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Solano Group  
P.O. Box 9026  
Berkeley, CA 94709

October 25, 2013

Mr. Mark Detterman  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

**Re: Albany 1-Hour Cleaners**


1187 Solano Avenue  
Albany, California  
ACEH Case No. 2857

Dear Mr. Detterman:

The Solano Group has retained Pangea Environmental Services, Inc. (Pangea) for environmental consulting services for the project referenced above. On my behalf, Pangea is submitting the attached *Site Investigation and Interim Remediation Report and Corrective Action Plan*.

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

Sincerely,



J. Anthony Kershaw  
General Partner  
Solano Group



October 28, 2013

***VIA ALAMEDA COUNTY FTP SITE***

Mr. Mark Detterman  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, 2<sup>nd</sup> Floor  
Alameda, California 94502

Re: **Site Investigation and Interim Remediation Report and Corrective Action Plan**  
Former Albany 1-Hour Cleaners  
1187 Solano Avenue  
Albany, CA 94706  
ACEH SLIC Case RO0002857

Dear Mr. Detterman:

On behalf of the Solano Group, Pangea Environmental Services, Inc. (Pangea) has prepared this *Site Investigation and Interim Remediation Report and Corrective Action Plan* for the subject property. This report describes site investigation and interim remediation of tetrachloroethene (PCE) impact from former dry cleaner operations at the site. The interim remediation activities included extensive soil excavation and installation of a passive ventilation system to help safeguard indoor air quality, and post-excavation assessment of indoor air quality. The report also presents a site conceptual model, proposed cleanup standards, feasibility study, and corrective action plan for residual PCE impact.

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

Sincerely,  
**Pangea Environmental Services, Inc.**

Bob Clark-Riddell, P.E.  
Principal Engineer

Attachment: *Site Investigation and Interim Remediation Report and Corrective Action Plan*

CC: Mr. J. Anthony Kershaw, Solano Group, P.O. Box 9026, Berkeley, California 94709  
Dr. Romtin Nassiri, Solano Smile Dental (1183 Solano Avenue Tenant)  
Anne J. Wolfe, USPS Facilities R&A Team West (1191 Solano Avenue Tenant)

**PANGEA Environmental Services, Inc.**

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## **SITE INVESTIGATION AND INTERIM REMEDIATION REPORT AND CORRECTIVE ACTION PLAN**

**Former Albany 1-Hour Cleaners  
1187 Solano Avenue  
Albany, CA 94706  
ACEH SLIC Case RO0002857**

**October 28, 2013**

*Prepared for:*


J. Anthony Kershaw  
Solano Group  
P.O. Box 9026  
Berkeley, California 94709


*Prepared by:*

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*Written by:*



  
Morgan Gillies  
Project Manager

  
Bob Clark-Riddell, P.E.  
Principal Engineer

**PANGEA Environmental Services, Inc.**

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AND CORRECTIVE ACTION PLAN**

**1187 Solano Avenue  
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## INTRODUCTION

On behalf of the Solano Group, Pangea Environmental Services, Inc. (Pangea) has prepared this *Site Investigation and Interim Remediation Report and Corrective Action Plan* for the subject property. This report describes site investigation and interim remediation of tetrachloroethene (PCE) impact from former dry cleaner operations at the site. The interim remediation activities included extensive soil excavation and installation of a passive ventilation system to help safeguard indoor air quality, and post-excavation assessment of indoor air quality. Site work was performed in accordance with agency interaction and the following approved plans: *Assessment Workplan* dated June 17, 2013 (Pangea, 2013a), *Interim Remediation Workplan* dated July 29, 2013 (Pangea, 2013b), and *Workplan for Preliminary Assessment of Indoor Air* dated September 9, 2013 (Pangea, 2013c). The report also presents a site conceptual model (SCM), proposed cleanup standards, feasibility study and corrective action plan (FS/CAP) for residual PCE impact.

## EXECUTIVE SUMMARY

Dry cleaner operations occurred at Albany 1-Hour Cleaners at 1187 Solano Avenue (subject site) from approximately 1986 to 2011. In 2004, hydrocarbon-based cleaning equipment was installed to replace the equipment that used tetrachloroethene, also known as perchloroethene (PCE). Limited site assessment was conducted in 2004 and 2005. The site vicinity and site map are shown on Figures 1 and 2, respectively. The location of former dry cleaning equipment is shown on Figure 3.

### Completed Activities

In 2013, extensive assessment and interim remediation of the dry cleaner release was performed as detailed below. Figures illustrating site conditions before and after remedial action are included in this report. Site assessment data is tabulated and compared to environmental screening levels. A map of all sample locations (e.g., borings and wells) is included as Figure 4. Site assessment, interim remediation, and vapor intrusion mitigation has been performed in general accordance with CalEPA/DTSC guidance documents.

- **Initial Assessment (2004 through 2006):** Subsurface assessment was performed in 2004 and 2005 to evaluate potential cleaning solvent impact to soil, soil gas, and groundwater (Avalon, 2004 and 2005). The assessment included soil gas sampling from 5 ft depth in four (4) temporary probes, soil sampling from three (3) shallow borings at 5 ft depth, soil sampling from five (5) deeper borings to 10 to 30 ft depth, and groundwater sampling from approximately 30 ft deep within the five deeper borings. The primary chemical of concern (COC) is PCE. Figure 5 presents PCE concentrations in soil gas in 2004. Prior site assessment was summarized and evaluated in the *Soil Gas Investigation and Health Risk Assessment* dated June 8, 2006 (Avalon, 2006). This report concluded that the risk posed by the identified compounds was within acceptable levels for commercial site use and recommended no further action at the time. In a letter dated July 5, 2006, the Alameda County Environmental Health (ACEH) concurred with the report findings and requested a closure request for commercial land use with a draft deed restriction limiting future land use. The ACEH provides oversight for this SLIC case file number RO0002857. The ACEH required additional action to allow case closure with unrestricted land use and avoid a deed restriction.
- **Early 2013 Assessment:** In early 2013, additional subsurface assessment was performed to further evaluate site conditions prior to site improvements by the future tenant, and to help

facilitate future case closure with unrestricted land use. The additional assessment included soil sampling from numerous borings; groundwater sampling within borings and the open excavation; and subslab soil gas sampling from many probes. The additional assessment found elevated PCE impact near the old drycleaning equipment in soil, subslab gas, and groundwater. The PCE concentrations at select locations in soil, subslab gas, and shallow groundwater impact exceeded applicable environmental screening levels. Figure 6 presents PCE concentrations in shallow grab groundwater, Figure 7 presents PCE concentrations in shallow groundwater monitoring wells, while Figure 8 presents PCE concentrations in deeper groundwater.

- **Initial Soil Excavation in Feb/March 2013:** Due to elevated impact and the potential for vapor intrusion, interim remediation was performed in February and March 2013 to remove source material under much of the former dry cleaning unit at 1187 Solano and also underneath the adjacent unit at 1191 Solano. All identified soil impact that exceeded residential Environmental Screening Levels (ESLs) established by the San Francisco Bay Region - Regional Water Quality Control Board was removed and disposed offsite. Approximately 361.8 tons of soil was removed and disposed offsite. The excavation cavity was primarily backfilled with controlled density fill (CDF, a cement slurry) to support the building wall during excavation under the wall, to help mitigate upward vapor intrusion from any residual PCE impact, and to help avoid soil compaction activity within the deeper excavation. Figures 9 and 10 present PCE concentrations in soil and subslab gas, respectively, before initial excavation. Figures 11 and 12 present the excavation extent/depth and PCE concentrations in compliance samples.
- **Temporary Vapor Mitigation System Testing:** To mitigate potential intrusion of PCE vapors, subslab slotted piping was installed for potential incorporation into a temporary passive subslab ventilation (SSV) or active subslab depressurization (SSD) system. The piping allowed extraction of subslab vapor beneath the former dry cleaner unit at 1187 Solano Avenue, and beneath the adjacent units at 1185 Solano (vacant) and 1191 Solano (Post Office). A 2.5 hp regenerative extraction blower was temporarily installed to facilitate five-day tests of the SSD system within these units. The temporary SSD system effectively reduced subslab PCE vapor concentrations at all monitored locations. This temporary system (except for vent piping in 1191 Solano) was removed during subsequent excavation. Figure 13 shows the layout and design of the temporary subslab depressurization system. Figure 14 shows PCE concentrations in subslab gas after initial excavation and two 5-day vapor extraction tests to remove residual PCE vapors.
- **Public Fact Sheet Notice, Summer 2013:** In July 2013, a fact sheet on environmental assessment was mailed to identified property owners and occupants within a 200-ft radius of the site. This fact sheet contained information concerning site background, results of recent investigation and cleanup activities, planned investigation activities, and information contacts. No public comments were received.
- **Additional Assessment in July 2013:** In July 2013, following the initial interim remediation (excavation), additional subsurface assessment was performed to evaluate site conditions beyond the lateral limits of the initial excavation. The additional assessment included soil sampling from numerous borings, groundwater sampling within borings and three site monitoring wells (MW-1 through MW-3), and subslab soil gas sampling from new and existing probes. The assessment was performed in accordance with the agency-approved *Assessment Workplan* dated June 17, 2013 (Pangea, 2013a). Additional sampling of three subslab gas probes was also performed using Summa canisters, to obtain lower detection limits, on August 1, 2013. The additional assessment found elevated PCE at select locations in soil and subslab gas that exceeded applicable environmental screening levels, suggesting the need for additional interim remediation. Figures



15 and 16 present PCE concentrations in soil and subslab gas, respectively, before initial excavation. Figures 17 and 18 present the final excavation extent/depth and PCE concentrations in compliance samples.

- **Additional Soil Excavation in 2013:** Based on agency discussions, interim remediation was performed in August and September 2013 to remove target additional source material identified by the July/August 2013 assessment that posed a potential vapor intrusion concern. The additional soil removal at 1185 and 1187 Solano was performed in accordance with the agency-approved *Interim Remediation Workplan* dated July 29, 2013 (Pangea, 2013b). Again, all identified soil impact that exceeded residential Environmental Screening Levels (ESLs) established by the San Francisco Bay Region - Regional Water Quality Control Board was removed and disposed offsite. Since only one soil shallow soil sample exceeded the residential ESL in this area, the excavation primarily targeted soil with field indication of organic vapors that could pose a vapor intrusion risk. Approximately 140.8 additional tons of soil was removed and disposed offsite, for a total soil removal of 502.6 tons including the February/March 2013 excavation. Portions of the excavation cavity under the bathrooms and hallway at 1185 Solano Avenue was backfilled with controlled density fill (CDF) to support the building. The remainder of the excavation was backfilled with sand, gravel, and CDF as part of the ventilation system. Figures 19, 20 and 21 provide a cross-sectional view of the excavation extent and soil and groundwater conditions.
- **Passive Subslab Venting System Installation:** Except for CDF areas under the bathroom and hallway for support, the excavation cavity was backfilled with sand and gravel for incorporation into a passive subslab ventilation system. Slotted piping was installed within the gravel layer and overlain by 10 mil plastic sheeting and then CDF to facilitate collection of subsurface vapors and transport for passive venting. The passive ventilation piping is routed through two 4-inch diameter solid ABS piping risers into a sealed roof turbine fan for ventilation to the atmosphere. In addition, slotted PVC ventilation piping was installed under the units at 1183 Solano, 1185 Solano, 1187 Solano, and 1191 Solano Avenue. The piping is manifolded together within the ceiling; this piping could be used for future passive or active ventilation as merited. Access to the manifolded piping is provided by three panels in the hallway of 1185 Solano. A fourth panel provides access to the four subslab gas probes installed within the gravel layer beneath 1185 and 1187 Solano, and to a fourth monitoring well (MW-4) installed to monitor source area groundwater. The ventilation system is illustrated on Figure 22.
- **Post Interim Remediation Evaluation of Site Conditions:** Following soil excavation and installation of the passive ventilation system, Pangea performed additional assessment to evaluate the effectiveness of the interim remediation. Pangea also retained a specialist to identify underground utility locations that could act a preferential pathways for contaminant transport. Figure 23 shows a post-excavation site map, while Figure 24 also shows the underground utility locations. Figure 25 superimposes subslab gas concentrations before site excavation on this post-excavation site map with underground utilities. Based on prior data from July/August 2013 data, this figure illustrates that PCE vapors have likely preferentially migrated along the underground electrical conduit/backfill at 1183 Solano, and along the sanitary sewer in 1191 Solano. (Note that significant vacuum influence observed in subslab probe SSPO-4 during vent testing suggests a vapor pathway between SSPO-4 and the vent piping at 1191 Solano, which is adjacent the former dry cleaning equipment and previous elevated PCE concentrations in soil.) Figure 25 also shows the distribution of PCE in subslab gas *before* excavation with respect to *residential* environmental screening levels. To evaluate conditions after excavation and passive venting system installation, Pangea collected additional subslab gas data in October 2013 from probes

within 1183 Solano and within the passive venting gravel layer at 1185/1187 Solano. Figure 26 shows that PCE concentrations have significantly reduced near the conduits in the rear of 1183 Solano, with a small residual area further along the electrical conduit in the middle of 1183 Solano (at probe SS-17) that should attenuate later. PCE concentrations in subslab gas have been significantly reduced beneath 1185 and 1187 Solano. As also shown on Figure 26, all PCE concentrations in subslab gas are *below* environmental screening levels for *commercial* site use.

- **Preliminary Assessment of Indoor Air, October 2013:** At directed by the oversight agency, indoor air sampling was conducted to assess whether any imminent health threats to site occupants are currently present due to chemicals from the former drycleaner at the subject site. The sampling was performed in accordance with the agency-approved *Workplan for Preliminary Assessment of Indoor Air* dated September 9, 2013 (Pangea, 2013c). A vapor intrusion fact sheet was provided to the tenants at 1183 and 1191 Solano, who completed building survey forms regarding potential volatile organic compounds used or stored at the site. Prior to indoor air sampling, Pangea retained specialists to identify underground utility locations, to perform a blower door test, and to seal potential vapor leaks/penetrations in the building slab. All identified penetrations were sealed with Retro-Coat™ System. As shown on Figure 27, indoor air sampling results indicate that PCE concentrations in all tested units were *below* applicable environmental screening levels for *commercial* site use established by the San Francisco Regional Water Quality Control Board, which also provides regulatory oversight for this case as requested by the lead agency (ACEH).

### Conceptual Model, Feasibility Study and Corrective Action Plan

Based on the completed site assessment and interim remediation, Pangea offers the following information pertaining to residual PCE impact.

- **Site Conceptual Model:** Our review of available information suggests that PCE releases could have commenced in 1986 and would have discontinued in 2004 when hydrocarbon-based cleaning equipment was installed (an 18 year period). PCE likely primarily entered the subsurface by penetrating the concrete floor near the former dry cleaner location where most elevated impact has been detected (near boring B-7), or by breaching the concrete floor or the southern sanitary sewer piping near the former washing equipment (near boring B-3). To a presumed lesser extent, PCE may have migrated along preferential pathways/conduits under the floor in vapor phase, or in aqueous phase aided by reported extensive water flooding at the 1187 Solano unit. Potential preferential pathways include the sanitary sewer, sanitary sewer backfill material, and subslab baserock, as well as the underground electrical conduit exiting near the rear of 1185 Solano and subsequent electrical conduit/backfill extending under specialty chairs in the dental office in 1183 Solano. A video survey of the sanitary sewer out to the Solano Avenue main suggests that the cast iron piping is in good condition. The lack of significant PCE impact detected in soil and soil gas along the sanitary sewer suggests that PCE did not leak significantly from the sanitary sewer. Once under the concrete floor, PCE migrated downward through clayey site soil to the apparent groundwater interface/capillary fringe at approximately 9 ft depth bgs. PCE then migrated laterally approximately 100 ft within the low-permeability saturated zone at approximately 9 to 15 ft bgs. No PCE impact has been detected in soil deeper than 15 ft bgs, or in the first real water-bearing materials (silty gravel) approximately 6 to 12 inches thick encountered approximately 30 ft bgs. Site excavation activity has removed all identified soil impact that exceeded residential screening levels. The clayey site soil will tend to mitigate PCE vapor migration from groundwater into shallower soil, and vapor intrusion from groundwater does not appear to be a significant concern. Limited PCE impact is apparently present in residual

soil, subslab soil gas, and/or groundwater beneath the four units at 1183 through 1191 Solano Avenue. Based on site data and RWQCB ESLs, residual PCE at the site does not pose a significant risk to future site residents, occupants, or construction workers, and residual PCE in groundwater does not represent a significant risk to nearby receptors and does not pose a significant vapor intrusion risk. Additional information about other COCs and an evaluation of data gaps are presented in a tabular SCM.

- **Feasibility Study/Corrective Action Plan:** Based on site data and our site conceptual model, Pangea prepared a feasibility study/corrective action plan for addressing residual PCE impact beneath all four units at 1183 through 1191 Solano Avenue. The proposed cleanup standards are applicable environmental screening levels (ESLs) established by the Regional Water Quality Control Board (RWQCB). Our FS/CAP employs the following contingent activities:
  - Passive ventilation of subslab soil gas using the existing passive ventilation system under 1185 and 1187 Solano and the existing vent piping at 1183 and 1191 Solano;
  - Additional monitoring of groundwater, subslab soil gas, and indoor air to further evaluate the effect of the extensive interim remediation and the effectiveness of the ventilation system;
  - Expansion of the passive ventilation system, if merited;
  - Installation of an extraction blower to provide active ventilation to accelerate PCE removal and further safeguard indoor air, if merited;
  - Excavation of additional shallow soil beneath 1183 and/or 1191 Solano, if merited; and
  - Installation of a vapor intrusion barrier using Retro-Coat™ System, if merited.

The initial goal of the CAP is to sufficiently safeguard human health to allow resumed occupancy of vacant units at 1185 and 1187 Solano, and ongoing use for the occupied units at 1183 through 1191 Solano Avenue. The ultimate goal of the CAP is to help facilitate regulatory case closure within the relative near future in accordance with the RWQCB's regulatory guidance document *Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites* (RWQCB, 2009).

## Conclusions and Recommendations

Pangea offers the following conclusions regarding the PCE impact at the site:

- All site *soil* has excavated to *below* applicable screening levels for *residential* site use.
- All site *indoor air, subslab gas, and groundwater* concentrations are *below* applicable screening levels for *commercial* site use in all tested units.
- Therefore, current site data suggests that residual PCE does not represent a significant threat to human health or the environment.

Pangea recommends performing additional monitoring of indoor air and subsurface conditions to confirm the effectiveness of the completed interim remediation (excavation) and passive subslab venting system for mitigating threats to sensitive receptors and the environment. Pangea also recommends addressing data gaps discussed in the site conceptual model to provide more thorough assessment of site conditions.

If this additional (post-interim remediation) monitoring identifies potential concerns, Pangea would recommend implementation of one or more of the contingent measures presented in the CAP below. If the monitoring confirms plume stability and safe conditions, Pangea will recommend regulatory case closure in accordance with criteria established in the RWQCB's *Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites*.



## **SITE BACKGROUND**

The subject site consists of a vacant, one-story commercial unit at 1187 Solano Avenue (Figures 1 and 2). Dry cleaner operations occurred at Albany 1-Hour Cleaners at 1187 Solano Avenue (subject site) from approximately 1986 to 2011. In 2004, hydrocarbon-based cleaning equipment was installed to replace the equipment that used tetrachloroethene, also known as perchloroethene (PCE). Dry cleaning equipment locations are shown on Figure 4.

The subject site represents one unit of an entire commercial block of single-story units/buildings along Solano Avenue, for which the responsible party (Solano Group) owns the north side of the block. Parcel number 66.2801-22-1 includes 1175 Solano (pizza restaurant), 1181 Solano (medical offices), 1183 Solano (dentist office), and 1185 Solano (vacant and immediately adjacent subject site). Parcel number 66.2801-20 includes 1191 Solano (U.S. Post Office). The commercial parking lot for the site (parcel numbers 66.2801-18 and 66.2801-18) is immediately north of the site, and residential properties are north and northwest of the subject site parking lot. Cornell Elementary School is present about 150 ft southeast (upgradient) of the subject site.

Subsurface assessment was performed in 2004 and 2005 by Avalon Environmental Consultants of Tustin, California, to evaluate potential cleaning solvent impact to soil, soil gas, and groundwater. The assessment included soil gas sampling from 5 ft depth in four (4) temporary probes (SG- 1 through SG-4), soil sampling from three (3) shallow borings at 5 ft depth (GP-1 through GP-3), soil sampling from five (5) deeper borings to 10 to 30 ft depth (GPA-1 through GPA-5), and groundwater sampling from approximately 30 ft deep within the five deeper borings completed to a maximum of 37 ft bgs. Prior site assessment was summarized and evaluated in the *Soil Gas Investigation and Human Health Risk Assessment* dated June 8, 2006. Avalon reported that no sensitive receptors such as schools, day care centers or hospitals are located within 100 ft of the subject property structure, and that the nearest residences are located greater than 100 ft north and separated by a parking lot. Avalon's report concluded that the risk posed by the identified compounds was within acceptable levels for commercial site use and recommended no further action at the time. In a letter dated July 5, 2006, the Alameda County Environmental Health (ACEH) concurred with the report findings and requested a closure request for commercial land use with a draft deed restriction limiting future land use. The ACEH required additional action to allow case closure with *unrestricted* land use and avoid a deed restriction.

In January 2013, the Solano Group retained Pangea Environmental Services of Oakland, California, to review site environmental conditions prior to site improvements for a planned restaurant. All sampling locations are shown on Figure 4. The PCE concentrations in soil gas from 2004 sampling (at 5 ft depth) are illustrated on Figure 5. Historic and recent sampling data for soil, groundwater, and soil gas are summarized on Tables, 1, 2 and 3, respectively. This report documents the extensive site assessment, interim remediation, and vapor intrusion mitigation efforts performed by Pangea in 2013, and our corrective action plan for future site activity toward pursuing case closure.

## **SITE INVESTIGATION PROCEDURES**

The scope of work for subsurface site assessment reported herein included a sewer inspection and extensive sampling of soil, slab gas, and groundwater. The assessment included soil sampling from over fifty borings (50) borings; groundwater sampling within eleven (11) borings, four (4) groundwater monitoring wells, and three (3) excavation locations; and slab soil gas sampling from twenty-six of twenty-eight (28) probes. Additional soil assessment performed during sidewall and floor sampling of the completed excavation are described in the excavation section. In general, the site assessment was performed in a dynamic manner, with subsequent site assessment conducted in response to prior assessment results.

## Utility Locating

The location of existing and abandoned underground utilities are shown on Figure 24. Underground utility locating was first performed by PipeSpy of Berkeley, California on February 15, 2013. PipeSpy confirmed the location of the *abandoned sanitary sewer*. The abandoned, cast-iron sanitary sewer piping ran from the rear of the 1187 Solano unit, under the 1185 Solano unit, and into the 1183 Solano unit where it turns and exits into Solano Avenue. A more detailed description of the sewer conditions is described below in the sewer video inspection section. PipeSpy also confirmed the location of the underground *electrical* service running from the front of 1187 to the rear of 1185 Solano, which provides power for 1183, 1185 and 1187 Solano (1191 Solano obtains power separately from Cornell Street).

On September 17, 2013, GeoTech Utility Locating, LLC of Moraga, California performed utility locating for units at 1183 and 1191 Solano in advance of slab penetration sealing and subsequent indoor air sampling. This survey identified the location of the *current sanitary sewer piping beneath 1183 Solano*, which runs parallel the abandoned sewer out to the sidewalk along Solano Avenue. To conduct the survey, GeoTech used the cleanout in the parking lot north of the 1183 Solano unit. The survey did not identify the many connections to the numerous sinks at 1183 Solano and flushed a sensor down the toilet. The survey also identified the underground electrical conduit running from the mechanical room in the rear of 1183 Solano to the five dentist chairs within 1183 Solano. This conduit raceway apparently includes electrical service, a fresh air supply line, and a return vacuum line for each chair. A vacuum pump is present in the mechanical room in the rear of 1183 Solano.

The September 17, 2013 survey also confirmed the location of the sanitary sewer beneath 1191 Solano. This sewer runs approximately 30 inches east of the western unit wall along the entire unit. As shown in cross-sectional view on Figure 21, the sewer piping is shallower than the bottom of the footing since it was not encountered during excavation that extended under the footing and beneath the 1191 Solano unit. The survey did not confirm the specific locations of the sewer piping from the main lateral to the discovered cleanouts and penetrations in the slab.

In September 2013, the Solano Group retained a plumber to install *new sanitary sewer piping* from the rear of each unit at 1185 and 1187 Solano. The piping was connected to the new sanitary sewer piping running out of 1187 Solano to the main under the sidewalk. Select utilities are shown in the site photographs in Appendix A.

## Sewer Video Inspection

An inspection of the abandoned sanitary sewer at the site was conducted by PipeSpy of Berkeley, California on February 15, 2013. The abandoned sanitary sewer piping ran from the rear of the 1187 Solano unit, under the 1185 Solano unit, and into the 1183 Solano unit where it turns and exits into Solano Avenue (Figures 3 and 4). From the 1187 Solano unit, the sewer ran perpendicular to the wall and about 7 ft under the bathrooms of 1185 Solano, before turning about 45 degrees and routing into 1183 Solano. The sewer was approximately 1 ft under the slab at the rear of the 1187 Solano unit. The sewer was apparently surrounded by a few inches of backfill material used during sewer installation. This backfill material is presumably significantly more permeable than the surrounding native clayey soil. In 2001, a new sewer was installed for use by the tenant at 1183 Solano. The inspected sewer was abandoned and no longer used by the other units in November 2012.

The sewer is cast iron and appeared in very good condition with no observed cracks, low points, or ponded water that could increase the potential for leakage. The initial few feet of the sewer contained paper residue and was less smooth. The sewer had unions approximately every five feet or more.

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A second sewer line was discovered about 6 ft south of the apparent primary sanitary sewer. The second line ran approximately 45 degrees from the 1187 Solano western wall and ended about 3 ft under the wall beneath 1185 Solano, based on observations by the excavation contractor. A tee was observed in the primary sewer line a few feet away, which may have connected to this second sewer line. The second sewer line appeared slightly shallower than the primary sewer and may have sloped toward the primary sewer. (Both of these abandoned sanitary sewer lines were removed up to a few feet below 1183 Solano during site excavation activities).

### Pre-Drilling Activities

A comprehensive site safety plan was prepared to protect site workers and the plan was kept onsite during all field activities. The proposed drilling locations were marked and Underground Service Alert was notified at least 48 hours before the proposed field activities. Boring and well permits were obtained from Alameda County Public Works Agency (Appendix B).

### Soil and Groundwater Sampling

Soil and groundwater sampling was performed using over fifty borings (50) borings. Groundwater sampling was conducted from eleven (11) borings, four (4) groundwater monitoring wells, and three (3) excavation locations. The sampling was performed between January 10 and September 27, 2013. Boring locations are shown on Figure 2. The soil boring activities are summarized below in Table A.

