J = Estimated value

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-20	Diln Fac:	63.72
Lab ID:	279369-001	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	32		ND	160	
Freon 114	ND	32		ND	220	
Chloromethane	ND	32		ND	66	
Vinyl Chloride	ND	32		ND	81	
1,3-Butadiene	ND	32		ND	70	
Bromomethane	ND	32		ND	120	
Chloroethane	ND	32		ND	84	
Trichlorofluoromethane	ND	32		ND	180	
Acrolein	ND	130		ND	290	
1,1-Dichloroethene	ND	32		ND	130	
Freon 113	ND	32		ND	240	
Acetone	ND	130		ND	300	
Carbon Disulfide	140	32		450	99	
Isopropanol	ND	130		ND	310	
Methylene Chloride	ND	32		ND	110	
trans-1,2-Dichloroethene	ND	32		ND	130	
MTBE	ND	32		ND	110	
n-Hexane	61	32		210	110	
1,1-Dichloroethane	ND	32		ND	130	
Vinyl Acetate	ND	32		ND	110	
cis-1,2-Dichloroethene	ND	32		ND	130	
2-Butanone	ND	32		ND	94	
Ethyl Acetate	ND	32		ND	110	
Tetrahydrofuran	ND	32		ND	94	
Chloroform	ND	32		ND	160	
1,1,1-Trichloroethane	ND	32		ND	170	
Cyclohexane	56	32		190	110	
Carbon Tetrachloride	ND	32		ND	200	
Benzene	21 J	32	1.4	66 J	100	4.4
1,2-Dichloroethane	ND	32		ND	130	
n-Heptane	120	32		510	130	
Trichloroethene	ND	32		ND	170	
1,2-Dichloropropane	ND	32		ND	150	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-20	Diln Fac:	63.72
Lab ID:	279369-001	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	32		ND	210	
cis-1,3-Dichloropropene	ND	32		ND	140	
4-Methyl-2-Pentanone	ND	32		ND	130	
Toluene	42	32		160	120	
trans-1,3-Dichloropropene	ND	32		ND	140	
1,1,2-Trichloroethane	ND	32		ND	170	
Tetrachloroethene	ND	32	1.3	ND	220	8.6
2-Hexanone	ND	32		ND	130	
Dibromochloromethane	ND	32		ND	270	
1,2-Dibromoethane	ND	32		ND	240	
Chlorobenzene	ND	32		ND	150	
Ethylbenzene	990	32		4,300	140	
m,p-Xylenes	3,300	32		14,000	140	
o-Xylene	1,000	32		4,400	140	
Styrene	ND	32		ND	140	
Bromoform	ND	32		ND	330	
1,1,2,2-Tetrachloroethane	ND	32		ND	220	
4-Ethyltoluene	ND	32		ND	160	
1,3,5-Trimethylbenzene	ND	32		ND	160	
1,2,4-Trimethylbenzene	ND	32		ND	160	
1,3-Dichlorobenzene	ND	32		ND	190	
1,4-Dichlorobenzene	ND	32		ND	190	
Benzyl chloride	ND	32		ND	160	
1,2-Dichlorobenzene	ND	32		ND	190	
1,2,4-Trichlorobenzene	ND	32		ND	240	
Hexachlorobutadiene	ND	32		ND	340	
Naphthalene	3.3 J	130	2.8	17 J	670	15

Surrogate	%REC	Limits
Bromofluorobenzene	84	80-121

J= Estimated value
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MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-21	Diln Fac:	5.970
Lab ID:	279369-002	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	3.0		ND	15	
Freon 114	ND	3.0		ND	21	
Chloromethane	ND	3.0		ND	6.2	
Vinyl Chloride	ND	3.0		ND	7.6	
1,3-Butadiene	ND	3.0		ND	6.6	
Bromomethane	ND	3.0		ND	12	
Chloroethane	ND	3.0		ND	7.9	
Trichlorofluoromethane	ND	3.0		ND	17	
Acrolein	ND	12		ND	27	
1,1-Dichloroethene	ND	3.0		ND	12	
Freon 113	ND	3.0		ND	23	
Acetone	ND	12		ND	28	
Carbon Disulfide	ND	3.0		ND	9.3	
Isopropanol	ND	12		ND	29	
Methylene Chloride	ND	3.0		ND	10	
trans-1,2-Dichloroethene	ND	3.0		ND	12	
MTBE	ND	3.0		ND	11	
n-Hexane	ND	3.0		ND	11	
1,1-Dichloroethane	ND	3.0		ND	12	
Vinyl Acetate	ND	3.0		ND	11	
cis-1,2-Dichloroethene	ND	3.0		ND	12	
2-Butanone	ND	3.0		ND	8.8	
Ethyl Acetate	ND	3.0		ND	11	
Tetrahydrofuran	ND	3.0		ND	8.8	
Chloroform	ND	3.0		ND	15	
1,1,1-Trichloroethane	ND	3.0		ND	16	
Cyclohexane	3.6	3.0		12	10	
Carbon Tetrachloride	ND	3.0		ND	19	
Benzene	1.8 J	3.0	0.13	5.6 J	9.5	0.41
1,2-Dichloroethane	ND	3.0		ND	12	
n-Heptane	ND	3.0		ND	12	
Trichloroethene	ND	3.0		ND	16	
1,2-Dichloropropane	ND	3.0		ND	14	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-21	Diln Fac:	5.970
Lab ID:	279369-002	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	3.0		ND	20	
cis-1,3-Dichloropropene	ND	3.0		ND	14	
4-Methyl-2-Pentanone	ND	3.0		ND	12	
Toluene	ND	3.0		ND	11	
trans-1,3-Dichloropropene	ND	3.0		ND	14	
1,1,2-Trichloroethane	ND	3.0		ND	16	
Tetrachloroethene	24	3.0	0.12	160	20	0.81
2-Hexanone	ND	3.0		ND	12	
Dibromochloromethane	ND	3.0		ND	25	
1,2-Dibromoethane	ND	3.0		ND	23	
Chlorobenzene	ND	3.0		ND	14	
Ethylbenzene	76	3.0		330	13	
m,p-Xylenes	490	3.0		2,100	13	
o-Xylene	230	3.0		990	13	
Styrene	ND	3.0		ND	13	
Bromoform	ND	3.0		ND	31	
1,1,2,2-Tetrachloroethane	ND	3.0		ND	20	
4-Ethyltoluene	ND	3.0		ND	15	
1,3,5-Trimethylbenzene	ND	3.0		ND	15	
1,2,4-Trimethylbenzene	ND	3.0		ND	15	
1,3-Dichlorobenzene	ND	3.0		ND	18	
1,4-Dichlorobenzene	ND	3.0		ND	18	
Benzyl chloride	ND	3.0		ND	15	
1,2-Dichlorobenzene	ND	3.0		ND	18	
1,2,4-Trichlorobenzene	ND	3.0		ND	22	
Hexachlorobutadiene	ND	3.0		ND	32	
Naphthalene	0.61 J	12	0.26	3.2 J	63	1.4

Surrogate	%REC	Limits
Bromofluorobenzene	89	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-22	Diln Fac:	43.40
Lab ID:	279369-003	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	22		ND	110	
Freon 114	ND	22		ND	150	
Chloromethane	ND	22		ND	45	
Vinyl Chloride	ND	22		ND	55	
1,3-Butadiene	ND	22		ND	48	
Bromomethane	ND	22		ND	84	
Chloroethane	ND	22		ND	57	
Trichlorofluoromethane	ND	22		ND	120	
Acrolein	ND	87		ND	200	
1,1-Dichloroethene	ND	22		ND	86	
Freon 113	ND	22		ND	170	
Acetone	ND	87		ND	210	
Carbon Disulfide	36	22		110	68	
Isopropanol	ND	87		ND	210	
Methylene Chloride	ND	22		ND	75	
trans-1,2-Dichloroethene	ND	22		ND	86	
MTBE	ND	22		ND	78	
n-Hexane	27	22		94	76	
1,1-Dichloroethane	ND	22		ND	88	
Vinyl Acetate	ND	22		ND	76	
cis-1,2-Dichloroethene	ND	22		ND	86	
2-Butanone	ND	22		ND	64	
Ethyl Acetate	ND	22		ND	78	
Tetrahydrofuran	ND	22		ND	64	
Chloroform	ND	22		ND	110	
1,1,1-Trichloroethane	ND	22		ND	120	
Cyclohexane	29	22		100	75	
Carbon Tetrachloride	ND	22		ND	140	
Benzene	6.6 J	22	0.94	21 J	69	3.0
1,2-Dichloroethane	ND	22		ND	88	
n-Heptane	ND	22		ND	89	
Trichloroethene	ND	22		ND	120	
1,2-Dichloropropane	ND	22		ND	100	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-22	Diln Fac:	43.40
Lab ID:	279369-003	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	22		ND	150	
cis-1,3-Dichloropropene	ND	22		ND	98	
4-Methyl-2-Pentanone	ND	22		ND	89	
Toluene	ND	22		ND	82	
trans-1,3-Dichloropropene	ND	22		ND	98	
1,1,2-Trichloroethane	ND	22		ND	120	
Tetrachloroethene	3.6 J	22	0.87	24 J	150	5.9
2-Hexanone	ND	22		ND	89	
Dibromochloromethane	ND	22		ND	180	
1,2-Dibromoethane	ND	22		ND	170	
Chlorobenzene	ND	22		ND	100	
Ethylbenzene	78	22		340	94	
m,p-Xylenes	3,100	22		13,000	94	
o-Xylene	1,200	22		5,100	94	
Styrene	ND	22		ND	92	
Bromoform	ND	22		ND	220	
1,1,2,2-Tetrachloroethane	ND	22		ND	150	
4-Ethyltoluene	ND	22		ND	110	
1,3,5-Trimethylbenzene	ND	22		ND	110	
1,2,4-Trimethylbenzene	ND	22		ND	110	
1,3-Dichlorobenzene	ND	22		ND	130	
1,4-Dichlorobenzene	ND	22		ND	130	
Benzyl chloride	ND	22		ND	110	
1,2-Dichlorobenzene	ND	22		ND	130	
1,2,4-Trichlorobenzene	ND	22		ND	160	
Hexachlorobutadiene	ND	22		ND	230	
Naphthalene	1.9 J	87	1.9	10 J	460	9.9

Surrogate	%REC	Limits
Bromofluorobenzene	85	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-23	Diln Fac:	63.36
Lab ID:	279369-004	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	32		ND	160	
Freon 114	ND	32		ND	220	
Chloromethane	ND	32		ND	65	
Vinyl Chloride	ND	32		ND	81	
1,3-Butadiene	ND	32		ND	70	
Bromomethane	ND	32		ND	120	
Chloroethane	ND	32		ND	84	
Trichlorofluoromethane	ND	32		ND	180	
Acrolein	ND	130		ND	290	
1,1-Dichloroethene	ND	32		ND	130	
Freon 113	ND	32		ND	240	
Acetone	ND	130		ND	300	
Carbon Disulfide	ND	32		ND	99	
Isopropanol	ND	130		ND	310	
Methylene Chloride	ND	32		ND	110	
trans-1,2-Dichloroethene	ND	32		ND	130	
MTBE	ND	32		ND	110	
n-Hexane	39	32		140	110	
1,1-Dichloroethane	ND	32		ND	130	
Vinyl Acetate	ND	32		ND	110	
cis-1,2-Dichloroethene	ND	32		ND	130	
2-Butanone	ND	32		ND	93	
Ethyl Acetate	ND	32		ND	110	
Tetrahydrofuran	ND	32		ND	93	
Chloroform	ND	32		ND	150	
1,1,1-Trichloroethane	ND	32		ND	170	
Cyclohexane	ND	32		ND	110	
Carbon Tetrachloride	ND	32		ND	200	
Benzene	7.5 J	32	1.4	24 J	100	4.4
1,2-Dichloroethane	ND	32		ND	130	
n-Heptane	58	32		240	130	
Trichloroethene	ND	32		ND	170	
1,2-Dichloropropane	ND	32		ND	150	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-23	Diln Fac:	63.36
Lab ID:	279369-004	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	32		ND	210	
cis-1,3-Dichloropropene	ND	32		ND	140	
4-Methyl-2-Pentanone	ND	32		ND	130	
Toluene	40	32		150	120	
trans-1,3-Dichloropropene	ND	32		ND	140	
1,1,2-Trichloroethane	ND	32		ND	170	
Tetrachloroethene	1.3 J	32	1.3	9.0 J	210	8.6
2-Hexanone	ND	32		ND	130	
Dibromochloromethane	ND	32		ND	270	
1,2-Dibromoethane	ND	32		ND	240	
Chlorobenzene	ND	32		ND	150	
Ethylbenzene	2,000	32		8,700	140	
m,p-Xylenes	5,800	32		25,000	140	
o-Xylene	2,100	32		9,000	140	
Styrene	ND	32		ND	130	
Bromoform	ND	32		ND	330	
1,1,2,2-Tetrachloroethane	ND	32		ND	220	
4-Ethyltoluene	ND	32		ND	160	
1,3,5-Trimethylbenzene	ND	32		ND	160	
1,2,4-Trimethylbenzene	ND	32		ND	160	
1,3-Dichlorobenzene	ND	32		ND	190	
1,4-Dichlorobenzene	ND	32		ND	190	
Benzyl chloride	ND	32		ND	160	
1,2-Dichlorobenzene	ND	32		ND	190	
1,2,4-Trichlorobenzene	ND	32		ND	240	
Hexachlorobutadiene	ND	32		ND	340	
Naphthalene	3.5 J	130	2.8	19 J	660	15