**Table A - Soil Boring Summary**

Date	Boring ID	Boring Locations	Boring Method	Comments
1/10/13	B-1 to B-10	1187 Solano	Hand auger	Initial Pangea assessment
1/18/13	B-11 to B-15	1191 Solano	Hand auger and limited access rig	Initial assessment in adjacent Post Office unit
2/1/13 2/8/13	A-2 to A-7	1191 Solano	Bobcat auger	Angled boring from 1187 unit
3/8/13	B-16 & B-17	1187 Solano	Bobcat auger	Groundwater assessment
3/20/13	B-18 to B-20, and DB-1	1185 Solano	Bobcat auger and direct push rig	Soil and groundwater assessment downgradient, with deep (30') sampling
4/25/13	B-21 to B-30	1187 Solano (south), 1191 Solano & Courtyard	Hand auger	Soil and groundwater delineation
5/17/13	MW-1 to 3	Near source (MW-1) and Downgrad (MW-2 & MW-3)	Direct push and hand auger for pre-pack wells	Plume delineation with monitoring wells
5/24/13	A-8	1185 Solano	Hand auger	Angled assessment from 1187 unit, under bathroom
7/2/13 & 7/3/13	A-9 to A-13, B-31 to B-34	1185 Solano	Hand auger	Vertical borings in 1185, and angled assessment from 1187
8/29/13 & 9/2/13	HA-1 to HA-3, 1183 North+	1183 Solano	Hand auger	Angled borings from 1187
9/11/13	MW-4	1185 Solano (Near Source)	Hand auger	Angled from 1187



Soil and groundwater sampling procedures are described below. All sampling was performed in general accordance with our Standard Operating Procedures included in Appendix C. Boring logs and well construction diagrams are included in Appendix D. Select soil and groundwater samples were analyzed for Volatile Organic Compounds (VOCs) by EPA Method 8260B (Method 8010 Target List). All samples were shipped under chain of custody to McCampbell Analytical Laboratories, Inc., of Pittsburg, California, a California-certified laboratory.

The drilling was observed in the field by Pangea project manager Morgan Gillies and supervised by Bob Clark-Riddell, a California Registered Professional Civil Engineer (P.E.). Soil characteristics such as color, texture, and relative water content were noted in the field using the USCS classification system and entered onto a field boring log. Field screening of soil samples for potential volatile organic compounds included visual and olfactory observations.

On January 10, 2013, Pangea coordinated the drilling of ten soil borings (B-1 through B-10) within the former drycleaning unit of 1187 Solano Avenue, except boring B-9 located near the sanitary sewer in 1185 Solano. The 1187 Solano borings were performed to further assess conditions in the northern half of the unit where former dry cleaning equipment and a drain were located. Due to elevated PCE impact detected along the eastern wall of 1187 Solano, five (5) additional soil borings (B-11 through B-15) were completed in the adjacent unit at 1191 Solano (U.S. Post Office facility) on January 18, 2013.

For the January 10, 2013 borings, Pangea retained Confluence Environmental of Sacramento, California, to hand auger the borings. Confluence hand augered borings B-1 through B-10 to approximately 6 ft below grade surface (bgs) to facilitate soil sample collection. For the January 18, 2013 borings, Pangea retained Penecore Drilling of Woodland, California to drill with a limited access Geoprobe™ 420 drill rig using dual-tube direct-push drilling methods to collect continuously cored soil samples. Borings B-6, B-7, and B-11 through B-15 were advanced to approximately 15 to 16 ft below grade surface (bgs). For direct-push borings, select soil samples were collected from each boring for laboratory analysis in acetate liners, and capped with Teflon tape and plastic end caps. For hand augered borings, soil samples were collected in brass or stainless steel soil sleeves, and capped with Teflon tape and plastic end caps. Soil samples were collected at approximately four ft intervals and/or at lithologic changes.

On February 1 and 8, 2013, Sustainable Technologies (ST) of Alameda, California completed six borings (A-2 through A-7) angled under the adjacent 1191 Solano unit using a Bobcat equipped with a nine-inch diameter auger.

On March 20, 2013, Pangea retained Penecore Drilling to complete three shallow (B-18 through B-20) borings and one deep boring (DB-1). These borings were initially completed using Geoprobe™ 6600 drill rig using dual-tube direct-push drilling techniques. Shallow soil samples were collected from borings B-19 and B-20 to assess conditions adjacent the abandoned sanitary sewer. After removing the inner drilling rods, temporary PVC piping and well screen was installed within the boring and the outer drill rods were removed. A discrete depth groundwater sample was collected from deep boring DB-1 using a clean stainless steel bailer. Since water did not enter the three shallow borings (due to clayey material likely inhibiting groundwater infiltration), ST performed soil boring using the Bobcat equipped with a nine-inch diameter auger at boring locations B-18, B-19 and B-20. Grab groundwater was collected from these three borings using disposable bailers. Groundwater samples were then decanted into appropriate containers.

On April 25, 2013, Pangea retained Cascade Drilling of Richmond, California to complete ten shallow borings using hand auger drilling techniques. Five borings were completed to further delineate the extent of PCE in shallow groundwater, including borings B-21, B-22, and B-30 for downgradient delineation west of 1183 Solano, and borings B-23 and B-24 for upgradient delineation within 1191 Solano. The groundwater gradient is presumed to be towards the west or southwest based on surface topography and

groundwater flow at nearby sites. Five borings (B-25 to B-29) were completed to approximately 5 ft bgs to further assess soil conditions within the southern half of the 1187 Solano unit prior to tenant improvements for the planned restaurant. The goal of this shallow soil assessment was to confirm that no significant source of PCE was present within the 1187 Solano unit that could merit potential future source remediation, other than subslab gas venting.

On May 17, 2013, Pangea retained Cascade Drilling of Richmond, California to install three shallow groundwater monitoring wells using direct-push sampling techniques. Pre-pack wells were installed in each borehole to facilitate collection of repeatable data. As shown on the well construction logs in Appendix C, wells MW-1 and MW-3 are screened from 9 to 14 ft bgs, and well MW-2 is screened from 10 to 15 ft bgs. For several days following well installation there was insufficient water to facilitate well development or sampling. Despite only a few inches of water, wells MW-2 and MW-3 were sampled on May 22 and 24, respectively using a new, small diameter disposable bailer for each well. Well MW-1 had sufficient water on June 10, 2013 to allow sampling using a new, small diameter disposable bailer. There was insufficient water to conduct purging prior to well sampling.

On May 24, 2013, ST hand augered boring A-8 angled under the bathroom of the adjacent 1185 Solano unit. This boring was performed to evaluate conditions near the abandoned sewer.

On July 2 and 3, 2013, Pangea commenced implementation of the approved *Assessment Workplan*. ST hand augered borings A-9 through A-13 angled under the bathroom and hallway of the adjacent 1185 Solano unit. Confluence hand augered borings B-31 through B-34 within 1185 Solano to an approximate depth of 5 ft bgs to facilitate soil sample collection. These borings were performed to identify residual PCE (which was subsequently excavated).

On August 29 and 30, and September 2, 2013, ST hand augered laterally under 1183 Solano to evaluate conditions beneath and nearby the existing and abandoned sewer piping beneath 1183 Solano. This assessment was conducted in general accordance with the approved *Interim Remediation Workplan*, during installation of subslab ventilation piping and removal of additional soil along the sanitary sewer. The assessment included borings HA-1 through HA-3, 1183 Central N, and 1183 North. Also, boring 'SS-1183' was performed directly beneath the sanitary sewer within 1183 Solano, a few feet after the sewer exited 1185 Solano. And boring 'HA-2D-1SS' was augered horizontally under the footer to evaluate conditions approximately 1 ft below the sewer conduits at 1183 Solano.

On September 10, 2013, Confluence installed source area monitoring well MW-4 using a 3.25-inch diameter hand auger. As shown on the well construction log in Appendix D, well MW-4 is a 1-inch diameter well screened from 9 to 14 ft bgs. On September 27, 2013, Pangea purged approximately 2 liters of groundwater and sampled the well using 3/8-inch diameter tubing a Watera check valve (SS-10 micro flow system).

Additional soil and grab groundwater sampling was performed during excavation efforts in February/March 2013 and August/September 2013, as described in the interim remediation section of this report.

### **Subslab Gas Sampling Procedures**

To evaluate shallow subsurface gas conditions beneath site buildings, Pangea conducted subslab gas sampling from twenty-six of twenty-eight (28) installed probes. The sampling was performed between January 10 and October 11, 2013. Probe locations are shown on Figure 4. The subslab probe installation and sampling activities are summarized below in Table B.

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**Table B - Subslab Gas Probe Installation and Sampling Summary**

Date	Probe IDs	New Probe Locations	Sample Containers	Comments
1/16/13 & 1/17/13	SSPO-1 and SSPO-2 SS-3 to SS-7 CSV-1	1185, 1187 and 1191 Solano	1L Summa Canisters	Initial Pangea assessment. Sample all new probes.
4/8/13 to 5/13/13	Vent Pipe Testing	1185 and 1191 Solano	1L Tedlar Bags	Testing of Ventilation System Piping.
4/25/13	SS-9 & SS-10 (new) (resample SSPO-1 and SSPO-2 and SS-6 and SS-7)	1185 and 1187 Solano (1185 and 1191 Solano)	1L Tedlar Bag	Sample new and existing probes about 7 days after vent testing.
7/2/13 & 7/3/13	SS-8, SS-11 to SS-20, SS-PO-3 and SS-PO-4	1183 to 1191 Solano and Courtyard	1L Summa Canisters and 1L Tedlar Bags	Sampling per approved Assessment Workplan.
7/2/13	1185 Bath, 1185 Hall	1185 Solano	1L Tedlar Bags	Sampled tubing in vents, per Workplan.
8/1/13	SS-PO-5 (resampled SS-9 and SS-16)	1191 Solano	1L Summa Canisters	Sampled per Interim Remediation Workplan.
9/12/13 (install) 10/10/13 (sample)	SG-1185 N & S SG-1187 N & S	1185 and 1187 Solano	1L Tedlar Bags	Installed probes within gravel layer of passive venting system. Sampled N probes 10/10/13.
10/11/13	SS-16 and SS-17	1191 Solano	1L Tedlar Bags	Resampled after Additional Excavation.

**Subslab Probe Locations and Sampling Purpose**

On January 16 and 17, for initial subslab gas sampling, probes SSPO-1 and SSPO-2 were installed in the Post Office unit at 1191 Solano Avenue, just east of the former dry cleaning machine. Subslab probe SSPO-2 was installed beneath the underlying slab near B-13, while SSPO-1 was installed where no wooden floor is present above the slab. Subslab gas probes SS-3, SS-4 and SS-5 were installed within the former cleaner unit to evaluated conditions near the north end, adjacent the former cleaning machine, and near the south end, respectively. Subslab gas probes SS-6 and SS-7 were installed within the 1185 Solano unit, not very far from the abandoned sewer. (No SS-8 probe was installed at this time). Subfloor gas probe CSV-1 was installed beneath the wooden floor that covers the southern half of the 1191 Solano unit, to assess conditions between the flooring material (a void space of approximately 4 inches thick) and the underlying slab.

On April 25, 2013, subslab gas probes SS-9 and SS-10 were installed near the south end of the units at 1187 Solano and 1185 Solano, respectively. These probes were installed to evaluate conditions further south within the units. Existing probes were also sampled to evaluated conditions after initial excavation and vent testing. Probes SS-3, SS-4 and SS-5 were overexcavated and therefore were not sampled on April 25, 2013. This sampling was performed after some venting of the subslab materials during 5-day extraction tests, and a minimum of approximately one week of subsurface equilibration was allowed before subslab gas probe sampling.

On July 2 and 3, 2013, Pangea installed eleven additional subslab probes (SS-8, and SS-11 through SS-20), and resampled select probes in accordance with the approved *Assessment Workplan*. The probe locations evaluated conditions beneath all four units at 1183 through 1191 Solano, and in the courtyard



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east of 1181 Solano. Assessment included sampling of ventilation piping/vents labeled “1185 Hall’ and “1185 Bath” to evaluate conditions in shallow soil under the 1185 bathrooms and hallway.

On August 1, 2013, Pangea installed new probe SSPO-5 to further delineate subsurface conditions in 1191 Solano, and resampled probes SS-9 and SS-16 using Summa canisters to reassess conditions.

On September 12, 2013, Pangea installed four new probes to allow ongoing evaluation of conditions within the gravel layer of the passive ventilation system. Probes SG-1185 N and SG-1185 S were installed within the northern and southern portion of the gravel layer, respectively, in 1185 Solano. Similarly, probes SG-1187 N and SG-1187 S were installed within the northern and southern portion of the gravel layer, respectively, in 1187 Solano. Each probe consists of a 12-inch long, 1-inch diameter slotted PVC pipe with a ¼” Teflon tubing and brass fittings. The tubing runs approximately 15 ft back to the manifold area, where it is capped for future sampling. A photograph of the probe construction is shown in Appendix A. On October 10, 2013, Pangea collected 1-liter Tedlar bag samples from northern probes SG-1185 N and SG-1187 N.

On October 11, 2013, Pangea resampled probes SS-16 and SS-17 using Summa canisters to reassess conditions after performing excavation, blower door testing, and penetration sealing.

#### Sample Collection Techniques

To prepare for the subsurface gas sampling, a site safety plan (SSP) was prepared to protect site workers. The subsurface sampling was conducted in general accordance with select procedures described in Pangea’s Standard Operating Procedures (SOPs) for Subsurface Vapor Sampling (Appendix C). Field forms from the subsurface sampling are included in Appendix E.

The subsurface gas samples were collected from approximately 0.5 ft bgs, immediately below the approximately 4 ½-inch thick concrete slab. The subsurface gas probe installation procedure involved using a rotohammer to drill a 1 ½-inch diameter, 3 ½-inch deep hole in the approximately 4 ½-inch thick concrete slab, drilling a ½-inch diameter hole through the remaining concrete, installing a rubber stopper with stainless steel tubing (capped on one end with a Swagelok fitting), and placing a bentonite and cement seal from the top of the stopper to within an inch of the surface. A second rubber stopper was placed over the subsurface probe for protection and probes equilibrated for at least 2 hours prior to sampling.

Pangea collected initial subsurface gas samples using laboratory-supplied manifolds and certified Summa canisters for sampling and purging. The Summa canisters were supplied under a vacuum of approximately 30 inches of mercury. Prior to sample collection from the probes, vacuum/leak tests were conducted on the sampling assembly with a vacuum pump. The vacuum/leak tests indicated some leakage, so the fittings were tightened and the leak test was performed again to confirm no leakage and maintenance of the initial vacuum in the sampling manifold system. After a minimum of 5 minutes of vacuum/leak testing, the vacuum pump was started and opened to purge the manifold/probe assembly. Upon completion of purging of approximately five or more times the ambient volume of air in the assembly/probe, the sampling Summa canister was opened for sample collection. The pre-set valve regulated the vapor flow to approximately 150 milliliters of air per minute. After approximately 5 or more minutes, the vacuum within the Summa canisters decreased to below 5 inches of mercury but not below 3 inches of mercury and the canister valve was closed.

To further evaluate potential leakage within the sampling system, a leak-check enclosure was placed over the subsurface probe, and helium gas was introduced into the leak-check enclosure. A helium detector was used to monitor the concentration of helium within the enclosure during sample collection. During purging, vapor from the probe was routed through a Tedlar bag within a vacuum chamber to check for helium within the probe/sampling assembly (indicating a probe leak) and to qualitatively screen for contaminants. After sample collection, subsurface probes were capped for future sampling, as merited.

During subsequent subslab gas sampling on April 25, 2013 and May 17, 2013, Pangea collected subslab gas samples from all probes using 1-liter Tedlar™ bags. Each probe was purged for approximately 15 seconds (approximately 75 mL) using a PID to check for contaminant concentrations. Each probe was then sampled using a vacuum pump equipped with an iron lung containing a Tedlar™ bag. Sample collection was performed approximately ten (10) days after the most recent 5-day venting test at the site.

On July 2 and 3, 2013, Pangea used Tedlar bags and Summa canisters to collect soil samples in accordance with our Standard Operating Procedures. This sampling was performed with leak-check testing described in our SOPs. To collect a sample from the '1185 Hall' and '1185 Bath' vents, Pangea inserted ¼" diameter Teflon tubing to the approximate middle of the screen section length several days before the sample collection. Prior to sample collection with 1-liter Tedlar bags, Pangea purged approximately three times the calculated tubing volume.

On August 1, 2013, Summa canisters were used to collect samples from probes SSPO-5, SS-9 and SS-16. During the subsequent limited subslab gas testing on October 10 and 11, 2013, Pangea collected 1-liter Tedlar bag samples using an iron-lung. Prior to sample collection, Pangea purged approximately 1.0 liters from northern probes SG-1185 N and SG-1187 N, and purged approximately 0.5 liters from subslab probes SS-16 and SS-17. Since probe integrity was demonstrated during prior testing of SS-16 and 17, a leak-check enclosure was not used for these sampling events.

### **Subslab Gas Sample Analyses**

Initial subslab gas samples were collected within Summa canisters and submitted for analysis to McCampbell Analytical, Inc., of Pittsburg, California, a State-certified laboratory. These initial subslab gas samples were analyzed by Total Organics Method 15 (TO-15) for volatile organic compounds (VOCs), which included analysis for petroleum hydrocarbons (e.g., BTEX and naphthalene) and chlorinated hydrocarbons. Select samples were analyzed for helium by ASTM 1946. Due to lack of significant BTEX compounds in initial samples, most subsequent subslab gas samples were analyzed by EPA Method 8260B for VOCs (Method 8010 target list). Select subsequent samples were analyzed and reported for full list compounds of EPA Method 8260 to evaluate if select hydrocarbons (e.g., benzene, toluene, xylenes, and naphthalene) detected in indoor air samples on October 3, 2013 were also present in subslab gas.

## **SITE INVESTIGATION RESULTS**

The site assessment found elevated PCE impact near the old dry cleaning equipment in soil, subslab gas, and groundwater. The PCE concentrations at select locations in soil, subslab gas, and shallow groundwater impact exceeded applicable environmental screening levels.

### **Field Observations**

Based on soil logging during hand augering and drilling, site soil consists primarily of brown silty clay to the maximum explored depth of approximately 35 ft bgs, with occasional thin units of clayey gravel or sandy clay. Shallow clayey soil was predominantly dense and plastic. Shallow soil under the bathrooms and hallway under the 1185 Solano unit was less dense and contained sand. During soil excavation in February and March 2013, shallow groundwater was encountered at approximately 9 ft bgs within the excavation cavity.

The prior consultant, Avalon, reported gravelly and silty clay, which were very expansive. The soils were moist and soft to a depth of three feet. Avalon did not encounter groundwater in the initial borings advanced to a maximum depth of 20 ft bgs. Avalon later reported a thin (6 inch to 1 ft) water-bearing layer of silty gravel at approximately 30 to 31 ft bgs in their four deeper borings installed to encounter

and sample groundwater (GPA-1 through GPA-4). Avalon reported that the groundwater in the gravel layer was under pressure and the top of water was detected at approximately 26 ft bgs.

Pangea used a PID to conduct field screening of soil samples from borings and excavation boundaries for potential volatile organic compounds. The highest PID readings were observed in site soil beneath and nearby the former PCE-using dry cleaning machine adjacent the eastern wall of the 1187 Solano unit. Areas with elevated PID readings were targeted for soil excavation. A sweet solvent odor was observed in areas with the highest elevated PID readings.

## Records Research

The local topography slopes generally toward the west to west-southwest. To estimate groundwater flow direction and subsurface conditions in the area, Pangea reviewed the State Water Resources Control Boards (SWRCBs) Geotracker website for nearby sites with existing monitoring well networks. Based on reviewed file information from nearby sites, groundwater reportedly flows to the west to west-southwest. The Kelly-Moore Paint Company at 696 San Pablo Avenue, Albany, had an estimated groundwater flow direction of west-southwest for October 2012. The Shell station at 999 San Pablo, Albany, had estimated groundwater flow direction of west-southwest for June 2012.

## Soil and Groundwater Analytical Results

Soil and groundwater analytical results are summarized and compared to regulatory environmental screening levels on Tables 1 and 2, respectively. The primary VOC detected in site soil and groundwater was tetrachloroethene (PCE). Limited concentrations of 1,1,1-trichloroethene (TCE) and cis-1,2-dichloroethane (cis-1,2-DCE), which are degradation products of PCE, were also detected. Figures illustrating site conditions before and after interim remedial action are referenced below. The laboratory analytical reports are included in Appendix K.

**Soil:** Tetrachloroethene (PCE) was detected in soil at a maximum concentration of 7.9 milligrams per kilogram (mg/Kg), at approximately 5.5 ft depth in boring A-6 near the former dry cleaning equipment and angled under the adjacent wall. Other elevated PCE concentrations were detected in site soil within approximately 15 ft of the former dry cleaning equipment. Figure 9 illustrates the extent of PCE in soil prior to the initial excavation (based on prior soil sampling or later sampling beyond the excavation limit). Figure 15 presents PCE in soil results in soil in 1185 Solano prior to the additional excavation in August/September 2013, which indicates that only one shallow soil sample result of 0.7 mg/kg (boring B-33 at 1 ft bgs) exceeded the applicable residential screening level of 0.55 mg/kg. As shown on the cross-section in Figure 20, PCE concentrations above the residential screening level were primarily limited to near the former dry cleaning equipment, only extended to about 10 ft bgs, and were removed during excavation activities.

On Table 1 Pangea compares detected PCE concentrations to applicable Environmental Screening Levels (ESLs) established by the San Francisco Bay - Regional Water Quality Control Board's (RWQCB). These ESLs were recently updated in February 2013 and May 2013. As shown on Figures 9, 12, 17, 18, and 20, all detected PCE concentrations in soil above the current applicable ESL of 0.55 mg/Kg were excavated. (This ESL was previously 0.43 mg/Kg before the May 2013 revision). The final ESL for residential site use for shallow (<3 meters) soil, and safeguards human health via the direct exposure pathway.

**Groundwater:** No PCE or other VOCs have been detected in deeper water-bearing materials present at approximately 30 ft bgs. Deeper groundwater sampling was performed in the source area (DB-1) and in surrounding borings GPA-1 through GPA-4. The sampling locations and PCE reporting limits for sampling of deeper groundwater are shown on Figure 8.

The extent of PCE impact in shallow (about 10 ft depth) groundwater is illustrated on Figure 6. Grab groundwater samples were collected from beneath the former dry cleaning equipment (sample EX-E-GW), north of this location (sample EX-N-GW), and south of this location (sample EX-SE). A PCE concentration of 750 µg/L was detected in groundwater immediately below the former dry cleaning equipment location (EX-E-GW). Significantly lower PCE concentrations were detected to the north (8.3 µg/L) and south (93 µg/L) of this location. Subsequent grab groundwater results from ten (10) temporary borings indicated that no PCE impact was detected in upgradient groundwater (1191 Solano, Post Office), but PCE impact has migrated at least 50 ft in the presumed downgradient direction. The maximum PCE concentration detected in groundwater was 820 µg/L, in boring B-22 within the walkway west of 1183 Solano.

Four groundwater monitoring wells were installed to further delineate the extent of PCE in shallow groundwater, to allow collection of periodic groundwater data, and to estimate the groundwater flow direction. Initially, only a few inches of water collected in the site wells. As shown on Figure 7, data from these wells has provided additional delineation of source area impact and the downgradient extent of PCE in shallow groundwater. Detected PCE concentrations in groundwater wells are lower than those in nearby grab groundwater samples. For example, 200 µg/L in source area well MW-1 is lower than 820 µg/L in nearby grab sample from B-22. The PCE concentration of 110 µg/L in source area well MW-4 suggests that the PCE source contributing to the nearby higher grab sample results (750 µg/L at EX-E-GW and 650 µg/L at B-18) has been significantly removed by site excavation.

The PCE concentrations in shallow groundwater exceed the final ESLs protective of drinking water (5 µg/L), but since site water is not used as a drinking water resource, this ESL is not applicable to the subject site. Given the fine-grain soil, the applicable ESL for groundwater is the ESL protective of vapor intrusion into indoor air of 640 µg/L for commercial use (63 µg/L for residential use). The predominantly shallow clayey soil and the controlled density fill (CDF) backfill overlying the PCE impact should effectively mitigate upward vapor migration to sufficiently safeguard indoor air quality. As shown on Figure 7, PCE concentrations in groundwater monitoring wells (maximum of 200 µg/L) is below the applicable ESL for commercial site use.

The only other VOC detected in site groundwater is TCE. TCE was detected at 7.1 µg/L in boring B-20 and 1.4 µg/L in sample EX-N-GW located north of the former dry cleaning equipment location. Only one of these TCE concentrations in shallow groundwater slightly exceeds the final ESLs protective of drinking water (5 µg/L), and neither exceed the final ESL protective of non-drinking water (130 µg/L).

### **Subslab Gas Analytical Results**

Subslab soil gas analytical results are summarized on Table 3. The laboratory analytical reports are included in Appendix K. The limited helium detected in select subslab samples suggests that the probes did not 'short circuit' to surface air and that the results are likely representative of subslab soil gas conditions.

The results of *initial* subslab gas sampling on January 17, 2013 are summarized on Figure 10. The maximum PCE concentration detected in subslab gas was 770,000 µg/m<sup>3</sup>, in probe SS-4 located immediately adjacent the former dry cleaning equipment. Elevated PCE concentrations were also detected in other subslab gas probes in 1185 and 1187 Solano. Significantly lower PCE concentrations were detected in subslab gas below 1191 Solano, likely due to the footing separating the 1187 and 1191 Solano units/building, and due to the higher elevation at 1191 Solano (about 2 ft higher than the adjacent 1187 Solano unit).

As shown on Table 3, the detected PCE concentrations prior to excavation significantly exceeded the shallow soil gas Environmental Screening Levels (ESLs) established by the San Francisco Regional Water Quality Control Board (RWQCB) for *commercial* site use ( $2,100 \mu\text{g}/\text{m}^3$ ). The only other VOC detected in subslab gas was TCE, which is a degradation product of PCE. The detected TCE concentrations were a small percentage of the PCE concentrations, but also exceed the applicable ESLs.

After soil excavation and subslab gas ventilation testing, PCE concentrations in subslab gas were significantly reduced. As shown in Figure 14, the maximum PCE concentration in subslab gas after excavation and venting was  $19,000 \mu\text{g}/\text{m}^3$ , in probe SS-6, on May 17, 2013. For probe SS-6, this is a significant reduction from  $120,000 \mu\text{g}/\text{m}^3$  on January 17, 2013 and from  $40,000 \mu\text{g}/\text{m}^3$  on April 25, 2013. Subslab gas data at that time suggested that residual PCE impact in subslab gas was primarily limited to the northern half of 1185 Solano unit, with a smaller residual impact under a small portion of 1191 Solano. In July and August 2013, additional subslab gas assessment was performed in all units. This additional data suggested that the PCE impact was still most elevated in the northern half of 1185 Solano, but extended beneath 1183 Solano and further beneath 1191 Solano. The extent of PCE in subslab gas based on this more complete July/August 2013 data is shown on Figure 16, which also presents the proposed extent for additional excavation and additional ventilation piping.

Most importantly, Figure 26 presents subslab gas concentrations after the completion of interim soil excavation and passive ventilation system installation. All subslab gas concentrations were below the RWQCB ESL for commercial site use of  $2,100 \mu\text{g}/\text{m}^3$ .