Surrogate	%REC	Limits
Bromofluorobenzene	83	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-24	Diln Fac:	17.43
Lab ID:	279369-005	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	8.7		ND	43	
Freon 114	ND	8.7		ND	61	
Chloromethane	ND	8.7		ND	18	
Vinyl Chloride	ND	8.7		ND	22	
1,3-Butadiene	ND	8.7		ND	19	
Bromomethane	ND	8.7		ND	34	
Chloroethane	ND	8.7		ND	23	
Trichlorofluoromethane	ND	8.7		ND	49	
Acrolein	ND	35		ND	80	
1,1-Dichloroethene	ND	8.7		ND	35	
Freon 113	ND	8.7		ND	67	
Acetone	ND	35		ND	83	
Carbon Disulfide	73	8.7		230	27	
Isopropanol	ND	35		ND	86	
Methylene Chloride	ND	8.7		ND	30	
trans-1,2-Dichloroethene	ND	8.7		ND	35	
MTBE	ND	8.7		ND	31	
n-Hexane	14	8.7		49	31	
1,1-Dichloroethane	ND	8.7		ND	35	
Vinyl Acetate	ND	8.7		ND	31	
cis-1,2-Dichloroethene	ND	8.7		ND	35	
2-Butanone	ND	8.7		ND	26	
Ethyl Acetate	ND	8.7		ND	31	
Tetrahydrofuran	ND	8.7		ND	26	
Chloroform	ND	8.7		ND	43	
1,1,1-Trichloroethane	ND	8.7		ND	48	
Cyclohexane	14	8.7		48	30	
Carbon Tetrachloride	ND	8.7		ND	55	
Benzene	13	8.7	0.38	42	28	1.2
1,2-Dichloroethane	ND	8.7		ND	35	
n-Heptane	15	8.7		60	36	
Trichloroethene	ND	8.7		ND	47	
1,2-Dichloropropane	ND	8.7		ND	40	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-24	Diln Fac:	17.43
Lab ID:	279369-005	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/07/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	8.7		ND	58	
cis-1,3-Dichloropropene	ND	8.7		ND	40	
4-Methyl-2-Pentanone	ND	8.7		ND	36	
Toluene	12	8.7		45	33	
trans-1,3-Dichloropropene	ND	8.7		ND	40	
1,1,2-Trichloroethane	ND	8.7		ND	48	
Tetrachloroethene	ND	8.7	0.35	ND	59	2.4
2-Hexanone	ND	8.7		ND	36	
Dibromochloromethane	ND	8.7		ND	74	
1,2-Dibromoethane	ND	8.7		ND	67	
Chlorobenzene	ND	8.7		ND	40	
Ethylbenzene	300	8.7		1,300	38	
m,p-Xylenes	970	8.7		4,200	38	
o-Xylene	310	8.7		1,300	38	
Styrene	ND	8.7		ND	37	
Bromoform	ND	8.7		ND	90	
1,1,2,2-Tetrachloroethane	ND	8.7		ND	60	
4-Ethyltoluene	ND	8.7		ND	43	
1,3,5-Trimethylbenzene	ND	8.7		ND	43	
1,2,4-Trimethylbenzene	ND	8.7		ND	43	
1,3-Dichlorobenzene	ND	8.7		ND	52	
1,4-Dichlorobenzene	ND	8.7		ND	52	
Benzyl chloride	ND	8.7		ND	45	
1,2-Dichlorobenzene	ND	8.7		ND	52	
1,2,4-Trichlorobenzene	ND	8.7		ND	65	
Hexachlorobutadiene	ND	8.7		ND	93	
Naphthalene	2.5 J	35	0.76	13 J	180	4.0

Surrogate	%REC	Limits
Bromofluorobenzene	88	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-25	Diln Fac:	5.310
Lab ID:	279369-006	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	2.7		ND	13	
Freon 114	ND	2.7		ND	19	
Chloromethane	ND	2.7		ND	5.5	
Vinyl Chloride	ND	2.7		ND	6.8	
1,3-Butadiene	ND	2.7		ND	5.9	
Bromomethane	ND	2.7		ND	10	
Chloroethane	ND	2.7		ND	7.0	
Trichlorofluoromethane	ND	2.7		ND	15	
Acrolein	ND	11		ND	24	
1,1-Dichloroethene	ND	2.7		ND	11	
Freon 113	ND	2.7		ND	20	
Acetone	ND	11		ND	25	
Carbon Disulfide	100	2.7		310	8.3	
Isopropanol	ND	11		ND	26	
Methylene Chloride	ND	2.7		ND	9.2	
trans-1,2-Dichloroethene	ND	2.7		ND	11	
MTBE	ND	2.7		ND	9.6	
n-Hexane	15	2.7		55	9.4	
1,1-Dichloroethane	ND	2.7		ND	11	
Vinyl Acetate	ND	2.7		ND	9.3	
cis-1,2-Dichloroethene	ND	2.7		ND	11	
2-Butanone	ND	2.7		ND	7.8	
Ethyl Acetate	ND	2.7		ND	9.6	
Tetrahydrofuran	ND	2.7		ND	7.8	
Chloroform	ND	2.7		ND	13	
1,1,1-Trichloroethane	ND	2.7		ND	14	
Cyclohexane	11	2.7		37	9.1	
Carbon Tetrachloride	ND	2.7		ND	17	
Benzene	12	2.7	0.12	39	8.5	0.37
1,2-Dichloroethane	ND	2.7		ND	11	
n-Heptane	7.1	2.7		29	11	
Trichloroethene	ND	2.7		ND	14	
1,2-Dichloropropane	ND	2.7		ND	12	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-25	Diln Fac:	5.310
Lab ID:	279369-006	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	2.7		ND	18	
cis-1,3-Dichloropropene	ND	2.7		ND	12	
4-Methyl-2-Pentanone	ND	2.7		ND	11	
Toluene	12	2.7		47	10	
trans-1,3-Dichloropropene	ND	2.7		ND	12	
1,1,2-Trichloroethane	ND	2.7		ND	14	
Tetrachloroethene	0.18 J	2.7	0.11	1.2 J	18	0.72
2-Hexanone	ND	2.7		ND	11	
Dibromochloromethane	ND	2.7		ND	23	
1,2-Dibromoethane	ND	2.7		ND	20	
Chlorobenzene	ND	2.7		ND	12	
Ethylbenzene	62	2.7		270	12	
m,p-Xylenes	240	2.7		1,100	12	
o-Xylene	78	2.7		340	12	
Styrene	ND	2.7		ND	11	
Bromoform	ND	2.7		ND	27	
1,1,2,2-Tetrachloroethane	ND	2.7		ND	18	
4-Ethyltoluene	ND	2.7		ND	13	
1,3,5-Trimethylbenzene	ND	2.7		ND	13	
1,2,4-Trimethylbenzene	ND	2.7		ND	13	
1,3-Dichlorobenzene	ND	2.7		ND	16	
1,4-Dichlorobenzene	ND	2.7		ND	16	
Benzyl chloride	ND	2.7		ND	14	
1,2-Dichlorobenzene	ND	2.7		ND	16	
1,2,4-Trichlorobenzene	ND	2.7		ND	20	
Hexachlorobutadiene	ND	2.7		ND	28	
Naphthalene	ND	11	0.23	ND	56	1.2

Surrogate	%REC	Limits
Bromofluorobenzene	98	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-26	Diln Fac:	2.170
Lab ID:	279369-007	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	1.1		ND	5.4	
Freon 114	ND	1.1		ND	7.6	
Chloromethane	ND	1.1		ND	2.2	
Vinyl Chloride	ND	1.1		ND	2.8	
1,3-Butadiene	ND	1.1		ND	2.4	
Bromomethane	ND	1.1		ND	4.2	
Chloroethane	ND	1.1		ND	2.9	
Trichlorofluoromethane	ND	1.1		ND	6.1	
Acrolein	ND	4.3		ND	10	
1,1-Dichloroethene	ND	1.1		ND	4.3	
Freon 113	ND	1.1		ND	8.3	
Acetone	5.4	4.3		13	10	
Carbon Disulfide	33	1.1		100	3.4	
Isopropanol	ND	4.3		ND	11	
Methylene Chloride	ND	1.1		ND	3.8	
trans-1,2-Dichloroethene	ND	1.1		ND	4.3	
MTBE	ND	1.1		ND	3.9	
n-Hexane	4.0	1.1		14	3.8	
1,1-Dichloroethane	ND	1.1		ND	4.4	
Vinyl Acetate	ND	1.1		ND	3.8	
cis-1,2-Dichloroethene	ND	1.1		ND	4.3	
2-Butanone	1.1	1.1		3.2	3.2	
Ethyl Acetate	ND	1.1		ND	3.9	
Tetrahydrofuran	ND	1.1		ND	3.2	
Chloroform	ND	1.1		ND	5.3	
1,1,1-Trichloroethane	ND	1.1		ND	5.9	
Cyclohexane	3.6	1.1		12	3.7	
Carbon Tetrachloride	ND	1.1		ND	6.8	
Benzene	7.2	1.1	0.047	23	3.5	0.15
1,2-Dichloroethane	ND	1.1		ND	4.4	
n-Heptane	2.5	1.1		10	4.4	
Trichloroethene	ND	1.1		ND	5.8	
1,2-Dichloropropane	ND	1.1		ND	5.0	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-26	Diln Fac:	2.170
Lab ID:	279369-007	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	1.1		ND	7.3	
cis-1,3-Dichloropropene	ND	1.1		ND	4.9	
4-Methyl-2-Pentanone	ND	1.1		ND	4.4	
Toluene	7.6	1.1		28	4.1	
trans-1,3-Dichloropropene	ND	1.1		ND	4.9	
1,1,2-Trichloroethane	ND	1.1		ND	5.9	
Tetrachloroethene	1.1	1.1	0.043	7.6	7.4	0.29
2-Hexanone	ND	1.1		ND	4.4	
Dibromochloromethane	ND	1.1		ND	9.2	
1,2-Dibromoethane	ND	1.1		ND	8.3	
Chlorobenzene	ND	1.1		ND	5.0	
Ethylbenzene	40	1.1		180	4.7	
m,p-Xylenes	150	1.1		660	4.7	
o-Xylene	61	1.1		260	4.7	
Styrene	ND	1.1		ND	4.6	
Bromoform	ND	1.1		ND	11	
1,1,2,2-Tetrachloroethane	ND	1.1		ND	7.4	
4-Ethyltoluene	ND	1.1		ND	5.3	
1,3,5-Trimethylbenzene	ND	1.1		ND	5.3	
1,2,4-Trimethylbenzene	ND	1.1		ND	5.3	
1,3-Dichlorobenzene	ND	1.1		ND	6.5	
1,4-Dichlorobenzene	ND	1.1		ND	6.5	
Benzyl chloride	ND	1.1		ND	5.6	
1,2-Dichlorobenzene	ND	1.1		ND	6.5	
1,2,4-Trichlorobenzene	ND	1.1		ND	8.1	
Hexachlorobutadiene	ND	1.1		ND	12	
Naphthalene	0.50 J	4.3	0.095	2.6 J	23	0.50

Surrogate	%REC	Limits
Bromofluorobenzene	98	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-27	Diln Fac:	3.920
Lab ID:	279369-008	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	2.0		ND	9.7	
Freon 114	ND	2.0		ND	14	
Chloromethane	ND	2.0		ND	4.0	
Vinyl Chloride	ND	2.0		ND	5.0	
1,3-Butadiene	ND	2.0		ND	4.3	
Bromomethane	ND	2.0		ND	7.6	
Chloroethane	ND	2.0		ND	5.2	
Trichlorofluoromethane	ND	2.0		ND	11	
Acrolein	ND	7.8		ND	18	
1,1-Dichloroethene	ND	2.0		ND	7.8	
Freon 113	ND	2.0		ND	15	
Acetone	ND	7.8		ND	19	
Carbon Disulfide	92	2.0		290	6.1	
Isopropanol	ND	7.8		ND	19	
Methylene Chloride	ND	2.0		ND	6.8	
trans-1,2-Dichloroethene	ND	2.0		ND	7.8	
MTBE	ND	2.0		ND	7.1	
n-Hexane	18	2.0		64	6.9	
1,1-Dichloroethane	ND	2.0		ND	7.9	
Vinyl Acetate	ND	2.0		ND	6.9	
cis-1,2-Dichloroethene	ND	2.0		ND	7.8	
2-Butanone	ND	2.0		ND	5.8	
Ethyl Acetate	ND	2.0		ND	7.1	
Tetrahydrofuran	ND	2.0		ND	5.8	
Chloroform	ND	2.0		ND	9.6	
1,1,1-Trichloroethane	ND	2.0		ND	11	
Cyclohexane	15	2.0		51	6.7	
Carbon Tetrachloride	ND	2.0		ND	12	
Benzene	23	2.0	0.085	73	6.3	0.27
1,2-Dichloroethane	ND	2.0		ND	7.9	
n-Heptane	7.5	2.0		31	8.0	
Trichloroethene	ND	2.0		ND	11	
1,2-Dichloropropane	ND	2.0		ND	9.1	