## INTERIM SOIL EXCAVATION

Based on the elevated PCE impact identified by Pangea's subslab gas and soil assessment, the Solano Group retained Sustainable Technologies, Inc., of Alameda, California to excavate soil impacted by chemicals from the former dry cleaner operations at the site. Pangea observed the soil excavation activities. Due to the potential for vapor intrusion of PCE vapors into indoor air, initial source remediation (excavation) was performed under the rear of the former dry cleaning unit at 1187 Solano and also underneath the adjacent units at 1185 Solano and 1191 Solano (Figure 11). Based on the results of additional site assessment, subsequent excavation was performed under most of 1185 Solano and extended south within 1187 Solano (Figure 18).

All identified soil impact that exceeded residential Environmental Screening Levels (ESLs) established by the San Francisco Bay Region - Regional Water Quality Control Board was removed and disposed offsite. During site excavation, a total of approximately 502.6 tons of soil was removed and disposed offsite.

Soil excavation activities included the following:

- Coordination with client/property owner and client representatives,
- Notification to adjacent tenants by property owner,
- Excavation planning with contractors and analytical laboratory,
- Excavation by appropriately licensed excavation contractor Sustainable Technologies,
- Preparation of a health and safety plan for excavation work,
- Submission of a grading permit application to the City of Albany,
- Interaction with structural engineer for underpinning, excavation support, and backfill design,

- Monitoring of indoor air with a photo-ionization device (PID) and personnel monitoring devices,
- Collection of excavation sidewall and floor soil samples,
- Collection of groundwater encountered in the excavation,
- Coordination of soil profiling and offsite disposal with contractor Advanced Environmental Solutions,
- Backfilling with cement slurry, base rock, gravel and sand. (Passive subslab venting system installation described separately).

### **Initial Excavation Sequence and Structural Engineering (February - April 2013)**

Soil excavation and backfilling activities first occurred between February and April 2013. The initial soil excavation involved two primary stages: the first under the footing and load-bearing wall along the eastern side of 1187 Solano, and the second under the remainder of the rear of 1187 Solano and a few feet under 1185 Solano.

**Stage 1:** The first stage involved excavating under the existing continuous footing and load-bearing wall along the eastern side of the unit. Consulted structural engineers and specialty contractors unanimously agreed that the classic underpinning technique would be the most appropriate and cost-effective approach for this soil excavation stage. An exploratory excavation confirmed that the load-bearing wall had a continuous footing, and presumably had internal reinforcement for added strength. ST retained JM Turner Engineering Inc of Santa Rosa, California to provide stamped drawings for the excavation, with special emphasis on the first excavation stage. Stamped drawings prepared by JM Turner Engineering are included in Appendix F.

The drawing shows Stage 1 as four 6-ft wide trenches perpendicular and under the continuous footing for the load-bearing wall, with up to two trenches excavated on a given day. Each trench was excavated and subsequently filled with an appropriate cement slurry. For added strength, ST used 3-sack cement slurry to exceed the minimum required 2-sack slurry. After sufficient drying of the cement slurry, one or two adjacent trenches were excavated and backfilled. To help evenly distribute the slurry under the footing, ST's cement subcontractor used vibration equipment and extended the slurry about 1 ft above the footing bottom for added pressure. During the trench excavation, the clayey soil held up exceedingly well with no signs of unraveling or sloughing. This alternating trenching and backfilling approach was continued until the Stage 1 excavation under the wall was complete. Based on field conditions and the longer than planned excavation, the actual trench width was slightly increased from 6 ft width with oversight from JM Turner Engineering. Also due to space limitations, ST initially excavated the entire excavation area inside the walls to approximately 4 ft depth to provide sufficient access for the excavation equipment to reach under the footing and adjacent unit. To access impacted shallow soil under the load-bearing wall, ST used an 18-inch diameter auger with extensions. This was a time-consuming yet effective approach to remove impacted soil up to approximately 7 ft laterally under the edge of the footing. Deeper soil under the footing/wall was removed with a small excavator bucket.

**Stage 2:** The second stage involved extending the excavation depth from approximately 4 ft to a final depth of 6 to 11 ft, as shown on Figure 11. To stage the excavation within the narrow building, ST first excavated and backfilled the eastern half of the 1187 unit area from 4 ft to final depth. ST then excavated and backfilled the western half of the 1187 unit area from 4 ft to final depth. Each excavation was backfilled with a cement slurry to expedite site work, avoid compaction requirements for deeper backfill, and help mitigate upward migration of PCE vapors from any residual impact in soil or groundwater. The final excavation backfill material and vent piping is illustrated in cross section on Figure 21.



### **Additional Excavation Activity (August – September 2013)**

Soil excavation resumed in August 2013. This excavation was also performed in two primary stages: the first under the bathrooms and hallway of 1185 Solano, and the second under the remainder of the rear of 1185 and 1187 Solano. The first stage included the use of CDF (cement slurry) in two slots under the hallway on either side of the piping manifold area, and a third long slot under the second bathroom. Two other slots were partially backfilled with gravel and sand and ventilation piping, before final backfilling with CDF. The second stage involved excavation using portable equipment for the open portions of 1185 and 1187 Solano.

#### **Excavation Extent**

The initial excavation extent and depth is shown on Figure 11. The initial excavation area was approximately 35 ft long by 22 ft wide. The excavation was completed to 11 ft depth beneath the former dry cleaning equipment, and to a depth of 8 to 11 ft for most of the remaining excavation. Based on compliance sampling results the northwest and southwestern corners were only excavated to 4 and 6 ft depth, respectively. A total of 361.8 tons of soil (estimated 240 cubic yards) was excavated and disposed offsite during this phase.

The final excavation extent and depth is shown on Figure 18. The final excavation area was approximately 50 ft long by 15 to 18 ft wide in 1185 Solano, and approximately 25 ft long by 18 ft wide in 1187 Solano. The excavation was completed to 2.5 to 4 ft depth. A total of 140.8 tons of soil (estimated 95 cubic yards) was excavated and disposed offsite during this phase of excavation.

#### **Soil Disposal**

A total of 502.6 tons of soil from the excavation activity was loaded and transported to the Clean Harbors Buttonwillow, LLC hazardous waste treatment, storage, and disposal facility in Buttonwillow, California for disposal as Class I RCRA hazardous waste (F-listed waste). The weight tickets for the disposed soil are included in Appendix G. Approximately 187.5 tons of soil was loaded into bins for transportation to the disposal facility during the initial excavation. Approximately 174.3 tons of soil was loaded into end dump trucks for transportation to the disposal facility for the initial excavation, with an additional 140.8 tons loaded into end dump trucks for the subsequent excavation. The Department of Toxic Substances Control issued EPA (RCRA) ID# CAP000234476 under RCRA Site Name Albany 1-Hour Cleaners.

#### **Compliance Sampling**

The initial excavation extent was based on soil assessment data from soil borings described above. After excavating each area the planned lateral and vertical extent, compliance soil samples were collected from the excavation sidewalls or floor. If soil contained PCE concentrations exceeding the final residential ESL for shallow soil of 0.43 mg/Kg (protective of direct contact per February 2013 ESLs), additional soil excavation and compliance sampling was performed. PID readings were also used on occasion to help screen soil for excavation due to elevated organic vapor concentrations in site soil. Therefore, the site assessment was performed in a dynamic manner, with subsequent site assessment conducted in response to field screening and laboratory assessment results.

A total of 15 sidewall and 10 floor samples were collected for the initial excavation boundary. Compliance sampling locations are shown on Figure 12. Soil analytical data from compliance sampling is summarized both on Figure 12 and Table 1.

For the subsequent excavation, a total of 10 sidewall and 16 floor samples were collected. Compliance sampling locations are shown on Figure 17. Soil analytical data from compliance sampling is summarized both on Figure 17 and Table 1.

The excavator bucket was used to facilitate sample collection from the sidewalls and bottoms of the deeper excavation areas. Soil from each depth and location was lifted to the side of the pit in the excavator bucket, where a sample was collected. For shallower sidewall samples the excavator bucket was not required to assist with sample collection. All soil samples were collected in stainless steel tubes hammered into the soil and capped with Teflon tape and plastic end caps. The samples were placed into a cooler filled with ice and delivered under chain-of-custody procedures to McCampbell Analytical, Inc. of Pittsburg, California, a State-certified laboratory. Soil sampling was performed in accordance with Pangea's *Standard Excavation Sampling Procedures* presented in Appendix C.

The compliance soil samples were analyzed for volatile organic compounds (VOCs) by EPA Method 8260B (using EPA Method 8010 reporting list to control cost).

### **Backfilling**

The excavation cavity was initially backfilled with cement slurry in two stages as described above. The cement slurry was used from 4 ft depth to the final excavation depth (maximum of 11 ft), as shown on Figure 21. For added strength, ST used 3-sack cement slurry to exceed the minimum required 2-sack slurry. The cement subcontractor used vibration equipment and the slurry extends about 1 ft above the footing bottom for added pressure along the eastern portion of the backfilling.

On top of the cement slurry, from approximately 24 inches to 4 ft depth, a recycled base rock was backfilled and compacted in 8" lifts. The base rock backfill material was compacted with a 30" sheep foot roller. From approximately 12" to 24" depth, recycled sand was backfilled and compacted in two lifts. Compaction testing on March 22, 2013, indicated that the backfill material had been compacted to approximately 90 to 92% (Appendix H). The compaction technician determined that more moisture was needed to achieve higher compaction density. ST wet the soil and performed additional compaction with the sheep foot roller.

For the subsequent excavation, portions of the excavation cavity under the bathrooms and hallway at 1185 Solano Avenue was backfilled with controlled density fill (CDF) to support the building. The remainder of the excavation was backfilled with sand and gravel. After installation of the ventilation piping with the gravel layer, 10 mil plastic sheeting was installed over the gravel. The plastic sheeting and gravel extended over the entire excavation area, except for the small CDF slots under the hallway, bathroom, and 1191 Solano. CDF was installed over the plastic sheeting. Figures 20 and 21 provide a cross-sectional view of the excavation extent and backfill materials.

Also prior to installation of the plastic sheeting and CDF, sanitary sewer piping was installed where shown on Figure 24. Permeable material was placed around the shallow sanitary piping in 1187 Solano to facilitate future connections to the piping. After completion of the final plumbing for the future tenants, a 4-inch thick concrete slab will be installed over the excavation area.

### **VAPOR INTRUSION MITIGATION**

To help mitigate potential intrusion of vapors from any residual PCE impact in soil and groundwater, Pangea first installed and tested a temporary subslab ventilation system. This system was removed during subsequent excavation, except for the vent piping in 1191 Solano. In conjunction with the additional excavation, Pangea also installed a passive ventilation system under 1185 and 1187 Solano, and additional piping for contingent use as active or passive ventilation under all units. Testing of this system is described below. Finally, Pangea performed a blower door test and sealed slab penetrations using the Retro-Coat<sup>TM</sup> System. Vapor intrusion mitigation has been initiated in general accordance with CalEPA/DTSC guidance and protocols, particularly the *Vapor Intrusion Mitigation Advisory (VIMA)* document of October 2011.

## Temporary Ventilation System

Installation and testing of the temporary ventilation system (which was subsequently removed) is described below. Test data is relevant to help with contingent installation of an active ventilation system.

### Installation of the Temporary Ventilation Piping

The subslab ventilation/depressurization system and subslab vapor flow is illustrated on Figure 13. The extraction and air inlet vent piping consisted of 4-inch diameter slotted schedule 40 PVC piping, wrapped with geotextile material. One end of each 'vent' was capped, and the other plumbed with 2-inch diameter solid schedule 40 PVC to the vent piping manifold within the western wall of 1187 Solano. Ball valves and sampling ports are located within fire-rated enclosures at the vent piping manifold to allow monitoring and adjustment of extracted subslab vapors. Bentonite plugs were installed at the end of each vent to help minimize the potential for vapor flow short-circuiting within the subsurface.

Above the former excavation area, two extraction vents were installed within shallow sand backfill along the eastern wall of 1187 Solano. Two air inlet vents were installed within shallow sand backfill along the western wall of 1187 Solano.

To target subslab and shallow soil gas beyond the limits of the excavation, six additional vent pipes were installed. Four of these vents were installed by excavating trenches approximately 18 inches deep and 12 inches wide, prior to installation of sand, slotted vent piping, and a bentonite plug. The first vent pipe targeted subslab gas at 1191 Solano (and an additional 2-inch PVC pipe was terminated at the end of that vent pipe for future expansion of venting in this adjacent unit). The second vent pipe targeted the southern portion of 1187 Solano. The third and fourth vent pipes targeted the primary room at 1185 Solano, and are located nearby the abandoned sanitary sewer present nearby in the adjacent 1183 Solano unit.

Two additional vent pipes were installed under the northern portion of 1185 Solano, where site assessment and/or excavation was inhibited by the presence of remodeled bathrooms and a ramp/passageway for disabled persons. These vents were constructed by ST on May 22 and 24, 2013, using a 7-inch diameter hand auger and a PID to screened soil for PCE vapors. The first additional vent pipe was installed immediately beneath the primary sanitary sewer as it travelled beneath the bathroom at 1185 Solano, extending beyond 7 ft from the wall where the sewer turned 45 degrees. This vent ('1185 Bathroom') was screened from approximately 6 to 10 ft horizontally from the 1187 Solano wall, with the sand pack extending to 11 ft under the wall (where a PID reading of 4 ppmv was measured). To enhance influence within subslab materials, the sanitary sewer piping was removed along with sand/backfill material surrounding the sewer. The vent pipe was installed within the location of the former sewer and the underlying hand auger borehole. (Subsequent vent testing confirmed significant vacuum influence extending from the '1185 Bathroom' vent through subslab materials to probe SS-6 located approximately 15 ft to the south).

The second additional vent pipe ('1185 Hall Soil'), installed beneath the hallway/ramp in 1185 Solano, was screened from approximately 7 to 12 ft horizontally from the 1187 Solano wall, with the sand pack extending from 6 to 7 ft under to wall and angling from 12 to 14.5 ft under the wall. This vent pipe was extended this length to influence potential residual PCE under the abandoned sanitary sewer location as it angled toward 1183 Solano. The screen interval targeted the highest PID readings in this boring, which were 12 ppmv (at 8 ft) and 15 ppmv (at 12 ft). Due to access limitations, this vent pipe was angled slightly downward and allowed soil gas extraction from slightly deeper subsurface soil rather than subslab materials already influenced by the '1185 Bathroom' vent. For each vent, sand was compacted inside the borehole prior to insertion of the capped and plumbed slotted pipe.

On May 24, 2013, ST also hand augered boring A-8 angled under the bathroom of the adjacent 1185 Solano unit. This boring was performed to evaluate conditions near the abandoned sewer. Due to limited PID readings (maximum of 6 ppmv at 6.5 ft under the wall) and significant vacuum influence from the adjacent '1185 Bathroom' vent, an additional vent was not constructed in this borehole. A soil sample collected from 5 ft under the wall (about 2 ft bgs) contained only 0.0093 mg/Kg.

#### Testing of the Temporary Ventilation System

Pangea coordinated testing of select subslab vent piping in April and May 2013. Subslab gas concentrations in the influent vapor stream and in tested subslab gas probes are summarized on Table 3. A regenerative extraction blower was temporarily installed to facilitate the testing of the subslab depressurization (SSD) system within these units. The test blower was a 2.5 hp Fuji Model VFC50 providing vapor flow of approximately 125 cubic-foot-per-minute (cfm). Vapor emissions were treated with granular activated carbon. Prior to five-day tests, Pangea notified the Bay Area Air Quality Management District.

From April 6 to 10, 2013, a five-day test was performed on the three existing subslab vent pipes. The test was conducted on the two vents in the main room of 1185 Solano ('1185 North' and '1185 South'), and the one vent in the Post Office building at 1191 Solano ('1191 Post Office'). During this initial testing of the SSD system, PCE concentrations in extracted subslab gas decreased from approximately 5,000  $\mu\text{g}/\text{m}^3$  (Day 3) to 4,400  $\mu\text{g}/\text{m}^3$  (Day 5), as shown on Table 3.

From April 10 to 15, 2013, a five-day test was performed only on the vent pipe in the Post Office building at 1191 Solano ('1191 Post Office'). During this testing, PCE concentrations in extracted subslab gas decreased from approximately 700  $\mu\text{g}/\text{m}^3$  (Day 1) to 370  $\mu\text{g}/\text{m}^3$  (Day 5).

Following these tests the subsurface was allowed to re-equilibrate prior to sample collection from subslab gas probes on April 25, 2013. As described above, subslab gas samples were collected and analyzed from previously installed probes, as well as newly installed probes SS-9 and SS-10. As shown on Table 3, significant PCE concentration reductions were observed in site subslab probes. For probe SS-7, PCE concentrations reduced from 540,000  $\mu\text{g}/\text{m}^3$  on January 17, 2013 to only 2,000  $\mu\text{g}/\text{m}^3$  on April 25, 2013. For probe SS-6, PCE concentrations reduced significantly from 120,000  $\mu\text{g}/\text{m}^3$  on January 17, 2013 to 40,000  $\mu\text{g}/\text{m}^3$  on April 25, 2013. Concentration reductions were also observed in the Post Office probes at 1191 Solano, and no PCE was detected in subslab gas from probe SS-PO-2 or new probes SS-9 and SS-10.

Testing results indicated that residual PCE impact was highest near subslab gas probe SS-6 and persisted at 1191 Solano. Therefore, another five-day test was performed from April 29 to May 3, 2013 on all three existing vents at the time: 1185 North, 1185 South, and 1191 Post Office. During this testing, PCE concentrations in extracted these subslab gas decreased from approximately 4,400  $\mu\text{g}/\text{m}^3$  (April 10) to 1,600  $\mu\text{g}/\text{m}^3$  by Day 4 (May 2).

Due to elevated impact at probe SS-6, a short test was performed to only extract vapor from vent '1185 North' on May 13. A PCE concentration of 1,300  $\mu\text{g}/\text{m}^3$  was reported for this vent, which is lower than the 40,000  $\mu\text{g}/\text{m}^3$  recently detected in nearby SS-6 on April 25, 2013. On May 17, 2013, Pangea sampled subslab probe SS-6 after additional subsurface equilibration. Laboratory analytical results indicated that PCE concentrations in SS-6 had further decreased to 19,000  $\mu\text{g}/\text{m}^3$  by May 17, 2013.

On July 10, 2013, the test system was mobilized to the site for four hours of testing. The testing primarily evaluated vacuum influence in the recently installed subslab probes.

#### Vacuum Influence of Temporary Ventilation System

The maximum vacuum influence measured in subslab probes during testing is summarized on Table B. Vacuum influence in subslab probes for most probes equaled or exceeded CalEPA/DTSC's VIMA value of 0.1" water vacuum for effective mitigation of subslab vapors, for probes in 1185, 1187 and 1191 Solano. No testing of SS-9 was performed since installation of the floor slab and vent for 1187 South was pending renovation. Limited vacuum influence was observed for probes in 1191 Solano, which is not surprising given the deep footing discovered during subsequent excavation. The subsequent vents installed beneath 1183 Solano can be tested in the future.

**Table C - Maximum Vacuum Influence in Subslab Probes**

Probe	SSPO-1	SSPO-2	SSPO-3	SSPO-4	SS-6	SS-7	SS-10	SS-14
Vacuum ("H <sub>2</sub> O)	>0.50	0.10	0.15	0.35	0.80	>1.0	0.06	0.10

\* CalEPA/DTSC *Vapor Intrusion Mitigation Advisory (VIMA)* cites 0.1" water vacuum as sufficient vacuum influence for vapor mitigation.

#### Mass Removal Rates

During testing of the temporary ventilation system, the applied vacuum ranged from approximately 20" to 70" of water for the various vent pipes/horizontal wells. The induced vapor extraction ranged from approximately 92 to 178 cubic feet per minute (cfm). For testing of the three initially installed vents (1185 North + 1185 South + 1191 Post Office), the applied vacuum was approximately 30" water and induced a flow rate of approximately 120 cfm. PID readings from the system influent decreased from an initial maximum reading of 11.9 ppmv (April 5, 2013) to 0.7 ppmv (April 10, 2013). During a short test on April 25, 2013, PID measurements indicated a very slight rebound to 1.1 ppmv.

Mass removal rates were calculated using vapor extraction flow rates and VOC concentrations from laboratory analysis of vapor samples collected during testing. During testing from the three vents, the estimated PCE removal rate initially decreased from approximately 0.054 lbs/day (April 8) to 0.048 lbs/day (April 10), and later reduced to 0.021 lbs/day (May 2). During testing of 1191 Post Office only, the estimated PCE removal rate decreased from approximately 0.007 lbs/day (April 10) to 0.004 lbs/day (April 15). During brief testing of 1185 North only on May 13, the estimated PCE removal rate decreased from approximately 0.014 lbs/day.

Based on discussions with the Bay Area Air Quality Management District, a permit is required to operate an active ventilation system although emission treatment may not be required for the anticipated emissions. To operate a passive subslab ventilation system (SSV), which operates on a wind-powered fan rather than an electrical extraction blower, the BAAQMD may issue a permit exemption notice.

#### Testing Conclusions

Testing of the temporary ventilation system indicates that an active system could effectively mitigate vapor intrusion concerns within 1185, 1187 and 1191 Solano. Depending on final requirements for vapor intrusion mitigation and future data, additional vents may be required to enhance the effectiveness of the existing vent piping network at 1183 and 1191 Solano. Operation of an active system would require a permit from BAAQMD but no vapor treatment would likely be required. Operation of a passive system would likely be eligible for a permit exemption notice from BAAQMD.

### **Passive Subslab Venting System (and Contingent Active System)**

After completion of the additional excavation, a subslab ventilation system was installed in 1185 and 1187 Solano. The ventilation system is illustrated on Figures 22 and 23. Except for CDF areas under the bathroom and hallway for support, the excavation cavity was backfilled with sand and gravel for incorporation into a passive subslab ventilation system. Slotted piping was installed within the gravel layer and overlain by 10 mil plastic sheeting and then CDF to facilitate collection of subsurface vapors and transport for passive venting. The passive ventilation piping is routed through two 4-inch diameter solid ABS piping risers into a sealed roof turbine fan for ventilation to the atmosphere. In addition, slotted PVC ventilation piping was installed under the units at 1183 Solano, 1185 Solano, 1187 Solano, and 1191 Solano Avenue. This additional piping is manifolded together within the ceiling and could be used for future passive or active ventilation. Access to the manifolded piping is provided by three panels in the hallway of 1185 Solano. A fourth panel provides access to the four subslab gas probes installed within the gravel layer beneath 1185 and 1187 Solano, and to a fourth monitoring well (MW-4) installed to monitor source area groundwater.

Based on testing of subslab gas on October 10, 2013 and indoor air testing on September 27, 2013 and October 3, 2013, the passive ventilation system (and prior excavation) is sufficiently safeguarding indoor air. The future slab installation in 1185 and 1187 will further safeguard human health.

### **Slab Penetration Sealing and Blower Door Test**

To further mitigate potential vapor intrusion, Pangea performed sealed slab penetrations using the Retro-Coat™ System manufactured by Land Science Technologies of San Clemente, California. To help identify potential slab penetrations, Pangea first retained GeoTech Utility Locating as described in the utility locating section above. This survey identified the location of the current sanitary sewer piping beneath 1183 Solano. The survey also identified the underground electrical conduit running from the mechanical room in the rear of 1183 Solano to the five dentist chairs within 1183 Solano. At each dentist chair an underground vault contained electrical service, an air supply line, and a vacuum conduit. The survey also confirmed the location of the sanitary sewer beneath 1191 Solano. The owner's contractor then removed sheet rock to find and expose plumbing penetrations near sinks and toilets within 1183 and 1191 Solano.

The blower door test was performed on September 17, 2013 by Ultimate Home Performance to look for locations where air enters the building, after sealing up the doors. The 1191 Solano unit was very 'tight', with an average air flow of 3333 cubic feet per minute extracted through the door at 50 Pascals of pressure. A little air flow was observed entering the building near the plumbing water supply fixtures in the bathrooms, so these fixtures were later sealed. Some air flow was observed exiting the toilet, so the toilets were later removed and the penetration filled with grout. Air was also entering along the eastern wall where the mail cart wore away the plaster on the lathe, so this was filled with sheetrock compound. Some air entered around electrical outlets but these were not sealed. It was difficult to determine in any air flow was observed along the plumbing penetrations at the exposed cleanouts, as these cleanouts appeared cemented or grouted in place. To help mitigate any potential vapor intrusion from these penetrations, they were sealed as detailed below.

Slab and wall penetrations were sealed using the Retro-Coat™ products by contractor American Industrial Coatings of Woodland, California on September 19 and 20, 2013. Retro-Coat™ CAULK was used to seal all identified slab penetrations in 1183 and 1191 Solano, as well as the vent piping penetrations at the manifold in 1187 Solano. The Retro-Coat™ System of Retro-Coat™ PREP, Retro-Coat™ PRIMER, and Retro-Coat™ was used to seal the underground vaults for each dentist chair at 1183 Solano. To provide an acceptable surface for the Retro-Coat™ primer and finish coat, ST first installed



an approximate 2-inch thick quick-set grout layer on the permeable rock present in the bottom of the vault. The vault box sides are plastic or metal. Photographs of the blower door test and sealing are included in Appendix I.

## INDOOR AIR ASSESSMENT

To evaluate indoor air quality at the site following mitigation measures, Pangea sampled indoor air in accordance with the approved *Workplan for Preliminary Assessment of Indoor Air* dated September 9, 2013. The testing was initiated on October 3 and completed on October 4, 2013, with one sample collected on September 27, 2013. In accordance with the ACEH request, the following indoor air samples were collected:

- 1183 Solano: one 8- hour sample near the primary dentist/patient work area, and a 24-hour sample to evaluate diurnal affects in accordance with CalEPA/DTSC guidance;
- 1187 Solano: one 8-hour sample near the center of the open area that connects to 1185 Solano (sample is likely representative of both units);
- 1191 Solano: one 8-hour sample in the rear breakroom (adjacent impacted subslab gas probes SSPO-3 and SSPO-4), another 8-hour sample near the front work area, and a nearby 24-hour sample to evaluate diurnal affects in accordance with CalEPA/DTSC guidance;
- Ambient Air: one 8-hour sample on the rooftop of 1181 Solano, approximately 40 ft upwind (northwest) of the closest sample at 1183 Solano and approximately 70 ft upwind of the sample at 1187 Solano (the prevailing wind was from the north or northwest during sampling).

The indoor air sample locations and analytical results are shown on Figure 27. Indoor air analytical results are summarized on Table 4. All COC concentrations (PCE and its degradation products) were lower than *commercial* ESLs in *all sampled units* and at negligible levels in the ambient air sample. Concentrations of PCE in 1183 and 1187 Solano did slightly exceed the *residential* ESL in the 8-hr work day sample, and the 24-hr sample in 1183 Solano was slightly more than double the *residential* ESL. The higher level for the 24-hr 1183 Solano sample is likely due to the fact that the HVAC system, which produces a slight positive pressure, was shut down for the period following the work day, thus allowing increased intrusion rates during the period that it was not occupied. The 24-hr sample in 1191 Solano was comparable to the 8-hr sample.

Select other compounds were detected in the ambient/background sample and indoor air at concentrations slightly exceeding commercial ESLs. The compounds are not associated with the PCE release, are present in ambient air, and are likely associated with background conditions or another source.