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SV-27	Diln Fac:	3.920
Lab ID:	279369-008	Batch#:	237759
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Bromodichloromethane	ND	2.0		ND	13	
cis-1,3-Dichloropropene	ND	2.0		ND	8.9	
4-Methyl-2-Pentanone	ND	2.0		ND	8.0	
Toluene	13	2.0		48	7.4	
trans-1,3-Dichloropropene	ND	2.0		ND	8.9	
1,1,2-Trichloroethane	ND	2.0		ND	11	
Tetrachloroethene	ND	2.0	0.078	ND	13	0.53
2-Hexanone	ND	2.0		ND	8.0	
Dibromochloromethane	ND	2.0		ND	17	
1,2-Dibromoethane	ND	2.0		ND	15	
Chlorobenzene	ND	2.0		ND	9.0	
Ethylbenzene	54	2.0		230	8.5	
m,p-Xylenes	210	2.0		920	8.5	
o-Xylene	75	2.0		330	8.5	
Styrene	ND	2.0		ND	8.3	
Bromoform	ND	2.0		ND	20	
1,1,2,2-Tetrachloroethane	ND	2.0		ND	13	
4-Ethyltoluene	ND	2.0		ND	9.6	
1,3,5-Trimethylbenzene	ND	2.0		ND	9.6	
1,2,4-Trimethylbenzene	ND	2.0		ND	9.6	
1,3-Dichlorobenzene	ND	2.0		ND	12	
1,4-Dichlorobenzene	ND	2.0		ND	12	
Benzyl chloride	ND	2.0		ND	10	
1,2-Dichlorobenzene	ND	2.0		ND	12	
1,2,4-Trichlorobenzene	ND	2.0		ND	15	
Hexachlorobutadiene	ND	2.0		ND	21	
Naphthalene	0.75 J	7.8	0.17	3.9 J	41	0.90

Surrogate	%REC	Limits
Bromofluorobenzene	102	80-121

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SHROUD	Diln Fac:	1,188
Lab ID:	279369-009	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	590		ND	2,900	
Freon 114	ND	590		ND	4,200	
Chloromethane	ND	590		ND	1,200	
Vinyl Chloride	ND	590		ND	1,500	
1,3-Butadiene	ND	590		ND	1,300	
Bromomethane	ND	590		ND	2,300	
Chloroethane	ND	590		ND	1,600	
Trichlorofluoromethane	ND	590		ND	3,300	
Acrolein	ND	2,400		ND	5,400	
1,1-Dichloroethene	ND	590		ND	2,400	
Freon 113	ND	590		ND	4,600	
Acetone	ND	2,400		ND	5,600	
Carbon Disulfide	ND	590		ND	1,800	
Isopropanol	74,000	2,400		180,000	5,800	
Methylene Chloride	ND	590		ND	2,100	
trans-1,2-Dichloroethene	ND	590		ND	2,400	
MTBE	ND	590		ND	2,100	
n-Hexane	ND	590		ND	2,100	
1,1-Dichloroethane	ND	590		ND	2,400	
Vinyl Acetate	ND	590		ND	2,100	
cis-1,2-Dichloroethene	ND	590		ND	2,400	
2-Butanone	ND	590		ND	1,800	
Ethyl Acetate	ND	590		ND	2,100	
Tetrahydrofuran	ND	590		ND	1,800	
Chloroform	ND	590		ND	2,900	
1,1,1-Trichloroethane	ND	590		ND	3,200	
Cyclohexane	ND	590		ND	2,000	
Carbon Tetrachloride	ND	590		ND	3,700	
Benzene	ND	590	26	ND	1,900	83
1,2-Dichloroethane	ND	590		ND	2,400	
n-Heptane	ND	590		ND	2,400	
Trichloroethene	ND	590		ND	3,200	
1,2-Dichloropropane	ND	590		ND	2,700	
Bromodichloromethane	ND	590		ND	4,000	

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Field ID:	SHROUD	Diln Fac:	1,188
Lab ID:	279369-009	Batch#:	237797
Matrix:	Air	Sampled:	08/05/16
Units (V):	ppbv	Received:	08/05/16
Units (M):	ug/m3	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
cis-1,3-Dichloropropene	ND	590		ND	2,700	
4-Methyl-2-Pentanone	ND	590		ND	2,400	
Toluene	ND	590		ND	2,200	
trans-1,3-Dichloropropene	ND	590		ND	2,700	
1,1,2-Trichloroethane	ND	590		ND	3,200	
Tetrachloroethene	ND	590	24	ND	4,000	160
2-Hexanone	ND	590		ND	2,400	
Dibromochloromethane	ND	590		ND	5,100	
1,2-Dibromoethane	ND	590		ND	4,600	
Chlorobenzene	ND	590		ND	2,700	
Ethylbenzene	ND	590		ND	2,600	
m,p-Xylenes	ND	590		ND	2,600	
o-Xylene	ND	590		ND	2,600	
Styrene	ND	590		ND	2,500	
Bromoform	ND	590		ND	6,100	
1,1,2,2-Tetrachloroethane	ND	590		ND	4,100	
4-Ethyltoluene	ND	590		ND	2,900	
1,3,5-Trimethylbenzene	ND	590		ND	2,900	
1,2,4-Trimethylbenzene	ND	590		ND	2,900	
1,3-Dichlorobenzene	ND	590		ND	3,600	
1,4-Dichlorobenzene	ND	590		ND	3,600	
Benzyl chloride	ND	590		ND	3,100	
1,2-Dichlorobenzene	ND	590		ND	3,600	
1,2,4-Trichlorobenzene	ND	590		ND	4,400	
Hexachlorobutadiene	ND	590		ND	6,300	
Naphthalene	ND	2,400	52	ND	12,000	270

Surrogate	%REC	Limits
Bromofluorobenzene	83	80-121

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Type: BS Lab ID: QC846127

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	11.18	112	70-130
Freon 114	10.00	12.41	124	70-130
Chloromethane	10.00	7.678	77	70-130
Vinyl Chloride	10.00	8.227	82	70-130
1,3-Butadiene	10.00	9.598	96	70-130
Bromomethane	10.00	9.072	91	70-130
Chloroethane	10.00	10.34	103	70-130
Trichlorofluoromethane	10.00	12.65	126	70-130
Acrolein	10.00	6.964	70	70-130
1,1-Dichloroethene	10.00	10.45	104	70-130
Freon 113	10.00	12.18	122	70-130
Acetone	10.00	9.963	100	70-130
Carbon Disulfide	10.00	8.586	86	70-130
Isopropanol	10.00	8.594	86	70-130
Methylene Chloride	10.00	8.996	90	70-130
trans-1,2-Dichloroethene	10.00	10.04	100	70-130
MTBE	10.00	9.676	97	70-130
n-Hexane	10.00	10.04	100	70-130
1,1-Dichloroethane	10.00	10.61	106	70-130
Vinyl Acetate	10.00	9.411	94	70-130
cis-1,2-Dichloroethene	10.00	8.861	89	70-130
2-Butanone	10.00	10.95	109	70-130
Ethyl Acetate	10.00	12.09	121	70-130
Tetrahydrofuran	10.00	9.428	94	70-130
Chloroform	10.00	9.789	98	70-130
1,1,1-Trichloroethane	10.00	10.23	102	70-130
Cyclohexane	10.00	9.697	97	70-130
Carbon Tetrachloride	10.00	9.021	90	70-130
Benzene	10.00	8.669	87	70-130
1,2-Dichloroethane	10.00	8.508	85	70-130
n-Heptane	10.00	8.927	89	70-130
Trichloroethene	10.00	9.682	97	70-130
1,2-Dichloropropane	10.00	8.659	87	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
Bromodichloromethane	10.00	9.295	93	70-130
cis-1,3-Dichloropropene	10.00	8.122	81	70-130
4-Methyl-2-Pentanone	10.00	9.222	92	70-130
Toluene	10.00	8.854	89	70-130
trans-1,3-Dichloropropene	10.00	7.784	78	70-130
1,1,2-Trichloroethane	10.00	10.09	101	70-130
Tetrachloroethene	10.00	10.35	104	70-130
2-Hexanone	10.00	7.414	74	70-130
Dibromochloromethane	10.00	9.075	91	70-130
1,2-Dibromoethane	10.00	9.351	94	70-130
Chlorobenzene	10.00	8.532	85	70-130
Ethylbenzene	10.00	8.172	82	70-130
m,p-Xylenes	20.00	16.88	84	70-130
o-Xylene	10.00	8.549	85	70-130
Styrene	10.00	8.674	87	70-130
Bromoform	10.00	9.081	91	70-130
1,1,2,2-Tetrachloroethane	10.00	8.075	81	70-130
4-Ethyltoluene	10.00	7.772	78	70-130
1,3,5-Trimethylbenzene	10.00	8.402	84	70-130
1,2,4-Trimethylbenzene	10.00	7.615	76	70-130
1,3-Dichlorobenzene	10.00	8.841	88	70-130
1,4-Dichlorobenzene	10.00	8.935	89	70-130
Benzyl chloride	10.00	7.195	72	70-130
1,2-Dichlorobenzene	10.00	8.740	87	70-130
1,2,4-Trichlorobenzene	10.00	9.371	94	70-130
Hexachlorobutadiene	10.00	8.933	89	70-130
Naphthalene	10.00	10.03	100	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	95	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC846128

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	11.49	115	70-130	3	25
Freon 114	10.00	12.97	130	70-130	4	25
Chloromethane	10.00	7.729	77	70-130	1	25
Vinyl Chloride	10.00	8.493	85	70-130	3	25
1,3-Butadiene	10.00	9.911	99	70-130	3	25
Bromomethane	10.00	9.358	94	70-130	3	25
Chloroethane	10.00	10.80	108	70-130	4	25
Trichlorofluoromethane	10.00	13.22	132 *	70-130	4	25
Acrolein	10.00	7.232	72	70-130	4	25
1,1-Dichloroethene	10.00	10.81	108	70-130	3	25
Freon 113	10.00	12.57	126	70-130	3	25
Acetone	10.00	10.20	102	70-130	2	25
Carbon Disulfide	10.00	8.900	89	70-130	4	25
Isopropanol	10.00	9.213	92	70-130	7	25
Methylene Chloride	10.00	9.355	94	70-130	4	25
trans-1,2-Dichloroethene	10.00	10.39	104	70-130	3	25
MTBE	10.00	10.24	102	70-130	6	25
n-Hexane	10.00	10.60	106	70-130	5	25
1,1-Dichloroethane	10.00	11.07	111	70-130	4	25
Vinyl Acetate	10.00	9.640	96	70-130	2	25
cis-1,2-Dichloroethene	10.00	9.195	92	70-130	4	25
2-Butanone	10.00	11.24	112	70-130	3	25
Ethyl Acetate	10.00	12.42	124	70-130	3	25
Tetrahydrofuran	10.00	8.996	90	70-130	5	25
Chloroform	10.00	10.12	101	70-130	3	25
1,1,1-Trichloroethane	10.00	9.967	100	70-130	3	25
Cyclohexane	10.00	9.472	95	70-130	2	25
Carbon Tetrachloride	10.00	8.708	87	70-130	4	25
Benzene	10.00	8.530	85	70-130	2	25
1,2-Dichloroethane	10.00	8.315	83	70-130	2	25
n-Heptane	10.00	8.742	87	70-130	2	25
Trichloroethene	10.00	9.606	96	70-130	1	25
1,2-Dichloropropane	10.00	8.495	85	70-130	2	25

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Bromodichloromethane	10.00	9.145	91	70-130	2	25
cis-1,3-Dichloropropene	10.00	8.145	81	70-130	0	25
4-Methyl-2-Pentanone	10.00	8.953	90	70-130	3	25
Toluene	10.00	9.095	91	70-130	3	25
trans-1,3-Dichloropropene	10.00	7.898	79	70-130	1	25
1,1,2-Trichloroethane	10.00	10.31	103	70-130	2	25
Tetrachloroethene	10.00	10.59	106	70-130	2	25
2-Hexanone	10.00	7.736	77	70-130	4	25
Dibromochloromethane	10.00	9.404	94	70-130	4	25
1,2-Dibromoethane	10.00	9.606	96	70-130	3	25
Chlorobenzene	10.00	8.732	87	70-130	2	25
Ethylbenzene	10.00	8.522	85	70-130	4	25
m,p-Xylenes	20.00	17.41	87	70-130	3	25
o-Xylene	10.00	8.905	89	70-130	4	25
Styrene	10.00	9.183	92	70-130	6	25
Bromoform	10.00	9.165	92	70-130	1	25
1,1,2,2-Tetrachloroethane	10.00	8.174	82	70-130	1	25
4-Ethyltoluene	10.00	8.111	81	70-130	4	25
1,3,5-Trimethylbenzene	10.00	8.740	87	70-130	4	25
1,2,4-Trimethylbenzene	10.00	8.059	81	70-130	6	25
1,3-Dichlorobenzene	10.00	9.355	94	70-130	6	25
1,4-Dichlorobenzene	10.00	9.476	95	70-130	6	25
Benzyl chloride	10.00	7.423	74	70-130	3	25
1,2-Dichlorobenzene	10.00	9.091	91	70-130	4	25
1,2,4-Trichlorobenzene	10.00	9.903	99	70-130	6	25
Hexachlorobutadiene	10.00	9.471	95	70-130	6	25
Naphthalene	10.00	10.68	107	70-130	6	25

Surrogate	%REC	Limits
Bromofluorobenzene	98	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846129	Diln Fac:	1.000
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	0.50		ND	2.5	
Freon 114	ND	0.50		ND	3.5	
Chloromethane	ND	0.50		ND	1.0	
Vinyl Chloride	ND	0.50		ND	1.3	
1,3-Butadiene	ND	0.50		ND	1.1	
Bromomethane	ND	0.50		ND	1.9	
Chloroethane	ND	0.50		ND	1.3	
Trichlorofluoromethane	ND	0.50		ND	2.8	
Acrolein	ND	2.0		ND	4.6	
1,1-Dichloroethene	ND	0.50		ND	2.0	
Freon 113	ND	0.50		ND	3.8	
Acetone	ND	2.0		ND	4.8	
Carbon Disulfide	ND	0.50		ND	1.6	
Isopropanol	ND	2.0		ND	4.9	
Methylene Chloride	ND	0.50		ND	1.7	
trans-1,2-Dichloroethene	ND	0.50		ND	2.0	
MTBE	ND	0.50		ND	1.8	
n-Hexane	ND	0.50		ND	1.8	
1,1-Dichloroethane	ND	0.50		ND	2.0	
Vinyl Acetate	ND	0.50		ND	1.8	
cis-1,2-Dichloroethene	ND	0.50		ND	2.0	
2-Butanone	ND	0.50		ND	1.5	
Ethyl Acetate	ND	0.50		ND	1.8	
Tetrahydrofuran	ND	0.50		ND	1.5	
Chloroform	ND	0.50		ND	2.4	
1,1,1-Trichloroethane	ND	0.50		ND	2.7	
Cyclohexane	ND	0.50		ND	1.7	
Carbon Tetrachloride	ND	0.50		ND	3.1	
Benzene	ND	0.50	0.022	ND	1.6	0.069
1,2-Dichloroethane	ND	0.50		ND	2.0	
n-Heptane	ND	0.50		ND	2.0	
Trichloroethene	ND	0.50		ND	2.7	
1,2-Dichloropropane	ND	0.50		ND	2.3	
Bromodichloromethane	ND	0.50		ND	3.4	

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846129	Diln Fac:	1.000
Matrix:	Air	Batch#:	237759
Units (V):	ppbv	Analyzed:	08/06/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
cis-1,3-Dichloropropene	ND	0.50		ND	2.3	
4-Methyl-2-Pentanone	ND	0.50		ND	2.0	
Toluene	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	ND	0.50		ND	2.7	
Tetrachloroethene	ND	0.50	0.020	ND	3.4	0.14
2-Hexanone	ND	0.50		ND	2.0	
Dibromochloromethane	ND	0.50		ND	4.3	
1,2-Dibromoethane	ND	0.50		ND	3.8	
Chlorobenzene	ND	0.50		ND	2.3	
Ethylbenzene	ND	0.50		ND	2.2	
m,p-Xylenes	ND	0.50		ND	2.2	
o-Xylene	ND	0.50		ND	2.2	
Styrene	ND	0.50		ND	2.1	
Bromoform	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	ND	0.50		ND	3.4	
4-Ethyltoluene	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	ND	0.50		ND	2.5	
1,2,4-Trimethylbenzene	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	ND	0.50		ND	3.0	
Benzyl chloride	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	ND	0.50		ND	3.7	
Hexachlorobutadiene	ND	0.50		ND	5.3	
Naphthalene	ND	2.0	0.044	ND	10	0.23

Surrogate	%REC	Limits
Bromofluorobenzene	86	70-130

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Type: BS Lab ID: QC846272

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	11.19	112	70-130
Freon 114	10.00	12.58	126	70-130
Chloromethane	10.00	7.585	76	70-130
Vinyl Chloride	10.00	8.189	82	70-130
1,3-Butadiene	10.00	9.802	98	70-130
Bromomethane	10.00	9.152	92	70-130
Chloroethane	10.00	10.74	107	70-130
Trichlorofluoromethane	10.00	12.93	129	70-130
Acrolein	10.00	7.027	70	70-130
1,1-Dichloroethene	10.00	10.61	106	70-130
Freon 113	10.00	12.18	122	70-130
Acetone	10.00	10.46	105	70-130
Carbon Disulfide	10.00	8.664	87	70-130
Isopropanol	10.00	8.655	87	70-130
Methylene Chloride	10.00	9.049	90	70-130
trans-1,2-Dichloroethene	10.00	10.20	102	70-130
MTBE	10.00	9.940	99	70-130
n-Hexane	10.00	10.39	104	70-130
1,1-Dichloroethane	10.00	10.76	108	70-130
Vinyl Acetate	10.00	9.643	96	70-130
cis-1,2-Dichloroethene	10.00	8.990	90	70-130
2-Butanone	10.00	11.03	110	70-130
Ethyl Acetate	10.00	12.18	122	70-130
Tetrahydrofuran	10.00	8.943	89	70-130
Chloroform	10.00	9.958	100	70-130
1,1,1-Trichloroethane	10.00	10.05	101	70-130
Cyclohexane	10.00	9.553	96	70-130
Carbon Tetrachloride	10.00	8.571	86	70-130
Benzene	10.00	8.554	86	70-130
1,2-Dichloroethane	10.00	8.425	84	70-130
n-Heptane	10.00	8.826	88	70-130
Trichloroethene	10.00	9.889	99	70-130
1,2-Dichloropropane	10.00	8.683	87	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
Bromodichloromethane	10.00	9.195	92	70-130
cis-1,3-Dichloropropene	10.00	8.246	82	70-130
4-Methyl-2-Pentanone	10.00	9.098	91	70-130
Toluene	10.00	9.256	93	70-130
trans-1,3-Dichloropropene	10.00	7.903	79	70-130
1,1,2-Trichloroethane	10.00	10.97	110	70-130
Tetrachloroethene	10.00	11.03	110	70-130
2-Hexanone	10.00	7.430	74	70-130
Dibromochloromethane	10.00	9.546	95	70-130
1,2-Dibromoethane	10.00	9.856	99	70-130
Chlorobenzene	10.00	9.091	91	70-130
Ethylbenzene	10.00	8.787	88	70-130
m,p-Xylenes	20.00	17.62	88	70-130
o-Xylene	10.00	8.985	90	70-130
Styrene	10.00	9.275	93	70-130
Bromoform	10.00	8.885	89	70-130
1,1,2,2-Tetrachloroethane	10.00	8.464	85	70-130
4-Ethyltoluene	10.00	8.184	82	70-130
1,3,5-Trimethylbenzene	10.00	8.725	87	70-130
1,2,4-Trimethylbenzene	10.00	8.294	83	70-130
1,3-Dichlorobenzene	10.00	9.530	95	70-130
1,4-Dichlorobenzene	10.00	9.722	97	70-130
Benzyl chloride	10.00	7.427	74	70-130
1,2-Dichlorobenzene	10.00	9.325	93	70-130
1,2,4-Trichlorobenzene	10.00	9.821	98	70-130
Hexachlorobutadiene	10.00	9.757	98	70-130
Naphthalene	10.00	10.78	108	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	96	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC846273

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	11.78	118	70-130	5	25
Freon 114	10.00	12.53	125	70-130	0	25
Chloromethane	10.00	8.917	89	70-130	16	25
Vinyl Chloride	10.00	9.474	95	70-130	15	25
1,3-Butadiene	10.00	10.64	106	70-130	8	25
Bromomethane	10.00	10.42	104	70-130	13	25
Chloroethane	10.00	11.15	112	70-130	4	25
Trichlorofluoromethane	10.00	13.50	135 *	70-130	4	25
Acrolein	10.00	7.187	72	70-130	2	25
1,1-Dichloroethene	10.00	10.89	109	70-130	3	25
Freon 113	10.00	12.53	125	70-130	3	25
Acetone	10.00	10.43	104	70-130	0	25
Carbon Disulfide	10.00	9.322	93	70-130	7	25
Isopropanol	10.00	8.846	88	70-130	2	25
Methylene Chloride	10.00	9.576	96	70-130	6	25
trans-1,2-Dichloroethene	10.00	10.75	108	70-130	5	25
MTBE	10.00	10.32	103	70-130	4	25
n-Hexane	10.00	10.41	104	70-130	0	25
1,1-Dichloroethane	10.00	11.00	110	70-130	2	25
Vinyl Acetate	10.00	9.935	99	70-130	3	25
cis-1,2-Dichloroethene	10.00	9.244	92	70-130	3	25
2-Butanone	10.00	11.12	111	70-130	1	25
Ethyl Acetate	10.00	12.53	125	70-130	3	25
Tetrahydrofuran	10.00	8.791	88	70-130	2	25
Chloroform	10.00	10.18	102	70-130	2	25
1,1,1-Trichloroethane	10.00	9.988	100	70-130	1	25
Cyclohexane	10.00	9.488	95	70-130	1	25
Carbon Tetrachloride	10.00	8.434	84	70-130	2	25
Benzene	10.00	8.657	87	70-130	1	25
1,2-Dichloroethane	10.00	8.408	84	70-130	0	25
n-Heptane	10.00	8.871	89	70-130	1	25
Trichloroethene	10.00	9.689	97	70-130	2	25
1,2-Dichloropropane	10.00	8.502	85	70-130	2	25

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Bromodichloromethane	10.00	9.045	90	70-130	2	25
cis-1,3-Dichloropropene	10.00	8.241	82	70-130	0	25
4-Methyl-2-Pentanone	10.00	9.112	91	70-130	0	25
Toluene	10.00	9.528	95	70-130	3	25
trans-1,3-Dichloropropene	10.00	8.100	81	70-130	2	25
1,1,2-Trichloroethane	10.00	11.23	112	70-130	2	25
Tetrachloroethene	10.00	11.23	112	70-130	2	25
2-Hexanone	10.00	7.796	78	70-130	5	25
Dibromochloromethane	10.00	9.747	97	70-130	2	25
1,2-Dibromoethane	10.00	10.25	102	70-130	4	25
Chlorobenzene	10.00	9.134	91	70-130	0	25
Ethylbenzene	10.00	8.684	87	70-130	1	25
m,p-Xylenes	20.00	17.96	90	70-130	2	25
o-Xylene	10.00	9.168	92	70-130	2	25
Styrene	10.00	9.345	93	70-130	1	25
Bromoform	10.00	9.147	91	70-130	3	25
1,1,2,2-Tetrachloroethane	10.00	8.821	88	70-130	4	25
4-Ethyltoluene	10.00	8.381	84	70-130	2	25
1,3,5-Trimethylbenzene	10.00	8.967	90	70-130	3	25
1,2,4-Trimethylbenzene	10.00	8.534	85	70-130	3	25
1,3-Dichlorobenzene	10.00	9.668	97	70-130	1	25
1,4-Dichlorobenzene	10.00	9.432	94	70-130	3	25
Benzyl chloride	10.00	7.344	73	70-130	1	25
1,2-Dichlorobenzene	10.00	9.540	95	70-130	2	25
1,2,4-Trichlorobenzene	10.00	10.16	102	70-130	3	25
Hexachlorobutadiene	10.00	9.849	98	70-130	1	25
Naphthalene	10.00	10.83	108	70-130	0	25

Surrogate	%REC	Limits
Bromofluorobenzene	95	70-130

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846274	Diln Fac:	1.000
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
Freon 12	ND	0.50		ND	2.5	
Freon 114	ND	0.50		ND	3.5	
Chloromethane	ND	0.50		ND	1.0	
Vinyl Chloride	ND	0.50		ND	1.3	
1,3-Butadiene	ND	0.50		ND	1.1	
Bromomethane	ND	0.50		ND	1.9	
Chloroethane	ND	0.50		ND	1.3	
Trichlorofluoromethane	ND	0.50		ND	2.8	
Acrolein	ND	2.0		ND	4.6	
1,1-Dichloroethene	ND	0.50		ND	2.0	
Freon 113	ND	0.50		ND	3.8	
Acetone	ND	2.0		ND	4.8	
Carbon Disulfide	ND	0.50		ND	1.6	
Isopropanol	ND	2.0		ND	4.9	
Methylene Chloride	ND	0.50		ND	1.7	
trans-1,2-Dichloroethene	ND	0.50		ND	2.0	
MTBE	ND	0.50		ND	1.8	
n-Hexane	ND	0.50		ND	1.8	
1,1-Dichloroethane	ND	0.50		ND	2.0	
Vinyl Acetate	ND	0.50		ND	1.8	
cis-1,2-Dichloroethene	ND	0.50		ND	2.0	
2-Butanone	ND	0.50		ND	1.5	
Ethyl Acetate	ND	0.50		ND	1.8	
Tetrahydrofuran	ND	0.50		ND	1.5	
Chloroform	ND	0.50		ND	2.4	
1,1,1-Trichloroethane	ND	0.50		ND	2.7	
Cyclohexane	ND	0.50		ND	1.7	
Carbon Tetrachloride	ND	0.50		ND	3.1	
Benzene	ND	0.50	0.022	ND	1.6	0.069
1,2-Dichloroethane	ND	0.50		ND	2.0	
n-Heptane	ND	0.50		ND	2.0	
Trichloroethene	ND	0.50		ND	2.7	
1,2-Dichloropropane	ND	0.50		ND	2.3	
Bromodichloromethane	ND	0.50		ND	3.4	

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	279369	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC846274	Diln Fac:	1.000
Matrix:	Air	Batch#:	237797
Units (V):	ppbv	Analyzed:	08/08/16

Analyte	Result (V)	RL	MDL	Result (M)	RL	MDL
cis-1,3-Dichloropropene	ND	0.50		ND	2.3	
4-Methyl-2-Pentanone	ND	0.50		ND	2.0	
Toluene	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	ND	0.50		ND	2.7	
Tetrachloroethene	ND	0.50	0.020	ND	3.4	0.14
2-Hexanone	ND	0.50		ND	2.0	
Dibromochloromethane	ND	0.50		ND	4.3	
1,2-Dibromoethane	ND	0.50		ND	3.8	
Chlorobenzene	ND	0.50		ND	2.3	
Ethylbenzene	ND	0.50		ND	2.2	
m,p-Xylenes	ND	0.50		ND	2.2	
o-Xylene	ND	0.50		ND	2.2	
Styrene	ND	0.50		ND	2.1	
Bromoform	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	ND	0.50		ND	3.4	
4-Ethyltoluene	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	ND	0.50		ND	2.5	
1,2,4-Trimethylbenzene	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	ND	0.50		ND	3.0	
Benzyl chloride	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	ND	0.50		ND	3.7	
Hexachlorobutadiene	ND	0.50		ND	5.3	
Naphthalene	ND	2.0	0.044	ND	10	0.23

Surrogate	%REC	Limits
Bromofluorobenzene	86	70-130

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Result M= Result in mass units
Result V= Result in volume units


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 280013
ANALYTICAL REPORT

Pangea Environmental	Project : 2030.001.003
1710 Franklin Street	Location : 1233 Brockman
Oakland, CA 94612	Level : II

Sample ID	Lab ID
SB-7	280013-001
SV-28	280013-002

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: Will Rice Date: 08/24/2016

Will Rice
Project Manager
will.rice@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**280013**
Client:	**Pangea Environmental**
Project:	**2030.001.003**
Location:	**1233 Brockman**
Request Date:	**08/22/16**
Samples Received:	**08/22/16**

This data package contains sample and QC results for one soil sample and one water sample, requested for the above referenced project on 08/22/16. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):
No analytical problems were encountered.