These other compounds were not detected in subslab gas during recent sampling. The detected concentrations were also well below the 10 in a million risk level, a level deemed acceptable by the ACEH upon review of the prior site human health risk assessment. The other detected compounds that slightly exceeded commercial ESLs were benzene, naphthalene, carbon tetrachloride, and 1,2-dichloroethane. Based on these detections, Pangea had the laboratory report the full list of EPA Method 8260 compounds for recent samples. Benzene was detected at 1185 and 1187 Solano in subslab gas at very low concentrations in January 2013, but has not been detected since. Benzene concentrations in indoor air in all units was similar or about twice the ambient air concentration. Naphthalene concentrations in indoor air in all units was about two or three times the ambient air concentration. Naphthalene is not present in subsurface samples. Naphthalene may be due to exhaust from nearby vehicles, or exhaust from the excavation equipment. Concentrations of 1,2-dichloroethane were significantly higher in 1183 Solano than the other units, and may be associated with products used by the

dental operations. Carbon tetrachloride concentrations were very similar in ambient air and all samples, and may be associated with refrigerant use. Carbon tetrachloride is used in the manufacturing of refrigerants, and other refrigerants (e.g., dichlorodifluoromethane and trichlorofluoromethane) were present in all samples.

In summary, all COC concentrations (PCE and its degradation products) were lower than *commercial* ESLs in *all sampled units*. The other compounds detected in indoor air are not associated with the PCE release, are present in ambient air, and are likely associated with background conditions or another source.

## **SITE CONCEPTUAL MODEL**

Pangea prepared this site conceptual model (SCM) to describe and illustrate site conditions. All site data is summarized on Tables 1 through 4, and subsurface conditions are illustrated on Figures 1 through 27. To facilitate agency review and oversight, Pangea also prepared an SCM in the tabular format requested by ACEH. The tabular SCM, presented in Appendix J, also identifies potential data gaps. A summary of the SCM is provided below.

Our review of available information suggests that PCE releases could have commenced in 1986 and would have discontinued in 2004 when hydrocarbon-based cleaning equipment was installed (an 18 year period). PCE likely primarily entered the subsurface by penetrating the concrete floor near the former dry cleaner location where most elevated impact has been detected (near boring B-7), or by breaching the concrete floor or the southern sanitary sewer piping near the former washing equipment (near boring B-3). To a presumed lesser extent, PCE may have migrated along preferential pathways/conduits under the floor in vapor phase, or in aqueous phase aided by reported extensive water flooding at the 1187 Solano unit. Potential preferential pathways include the sanitary sewer, sanitary sewer backfill material, and subslab baserock, as well as the underground electrical conduit exiting near the rear of 1185 Solano and subsequent electrical conduit/backfill extending under specialty chairs in the dental office in 1183 Solano. A video survey of the sanitary sewer out to the Solano Avenue main suggests that the cast iron piping is in good condition. The lack of significant PCE impact detected in soil and soil gas along the sanitary sewer suggests that PCE did not leak significantly from the sanitary sewer.

Once under the concrete floor, PCE migrated downward through clayey site soil to the apparent groundwater interface/capillary fringe at approximately 9 ft depth bgs. PCE then migrated laterally approximately 100 ft within the low-permeability saturated zone at approximately 9 to 15 ft bgs. No PCE impact has been detected in soil deeper than 15 ft bgs, or in the first real water-bearing materials (silty gravel) approximately 6 to 12 inches thick encountered approximately 30 ft bgs. Site excavation activity has removed all identified soil impact that exceeded residential screening levels. The clayey site soil will tend to mitigate PCE vapor migration from groundwater into shallower soil, and vapor intrusion from groundwater does not appear to be a significant concern. Limited PCE impact is apparently present in residual soil, subslab soil gas, and/or groundwater beneath the four units at 1183 through 1191 Solano Avenue.

## **SCM Conclusions**

Pangea offers the following conclusions regarding the PCE impact at the site:

- All site *soil* has excavated to *below* applicable screening levels for *residential* site use.
- *Indoor air* quality is *below* applicable screening levels for *commercial* site use in all tested units.
- *Subslab gas* is *below* applicable screening levels for *commercial* site use in all tested units.

- Well data indicates that residual PCE impact in *groundwater* is *below* applicable screening levels for *commercial* site use for all units. The applicable screening level is protective of vapor intrusion to indoor air based on the site's fine-grained soil.
- Therefore, current site data suggests that residual PCE does not represent a significant threat to human health (e.g., site occupants or construction workers) or the environment.

### Data Gaps

To help confirm that residual PCE does not represent a significant threat to human health and the environment, Pangea plans to address data gaps in the SCM and prior site work. Therefore, Pangea plans to perform the following:

- Survey site monitoring wells to facilitate determination of the groundwater gradient and flow direction at the site, and to allow data uploading to State databases.
- Perform additional groundwater monitoring to evaluate plume stability.
- Perform additional subslab soil gas and indoor air monitoring to confirm the effectiveness of the completed interim remediation measures of excavation and passive subslab ventilation.
- Conduct a survey to identify any water wells or other sensitive receptors (e.g., basements or other subgrade development) within approximately 250 ft of the site in the crossgradient and downgradient directions.
- Short-term feasibility testing from vent piping to evaluate the potential benefit of contingent active or passive ventilation of vents installed under 1183 and 1191 Solano.

### REMEDIAL OBJECTIVES AND CLEANUP GOALS

The initial remedial objective is to sufficiently safeguard human health to allow resumed occupancy of vacant units at 1185 and 1187 Solano, and ongoing use for the occupied units at 1183 through 1191 Solano Avenue. The ultimate objective is to help facilitate regulatory case closure within the relative near future in accordance with the RWQCB's regulatory guidance document *Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites (Low-Threat Closure Tool)* (RWQCB, 2009).

### Cleanup Levels and Goals

The proposed cleanup goals and levels are presented on Table 5 (this table is also included at the end of the SCM). The proposed cleanup levels and goals are based on applicable RWQCB Environmental Screening Levels (ESLs) for commercial site use. Pangea has used RWQCB ESLs for several reasons. First, these ESLs were established by the same agency that provides oversight for this case in conjunction with the local lead agency (ACEH). Second, the RWQCB created the *Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites* that your agency referenced for criteria for closing the case. Third, the ESLs were revised in May 2013 and are much more recent than other screening criteria referenced in the *Low-Threat Closure Tool*. Finally, changes in attenuation factors and exposure duration have been incorporated into the revised ESLs and not into older screening criteria such as CalEPA/DTSC's California Human Health Screening Levels (CHHSLs). For example, the RWQCB commercial ESLs are based on an 8 hour exposure, while commercial CHHSLs use a 24 hour commercial exposure.

Although current site data indicates that COC concentrations in all media are below cleanup levels and goals, additional effort planned to confirm site conditions and satisfy case closure criteria are discussed below.

## **Low-Threat Chlorinated Solvent Site Closure Criteria**

The Low-Threat Closure Tool summarizes nine narrative criteria for site closure, shown below in three groups. The narrative criteria describe the conditions under which closure is warranted for low-threat sites. These criteria are introduced below.

1. Develop a complete Site Conceptual Model (SCM)
  - Pollutant sources are identified and evaluated
  - The site is adequately characterized
  - Exposure pathways, receptors, and potential risks, threats, and other environmental concerns are identified and assessed
2. Control sources and mitigate risks and threats
  - Pollutant sources are remediated to the extent feasible
  - Unacceptable risks to human health, ecological health, and sensitive receptors, considering current and future land and water uses, are mitigated
  - Unacceptable threats to groundwater and surface water resources, considering existing and potential beneficial uses, are mitigated
3. Demonstrate that residual pollution in all media will not adversely affect present and anticipated land and water uses
  - Groundwater plumes are decreasing
  - Cleanup standards can be met within a reasonable timeframe
  - Risk management measures are appropriate, documented, and do not require future Water Board oversight

This report addresses the nine narrative criteria for low-threat case closure.

### Group 1 Closure Criteria

With respect to the above Group 1 criteria, our SCM included herein describes how (a) the PCE impact from the former dry cleaning business has been identified, (b) the site is adequately characterized, and (c) environmental concerns pathways have been identified and assessed -- with the exception of the identified few data gaps to be evaluated in the near future.

### Group 2 Closure Criteria

For Group 2 criteria, the completed interim remediation (excavation) removal of 502.6 tons of impacted soil has likely remediated the site subsurface to the point where unacceptable risks to human health and sensitive receptors are mitigated. Addressing the SCM data gaps will help confirm that unacceptable threats to sensitive receptors or groundwater resources/beneficial uses are sufficiently mitigated. The planned assessment, ongoing monitoring data, and implementation of risk management measures (e.g., passive subslab venting) will provide additional information to demonstrate effective risk mitigation at this site.

As described in the SCM, the East Bay Plain Beneficial Use Evaluation Report (Water Board, 1999) indicates that the site lies within the Berkeley/Albany Groundwater Management Zone part of Zone B, which identifies areas where groundwater is *unlikely* to be used as a drinking water resource. In addition, shallow groundwater lies in very low permeability soils that are highly unlikely to be able to yield

sufficient water to constitute a potential drinking water resource as defined in State Water Resources Control Board Resolution 88-63. Therefore, risks to groundwater beneficial uses are likely to be non-existent. However, it is possible that sumps, basements or wells are present in the downgradient areas of the plume and that accidental ingestion of groundwater could potentially occur within any area where groundwater concentrations exceed ESLs for drinking water. Therefore, a receptor survey is planned to confirm the limited risk.

### Group 3 Closure Criteria

Group 3 criteria apply specifically when residual pollution in any medium (e.g. soil, soil gas, indoor air, groundwater, or surface water) remains in-place above cleanup standards. As described below, current site data indicates that residual pollution in all media is *below* cleanup standards (applicable ESLs) for commercial site use. Therefore, Group 3 criteria should be satisfied once data gap assessment and additional monitoring confirms that current site conditions are representative of site conditions.

Future data gap assessment and monitoring should demonstrate that (a) the groundwater plume is stable and/or decreasing, (b) cleanup standards are already met (or will be in a reasonable time), and (c) risk management measures are appropriate, documented, and do not require future Water Board oversight.

Engineering controls are already implemented at the site, and our plan includes contingent additional controls. The installed passive subslab ventilation system was installed as a risk management measure rather than an active system since the passive system does not have active components (e.g., blower) that could require agency oversight. Our corrective action plan also includes a vapor barrier as a contingent measure for further risk management, if merited by future data.

The Low-Threat Closure Tool allows for agency discretion regarding the need for deed restrictions upon issuance of case closure.

## **FEASIBILITY STUDY**

Pangea prepared a feasibility study/corrective action plan for addressing residual PCE impact beneath all four units at 1183 through 1191 Solano Avenue. To help select a cost-effective and appropriate alternative for meeting the remediation objectives, Pangea evaluated several site remediation techniques applicable to sites with chlorinated solvent impact. The evaluated remedial alternatives include:

- Excavation
- Soil Vapor Extraction (and Active Venting)
- Monitored Natural Attenuation (Soil Gas and Groundwater Monitoring)
- No Action

The evaluation of alternatives is discussed below.

### **Excavation**

Excavation is a proven and effective technique for remediation of chlorinated hydrocarbons. Excavation is most appropriate for shallow soils, and especially for low permeability materials where in-situ remedial techniques have very limited effectiveness. This method is also a cost-effective option for undeveloped sites where the excavation area is accessible and not beneath site facilities. Excavation can remove unsaturated soil, capillary fringe soil, and saturated soil. Soil is usually transported offsite for disposal, but soil can be treated and reused at the site in accordance with regulatory guidelines and approval.

Despite limited access inside the site building units, extensive and costly excavation was performed as an interim remedial measure at this site. The excavation was expanded in an effort to address applicable cleanup standards for commercial or residential site use, and that sufficiently mitigate potential vapor

intrusion into indoor air. Any future excavation expanded into the adjacent units at 1183 and 1191 Solano would be disruptive of the current tenants. Excavation would be most disruptive and costly for 1183 Solano due to sensitive dentist/orthodontist operations and significant site improvements. Excavation would be less disruptive in 1191 Solano, if limited to the storage room where the vent pipe was installed. Extending the excavation into other rooms would be more challenging given the ongoing U.S. Mail operations and site improvements. Nonetheless, Pangea considers excavation as a viable contingent measure (primarily for portions of 1191 Solano), if merited by future site data.

### **Soil Vapor Extraction (and Active Venting)**

Soil vapor extraction is a common approach for remediating unsaturated soil. This approach uses an aboveground vacuum blower to extract vapor-phase chlorinated hydrocarbons from the site subsurface. SVE also effectively removes chlorinated hydrocarbons adsorbed to unsaturated soil that could pose a risk to groundwater quality. Extracted vapors are typically treated aboveground with granular activated carbon, although emissions can be discharged to the atmosphere without treatment if acceptable to the air district.

Based on the predominantly fine-grained soil at this site, SVE may have limited effectiveness due to low soil permeability, water upwelling and shallow groundwater (about 9 ft bgs). SVE will also not target residual groundwater impact. However, testing of the temporary venting system and shallow wells/vents installed into site soil suggests that SVE can be used to provide 'active venting' of the site subsurface. This venting would likely provide preferential PCE removal from the more permeable subsurface materials, such as backfill material around utility conduits or subslab baserock materials. Therefore, Pangea considers SVE and Active Venting as a viable contingent measure, if merited by future site data.

### **Monitored Natural Attenuation (Soil Gas and Groundwater Monitoring)**

This alternative involves no active remediation, and assumes that residual contaminants will attenuate naturally. To be selected as an appropriate alternative, residual contaminants are often required to attenuate (or are projected to attenuate) to water quality objectives or other applicable cleanup standards within a reasonable timeframe. In addition, subslab/soil gas are required to attenuate (or are projected to attenuate) to applicable cleanup standards within a reasonable timeframe.

Given the extensive source removal via excavation (which removed source area soil impact and saturated-zone, groundwater impact), chlorinated concentrations in subslab/soil gas groundwater will likely attenuate naturally. Subslab gas monitoring data from probe SS-16 in 1183 Solano suggests that removal of the source area in the adjacent 1185 Solano unit has removed the PCE vapor source that likely migrated along preferential pathways to probe SS-16. Subslab gas monitoring of probe SS-17 will evaluate attenuation further along the same preferential pathway that intersects probe SS-16. For groundwater, it will likely require a very long time to reduce PCE concentrations to water quality objectives protective of drinking water standards, due to predominantly fine-grained material and the lack of significant PCE degradation (e.g. formation of TCE and cis-1,2-DCE) observed in other site media. However, the Basin Plan indicates that groundwater will not likely be used as a drinking water resource, so the risk to beneficial use is minimal or non-existent. This alternative may be appropriate to confirm plume stability and subslab gas attenuation to more fully satisfy criteria of the Low-Threat Closure Tool.

### **No Action**

This alternative involves no further action. Feasibility studies are often required to consider this alternative. This alternative would be appropriate after sufficiently satisfying criteria of the Low-Threat Closure Tool.



## **CORRECTION ACTION PLAN**

Based on our evaluation of the site conditions with respect to proposed cleanup levels and the Low-Threat Closure Tool, Pangea recommends additional monitoring of indoor air and subsurface conditions in subslab gas and groundwater. This is the monitored natural attenuation alternative presented above. The monitoring will assess the effectiveness of the completed interim remediation (excavation) and passive subslab venting system for mitigating threats to sensitive receptors and the environment. Pangea also recommends addressing data gaps discussed in the site conceptual model to provide more thorough assessment of site conditions.

If this additional (post-interim remediation) monitoring identifies potential concerns, Pangea would recommend implementation of one or more of the contingent measures presented below. If the future monitoring confirms plume stability and safe conditions, Pangea will recommend regulatory case closure in accordance with criteria established in the RWQCB's *Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites*.

Our CAP employs the following contingent activities, which include remedial approaches and engineering controls:

- Passive ventilation of subslab soil gas using the existing passive ventilation system under 1185 and 1187 Solano and the existing vent piping at 1183 and 1191 Solano;
- Additional monitoring of groundwater, subslab soil gas, and indoor air to further evaluate the effect of the extensive interim remediation and the effectiveness of the ventilation system;
- Excavation of additional shallow soil beneath 1183 and/or 1191 Solano, if merited;
- Expansion of the passive ventilation system, if merited;
- Installation of an extraction blower to provide active ventilation to accelerate PCE removal and further safeguard indoor air, if merited; and
- Installation of a vapor intrusion barrier using the Retro-Coat™ System, if merited.

In summary, the initial goal of the CAP is to sufficiently safeguard human health to allow resumed occupancy of vacant units at 1185 and 1187 Solano, and ongoing use for the occupied units at 1183 through 1191 Solano Avenue. The ultimate goal of the CAP is to help facilitate regulatory case closure within the relative near future in accordance with the RWQCB's regulatory guidance document *Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites* (RWQCB, 2009).

## CONCLUSIONS AND RECOMMENDATIONS

Pangea offers the following conclusions regarding the PCE impact at the site:

- All site *soil* has been excavated to *below* applicable screening levels for *residential* site use.
- All site *indoor air, subslab gas, and groundwater* concentrations are *below* applicable screening levels for *commercial* site use in all tested units.
- Therefore, current site data suggests that residual PCE does not represent a significant threat to human health or the environment.

Pangea recommends performing additional monitoring of indoor air and subsurface conditions to confirm the effectiveness of the completed interim remediation (excavation) and passive subslab venting system for mitigating threats to sensitive receptors and the environment. Pangea also recommends addressing data gaps discussed in the site conceptual model to provide more thorough assessment of site conditions.

If this additional (post-interim remediation) monitoring identifies potential concerns, Pangea would recommend implementation of one or more of the contingent measures presented in the above CAP. If the monitoring confirms plume stability and safe conditions, Pangea will recommend regulatory case closure in accordance with criteria established in the RWQCB's *Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites*.

## REFERENCES

- Avalon Environmental Consultants, 2004, (Avalon, 2004), *Phase II Subsurface Site Assessment*, November 10.
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- Pangea Environmental Services, 2013, (Pangea, 2013c), *Workplan for Preliminary Assessment of Indoor Air*, September 9.
- Regional Water Quality Control Board, 1999, (RWQCB, 1999), *East Bay Plain Beneficial Use Evaluation Report, Alameda and Contra Costa Counties, CA*, June 1999
- Regional Water Quality Control Board, 2009, (RWQCB, 2009) *Draft – Final Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites*, July 31
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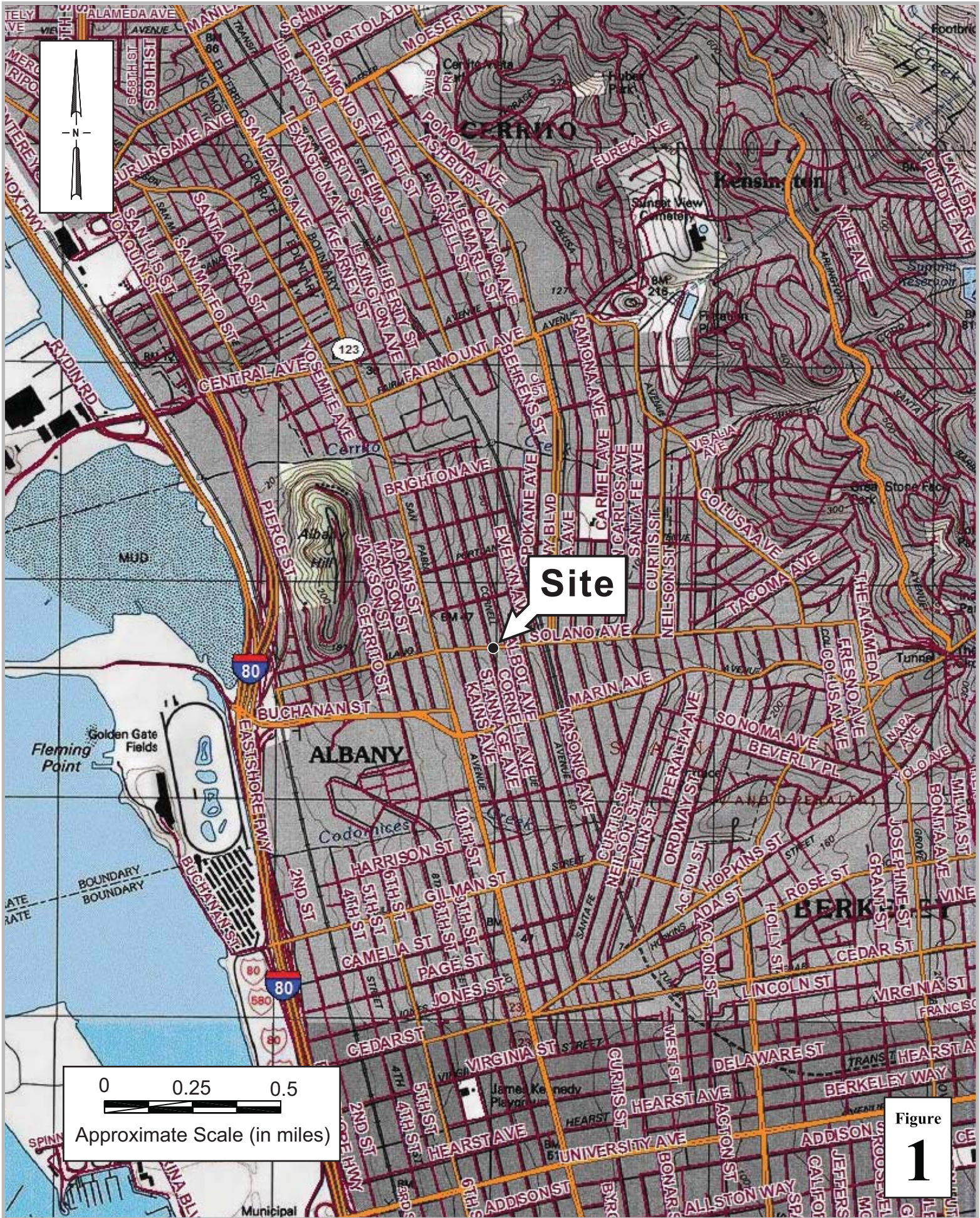