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

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

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

Chain of Custody # _____

C&T LOGIN # 280013

Project No: 2030.001.003 Sampler: Simmons, Albert

Project Name: 1233 Bockman Report To: Ron Scheele

Project P. O. No: Company: Pangea Env.

EDD Format: Report Level ☐ II ☐ III ☐ IV Telephone: (510) 459-6012

Turnaround Time: ☒ RUSH 48 ☐ Standard Email: rscheele@pangeaenv.com

Lab No.	Sample ID.	SAMPLING		MATRIX				# of Containers	CHEMICAL PRESERVATIVE					ANALYTICAL REQUEST			
		Date Collected	Time Collected	Water	Solid				HCl	H2SO4	HNO3	NaOH	None	8260 VOCs	8015 TPHg		
	SB-7	8/22/16	0900	X				3	X					X	X		
	SV-28	8/22/16	0830		X			1					X	X	X		

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☒ On Ice
☐ Ambient

RELINQUISHED BY: DATE: 8/22/16 TIME: 1243

DATE: TIME:

DATE: TIME:

RECEIVED BY: Pat Hong DATE: 8/22/2016 TIME: 12:45

DATE: TIME:

DATE: TIME:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 280013 Date Received 8/22/16 Number of coolers 1
Client Pangea Project 1233 Beckman

Date Opened 8/22 By (print) E (sign)
Date Logged in ↓ By (print) ↓ (sign) ↓
Date Labelled ↓ By (print) ↓ (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) 2.1°

☐ 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

Curtis & Tompkins, Ltd.

Detections Summary for 280013

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

Client : Pangea Environmental
Project : 2030.001.003
Location : 1233 Brockman

Client Sample ID : SB-7 Laboratory Sample ID : 280013-001

No Detections

Client Sample ID : SV-28 Laboratory Sample ID : 280013-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	5.2		5.0	mg/Kg	As Recd	25.00	EPA 8015B	EPA 5030B

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8015B
Field ID:	SV-28	Batch#:	238309
Matrix:	Soil	Sampled:	08/22/16
Units:	mg/Kg	Received:	08/22/16
Basis:	as received	Analyzed:	08/22/16

Type: SAMPLE Diln Fac: 25.00
Lab ID: 280013-002

Analyte	Result	RL
Gasoline C7-C12	5.2	5.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	115	78-138

Type: BLANK Diln Fac: 1.000
Lab ID: QC848369

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	105	78-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC848370	Batch#:	238309
Matrix:	Soil	Analyzed:	08/22/16
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	1.024	102	80-121

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	107	78-138

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	279996-001	Batch#:	238309
Matrix:	Soil	Sampled:	08/18/16
Units:	mg/Kg	Received:	08/18/16
Basis:	as received	Analyzed:	08/22/16

Type: MS Lab ID: QC848371

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.3961	10.10	8.048	76	50-120

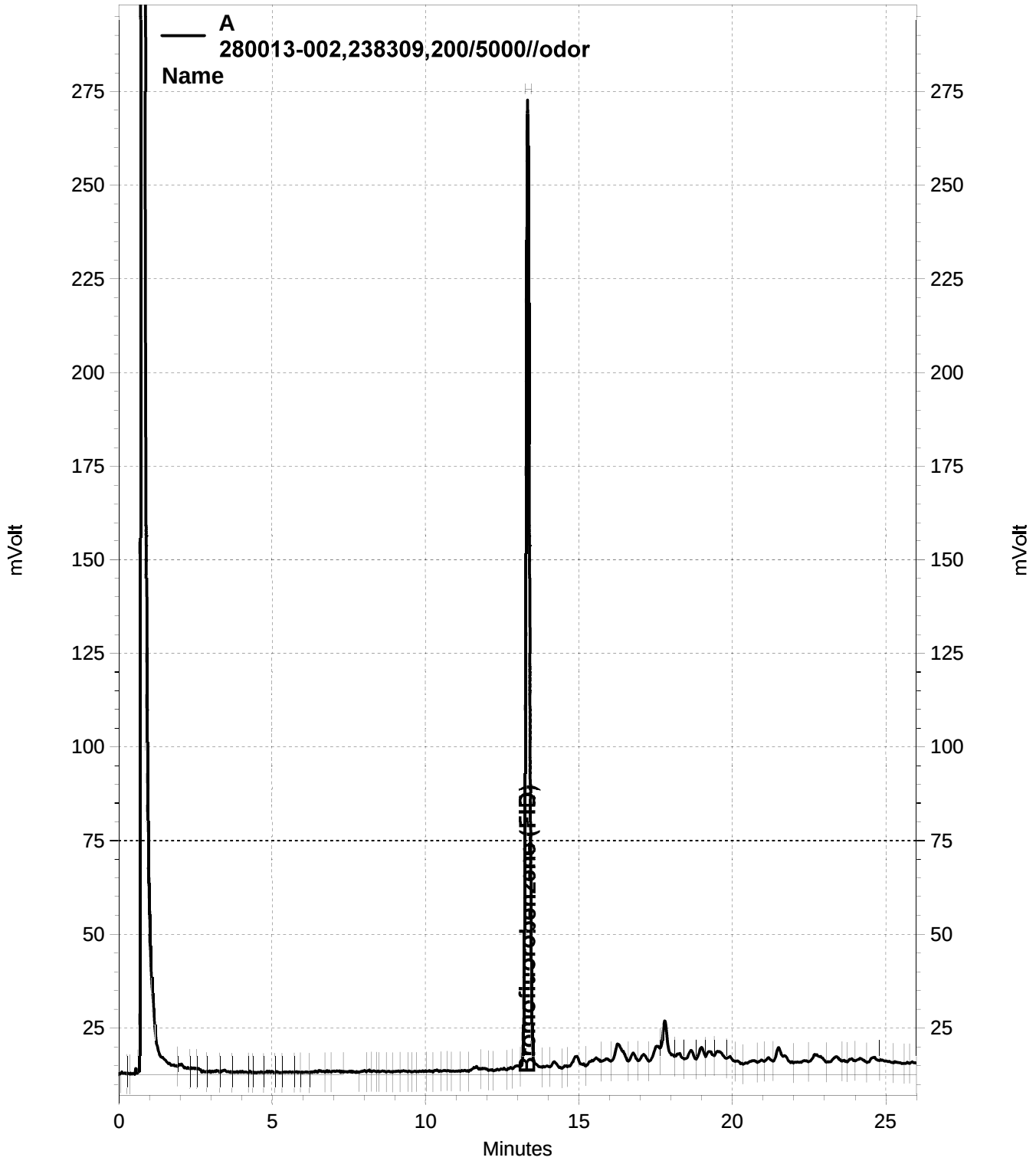
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	113	78-138

Type: MSD Lab ID: QC848372

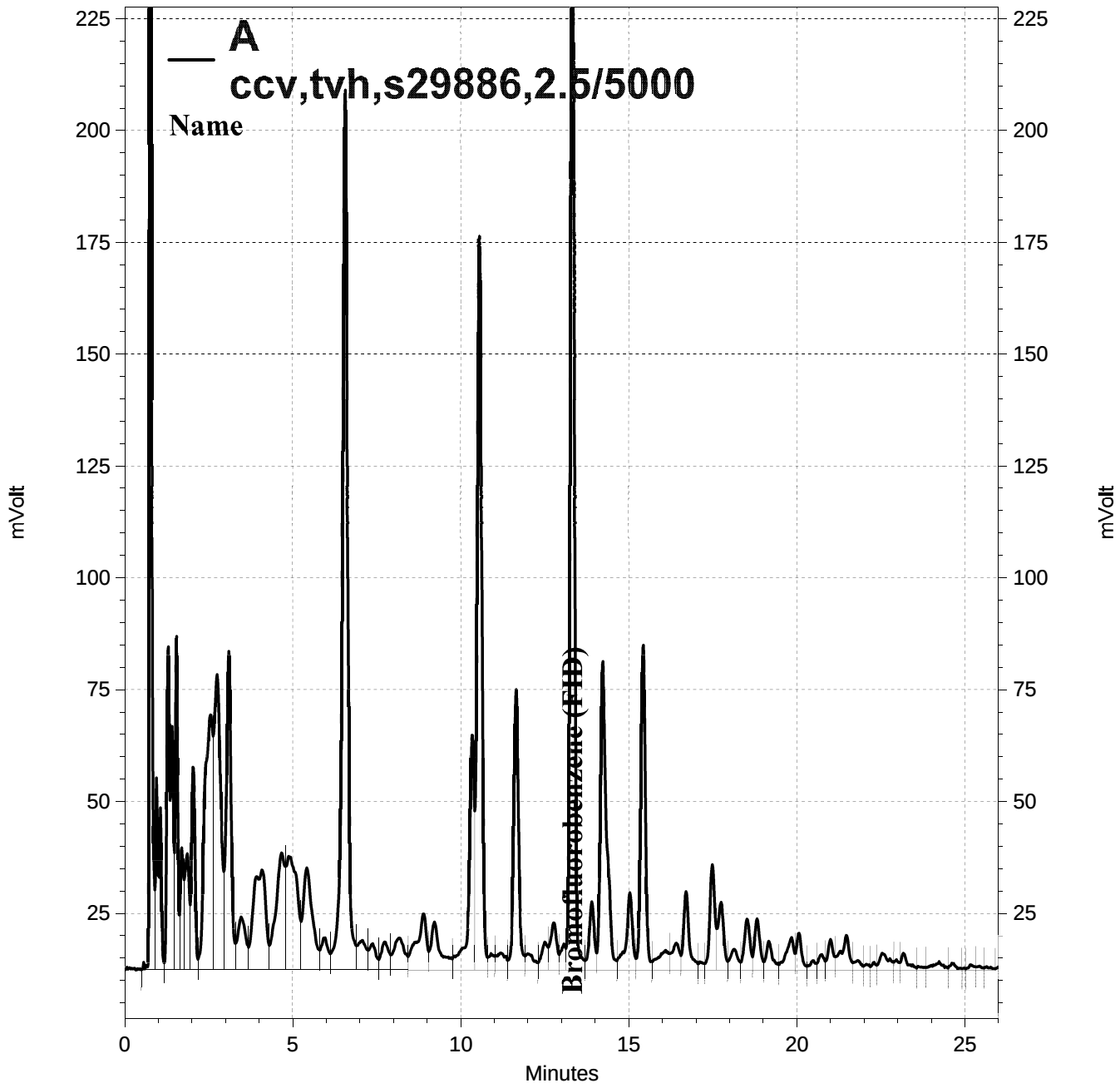
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.709	7.981	78	50-120	3	31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	116	78-138

RPD= Relative Percent Difference



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A
ccv,tvh,s29886,2.5/5000
Name
Bromofluorobenzene (FID)
mVolt
mVolt
Minutes
225
200
175
150
125
100
75
50
25
0
5
10
15
20
25
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Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8260B
Field ID:	SB-7	Batch#:	238286
Lab ID:	280013-001	Sampled:	08/22/16
Matrix:	Water	Received:	08/22/16
Units:	ug/L	Analyzed:	08/22/16
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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8260B
Field ID:	SB-7	Batch#:	238286
Lab ID:	280013-001	Sampled:	08/22/16
Matrix:	Water	Received:	08/22/16
Units:	ug/L	Analyzed:	08/22/16
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	80-128
1,2-Dichloroethane-d4	110	75-139
Toluene-d8	103	80-120
Bromofluorobenzene	111	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	238286
Units:	ug/L	Analyzed:	08/22/16
Diln Fac:	1.000		

Type: BS Lab ID: QC848288

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	11.20	90	66-135
Benzene	12.50	13.32	107	80-123
Trichloroethene	12.50	12.53	100	80-123
Toluene	12.50	13.27	106	80-121
Chlorobenzene	12.50	13.06	104	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-128
1,2-Dichloroethane-d4	107	75-139
Toluene-d8	102	80-120
Bromofluorobenzene	102	80-120

Type: BSD Lab ID: QC848289

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	10.74	86	66-135	4	24
Benzene	12.50	12.53	100	80-123	6	20
Trichloroethene	12.50	11.72	94	80-123	7	20
Toluene	12.50	12.81	102	80-121	4	20
Chlorobenzene	12.50	12.42	99	80-123	5	20

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-128
1,2-Dichloroethane-d4	104	75-139
Toluene-d8	103	80-120
Bromofluorobenzene	101	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC848290	Batch#:	238286
Matrix:	Water	Analyzed:	08/22/16
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

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC848290	Batch#:	238286
Matrix:	Water	Analyzed:	08/22/16
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	100	80-128
1,2-Dichloroethane-d4	107	75-139
Toluene-d8	105	80-120
Bromofluorobenzene	114	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8260B
Field ID:	SV-28	Diln Fac:	0.9524
Lab ID:	280013-002	Batch#:	238283
Matrix:	Soil	Sampled:	08/22/16
Units:	ug/Kg	Received:	08/22/16
Basis:	as received	Analyzed:	08/22/16

Analyte	Result	RL
Freon 12	ND	9.5
Chloromethane	ND	9.5
Vinyl Chloride	ND	9.5
Bromomethane	ND	9.5
Chloroethane	ND	9.5
Trichlorofluoromethane	ND	4.8
Acetone	ND	19
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.8
MTBE	ND	4.8
trans-1,2-Dichloroethene	ND	4.8
Vinyl Acetate	ND	48
1,1-Dichloroethane	ND	4.8
2-Butanone	ND	9.5
cis-1,2-Dichloroethene	ND	4.8
2,2-Dichloropropane	ND	4.8
Chloroform	ND	4.8
Bromochloromethane	ND	4.8
1,1,1-Trichloroethane	ND	4.8
1,1-Dichloropropene	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Benzene	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
Dibromomethane	ND	4.8
4-Methyl-2-Pentanone	ND	9.5
cis-1,3-Dichloropropene	ND	4.8
Toluene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
2-Hexanone	ND	9.5
1,3-Dichloropropane	ND	4.8
Tetrachloroethene	ND	4.8

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8260B
Field ID:	SV-28	Diln Fac:	0.9524
Lab ID:	280013-002	Batch#:	238283
Matrix:	Soil	Sampled:	08/22/16
Units:	ug/Kg	Received:	08/22/16
Basis:	as received	Analyzed:	08/22/16

Analyte	Result	RL
Dibromochloromethane	ND	4.8
1,2-Dibromoethane	ND	4.8
Chlorobenzene	ND	4.8
1,1,1,2-Tetrachloroethane	ND	4.8
Ethylbenzene	ND	4.8
m,p-Xylenes	ND	4.8
o-Xylene	ND	4.8
Styrene	ND	4.8
Bromoform	ND	4.8
Isopropylbenzene	ND	4.8
1,1,2,2-Tetrachloroethane	ND	4.8
1,2,3-Trichloropropane	ND	4.8
Propylbenzene	ND	4.8
Bromobenzene	ND	4.8
1,3,5-Trimethylbenzene	ND	4.8
2-Chlorotoluene	ND	4.8
4-Chlorotoluene	ND	4.8
tert-Butylbenzene	ND	4.8
1,2,4-Trimethylbenzene	ND	4.8
sec-Butylbenzene	ND	4.8
para-Isopropyl Toluene	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
n-Butylbenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8
1,2-Dibromo-3-Chloropropane	ND	4.8
1,2,4-Trichlorobenzene	ND	4.8
Hexachlorobutadiene	ND	4.8
Naphthalene	ND	4.8
1,2,3-Trichlorobenzene	ND	4.8

Surrogate	%REC	Limits
Dibromofluoromethane	105	78-134
1,2-Dichloroethane-d4	116	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	107	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC848283	Batch#:	238283
Matrix:	Soil	Analyzed:	08/22/16
Units:	ug/Kg		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	25.69	103	70-134
Benzene	25.00	26.96	108	80-123
Trichloroethene	25.00	26.09	104	80-128
Toluene	25.00	25.46	102	80-120
Chlorobenzene	25.00	24.86	99	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-134
1,2-Dichloroethane-d4	106	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	100	78-123

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC848284	Batch#:	238283
Matrix:	Soil	Analyzed:	08/22/16
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC848284	Batch#:	238283
Matrix:	Soil	Analyzed:	08/22/16
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	103	78-134
1,2-Dichloroethane-d4	112	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	106	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	280013	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	EPA 5030B
Project#:	2030.001.003	Analysis:	EPA 8260B
Field ID:	SV-28	Batch#:	238283
MSS Lab ID:	280013-002	Sampled:	08/22/16
Matrix:	Soil	Received:	08/22/16
Units:	ug/Kg	Analyzed:	08/22/16
Basis:	as received		

Type: MS Diln Fac: 0.9381
Lab ID: QC848387

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.4393	46.90	45.61	97	56-133
Benzene	<0.4888	46.90	46.01	98	57-120
Trichloroethene	<0.4865	46.90	43.95	94	49-145
Toluene	<0.4023	46.90	40.79	87	51-120
Chlorobenzene	<0.6918	46.90	37.99	81	47-120

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-134
1,2-Dichloroethane-d4	113	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	108	78-123

Type: MSD Diln Fac: 0.9709
Lab ID: QC848388

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	48.54	51.37	106	56-133	8	46
Benzene	48.54	50.79	105	57-120	6	44
Trichloroethene	48.54	49.59	102	49-145	9	46
Toluene	48.54	45.95	95	51-120	8	47
Chlorobenzene	48.54	42.86	88	47-120	9	50

Surrogate	%REC	Limits
Dibromofluoromethane	101	78-134
1,2-Dichloroethane-d4	110	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	105	78-123

RPD= Relative Percent Difference


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

Laboratory Job Number 280064
ANALYTICAL REPORT

Pangea Environmental	Project : 2030.001.003
1710 Franklin Street	Location : 1233 Brockman
Oakland, CA 94612	Level : II

Sample ID	Lab ID
SV-28	280064-001
SV-29	280064-002

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: Will Rice Date: 08/26/2016

Will Rice
Project Manager
will.rice@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**280064**
Client:	**Pangea Environmental**
Project:	**2030.001.003**
Location:	**1233 Brockman**
Request Date:	**08/23/16**
Samples Received:	**08/23/16**

This data package contains sample and QC results for two air samples, requested for the above referenced project on 08/23/16. The samples were received cold and intact.

Volatile Organics in Air by MS (EPA TO-15):
High responses were observed for a number of analytes in the CCV analyzed 08/24/16 15:21; affected data was qualified with "b". High responses were observed for a number of analytes in the CCV analyzed 08/25/16 14:11; affected data was qualified with "b". High recoveries were observed for a number of analytes in the BS/BSD for batch 238384; the associated RPDs were within limits. High recoveries were observed for a number of analytes in the BS/BSD for batch 238435; the associated RPDs were within limits, and these high recoveries were not associated with any reported results. No other analytical problems were encountered.

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2323 Fifth Street

Berkeley, CA 94710
(510)486-0900 Phone
(510)486-0532 Fax

AIR TESTING CHAIN OF CUSTODY
& PURCHASE ORDER

Page 1 of 1
Chain of Custody # : 1

C&T LOGIN # 280064

Project No: 2030.001.003
Project Name: 1233 Buckman
EDD Format: _____ Rpt Level: II III IV
Turnaround Time: ~~RUSH~~ 48HR ☐ Standard

Sampler: Simmons, Albert
Report To: Ron Scheele
Company: Pangea Env.
Telephone: (510) 459-6012
Email: rscheele@pangeaenv.com

Lab No.	Sample ID.	Sampling Information: Date Collected	Time Collected	Canister ID (Bar Code #)	Flow Controller ID	Sample Volume (Gauge Reading)	TESTING REQUESTED: TO-15	TO-3: C6-C12 GRO	TO-3M: C1-C6 Hydrocarbons	D1946: (Please Circle Targets) H_2 He N_2 O_2 CO CO_2 CH_4
1	SV-28	8/23/16	0842	253	239	5	X			
2	SV-29	8/23/16	0923	116	254	5	X			

Notes:

RELINQUISHED BY: _____ 8/23/16 1432 DATE/TIME
DATE/TIME
DATE/TIME

RECEIVED BY: Pat Hanafy 8/23/16 14:32 DATE/TIME
DATE/TIME
DATE/TIME

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 280064 Date Received 8/23/16 Number of coolers 0
Client Pangea Project 1233 Brockman

Date Opened 8/23 By (print) SC (sign)
Date Logged in ↓ By (print) ↓ (sign) ↓
Date Labelled ↓ By (print) ↓ (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)

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

☐ 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

Curtis & Tompkins, Ltd.

Detections Summary for 280064

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

Client : Pangea Environmental
Project : 2030.001.003
Location : 1233 Brockman

Client Sample ID : SV-28 Laboratory Sample ID : 280064-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Acetone	110		4.1	ppbv	As Recd	2.070	EPA TO-15	METHOD
Carbon Disulfide	1.0		1.0	ppbv	As Recd	2.070	EPA TO-15	METHOD
Isopropanol	750		25	ppbv	As Recd	12.42	EPA TO-15	METHOD
2-Butanone	1.2	b	1.0	ppbv	As Recd	2.070	EPA TO-15	METHOD
1,1,1-Trichloroethane	1.5		1.0	ppbv	As Recd	2.070	EPA TO-15	METHOD
Cyclohexane	1.8		1.0	ppbv	As Recd	2.070	EPA TO-15	METHOD
Trichloroethene	1.8		1.0	ppbv	As Recd	2.070	EPA TO-15	METHOD
Tetrachloroethene	29		1.0	ppbv	As Recd	2.070	EPA TO-15	METHOD

Client Sample ID : SV-29 Laboratory Sample ID : 280064-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Acetone	150		4.1	ppbv	As Recd	2.050	EPA TO-15	METHOD
Carbon Disulfide	7.0		1.0	ppbv	As Recd	2.050	EPA TO-15	METHOD
Cyclohexane	2.8		1.0	ppbv	As Recd	2.050	EPA TO-15	METHOD
Benzene	2.4		1.0	ppbv	As Recd	2.050	EPA TO-15	METHOD
n-Heptane	2.0		1.0	ppbv	As Recd	2.050	EPA TO-15	METHOD
Tetrachloroethene	1.0		1.0	ppbv	As Recd	2.050	EPA TO-15	METHOD
m,p-Xylenes	2.7		1.0	ppbv	As Recd	2.050	EPA TO-15	METHOD
o-Xylene	1.2		1.0	ppbv	As Recd	2.050	EPA TO-15	METHOD

b = See narrative

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Field ID:	SV-28	Units (M):	ug/m3
Lab ID:	280064-001	Sampled:	08/23/16
Matrix:	Air	Received:	08/23/16
Units (V):	ppbv		

Analyte	Result (V)	RL	Result (M)	RL	Diln Fac	Batch#	Analyzed
Freon 12	ND	1.0	ND	5.1	2.070	238384	08/24/16
Freon 114	ND	1.0	ND	7.2	2.070	238384	08/24/16
Chloromethane	ND	1.0	ND	2.1	2.070	238384	08/24/16
Vinyl Chloride	ND	1.0	ND	2.6	2.070	238384	08/24/16
1,3-Butadiene	ND	1.0	ND	2.3	2.070	238384	08/24/16
Bromomethane	ND	1.0	ND	4.0	2.070	238384	08/24/16
Chloroethane	ND	1.0	ND	2.7	2.070	238384	08/24/16
Trichlorofluoromethane	ND	1.0	ND	5.8	2.070	238384	08/24/16
Acrolein	ND	4.1	ND	9.5	2.070	238384	08/24/16
1,1-Dichloroethene	ND	1.0	ND	4.1	2.070	238384	08/24/16
Freon 113	ND	1.0	ND	7.9	2.070	238384	08/24/16
Acetone	110	4.1	270	9.8	2.070	238384	08/24/16
Carbon Disulfide	1.0	1.0	3.2	3.2	2.070	238384	08/24/16
Isopropanol	750	25	1,800	61	12.42	238435	08/26/16
Methylene Chloride	ND	1.0	ND	3.6	2.070	238384	08/24/16
trans-1,2-Dichloroethene	ND	1.0	ND	4.1	2.070	238384	08/24/16
MTBE	ND	1.0	ND	3.7	2.070	238384	08/24/16
n-Hexane	ND	1.0	ND	3.6	2.070	238384	08/24/16
1,1-Dichloroethane	ND	1.0	ND	4.2	2.070	238384	08/24/16
Vinyl Acetate	ND	1.0	ND	3.6	2.070	238384	08/24/16
cis-1,2-Dichloroethene	ND	1.0	ND	4.1	2.070	238384	08/24/16
2-Butanone	1.2 b	1.0	3.5	3.1	2.070	238384	08/24/16
Ethyl Acetate	ND	1.0	ND	3.7	2.070	238384	08/24/16
Tetrahydrofuran	ND	1.0	ND	3.1	2.070	238384	08/24/16
Chloroform	ND	1.0	ND	5.1	2.070	238384	08/24/16
1,1,1-Trichloroethane	1.5	1.0	8.2	5.6	2.070	238384	08/24/16
Cyclohexane	1.8	1.0	6.1	3.6	2.070	238384	08/24/16
Carbon Tetrachloride	ND	1.0	ND	6.5	2.070	238384	08/24/16
Benzene	ND	1.0	ND	3.3	2.070	238384	08/24/16
1,2-Dichloroethane	ND	1.0	ND	4.2	2.070	238384	08/24/16
n-Heptane	ND	1.0	ND	4.2	2.070	238384	08/24/16
Trichloroethene	1.8	1.0	9.6	5.6	2.070	238384	08/24/16
1,2-Dichloropropane	ND	1.0	ND	4.8	2.070	238384	08/24/16
Bromodichloromethane	ND	1.0	ND	6.9	2.070	238384	08/24/16
cis-1,3-Dichloropropene	ND	1.0	ND	4.7	2.070	238384	08/24/16

b= See narrative
ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Field ID:	SV-28	Units (M):	ug/m3
Lab ID:	280064-001	Sampled:	08/23/16
Matrix:	Air	Received:	08/23/16
Units (V):	ppbv		