Figure  
**1**

Solano Group  
1187 Solano Avenue  
Albany, California



Vicinity Map





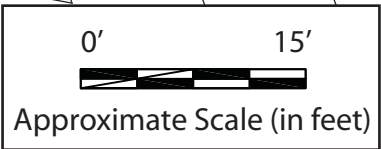
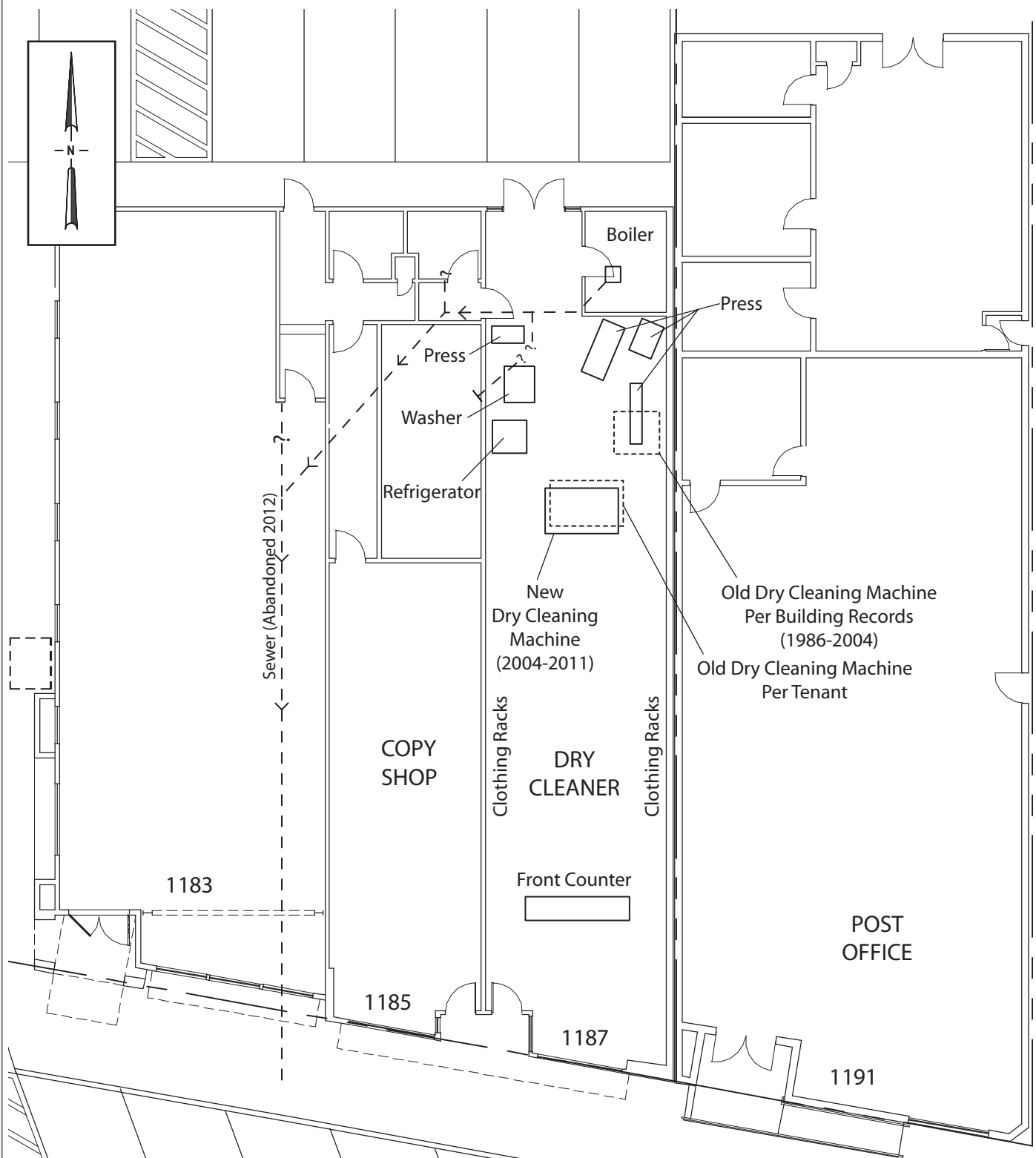
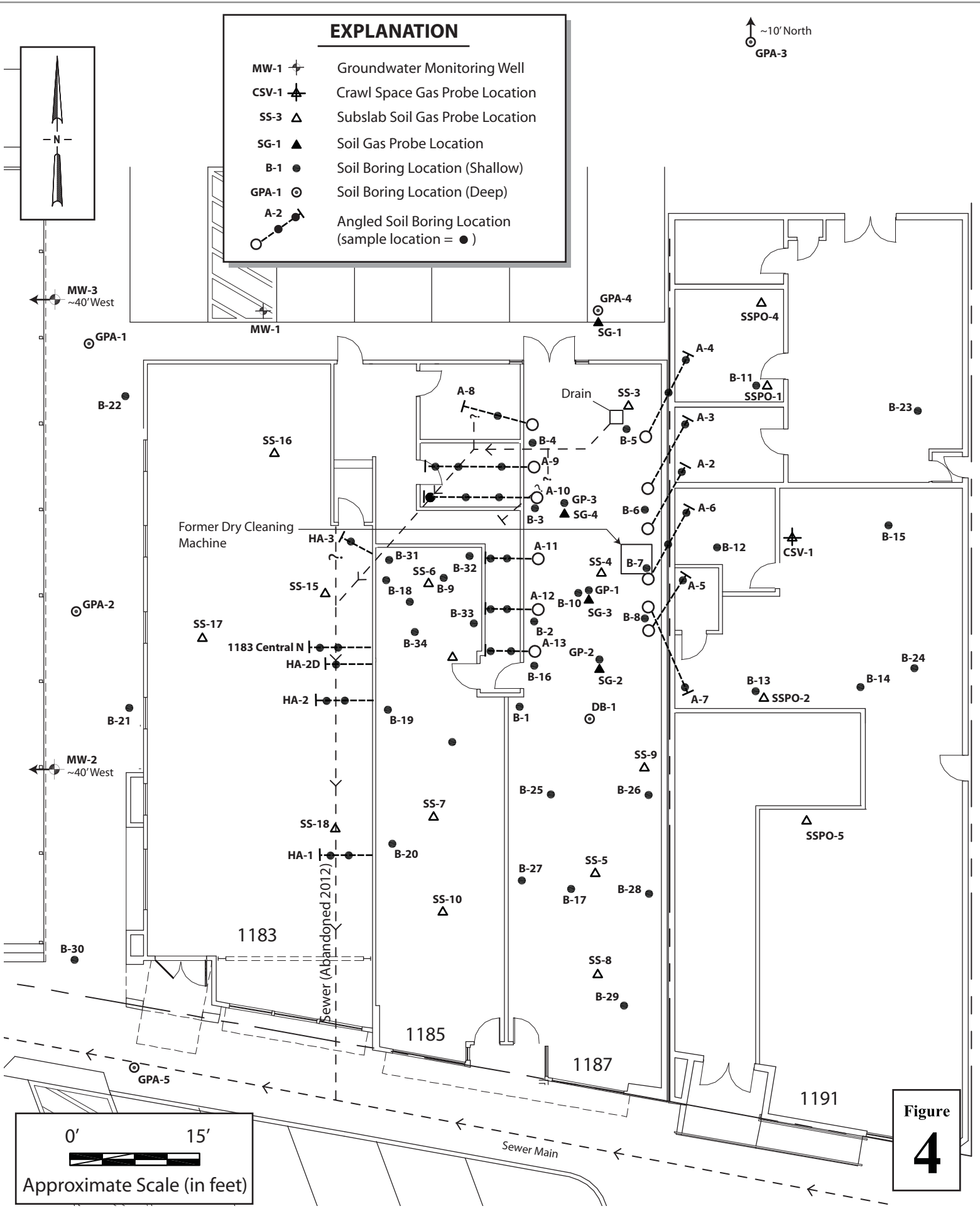
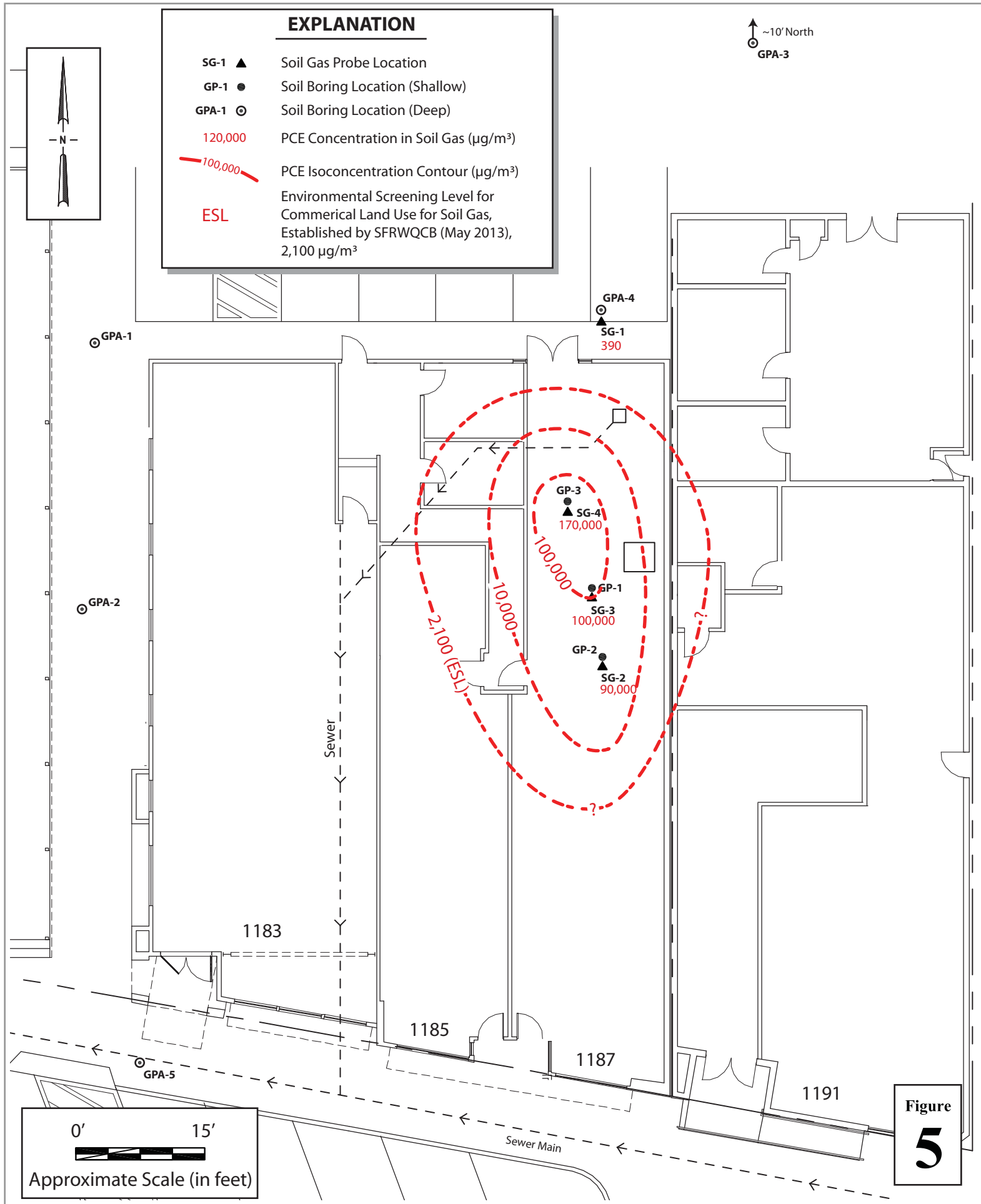


Figure  
**3**



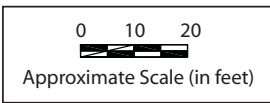






**EXPLANATION**

- MW-1 Groundwater Monitoring Well
- (9-14') Screen interval, feet bgs
- B-21 Boring Location
- 48 PCE Concentration in Groundwater (µg/L), 2013
- 100 PCE Isoconcentration Contour (µg/L)



**Note:** Residual PCE groundwater impact does not pose a significant risk to human health or environment. No PCE detected in first water-bearing unit at 30 ft depth and no known nearby water wells, surface water or other sensitive receptors. Well data shows adequate plume delineation and all concentrations well below RWQCB screening level protective of volatilization to indoor air for commercial site use (640 ug/l). Clayey soil and passive ventilation system further mitigate potential vapor intrusion.



Estimated Groundwater Flow Direction

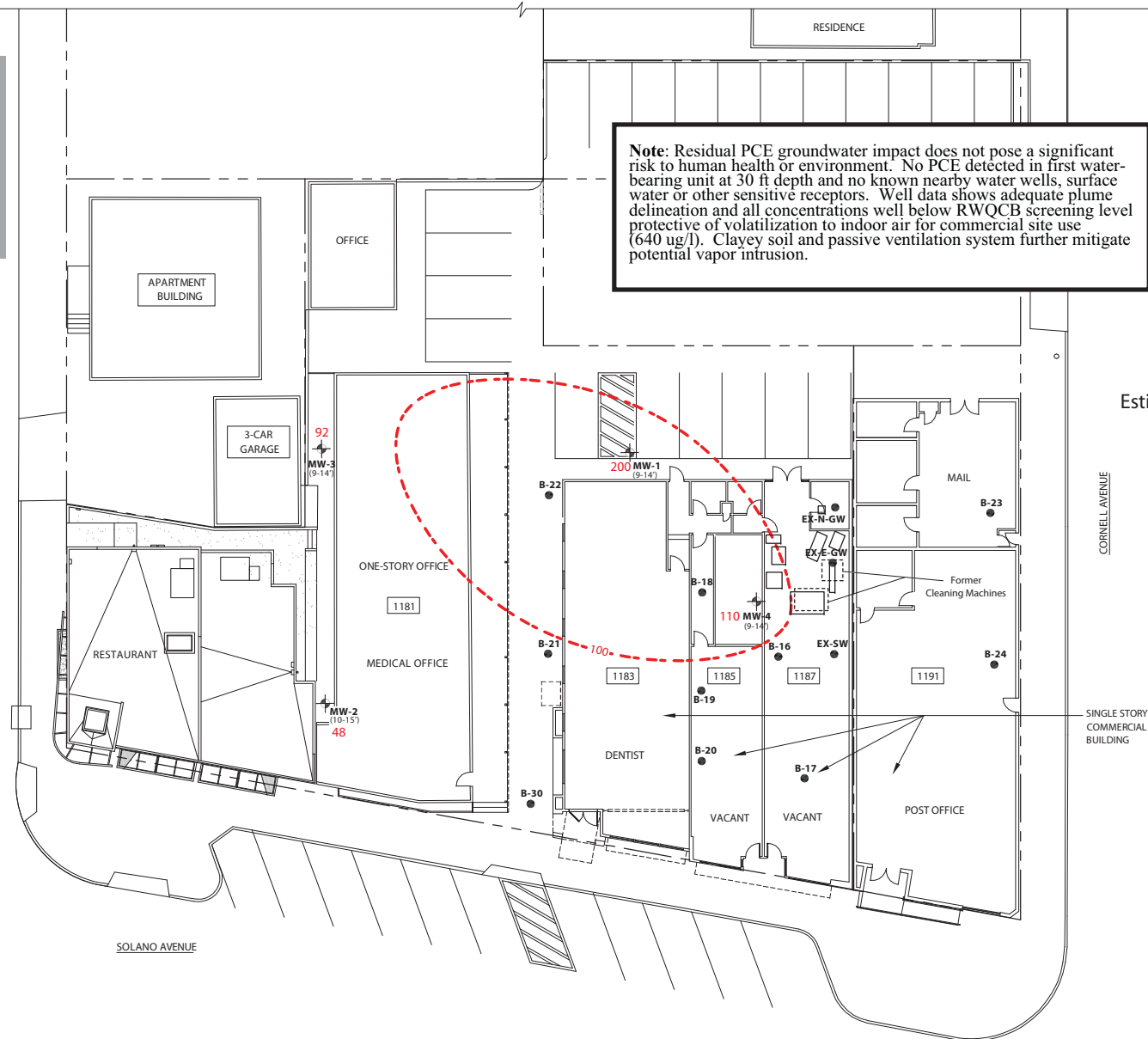
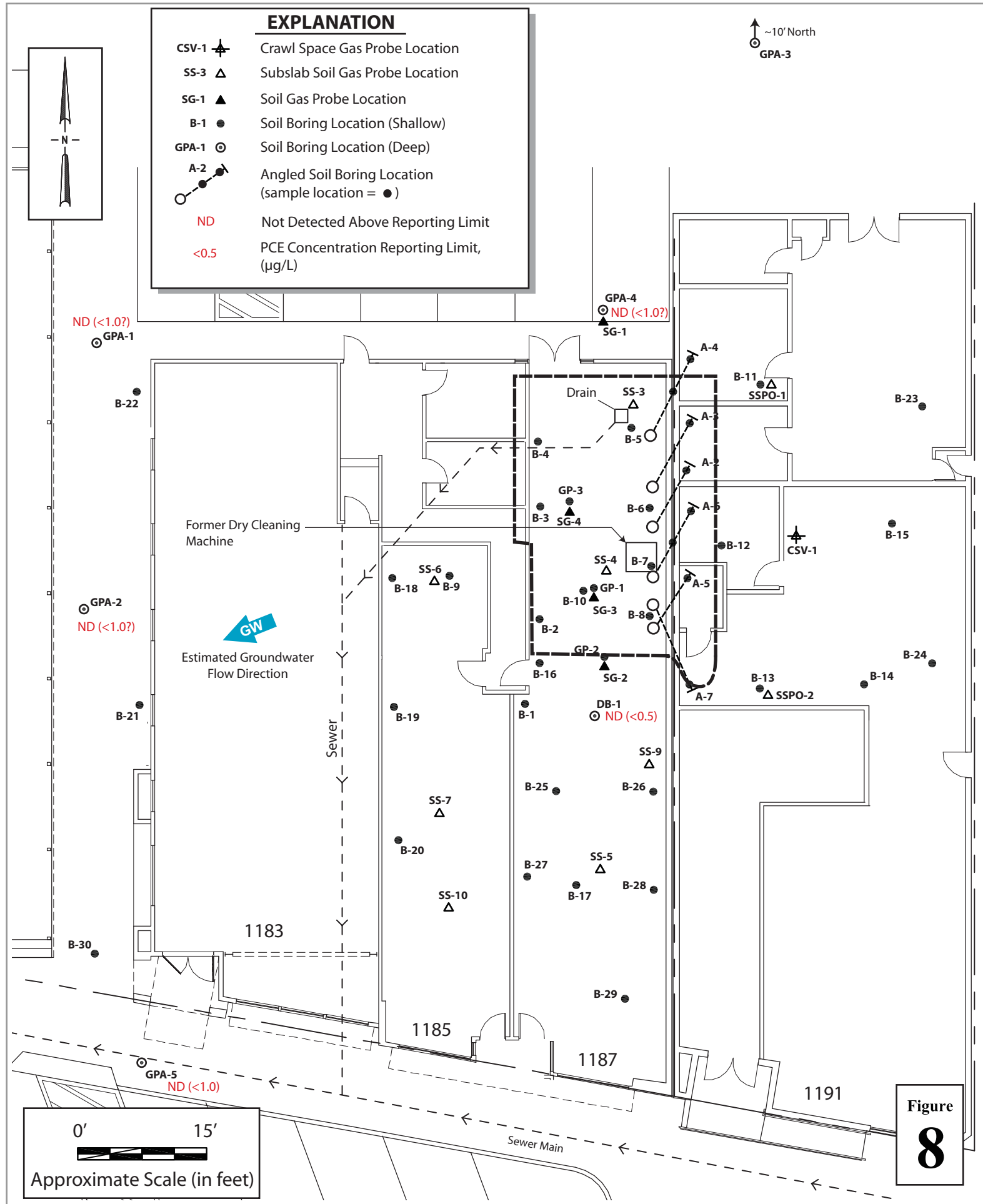


Figure  
**7**

**Solano Group**  
1187 Solano Avenue  
Albany, California



**PCE in Shallow Groundwater  
Monitoring Wells**



## EXPLANATION

- CSV-1 Crawl Space Gas Probe Location  
 SS-3 Subslab Soil Gas Probe Location  
 SG-1 Soil Gas Probe Location  
 B-1 Soil Boring Location (Shallow)  
 GPA-1 Soil Boring Location (Deep)  
 A-2 Angled Soil Boring Location (sample location = ●)  
 0.190 PCE Concentration in Soil, mg/kg (**bold** exceeds residential ESL)  
 5' Sample depth, feet  
 \* Overexcavated Location  
 + 1191 Solano grade is ~2.5' higher than 1187 grade  
 NS Not Sampled

PCE in Shallow (<3m) Soil Exceeding Residential ESL of 0.55 mg/kg.

GPA-3	
10'	ND
20'	ND
30'	ND

GPA-1	
10'	0.0071
20'	ND
30'	ND

B-22	
5'	<0.005

GP-3	
5'	0.470*
10'	0.690*
15'	ND
20'	ND

A-8	
2'	0.0093

B-4	
3'	0.32*
5'	0.11*

B-3	
3'	0.53*
5'	0.32*

B-9	
3'	0.086*

GPA-2	
10'	0.0066
20'	ND
30'	ND

B-21	
5'	<0.005

B-30	
5'	<0.005

GPA-5	
10'	0.012
20'	ND
30'	ND

B-5	
3.5'	0.78*
5.5'	0.42*

B-6	
3'	0.91*
5'	0.39*
7'	1.5*
11.5'	0.0062

GPA-4	
10'	0.310
20'	ND
30'	ND

A-4	
5.5'	0.011

A-4	
4'	0.032*

B-11	
8'+	<0.005
12'+	<0.005

B-23	
4.5'	<0.005
8.5'	<0.005

A-3	
7'	0.66*

A-6	
5.5'	7.9*

A-6	
4'	3.9*

B-12	
4'+	<0.005
8'+	0.011
12'+	<0.005

B-15	
8'+	<0.005

A-5	
8.5'	1.3*

B-8	
3'	1.6*
5'	0.40*

B-7	
3'	5.0*
5'	1.6*
7'	0.72*
11.5'	0.0061

B-24	
4.5'	<0.005

B-14	
8'+	<0.005

B-13	
8'+	<0.005
12'+	<0.005

A-7	
5.5	0.23*

GP-2	
5'	0.190
10'	0.026
15'	ND
20'	ND

B-28	
2.5'	<0.005
5'	<0.005

B-2	
3.5'	0.12
5'	0.19

B-10	
6'	0.39*

B-19	
2'	<0.005*
5'	0.013

B-25	
2.5'	0.0071*
5'	0.0066

B-20	
2'	0.013*
5'	0.0085

B-1	
3.5'	0.011
5'	0.034

B-26	
2.5'	0.018*
5'	0.0050

B-27	
3'	<0.005
5'	<0.005

B-29	
2.5'	<0.005
5'	<0.005

Sewer (Abandoned 2012)

Sewer Main

1183

1185

1187

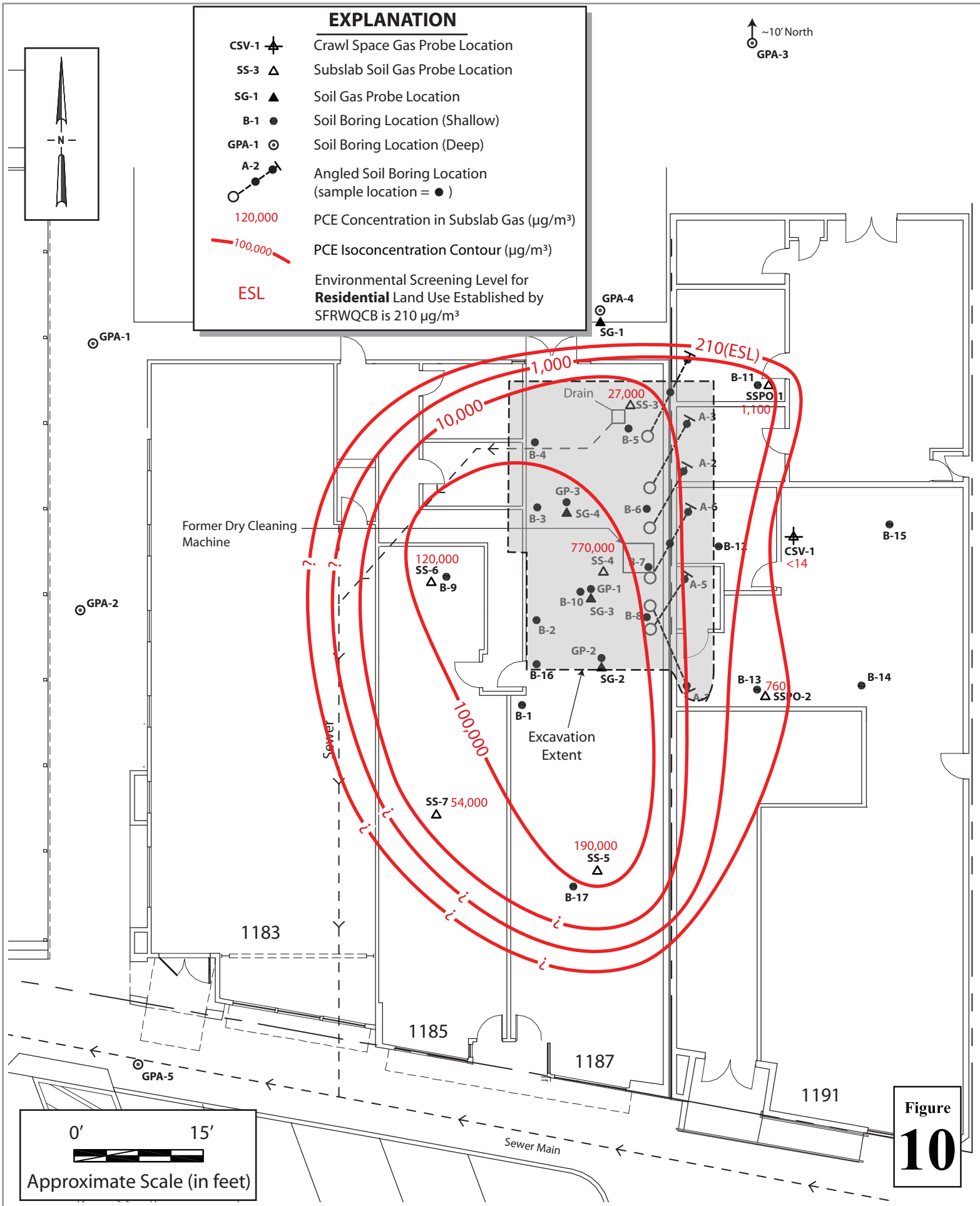
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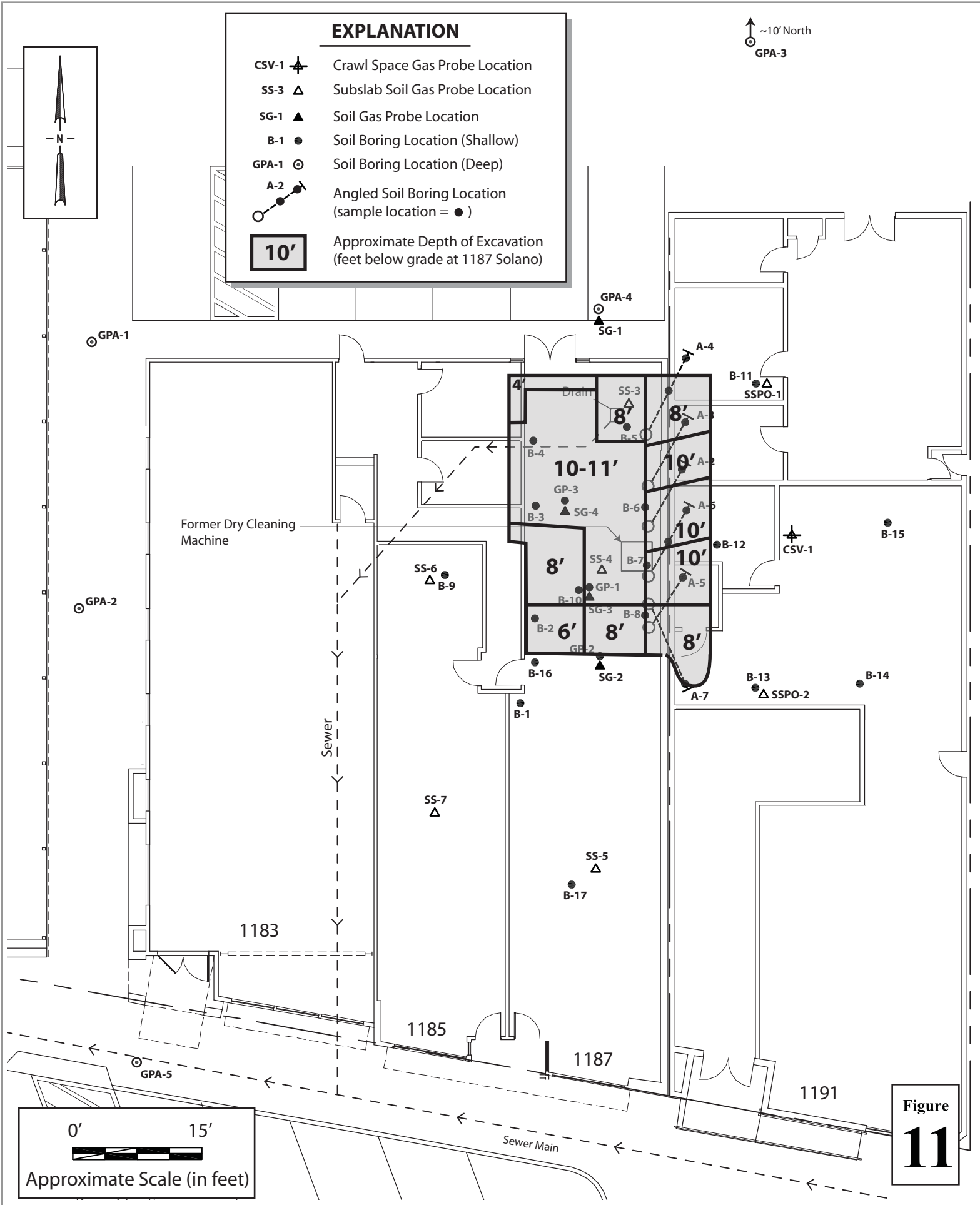
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Approximate Scale (in feet)

Figure









9



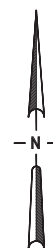




## EXPLANATION

- CSV-1  Crawl Space Gas Probe Location
- SS-3  Subslab Soil Gas Probe Location
- SG-1  Soil Gas Probe Location
- B-1  Soil Boring Location (Shallow)
- GPA-1  Soil Boring Location (Deep)
- A-2  Angled Soil Boring Location  
(sample location = ●)
-  10' Approximate Depth of Excavation  
(feet below grade at 1187 Solano)
-  Compliance Soil Sample Location
- 0.20 PCE Concentration in Soil, mg/kg
- \* Overexcavated Sample Location
- ESL = 0.55 mg/kg residential soil <3m