Analyte	Result (V)	RL	Result (M)	RL	Diln Fac	Batch#	Analyzed
4-Methyl-2-Pentanone	ND	1.0	ND	4.2	2.070	238384	08/24/16
Toluene	ND	1.0	ND	3.9	2.070	238384	08/24/16
trans-1,3-Dichloropropene	ND	1.0	ND	4.7	2.070	238384	08/24/16
1,1,2-Trichloroethane	ND	1.0	ND	5.6	2.070	238384	08/24/16
Tetrachloroethene	29	1.0	200	7.0	2.070	238384	08/24/16
2-Hexanone	ND	1.0	ND	4.2	2.070	238384	08/24/16
Dibromochloromethane	ND	1.0	ND	8.8	2.070	238384	08/24/16
1,2-Dibromoethane	ND	1.0	ND	8.0	2.070	238384	08/24/16
Chlorobenzene	ND	1.0	ND	4.8	2.070	238384	08/24/16
Ethylbenzene	ND	1.0	ND	4.5	2.070	238384	08/24/16
m,p-Xylenes	ND	1.0	ND	4.5	2.070	238384	08/24/16
o-Xylene	ND	1.0	ND	4.5	2.070	238384	08/24/16
Styrene	ND	1.0	ND	4.4	2.070	238384	08/24/16
Bromoform	ND	1.0	ND	11	2.070	238384	08/24/16
1,1,2,2-Tetrachloroethane	ND	1.0	ND	7.1	2.070	238384	08/24/16
4-Ethyltoluene	ND	1.0	ND	5.1	2.070	238384	08/24/16
1,3,5-Trimethylbenzene	ND	1.0	ND	5.1	2.070	238384	08/24/16
1,2,4-Trimethylbenzene	ND	1.0	ND	5.1	2.070	238384	08/24/16
1,3-Dichlorobenzene	ND	1.0	ND	6.2	2.070	238384	08/24/16
1,4-Dichlorobenzene	ND	1.0	ND	6.2	2.070	238384	08/24/16
Benzyl chloride	ND	1.0	ND	5.4	2.070	238384	08/24/16
1,2-Dichlorobenzene	ND	1.0	ND	6.2	2.070	238384	08/24/16
1,2,4-Trichlorobenzene	ND	1.0	ND	7.7	2.070	238384	08/24/16
Hexachlorobutadiene	ND	1.0	ND	11	2.070	238384	08/24/16
Naphthalene	ND	4.1	ND	22	2.070	238384	08/24/16

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Bromofluorobenzene	97	80-121	2.070	238384	08/24/16

b= See narrative
ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Field ID:	SV-29	Units (M):	ug/m3
Lab ID:	280064-002	Diln Fac:	2.050
Matrix:	Air	Sampled:	08/23/16
Units (V):	ppbv	Received:	08/23/16

Analyte	Result (V)	RL	Result (M)	RL	Batch#	Analyzed
Freon 12	ND	1.0	ND	5.1	238384	08/24/16
Freon 114	ND	1.0	ND	7.2	238384	08/24/16
Chloromethane	ND	1.0	ND	2.1	238384	08/24/16
Vinyl Chloride	ND	1.0	ND	2.6	238384	08/24/16
1,3-Butadiene	ND	1.0	ND	2.3	238384	08/24/16
Bromomethane	ND	1.0	ND	4.0	238384	08/24/16
Chloroethane	ND	1.0	ND	2.7	238384	08/24/16
Trichlorofluoromethane	ND	1.0	ND	5.8	238384	08/24/16
Acrolein	ND	4.1	ND	9.4	238384	08/24/16
1,1-Dichloroethene	ND	1.0	ND	4.1	238384	08/24/16
Freon 113	ND	1.0	ND	7.9	238384	08/24/16
Acetone	150	4.1	350	9.7	238384	08/24/16
Carbon Disulfide	7.0	1.0	22	3.2	238384	08/24/16
Isopropanol	ND	4.1	ND	10	238435	08/25/16
Methylene Chloride	ND	1.0	ND	3.6	238384	08/24/16
trans-1,2-Dichloroethene	ND	1.0	ND	4.1	238384	08/24/16
MTBE	ND	1.0	ND	3.7	238384	08/24/16
n-Hexane	ND	1.0	ND	3.6	238384	08/24/16
1,1-Dichloroethane	ND	1.0	ND	4.1	238384	08/24/16
Vinyl Acetate	ND	1.0	ND	3.6	238384	08/24/16
cis-1,2-Dichloroethene	ND	1.0	ND	4.1	238384	08/24/16
2-Butanone	ND	1.0	ND	3.0	238384	08/24/16
Ethyl Acetate	ND	1.0	ND	3.7	238384	08/24/16
Tetrahydrofuran	ND	1.0	ND	3.0	238384	08/24/16
Chloroform	ND	1.0	ND	5.0	238384	08/24/16
1,1,1-Trichloroethane	ND	1.0	ND	5.6	238384	08/24/16
Cyclohexane	2.8	1.0	9.7	3.5	238384	08/24/16
Carbon Tetrachloride	ND	1.0	ND	6.4	238384	08/24/16
Benzene	2.4	1.0	7.5	3.3	238384	08/24/16
1,2-Dichloroethane	ND	1.0	ND	4.1	238384	08/24/16
n-Heptane	2.0	1.0	8.2	4.2	238384	08/24/16
Trichloroethene	ND	1.0	ND	5.5	238384	08/24/16
1,2-Dichloropropane	ND	1.0	ND	4.7	238384	08/24/16
Bromodichloromethane	ND	1.0	ND	6.9	238384	08/24/16
cis-1,3-Dichloropropene	ND	1.0	ND	4.7	238384	08/24/16
4-Methyl-2-Pentanone	ND	1.0	ND	4.2	238384	08/24/16

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Field ID:	SV-29	Units (M):	ug/m3
Lab ID:	280064-002	Diln Fac:	2.050
Matrix:	Air	Sampled:	08/23/16
Units (V):	ppbv	Received:	08/23/16

Analyte	Result (V)	RL	Result (M)	RL	Batch#	Analyzed
Toluene	ND	1.0	ND	3.9	238384	08/24/16
trans-1,3-Dichloropropene	ND	1.0	ND	4.7	238384	08/24/16
1,1,2-Trichloroethane	ND	1.0	ND	5.6	238384	08/24/16
Tetrachloroethene	1.0	1.0	7.0	7.0	238384	08/24/16
2-Hexanone	ND	1.0	ND	4.2	238384	08/24/16
Dibromochloromethane	ND	1.0	ND	8.7	238384	08/24/16
1,2-Dibromoethane	ND	1.0	ND	7.9	238384	08/24/16
Chlorobenzene	ND	1.0	ND	4.7	238384	08/24/16
Ethylbenzene	ND	1.0	ND	4.5	238384	08/24/16
m,p-Xylenes	2.7	1.0	12	4.5	238384	08/24/16
o-Xylene	1.2	1.0	5.1	4.5	238384	08/24/16
Styrene	ND	1.0	ND	4.4	238384	08/24/16
Bromoform	ND	1.0	ND	11	238384	08/24/16
1,1,2,2-Tetrachloroethane	ND	1.0	ND	7.0	238384	08/24/16
4-Ethyltoluene	ND	1.0	ND	5.0	238384	08/24/16
1,3,5-Trimethylbenzene	ND	1.0	ND	5.0	238384	08/24/16
1,2,4-Trimethylbenzene	ND	1.0	ND	5.0	238384	08/24/16
1,3-Dichlorobenzene	ND	1.0	ND	6.2	238384	08/24/16
1,4-Dichlorobenzene	ND	1.0	ND	6.2	238384	08/24/16
Benzyl chloride	ND	1.0	ND	5.3	238384	08/24/16
1,2-Dichlorobenzene	ND	1.0	ND	6.2	238384	08/24/16
1,2,4-Trichlorobenzene	ND	1.0	ND	7.6	238384	08/24/16
Hexachlorobutadiene	ND	1.0	ND	11	238384	08/24/16
Naphthalene	ND	4.1	ND	21	238384	08/24/16

Surrogate	%REC	Limits	Batch#	Analyzed
Bromofluorobenzene	91	80-121	238384	08/24/16

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	238384
Units (V):	ppbv	Analyzed:	08/24/16
Diln Fac:	1.000		

Type: BS Lab ID: QC848689

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	12.21	122	70-130
Freon 114	10.00	14.28 b	143 *	70-130
Chloromethane	10.00	8.079	81	70-130
Vinyl Chloride	10.00	8.828	88	70-130
1,3-Butadiene	10.00	12.00	120	70-130
Bromomethane	10.00	10.35	104	70-130
Chloroethane	10.00	10.79	108	70-130
Trichlorofluoromethane	10.00	14.98 b	150 *	70-130
Acrolein	10.00	7.377	74	70-130
1,1-Dichloroethene	10.00	11.72	117	70-130
Freon 113	10.00	14.15 b	141 *	70-130
Acetone	10.00	11.75	118	70-130
Carbon Disulfide	10.00	8.723	87	70-130
Isopropanol	10.00	9.449	94	70-130
Methylene Chloride	10.00	10.16	102	70-130
trans-1,2-Dichloroethene	10.00	11.10	111	70-130
MTBE	10.00	10.41	104	70-130
n-Hexane	10.00	11.76	118	70-130
1,1-Dichloroethane	10.00	11.55	116	70-130
Vinyl Acetate	10.00	10.37	104	70-130
cis-1,2-Dichloroethene	10.00	10.21	102	70-130
2-Butanone	10.00	13.12 b	131 *	70-130
Ethyl Acetate	10.00	15.98 b	160 *	70-130
Tetrahydrofuran	10.00	9.917	99	70-130
Chloroform	10.00	11.30	113	70-130
1,1,1-Trichloroethane	10.00	11.02	110	70-130
Cyclohexane	10.00	10.02	100	70-130
Carbon Tetrachloride	10.00	12.02	120	70-130
Benzene	10.00	8.531	85	70-130
1,2-Dichloroethane	10.00	8.596	86	70-130
n-Heptane	10.00	10.27	103	70-130
Trichloroethene	10.00	10.58	106	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	238384
Units (V):	ppbv	Analyzed:	08/24/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
1,2-Dichloropropane	10.00	8.484	85	70-130
Bromodichloromethane	10.00	9.713	97	70-130
cis-1,3-Dichloropropene	10.00	8.182	82	70-130
4-Methyl-2-Pentanone	10.00	9.499	95	70-130
Toluene	10.00	9.431	94	70-130
trans-1,3-Dichloropropene	10.00	8.342	83	70-130
1,1,2-Trichloroethane	10.00	10.68	107	70-130
Tetrachloroethene	10.00	11.15	111	70-130
2-Hexanone	10.00	7.363	74	70-130
Dibromochloromethane	10.00	10.86	109	70-130
1,2-Dibromoethane	10.00	10.07	101	70-130
Chlorobenzene	10.00	9.855	99	70-130
Ethylbenzene	10.00	9.100	91	70-130
m,p-Xylenes	20.00	17.82	89	70-130
o-Xylene	10.00	8.849	88	70-130
Styrene	10.00	9.761	98	70-130
Bromoform	10.00	11.94	119	70-130
1,1,2,2-Tetrachloroethane	10.00	8.096	81	70-130
4-Ethyltoluene	10.00	8.283	83	70-130
1,3,5-Trimethylbenzene	10.00	8.842	88	70-130
1,2,4-Trimethylbenzene	10.00	7.911	79	70-130
1,3-Dichlorobenzene	10.00	9.845	98	70-130
1,4-Dichlorobenzene	10.00	10.01	100	70-130
Benzyl chloride	10.00	8.278	83	70-130
1,2-Dichlorobenzene	10.00	9.553	96	70-130
1,2,4-Trichlorobenzene	10.00	9.162	92	70-130
Hexachlorobutadiene	10.00	8.855	89	70-130
Naphthalene	10.00	10.02	100	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	92	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	238384
Units (V):	ppbv	Analyzed:	08/24/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC848690