~10' North  
GPA-3



Former Dry Cleaning Machine

GPA-2

Sewer

1183

1185

1187

1191

GPA-5

Sewer Main

**NOTE: All soil excavated to below residential ESL.**

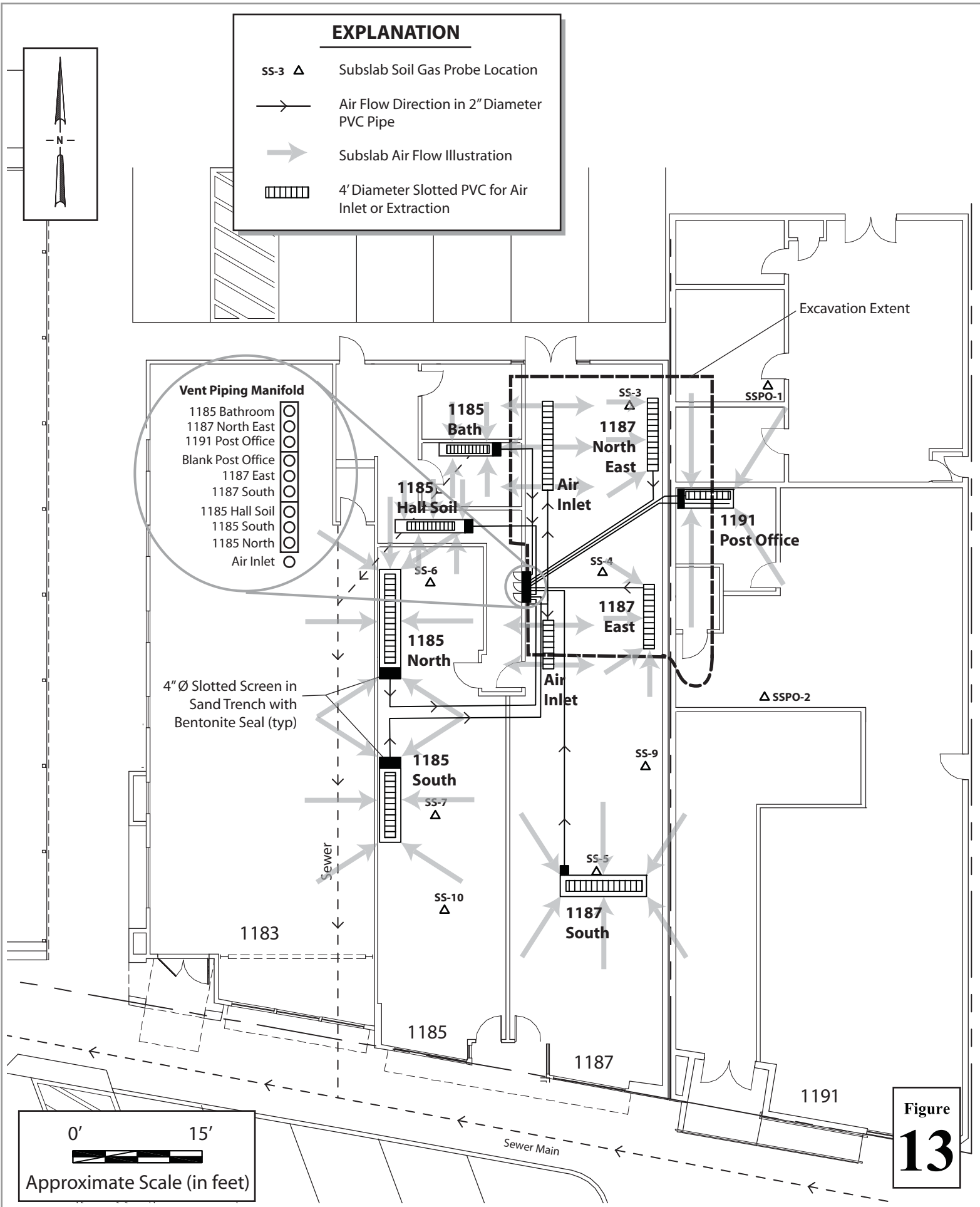
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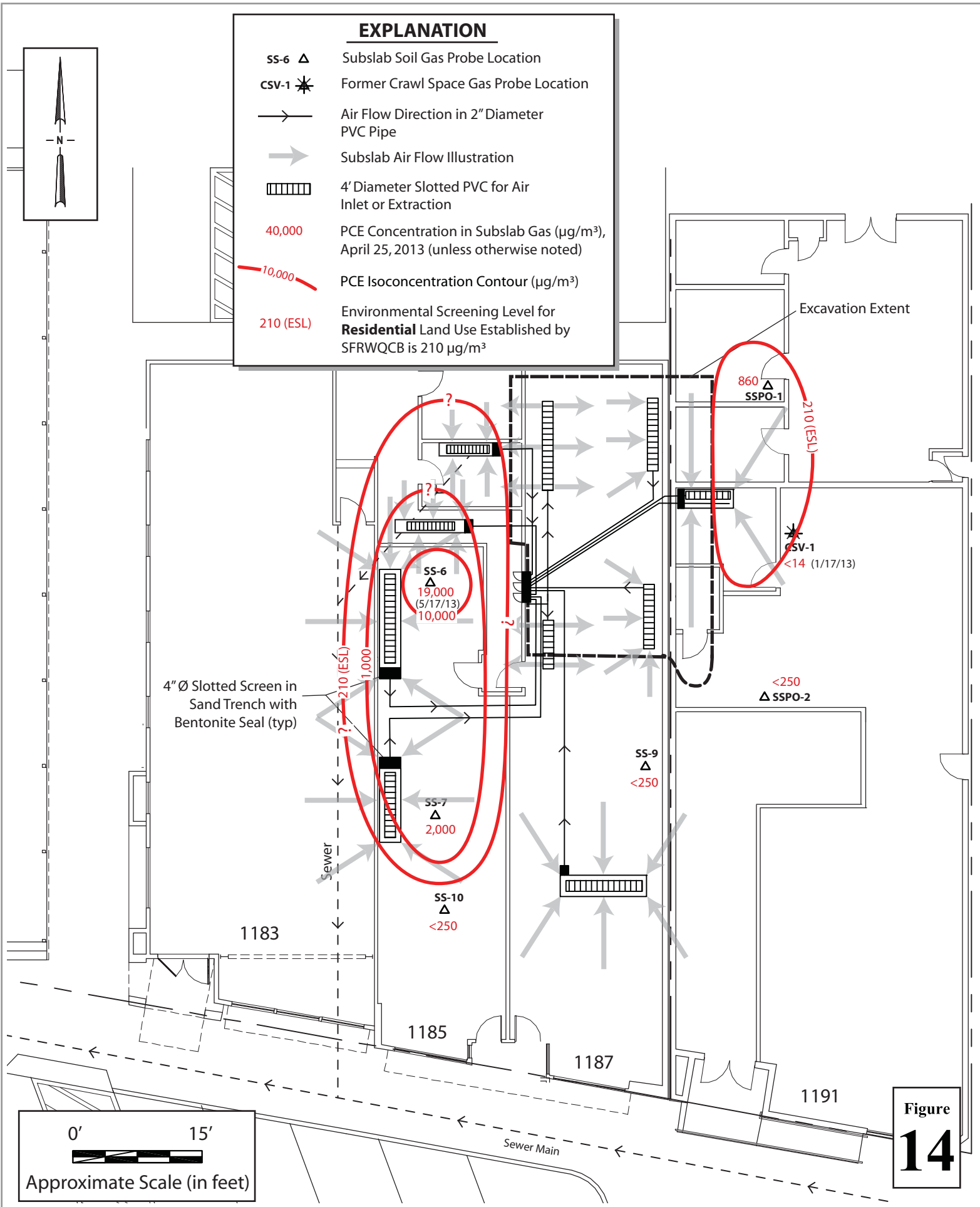


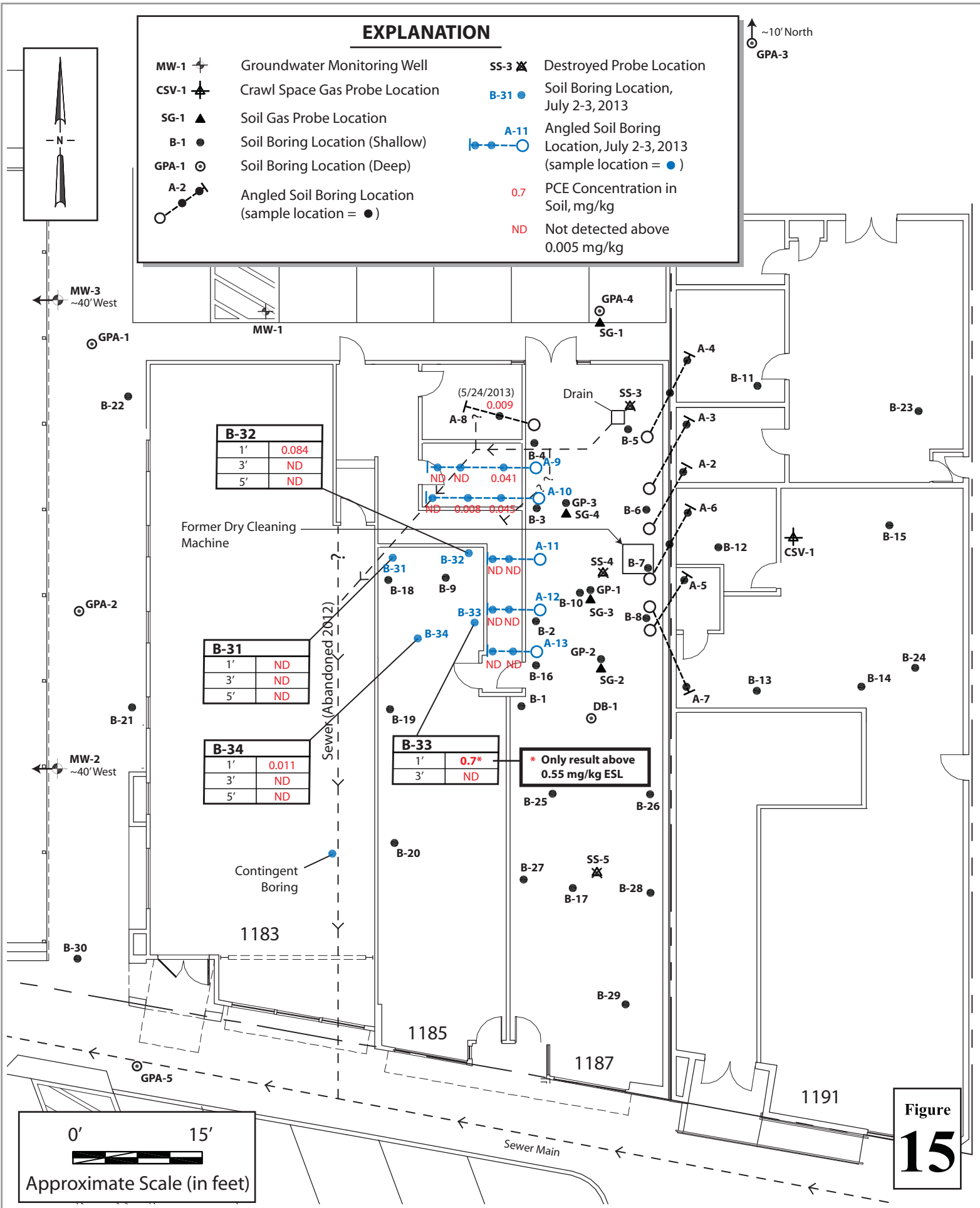
Approximate Scale (in feet)

Figure

**12**









## EXPLANATION

**10'**

Approximate Depth of Excavation  
(feet below grade at 1187 Solano)



Compliance Soil Sample Location



Horizontal Boring Location  
(Sample Location = ●)

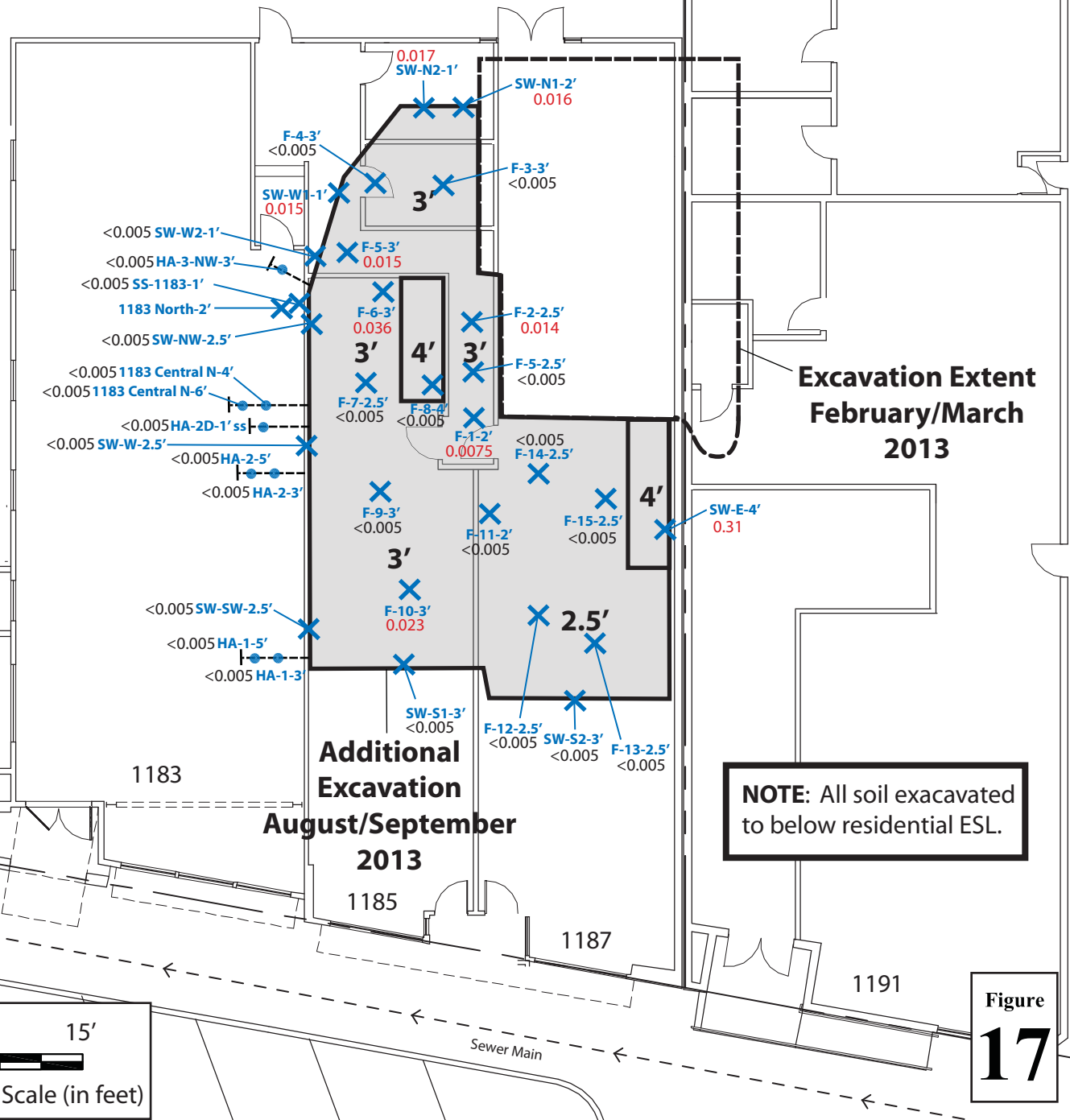
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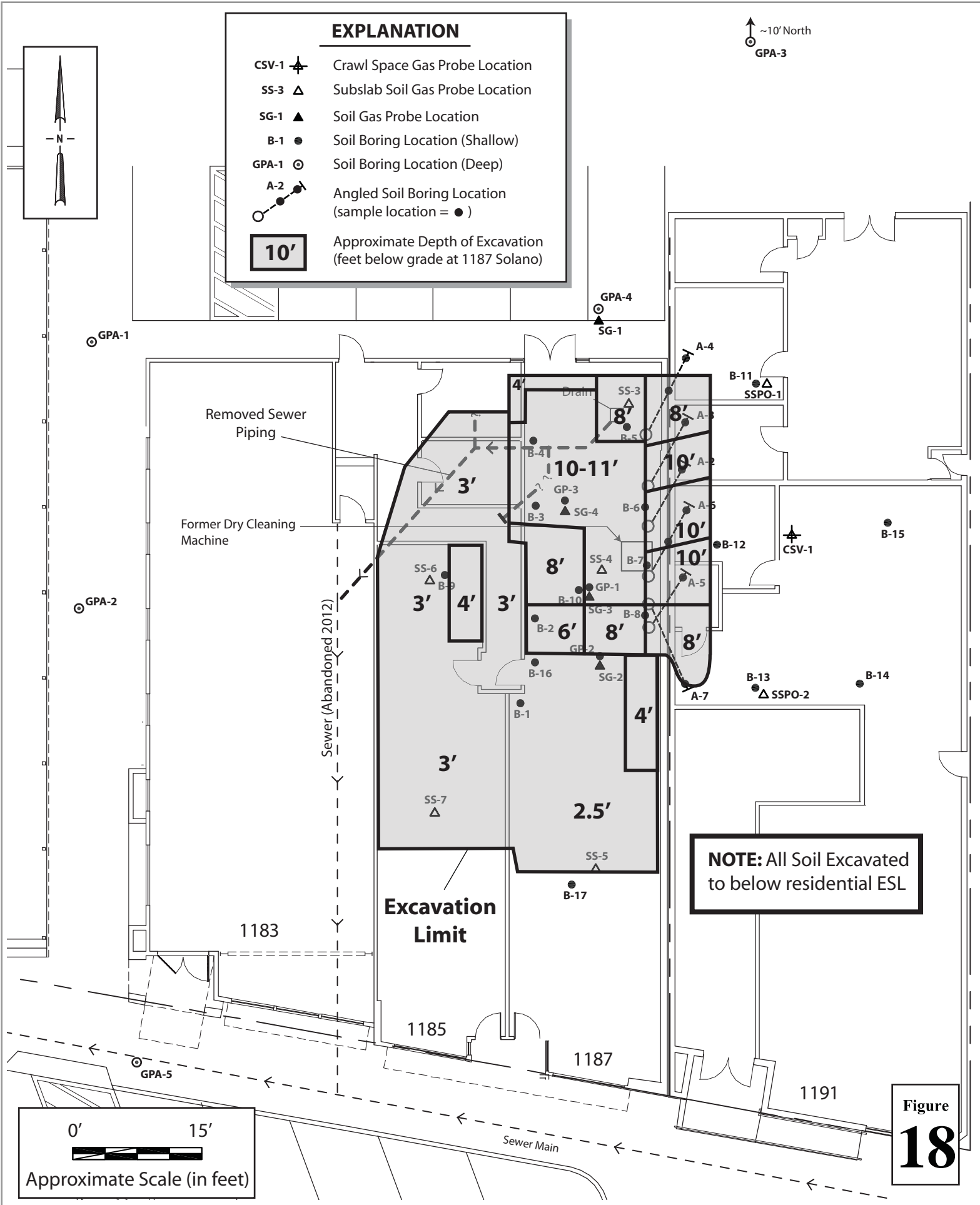
PCE Concentration Detected in Soil, mg/kg

<0.005

Non-Detect PCE Concentration, mg/kg

NOTE: All detections are below 0.55 mg/kg  
residential soil ESA







## EXPLANATION

- CSV-1 Crawl Space Gas Probe Location
- SS-3 Subslab Soil Gas Probe Location
- SG-1 Soil Gas Probe Location
- B-1 Soil Boring Location (Shallow)
- GPA-1 Soil Boring Location (Deep)
- A-2 Angled Soil Boring Location (sample location = ●)
- 0.190 PCE Concentration in Soil, mg/kg (**bold** exceeds residential ESL)
- 5' Sample depth, feet
- \* Overexcavated Location
- A A' Cross Section Location
- + 1191 Solano grade is ~2.5' higher than 1187 grade
- NS Not Sampled

PCE in Shallow (<3m) Soil Exceeding Residential ESL of 0.55 mg/kg.

GPA-3		
10'	ND	
20'	ND	
30'	ND	

GPA-1		
10'	0.0071	
20'	ND	
30'	ND	

B-22		
5'	<0.005	

GP-3		
5'	0.470*	
10'	0.690*	
15'	ND	
20'	ND	

B-4		
3'	0.32	
5'	0.11	

B-3		
3'	0.53*	
5'	0.32	

GPA-1		
5'	1.10*	
10'	0.0091	
15'	0.0084	

B-9		
3'	0.086	

GPA-2		
10'	0.0066	
20'	ND	
30'	ND	

B-21		
5'	<0.005	

B-30		
5'	<0.005	

GPA-5		
10'	0.012	
20'	ND	
30'	ND	

B-2		
3.5'	0.12	
5'	0.19	

B-10		
6'	0.39*	

B-19		
2'	<0.005	
5'	0.013	

B-25		
2.5'	0.0071	
5'	0.0066	

B-20		
2'	0.013	
5'	0.0085	

B-27		
3'	<0.005	
5'	<0.005	

B-29		
2.5'	<0.005	
5'	<0.005	

B-5		
3.5'	0.78	
5.5'	0.42	

B-6		
3'	0.91*	
5'	0.39*	
7'	1.5*	
11.5'	0.0062	

GPA-4		
10'	0.310	
20'	ND	
30'	ND	

A-4		
5.5'	0.011	

A-4		
4'	0.032*	

B-11		
8'+	<0.005	
12'+	<0.005	

B-23		
4.5'	<0.005	
8.5'	<0.005	

A-3		
7'	0.66*	

A-6		
5.5'	7.9*	

A-6		
4'	3.9*	

B-12		
4'+	<0.005	
8'+	0.011	
12'+	<0.005	

B-15		
8'+	<0.005	

A-5		
8.5'	1.3*	

B-8		
3'	1.6*	
5'	0.40*	

B-24		
4.5'	<0.005	

B-14		
8'+	<0.005	

A-7		
5.5	0.23	

GP-2		
5'	0.190	
10'	0.026	
15'	ND	
20'	ND	

B-13		
8'+	<0.005	
12'+	<0.005	

B-28		
2.5'	<0.005	
5'	<0.005	

Sewer (Abandoned 2012)

1183

1185

1187

1191

Sewer Main

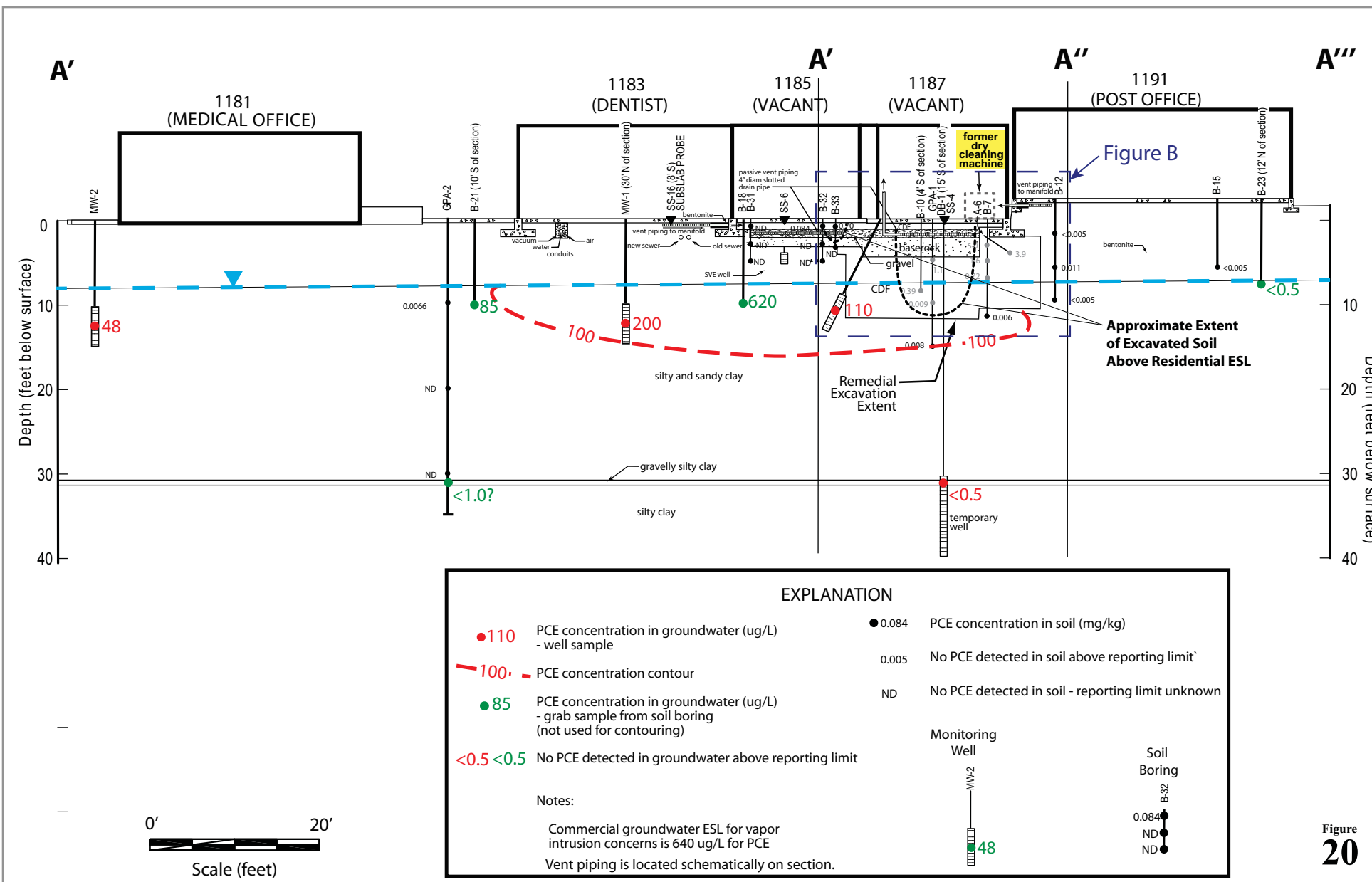
0' 15'

Approximate Scale (in feet)

Figure

19





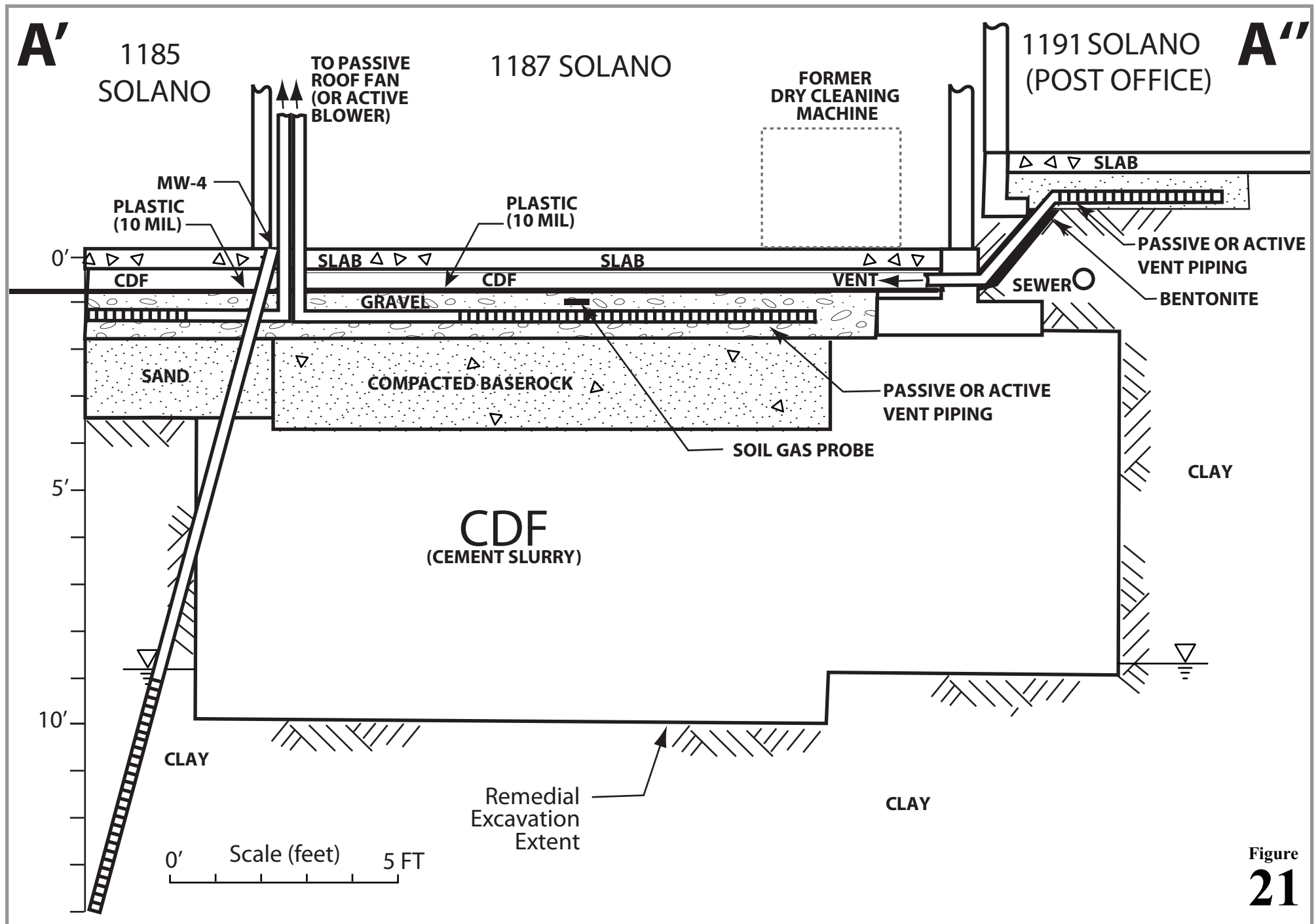
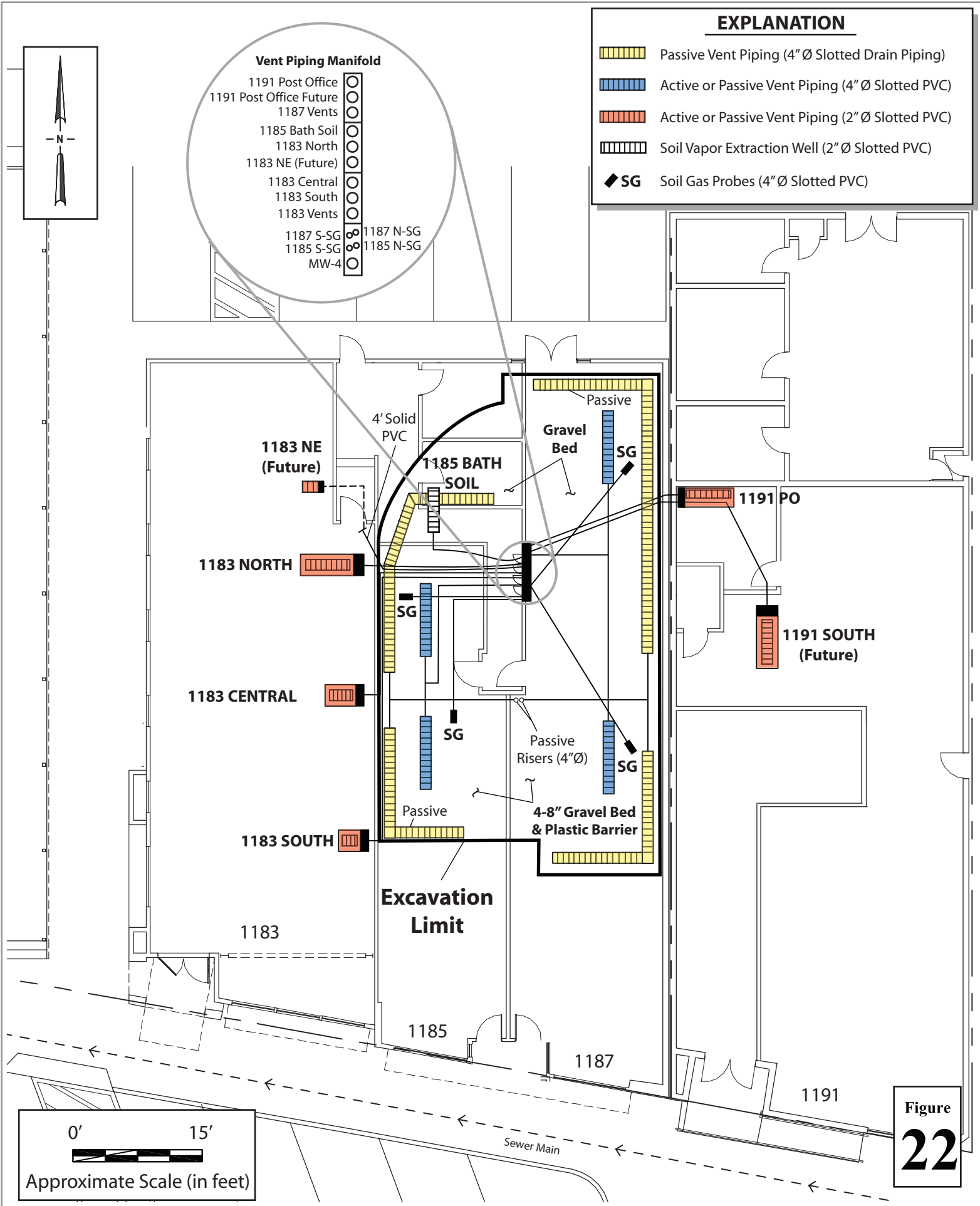
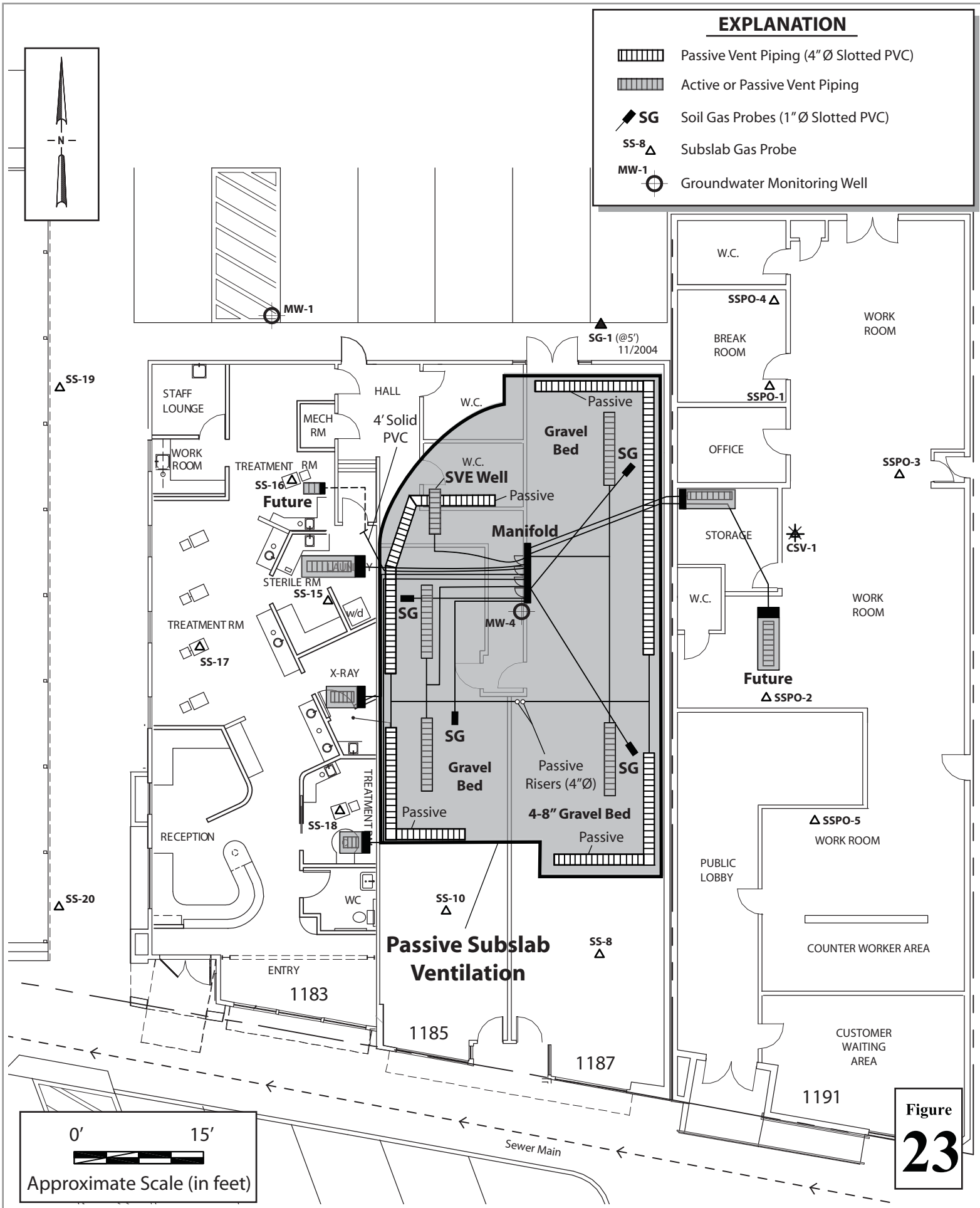


Figure  
**21**





Figure

23

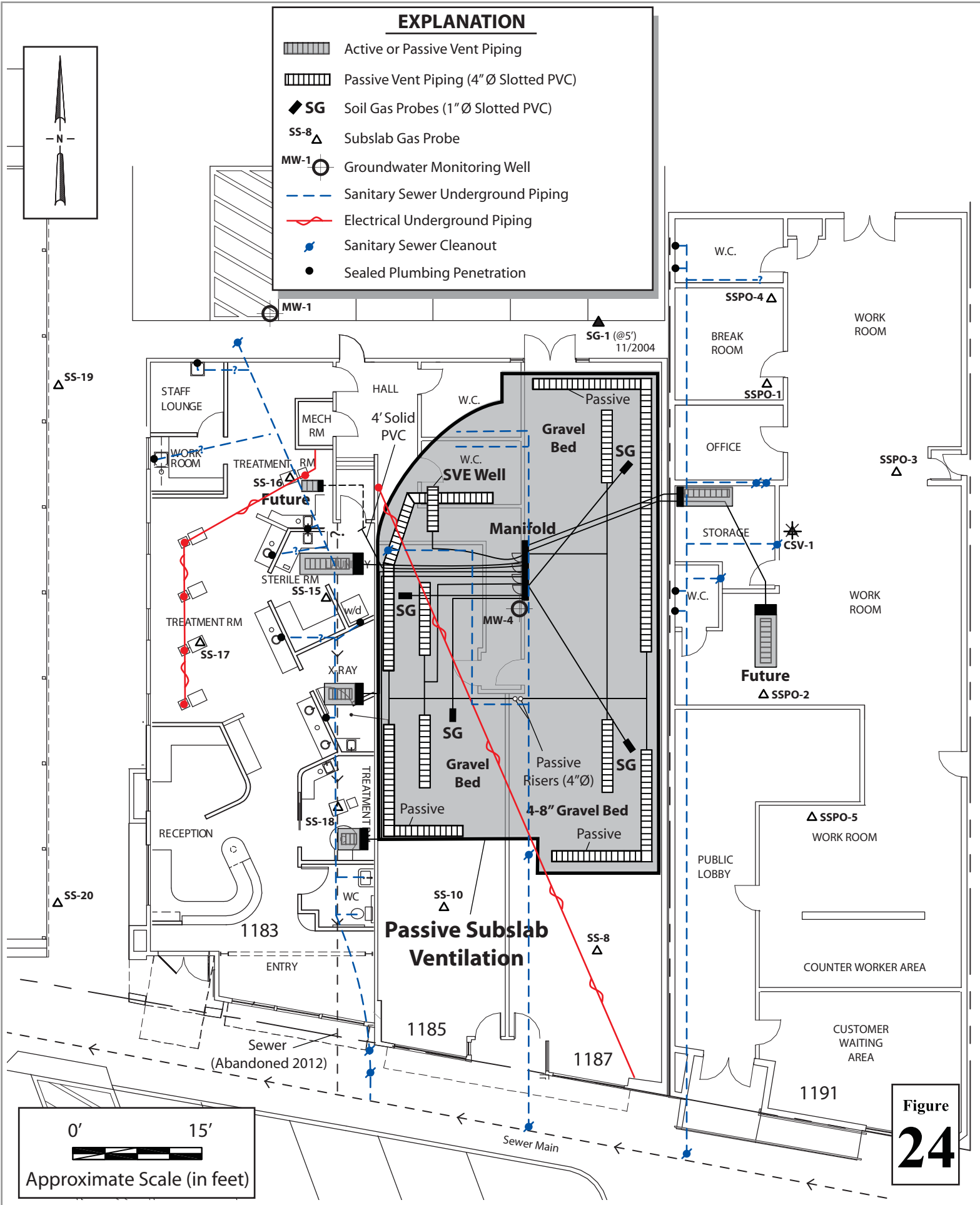
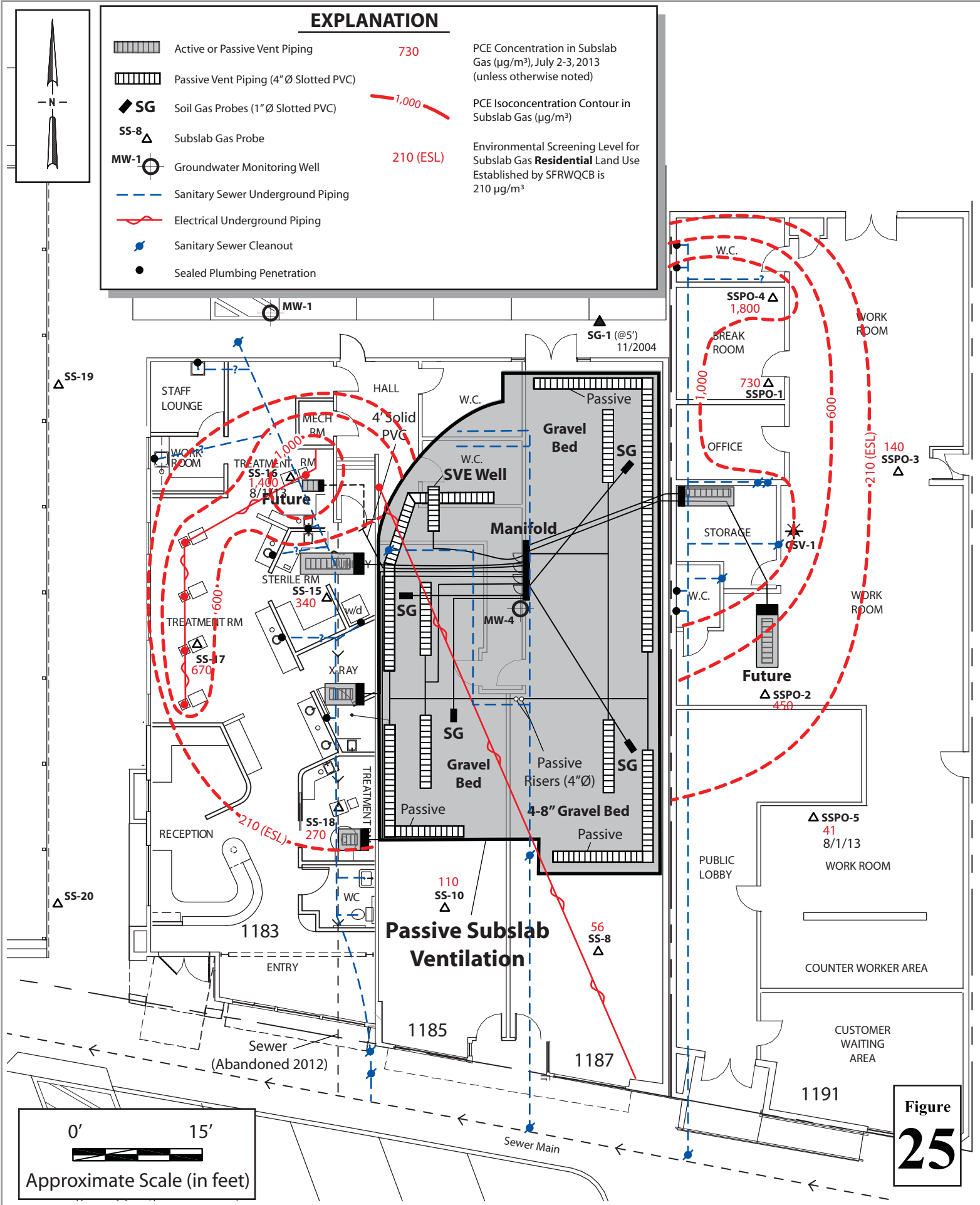
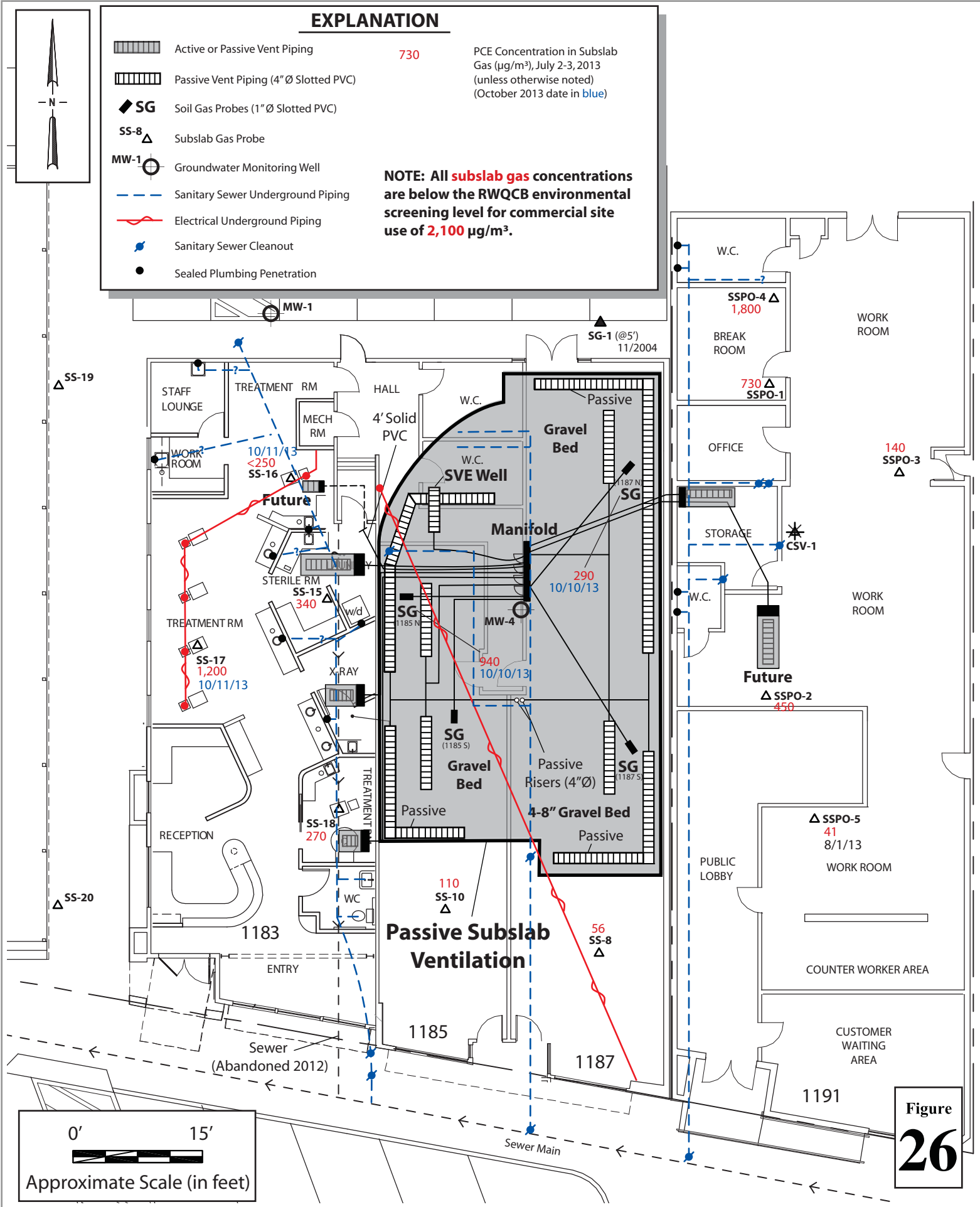
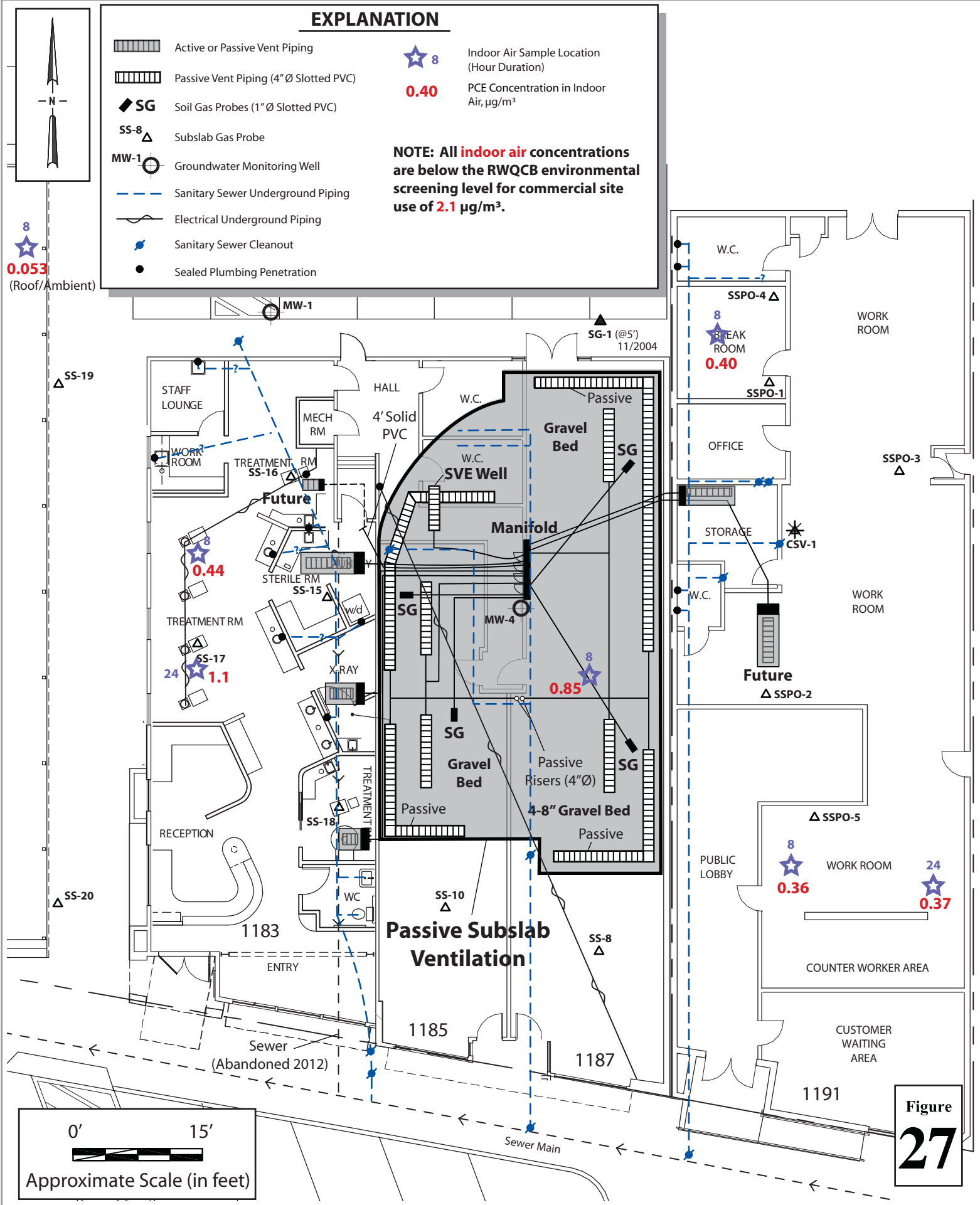


Figure  
**24**











# Pangea

**Table 1. Soil Analytical Data - 1187 Solano Ave, Albany, California**

	PCE	TCE	cis-1,2-DCE	Other VOCs	Comments
<i>Residential</i> ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:	<b>0.55</b>	<b>0.46</b>	0.19	Varies	
<i>Residential</i> ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:	0.55	1.7	18	Varies	
<i>Residential</i> ESL shallow soil <b>dw&amp;non-dw</b> (<3 m bgs) Direct Exp ESL:	0.55	1.7	160	Varies	
<i>Commercial</i> ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:	0.7	0.46	0.19	Varies	
<i>Commercial</i> ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:	2.6	8.3	18	Varies	
<i>Residential</i> ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:	0.55	0.46	0.19	Varies	
<i>Residential</i> ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:	<b>0.55</b>	<b>1.7</b>	18	Varies	
<i>Commercial</i> ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:	0.7	0.46	0.19	Varies	
<i>Commercial</i> ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:	2.6	8.3	18	Varies	
<i>Commercial</i> ESL soil <b>dw &amp; non-dw</b> (>3 m bgs) Direct Exp. ESL:	2.6	8.3	2,000	Varies	

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	mg/Kg					
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## 2004 and 2005 Borings

GP-1-5'	11/2/2004	5.0	<b>1.10</b>	0.0059	ND	ND	<b>Overexcavated</b>
GP-1-10'	11/2/2004	10.0	0.0091	ND	ND	ND	<b>Overexcavated</b>
GP-1-15'	11/2/2004	15.0	0.0084	ND	ND	ND	
GP-2-5'	11/2/2004	5.0	0.190	0.0022	ND	ND	
GP-2-10'	11/2/2004	10.0	0.026	ND	ND	ND	
GP-2-15'	11/2/2004	15.0	ND	ND	ND	ND	
GP-2-20'	11/2/2004	20.0	ND	ND	ND	ND	
GP-3-5'	11/2/2004	5.0	0.470	ND	ND	ND	<b>Overexcavated</b>
GP-3-10'	11/2/2004	10.0	<b>0.690</b>	ND	ND	ND	<b>Overexcavated</b>
GP-3-15'	11/2/2004	15.0	ND	ND	ND	ND	
GP-3-20'	11/2/2004	20.0	ND	ND	ND	ND	
GPA-1-10'	4/20/2005	10.0	0.0071	ND	ND	ND	
GPA-1-20'	4/20/2005	20.0	ND	ND	ND	ND	
GPA-1-30'	4/20/2005	30.0	ND	ND	ND	ND	
GPA-2-10'	4/20/2005	10.0	0.0066	ND	ND	ND	
GPA-2-20'	4/20/2005	20.0	ND	ND	ND	ND	
GPA-2-30'	4/20/2005	30.0	ND	ND	ND	ND	
GPA-3-10'	4/20/2005	10.0	ND	ND	ND	ND	
GPA-3-20'	4/20/2005	20.0	ND	ND	ND	ND	
GPA-3-30'	4/20/2005	30.0	ND	ND	ND	ND	
GPA-4-10'	4/20/2005	10.0	0.310	ND	ND	ND	
GPA-4-20'	4/20/2005	20.0	ND	ND	ND	ND	
GPA-4-30'	4/20/2005	30.0	ND	ND	ND	ND	
GPA-5-10'	4/20/2005	10.0	0.012	ND	ND	ND	
GPA-5-20'	4/20/2005	20.0	ND	ND	ND	ND	
GPA-5-30'	4/20/2005	30.0	ND	ND	ND	ND	