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	12.19	122	70-130	0	25
Freon 114	10.00	14.23 b	142 *	70-130	0	25
Chloromethane	10.00	7.982	80	70-130	1	25
Vinyl Chloride	10.00	8.910	89	70-130	1	25
1,3-Butadiene	10.00	11.89	119	70-130	1	25
Bromomethane	10.00	10.40	104	70-130	0	25
Chloroethane	10.00	10.56	106	70-130	2	25
Trichlorofluoromethane	10.00	14.89 b	149 *	70-130	1	25
Acrolein	10.00	7.491	75	70-130	2	25
1,1-Dichloroethene	10.00	11.54	115	70-130	2	25
Freon 113	10.00	14.13 b	141 *	70-130	0	25
Acetone	10.00	11.71	117	70-130	0	25
Carbon Disulfide	10.00	8.687	87	70-130	0	25
Isopropanol	10.00	9.228	92	70-130	2	25
Methylene Chloride	10.00	10.08	101	70-130	1	25
trans-1,2-Dichloroethene	10.00	11.11	111	70-130	0	25
MTBE	10.00	10.54	105	70-130	1	25
n-Hexane	10.00	11.86	119	70-130	1	25
1,1-Dichloroethane	10.00	11.68	117	70-130	1	25
Vinyl Acetate	10.00	10.50	105	70-130	1	25
cis-1,2-Dichloroethene	10.00	10.29	103	70-130	1	25
2-Butanone	10.00	13.07 b	131 *	70-130	0	25
Ethyl Acetate	10.00	16.30 b	163 *	70-130	2	25
Tetrahydrofuran	10.00	9.644	96	70-130	3	25
Chloroform	10.00	11.42	114	70-130	1	25
1,1,1-Trichloroethane	10.00	11.00	110	70-130	0	25
Cyclohexane	10.00	10.07	101	70-130	0	25
Carbon Tetrachloride	10.00	11.95	119	70-130	1	25
Benzene	10.00	8.528	85	70-130	0	25
1,2-Dichloroethane	10.00	8.456	85	70-130	2	25
n-Heptane	10.00	9.925	99	70-130	3	25
Trichloroethene	10.00	10.56	106	70-130	0	25

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	238384
Units (V):	ppbv	Analyzed:	08/24/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
1,2-Dichloropropane	10.00	8.427	84	70-130	1	25
Bromodichloromethane	10.00	9.913	99	70-130	2	25
cis-1,3-Dichloropropene	10.00	8.246	82	70-130	1	25
4-Methyl-2-Pentanone	10.00	9.266	93	70-130	2	25
Toluene	10.00	9.400	94	70-130	0	25
trans-1,3-Dichloropropene	10.00	8.148	81	70-130	2	25
1,1,2-Trichloroethane	10.00	10.61	106	70-130	1	25
Tetrachloroethene	10.00	11.12	111	70-130	0	25
2-Hexanone	10.00	7.068	71	70-130	4	25
Dibromochloromethane	10.00	10.95	110	70-130	1	25
1,2-Dibromoethane	10.00	10.09	101	70-130	0	25
Chlorobenzene	10.00	9.722	97	70-130	1	25
Ethylbenzene	10.00	8.963	90	70-130	2	25
m,p-Xylenes	20.00	17.54	88	70-130	2	25
o-Xylene	10.00	8.848	88	70-130	0	25
Styrene	10.00	9.431	94	70-130	3	25
Bromoform	10.00	12.02	120	70-130	1	25
1,1,2,2-Tetrachloroethane	10.00	8.227	82	70-130	2	25
4-Ethyltoluene	10.00	8.227	82	70-130	1	25
1,3,5-Trimethylbenzene	10.00	8.966	90	70-130	1	25
1,2,4-Trimethylbenzene	10.00	7.902	79	70-130	0	25
1,3-Dichlorobenzene	10.00	9.782	98	70-130	1	25
1,4-Dichlorobenzene	10.00	9.919	99	70-130	1	25
Benzyl chloride	10.00	7.989	80	70-130	4	25
1,2-Dichlorobenzene	10.00	9.546	95	70-130	0	25
1,2,4-Trichlorobenzene	10.00	8.795	88	70-130	4	25
Hexachlorobutadiene	10.00	8.497	85	70-130	4	25
Naphthalene	10.00	8.978	90	70-130	11	25

Surrogate	%REC	Limits
Bromofluorobenzene	95	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC848815	Diln Fac:	1.000
Matrix:	Air	Batch#:	238384
Units (V):	ppbv	Analyzed:	08/24/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Isopropanol	ND	2.0	ND	4.9
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC848815	Diln Fac:	1.000
Matrix:	Air	Batch#:	238384
Units (V):	ppbv	Analyzed:	08/24/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.50	ND	2.0
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

Surrogate	%REC	Limits
Bromofluorobenzene	90	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	238435
Units (V):	ppbv	Analyzed:	08/25/16
Diln Fac:	1.000		

Type: BS Lab ID: QC848887

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	13.23 b	132 *	70-130
Freon 114	10.00	14.53 b	145 *	70-130
Chloromethane	10.00	9.399	94	70-130
Vinyl Chloride	10.00	10.21	102	70-130
1,3-Butadiene	10.00	12.89	129	70-130
Bromomethane	10.00	11.85	119	70-130
Chloroethane	10.00	10.90	109	70-130
Trichlorofluoromethane	10.00	15.65 b	156 *	70-130
Acrolein	10.00	7.066	71	70-130
1,1-Dichloroethene	10.00	11.97	120	70-130
Freon 113	10.00	14.22 b	142 *	70-130
Acetone	10.00	11.42	114	70-130
Carbon Disulfide	10.00	9.058	91	70-130
Isopropanol	10.00	9.057	91	70-130
Methylene Chloride	10.00	10.23	102	70-130
trans-1,2-Dichloroethene	10.00	10.68	107	70-130
MTBE	10.00	10.22	102	70-130
n-Hexane	10.00	11.36	114	70-130
1,1-Dichloroethane	10.00	11.49	115	70-130
Vinyl Acetate	10.00	10.04	100	70-130
cis-1,2-Dichloroethene	10.00	9.783	98	70-130
2-Butanone	10.00	12.71	127	70-130
Ethyl Acetate	10.00	15.15 b	152 *	70-130
Tetrahydrofuran	10.00	9.520	95	70-130
Chloroform	10.00	11.10	111	70-130
1,1,1-Trichloroethane	10.00	11.09	111	70-130
Cyclohexane	10.00	10.35	104	70-130
Carbon Tetrachloride	10.00	11.99	120	70-130
Benzene	10.00	8.329	83	70-130
1,2-Dichloroethane	10.00	8.430	84	70-130
n-Heptane	10.00	9.815	98	70-130
Trichloroethene	10.00	10.39	104	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	238435
Units (V):	ppbv	Analyzed:	08/25/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
1,2-Dichloropropane	10.00	8.438	84	70-130
Bromodichloromethane	10.00	9.651	97	70-130
cis-1,3-Dichloropropene	10.00	7.837	78	70-130
4-Methyl-2-Pentanone	10.00	9.255	93	70-130
Toluene	10.00	9.577	96	70-130
trans-1,3-Dichloropropene	10.00	7.941	79	70-130
1,1,2-Trichloroethane	10.00	10.92	109	70-130
Tetrachloroethene	10.00	11.48	115	70-130
2-Hexanone	10.00	7.105	71	70-130
Dibromochloromethane	10.00	11.17	112	70-130
1,2-Dibromoethane	10.00	10.48	105	70-130
Chlorobenzene	10.00	9.799	98	70-130
Ethylbenzene	10.00	8.728	87	70-130
m,p-Xylenes	20.00	17.78	89	70-130
o-Xylene	10.00	9.184	92	70-130
Styrene	10.00	9.524	95	70-130
Bromoform	10.00	12.24	122	70-130
1,1,2,2-Tetrachloroethane	10.00	8.303	83	70-130
4-Ethyltoluene	10.00	8.261	83	70-130
1,3,5-Trimethylbenzene	10.00	9.012	90	70-130
1,2,4-Trimethylbenzene	10.00	7.918	79	70-130
1,3-Dichlorobenzene	10.00	9.891	99	70-130
1,4-Dichlorobenzene	10.00	9.850	99	70-130
Benzyl chloride	10.00	7.759	78	70-130
1,2-Dichlorobenzene	10.00	9.544	95	70-130
1,2,4-Trichlorobenzene	10.00	8.835	88	70-130
Hexachlorobutadiene	10.00	8.807	88	70-130
Naphthalene	10.00	8.326	83	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	94	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	238435
Units (V):	ppbv	Analyzed:	08/25/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC848888

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	12.92 b	129	70-130	2	25
Freon 114	10.00	14.55 b	145 *	70-130	0	25
Chloromethane	10.00	9.353	94	70-130	0	25
Vinyl Chloride	10.00	9.996	100	70-130	2	25
1,3-Butadiene	10.00	12.93	129	70-130	0	25
Bromomethane	10.00	11.78	118	70-130	1	25
Chloroethane	10.00	10.78	108	70-130	1	25
Trichlorofluoromethane	10.00	15.17 b	152 *	70-130	3	25
Acrolein	10.00	7.394	74	70-130	5	25
1,1-Dichloroethene	10.00	12.03	120	70-130	1	25
Freon 113	10.00	14.27 b	143 *	70-130	0	25
Acetone	10.00	11.71	117	70-130	2	25
Carbon Disulfide	10.00	9.098	91	70-130	0	25
Isopropanol	10.00	9.396	94	70-130	4	25
Methylene Chloride	10.00	10.28	103	70-130	1	25
trans-1,2-Dichloroethene	10.00	11.10	111	70-130	4	25
MTBE	10.00	10.35	104	70-130	1	25
n-Hexane	10.00	11.86	119	70-130	4	25
1,1-Dichloroethane	10.00	11.59	116	70-130	1	25
Vinyl Acetate	10.00	10.44	104	70-130	4	25
cis-1,2-Dichloroethene	10.00	10.05	100	70-130	3	25
2-Butanone	10.00	12.92	129	70-130	2	25
Ethyl Acetate	10.00	15.89 b	159 *	70-130	5	25
Tetrahydrofuran	10.00	9.586	96	70-130	1	25
Chloroform	10.00	11.23	112	70-130	1	25
1,1,1-Trichloroethane	10.00	11.06	111	70-130	0	25
Cyclohexane	10.00	10.05	101	70-130	3	25
Carbon Tetrachloride	10.00	11.83	118	70-130	1	25
Benzene	10.00	8.412	84	70-130	1	25
1,2-Dichloroethane	10.00	8.416	84	70-130	0	25
n-Heptane	10.00	9.793	98	70-130	0	25
Trichloroethene	10.00	10.63	106	70-130	2	25

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	238435
Units (V):	ppbv	Analyzed:	08/25/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
1,2-Dichloropropane	10.00	8.489	85	70-130	1	25
Bromodichloromethane	10.00	9.709	97	70-130	1	25
cis-1,3-Dichloropropene	10.00	8.070	81	70-130	3	25
4-Methyl-2-Pentanone	10.00	9.142	91	70-130	1	25
Toluene	10.00	9.521	95	70-130	1	25
trans-1,3-Dichloropropene	10.00	7.894	79	70-130	1	25
1,1,2-Trichloroethane	10.00	10.69	107	70-130	2	25
Tetrachloroethene	10.00	11.65	116	70-130	1	25
2-Hexanone	10.00	7.086	71	70-130	0	25
Dibromochloromethane	10.00	11.32	113	70-130	1	25
1,2-Dibromoethane	10.00	10.21	102	70-130	3	25
Chlorobenzene	10.00	9.836	98	70-130	0	25
Ethylbenzene	10.00	8.872	89	70-130	2	25
m,p-Xylenes	20.00	17.73	89	70-130	0	25
o-Xylene	10.00	8.824	88	70-130	4	25
Styrene	10.00	9.646	96	70-130	1	25
Bromoform	10.00	12.34	123	70-130	1	25
1,1,2,2-Tetrachloroethane	10.00	8.222	82	70-130	1	25
4-Ethyltoluene	10.00	8.242	82	70-130	0	25
1,3,5-Trimethylbenzene	10.00	8.946	89	70-130	1	25
1,2,4-Trimethylbenzene	10.00	8.032	80	70-130	1	25
1,3-Dichlorobenzene	10.00	9.996	100	70-130	1	25
1,4-Dichlorobenzene	10.00	9.913	99	70-130	1	25
Benzyl chloride	10.00	7.718	77	70-130	1	25
1,2-Dichlorobenzene	10.00	9.405	94	70-130	1	25
1,2,4-Trichlorobenzene	10.00	8.788	88	70-130	1	25
Hexachlorobutadiene	10.00	8.834	88	70-130	0	25
Naphthalene	10.00	8.636	86	70-130	4	25

Surrogate	%REC	Limits
Bromofluorobenzene	94	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC848889	Diln Fac:	1.000
Matrix:	Air	Batch#:	238435
Units (V):	ppbv	Analyzed:	08/25/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Isopropanol	ND	2.0	ND	4.9
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	280064	Location:	1233 Brockman
Client:	Pangea Environmental	Prep:	METHOD
Project#:	2030.001.003	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC848889	Diln Fac:	1.000
Matrix:	Air	Batch#:	238435
Units (V):	ppbv	Analyzed:	08/25/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.50	ND	2.0
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

Surrogate	%REC	Limits
Bromofluorobenzene	89	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units