## January 2013 Borings

B-1-3.5	1/10/2013	3.5-4.0	0.011	<0.005	<0.005	ND	
B-1-5.5	1/10/2013	5.0-5.5	0.034	0.0051	<0.005	ND	
B-2-4*	1/10/2013	3.5-4.0	0.12	0.046	0.022	ND	<b>Overexcavated</b>
B-2-5.5*	1/10/2013	5.0-5.5	0.19	0.025	0.010	ND	<b>Overexcavated</b>
B-3-3.5*	1/10/2013	3.0-3.5	0.53	<0.025	<0.025	ND	<b>Overexcavated</b>
B-3-5.5*	1/10/2013	5.0-5.5	0.32	<0.020	<0.020	ND	<b>Overexcavated</b>

**Table 1. Soil Analytical Data - 1187 Solano Ave, Albany, California**

			PCE	TCE	cis-1,2-DCE	Other VOCs	Comments
Residential ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:			0.55	0.46	0.19	Varies	
Residential ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:			0.55	1.7	18	Varies	
Residential ESL shallow soil <b>dw&amp;non-dw</b> (<3 m bgs) Direct Exp ESL:			0.55	1.7	160	Varies	
Commercial ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:			0.7	0.46	0.19	Varies	
Commercial ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:			2.6	8.3	18	Varies	
Residential ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:			0.55	0.46	0.19	Varies	
Residential ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:			0.55	1.7	18	Varies	
Commercial ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:			0.7	0.46	0.19	Varies	
Commercial ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:			2.6	8.3	18	Varies	
Commercial ESL soil <b>dw &amp; non-dw</b> (>3 m bgs) Direct Exp. ESL:			2.6	8.3	2,000	Varies	
Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	mg/Kg				
B-4-3.5*	1/10/2013	3.0-3.5	0.32	<0.020	<0.020	ND	Overexcavated
B-4-5.5*	1/10/2013	5.0-5.5	0.11	<0.005	<0.005	ND	Overexcavated
B-5-3.5*	1/10/2013	3.0-3.5	0.78	<0.050	<0.050	ND	Overexcavated
B-5-5.5*	1/10/2013	5.0-5.5	0.42	<0.033	<0.033	ND	Overexcavated
B-6-3.5*	1/10/2013	3.0-3.5	0.91	<0.10	<0.10	ND	Overexcavated
B-6-5.5*	1/10/2013	5.0-5.5	0.39	<0.025	<0.025	ND	Overexcavated
B-6-7.5*	1/10/2013	7.0-7.5	1.5	<0.20	<0.20	ND	Overexcavated
B-6-12*	1/18/2013	11.5-12.0	0.0062	<0.005	<0.005	ND	
B-7-3.5*	1/10/2013	3.0-3.5	5.0	<0.20	<0.20	ND	Overexcavated
B-7-5.5*	1/10/2013	5.0-5.5	1.6	<0.10	<0.10	ND	Overexcavated
B-7-7.5*	1/10/2013	7.0-7.5	0.72	<0.10	<0.10	ND	Overexcavated
B-7-12	1/18/2013	11.5-12.0	0.0061	<0.005	<0.005	ND	
B-8-3.5*	1/10/2013	3.0-3.5	1.6	<0.10	<0.10	ND	Overexcavated
B-8-5.5*	1/10/2013	5.0-5.5	0.40	<0.025	<0.025	ND	Overexcavated
B-9-3	1/10/2013	2.5-3.0	0.086	<0.005	<0.005	ND	1185 Solano
B-10-6*	1/10/2013	5.5-6.0	0.39	<0.033	<0.033	ND	Overexcavated
B-11-8	1/18/2013	7.5-8.0 <sup>+</sup>	<0.005	<0.005	<0.005	ND	1191 Solano
B-11-12	1/18/2013	11.5-12.0 <sup>+</sup>	<0.005	<0.005	<0.005	ND	1191 Solano
B-12-4	1/18/2013	3.5-4.0 <sup>+</sup>	<0.005	<0.005	<0.005	ND	1191 Solano
B-12-8	1/18/2013	7.5-8.0 <sup>+</sup>	0.011	<0.005	<0.005	ND	1191 Solano
B-12-12	1/18/2013	11.5-12.0 <sup>+</sup>	<0.005	<0.005	<0.005	ND	1191 Solano
B-13-8	1/18/2013	7.5-8.0 <sup>+</sup>	<0.005	<0.005	<0.005	ND	1191 Solano
B-13-12	1/18/2013	11.5-12.0 <sup>+</sup>	<0.005	<0.005	<0.005	ND	1191 Solano
B-14-8	1/18/2013	7.5-8.0 <sup>+</sup>	<0.005	<0.005	<0.005	ND	1191 Solano
B-15-8	1/18/2013	7.5-8.0 <sup>+</sup>	<0.005	<0.005	<0.005	ND	1191 Solano
February 2013 Borings (Angled Under Wall onto 1191 Solano property)							
A-2-11*	2/1/2013	7.0	1.5	<0.10	<0.10	ND	Overexcavated
A-3-11*	2/1/2013	7.0	0.66	<0.20	<0.20	ND	Overexcavated
A-4-6*	2/1/2013	4.0	0.032	0.013	<0.005	ND	Overexcavated
A-4-9*	2/8/2013	5.5	0.011	0.005	<0.005	ND	

# Pangea

**Table 1. Soil Analytical Data - 1187 Solano Ave, Albany, California**

			PCE	TCE	cis-1,2-DCE	Other VOCs	Comments
Residential ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:			0.55	0.46	0.19	Varies	
Residential ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:			0.55	1.7	18	Varies	
Residential ESL shallow soil <b>dw&amp;non-dw</b> (<3 m bgs) Direct Exp ESL:			0.55	1.7	160	Varies	
Commercial ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:			0.7	0.46	0.19	Varies	
Commercial ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:			2.6	8.3	18	Varies	
Residential ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:			0.55	0.46	0.19	Varies	
Residential ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:			0.55	1.7	18	Varies	
Commercial ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:			0.7	0.46	0.19	Varies	
Commercial ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:			2.6	8.3	18	Varies	
Commercial ESL soil <b>dw &amp; non-dw</b> (>3 m bgs) Direct Exp. ESL:			2.6	8.3	2,000	Varies	
Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	mg/Kg				
A-5-13*	2/1/2013	8.5	1.3	<0.05	<0.05	ND	Overexcavated
A-6-6*	2/1/2013	4.0	3.9	<0.2	<0.2	ND	Overexcavated
A-6-10*	2/1/2013	5.5	7.9	<0.5	<0.5	ND	Overexcavated
A-7-9*	2/8/2013	5.5	0.23	<0.010	<0.010	ND	Overexcavated
February and March 2013 Excavation Boundary							
EX-SE-5	2/15/2013	5.0	0.012	<0.005	<0.005	ND	
EX-SE2-6	2/18/2013	6.0	<0.005	<0.005	<0.005	ND	
EX-E-7	2/18/2013	7.0	0.055	<0.005	<0.005	ND	
EX-N-8	2/22/2013	8.0	<0.005	<0.005	<0.005	ND	
EX-F1-11	3/5/2013	11.0	0.083	<0.005	<0.005	ND	
EX-F2-7	3/5/2013	7.0	0.025	<0.005	<0.005	ND	
SW-1-4	3/5/2013	4.0	0.021	<0.005	<0.005	ND	
EX-F3-6	3/6/2013	6.0	0.57	<0.005	<0.005	ND	Overexcavated
EX-F3-8	3/12/2013	8.0	0.36	<0.005	<0.005	ND	
EX-F4-6	3/6/2013	6.0	0.20	<0.005	<0.005	ND	
EX-F5-9	3/7/2013	9.0	0.0077	<0.005	<0.005	ND	
EX-F6-12	3/7/2013	12.0	0.0066	<0.005	<0.005	ND	
EX-F7-4	3/8/2013	4.0	0.15	<0.005	<0.005	ND	
SW-2-4	3/11/2013	4.0	0.16	<0.005	<0.005	ND	
SW-3-4	3/11/2013	4.0	0.10	<0.005	<0.005	ND	
EX-F8-11	3/13/2013	11.0	0.059	<0.005	<0.005	ND	
EX-F9-11	3/14/2013	11.0	0.026	<0.005	<0.005	ND	
SW-4-5	3/14/2013	5.0	0.016	<0.005	<0.005	ND	
SW-5-2	3/14/2013	2.0	0.12	<0.005	<0.005	ND	
SW-6-2	3/14/2013	2.0	0.12	<0.005	<0.005	ND	
SW-7-5	3/14/2013	5.0	0.047	<0.005	<0.005	ND	
SW-8-1	3/16/2013	1.0	0.12	<0.005	<0.005	ND	
SW-9-1	3/16/2013	1.0	0.096	<0.005	<0.005	ND	
Sewer-1-1	3/16/2013	1.0	0.34	<0.005	<0.005	ND	
Sewer-2-1	3/16/2013	1.0	0.34	<0.005	<0.005	ND	

# Pangea

**Table 1. Soil Analytical Data - 1187 Solano Ave, Albany, California**

	PCE	TCE	cis-1,2-DCE	Other VOCs	Comments
<i>Residential</i> ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:	<b>0.55</b>	<b>0.46</b>	0.19	Varies	
<i>Residential</i> ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:	0.55	1.7	18	Varies	
<i>Residential</i> ESL shallow soil <b>dw&amp;non-dw</b> (<3 m bgs) Direct Exp ESL:	0.55	1.7	160	Varies	
<i>Commercial</i> ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:	0.7	0.46	0.19	Varies	
<i>Commercial</i> ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:	2.6	8.3	18	Varies	
<i>Residential</i> ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:	0.55	0.46	0.19	Varies	
<i>Residential</i> ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:	<b>0.55</b>	<b>1.7</b>	18	Varies	
<i>Commercial</i> ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:	0.7	0.46	0.19	Varies	
<i>Commercial</i> ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:	2.6	8.3	18	Varies	
<i>Commercial</i> ESL soil <b>dw &amp; non-dw</b> (>3 m bgs) Direct Exp. ESL:	2.6	8.3	2,000	Varies	

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	mg/Kg					
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## March and April Borings 2013

B-19-2	3/20/2013	1.5-2.0	<0.005	<0.005	<0.005	ND	<b>Overexcavated</b>
B-19-5	3/20/2013	4.5-5.0	0.013	<0.005	<0.005	ND	
B-20-2	3/20/2013	1.5-2.0	0.013	<0.005	<0.005	ND	<b>Overexcavated</b>
B-20-5	3/20/2013	4.5-5.0	0.0085	<0.005	<0.005	ND	
B-21-5	4/25/2013	4.5-5.0	<0.005	<0.005	<0.005	ND	
B-22-5	4/25/2013	4.5-5.0	<0.005	<0.005	<0.005	ND	
B-23-4.5	4/25/2013	4.0-4.5	<0.005	<0.005	<0.005	ND	
B-23-8.5	4/25/2013	8.0-8.5	<0.005	<0.005	<0.005	ND	
B-24-4.5	4/25/2013	4.0-4.5	<0.005	<0.005	<0.005	ND	
B-25-2.5	4/25/2013	2.0-2.5	0.0071	<0.005	<0.005	ND	
B-25-5	4/25/2013	4.5-5.0	0.0066	<0.005	<0.005	ND	
B-26-2.5	4/25/2013	2.0-2.5	0.018	<0.005	<0.005	ND	
B-26-5	4/25/2013	4.5-5.0	0.0050	<0.005	<0.005	ND	
B-27-3	4/25/2013	2.5-3.0	<0.005	<0.005	<0.005	ND	
B-27-5	4/25/2013	4.5-5.0	<0.005	<0.005	<0.005	ND	
B-28-2.5	4/25/2013	2.0-2.5	<0.005	<0.005	<0.005	ND	
B-28-5	4/25/2013	4.5-5.0	<0.005	<0.005	<0.005	ND	
B-29-2.5	4/25/2013	2.0-2.5	<0.005	<0.005	<0.005	ND	
B-29-5	4/25/2013	4.5-5.0	<0.005	<0.005	<0.005	ND	
B-30-5	4/25/2013	4.5-5.0	<0.005	<0.005	<0.005	ND	

## May 2013 Boring (Angled Under Bathroom at 1185 Solano)

A-8-5	5/24/2013	2.0	0.0093	<0.005	<0.005	ND	
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## July 2013 Vertical Boring (1185 Solano)

B-31-1	7/2/2013	1.0-1.5	<0.005	<0.005	<0.005	ND	<b>Overexcavated</b>
B-31-3	7/2/2013	3.0-3.5	<0.005	<0.005	<0.005	ND	<b>Overexcavated</b>
B-31-5	7/2/2013	4.5-5.0	<0.005	<0.005	<0.005	ND	
B-32-1	7/2/2013	1.0-1.5	0.084	<0.005	<0.005	ND	<b>Overexcavated</b>
B-32-3	7/2/2013	3.0-3.5	<0.005	<0.005	<0.005	ND	<b>Overexcavated</b>
B-32-5	7/2/2013	4.5-5.0	<0.005	<0.005	<0.005	ND	
B-33-1	7/2/2013	1.0-1.5	<b>0.70</b>	0.16	<0.050	ND	<b>Overexcavated</b>
B-33-3	7/2/2013	3.0-3.5	<0.005	<0.005	<0.005	ND	<b>Overexcavated</b>
B-34-1	7/2/2013	1.0-1.5	0.011	<0.005	<0.005	ND	<b>Overexcavated</b>
B-34-3	7/2/2013	3.0-3.5	<0.005	<0.005	<0.005	ND	<b>Overexcavated</b>
B-34-5	7/2/2013	4.5-5.0	<0.005	<0.005	<0.005	ND	

## July 2013 Boring (Angled Under Wall onto 1185 Solano)

A-9-3	7/2/2013	1.5	0.041	<0.005	<0.005	ND	<b>Overexcavated</b>
A-9-9	7/2/2013	3.0	<0.005	<0.005	<0.005	ND	<b>Overexcavated</b>
A-9-12	7/2/2013	4.5	<0.005	<0.005	<0.005	ND	
A-10-3	7/2/2013	1.0	0.045	<0.005	<0.005	ND	<b>Overexcavated</b>
A-10-6.5	7/2/2013	2.0	0.0079	<0.005	<0.005	ND	<b>Overexcavated</b>

# Pangea

**Table 1. Soil Analytical Data - 1187 Solano Ave, Albany, California**

	PCE	TCE	cis-1,2-DCE	Other VOCs	Comments
<i>Residential</i> ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:	<b>0.55</b>	<b>0.46</b>	0.19	Varies	
<i>Residential</i> ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:	0.55	1.7	18	Varies	
<i>Residential</i> ESL shallow soil <b>dw&amp;non-dw</b> (<3 m bgs) Direct Exp ESL:	0.55	1.7	160	Varies	
<i>Commercial</i> ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:	0.7	0.46	0.19	Varies	
<i>Commercial</i> ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:	2.6	8.3	18	Varies	
<i>Residential</i> ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:	0.55	0.46	0.19	Varies	
<i>Residential</i> ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:	<b>0.55</b>	<b>1.7</b>	18	Varies	
<i>Commercial</i> ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:	0.7	0.46	0.19	Varies	
<i>Commercial</i> ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:	2.6	8.3	18	Varies	
<i>Commercial</i> ESL soil <b>dw &amp; non-dw</b> (>3 m bgs) Direct Exp. ESL:	2.6	8.3	2,000	Varies	

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	mg/Kg				
A-10-12	7/2/2013	3.0	<0.005	<0.005	<0.005	ND	<b>Overexcavated</b>
A-11-3	7/2/2013	2.0	<0.005	<0.005	<0.005	ND	<b>Overexcavated</b>
A-11-8	7/3/2013	5.5	<0.005	<0.005	<0.005	ND	
A-12-5	7/3/2013	2.5	<0.005	<0.005	<0.005	ND	<b>Overexcavated</b>
A-12-8	7/3/2013	4.0	<0.005	<0.005	<0.005	ND	
A-13-3	7/3/2013	1.5	<0.005	<0.005	<0.005	ND	<b>Overexcavated</b>
A-13-8	7/3/2013	4.0	<0.005	<0.005	<0.005	ND	

## August and September 2013 Excavation Boundary

F-1-2	8/7/2013	2.0	0.0075	<0.005	<0.005	ND	
F-2-2.5	8/7/2013	2.5	0.014	<0.005	<0.005	ND	
SW-N1-2	8/15/2013	2.0	0.016	<0.005	<0.005	ND	
SW-N2-1	8/15/2013	1.0	0.017	<0.005	<0.005	ND	
SW-W-1	8/15/2013	1.0	0.015	<0.005	<0.005	ND	
F-3-3	8/15/2013	3.0	<0.005	<0.005	<0.005	ND	
F-4-3	8/15/2013	3.0	<0.005	<0.005	<0.005	ND	
F-5-2.5	8/19/2013	2.5	<0.005	<0.005	<0.005	ND	
SW-W2-1	8/21/2013	1.0	<0.005	<0.005	<0.005	ND	
F-5-3	8/21/2013	3.0	0.015	<0.005	<0.005	ND	
F-6-3	8/21/2013	3.0	0.036	<0.005	<0.005	ND	
F-7-2.5	8/29/2013	2.5	<0.005	<0.005	<0.005	ND	
F-8-4	8/29/2013	4.0	<0.005	<0.005	<0.005	ND	
SW-SW-2.5	8/29/2013	2.5	<0.005	<0.005	<0.005	ND	
SW-W-2.5	8/29/2013	2.5	<0.005	<0.005	<0.005	ND	
SW-NW-2.5	8/29/2013	2.5	<0.005	<0.005	<0.005	ND	
F-9-3	9/5/2013	3.0	<0.005	<0.005	<0.005	ND	
F-10-3	9/5/2013	3.0	0.023	<0.005	<0.005	ND	
F-11-2	9/5/2013	2.0	<0.005	<0.005	<0.005	ND	
F-12-2.5	9/5/2013	2.5	<0.005	<0.005	<0.005	ND	
F-13-2.5	9/5/2013	2.5	<0.005	<0.005	<0.005	ND	
F-14-2.5	9/5/2013	2.5	<0.005	<0.005	<0.005	ND	
F-15-2.5	9/5/2013	2.5	<0.005	<0.005	<0.005	ND	
SW-S1-3	9/5/2013	3.0	<0.005	<0.005	<0.005	ND	
SW-S2-3	9/5/2013	3.0	<0.005	<0.005	<0.005	ND	
SW-E-4	9/5/2013	4.0	0.31	<0.020	<0.020	ND	

## August and September 2013 Borings

HA-1-3	8/29/2013	3.0	<0.005	<0.005	<0.005	ND	
HA-1-5	8/29/2013	5.0	<0.005	<0.005	<0.005	ND	
HA-2-3	8/29/2013	3.0	<0.005	<0.005	<0.005	ND	
HA-2-5	8/29/2013	5.0	<0.005	<0.005	<0.005	ND	

# Pangea

**Table 1. Soil Analytical Data - 1187 Solano Ave, Albany, California**

	PCE	TCE	cis-1,2-DCE	Other VOCs	Comments
<i>Residential</i> ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:	<b>0.55</b>	<b>0.46</b>	0.19	Varies	
<i>Residential</i> ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:	0.55	1.7	18	Varies	
<i>Residential</i> ESL shallow soil <b>dw&amp;non-dw</b> (<3 m bgs) Direct Exp ESL:	0.55	1.7	160	Varies	
<i>Commercial</i> ESL shallow soil <b>dw</b> (<3 m bgs) Final ESL:	0.7	0.46	0.19	Varies	
<i>Commercial</i> ESL shallow soil <b>non-dw</b> (<3 m bgs) Final ESL:	2.6	8.3	18	Varies	
<i>Residential</i> ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:	0.55	0.46	0.19	Varies	
<i>Residential</i> ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:	<b>0.55</b>	<b>1.7</b>	18	Varies	
<i>Commercial</i> ESL deep soil <b>dw</b> (>3 m bgs) Final ESL:	0.7	0.46	0.19	Varies	
<i>Commercial</i> ESL deep soil <b>non-dw</b> (>3 m bgs) Final ESL:	2.6	8.3	18	Varies	
<i>Commercial</i> ESL soil <b>dw &amp; non-dw</b> (>3 m bgs) Direct Exp. ESL:	2.6	8.3	2,000	Varies	

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	mg/Kg			
HA-3-NW-3	8/29/2013	3.0	<0.005	<0.005	<0.005	ND
SS-1183-1	8/29/2013	1.0	<0.005	<0.005	<0.005	ND
HA-2D-1ss	8/30/2013	1.0	<0.005	<0.005	<0.005	ND
1183 North-2	9/2/2013	2.0	<0.005	<0.005	<0.005	ND
1183 Cental N-4	9/2/2013	4.0	<0.005	<0.005	<0.005	ND
1183 Cental N-6	9/2/2013	6.0	<0.005	<0.005	<0.005	ND

**Explanation:**

mg/Kg = milligrams per Kilogram

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

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

\* = Sample location overexcavated.

\* = Slab elevation is about 2.5 ft higher in Post Office building than adjacent units at 1185 and 1187 Solano.

-- = Not analyzed or not available.

ESL = Environmental Screening Level for Shallow/Deep Soil with Residential and Commercial/Industrial Land Use, Groundwater is/is not a current or potential source of drinking water. (Table A/Table B/Table C/Table D/Table K-1/Table K-2).

ESL established by the SFBRWQCB, Interim Final - November 2007 and amended in May 2013.

**non-dw** = groundwater is not a current or potential source of drinking water.

**dw** = groundwater is a current or potential source of drinking water.

Other VOCs = Volatile Organic Compounds besides PCE, TCE and cis-1,2-DCA by EPA Method 8010.

TCE = Trichloroethane by EPA Method 8010.

PCE = Tetrachloroethene by EPA Method 8010.

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

**Bold** concentrations exceed **residential** ESL where groundwater *is* a current or potential source of drinking water.

ND = Not Detected above laboratory reporting limits.

# Pangea

**Table 2. Groundwater Analytical Data - 1187 Solano Ave, Albany, California**

				PCE	TCE	cis-1,2-DCE	BTEX	Other VOCs	Comments
Final ESL for groundwater, dw:				5.0	5.0	6.0	Varies	Varies	
Final ESL for groundwater, non-dw:				63	130	590	Varies	Varies	
Residential ESL GW to Indoor Air:				63	130	---	--	--	
Commercial ESL GW to Indoor Air (fine - coarse):				640	1,300	--	--	--	
Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	Depth to Water (ft bgs)	← μg/L →					
2004 and 2005 Borings									
GPA-1	4/20/2005	---	---	ND (<1.0?)	ND	ND	---	ND	
GPA-2	4/20/2005	---	---	ND (<1.0?)	ND	ND	---	ND	
GPA-3	4/20/2005	---	---	ND (<1.0?)	ND	ND	---	ND	
GPA-4	4/20/2005	---	---	ND (<1.0?)	ND	ND	---	ND	
GPA-5	4/21/2005	---	---	ND (<1.0)	ND	ND	---	ND	
Pangea Assessment 2013									
EX-SE	2/18/2013	9.0	9.0	93	<2.5	<2.5	---	ND	
EX-N-GW	2/25/2013	9.0	9.0	8.3	1.4	0.71	---	ND	
EX-E-GW	2/25/2013	9.0	9.0	750	<25	<25	---	ND	
B-16	3/8/2013	8.5	8.5	520	<0.5	<0.5	---	ND	
B-17	3/8/2013	9.0	9.0	25	<0.5	<0.5	---	ND	
B-18	3/20/2013	9.0	9.0	620	<50	<50	---	ND	
B-19	3/20/2013	9.0	9.0	440	<50	<50	---	ND	
B-20	3/20/2013	9.4	9.4	190	7.0	<0.5	---	ND	
DB-1	3/20/2013	30-40	32.0	<0.5	<0.5	<0.5	---	ND	
B-21	4/25/2013	10.0	10.0	85	<2.5	<2.5	---	ND	
B-22	4/25/2013	10.0	10.0	820	<50	<50	---	ND	
B-23	4/25/2013	12.0	12.0	<0.5	<0.5	<0.5	---	ND	
B-24	4/25/2013	12.0	12.0	<0.5	<0.5	<0.5	---	ND	
B-30	4/25/2013	10.0	10.0	290	<10	<10	---	ND	
Monitoring Wells									
MW-1	6/10/2013	9-14	13.6	200	42	<10	---	ND	Little water
MW-2	5/22/2013	10-15	14.0	48	<1.2	<1.2	---	<1.2	Little water
MW-3	5/24/2013	9-14	12.9	92	2.9	<2.5	---	<2.5	Little water
MW-4	9/27/2013	9-14	9.0	110	<5.0	<5.0	<5.0	ND	

## Explanation:

μg/L = Micrograms per Liter

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

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

-- = Not analyzed or not available.

ESL = Environmental Screening Level for Groundwater, groundwater is a current or potential source of drinking water. (Table F-1a).

ESL = Environmental Screening Level for groundwater, groundwater is not a current or potential source of drinking water. (Table F-1b).

ESL = Environmental Screening Level for groundwater to indoor air for residential/commercial land use. (Table E-1).

ESL established by the SFBRWQCB, Interim Final - November 2007 and amended in May 2013.

**non-dw** = groundwater is not a current or potential source of drinking water.

**dw** = groundwater is a current or potential source of drinking water.

Other VOCs = Volatile Organic Compounds besides PCE, TCE and cis-1,2-DCA by EPA Method 8010 or 8260.

TCE = Trichloroethane by EPA Method 8010 or 8260.

PCE = Tetrachloroethene by EPA Method 8010 or 8260.

cis-1,2-DCE = cis-1,2 - Dichloroethene by EPA Method 8010 or 8260.

BTEX = Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8260.

**Bold** concentrations exceed ESL protective of indoor air (commercial).

ND = Not Detected above laboratory reporting limits.



**Table 3. Subslab and Soil Gas Analytical Data - 1185 - 1191 Solano Avenue, Albany, California**

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	BTEX	Other VOCs	Helium	Notes
			← $\mu\text{g}/\text{m}^3$ →						%	

## SUBSLAB DEPRESSURIZATION SYSTEM

INF	4/8/13	0.5	<b>5,000</b>	510	<250	<250	---	<250	---	Day 3 (1st). 1185N+S&PO
INF	4/10/13	0.5	<b>4,400</b>	290	<250	<250	---	<250	---	Day 5 (1st). 1185N+S&PO
INF	5/2/13	0.5	1,900	<250	<250	<250	---	<250	---	Day 4 (2nd). 1185N+S&PO
INF-PO	4/10/13	0.5	700	<250	<250	<250	---	<250	---	Day 1 - PO Only Test
INF-PO	4/15/13	0.5	370	<250	<250	<250	---	<250	---	Day 5 - PO Only Test
INF-V-1185N	5/13/13	0.5	1,300	<250	<250	<250	---	<250	---	Short Test 1185N Only

## SUBSLAB GAS (Immediately Under Concrete Slab)

### 1183 Solano Avenue

SS-15	07/02/13	0.5	340	<250	<250	<250	<500	<250	---	
SS-16	07/02/13	0.5	<250	<250	<250	<250	<500	<250	---	
	08/01/13	0.5	1,400	<11	<8.1	<8.1	<27*	(Q)	---	<6.5 $\mu\text{g}/\text{m}^3$ benzene for TO-15.
	10/11/13	0.5	<250	<250	<250	<250	<250	ND	---	
SS-17	07/03/13	0.5	670	<11	<8.1	<8.1	<27*	(L)	---	
	10/11/13	0.5	1,200	<250	<250	<250	<250	ND	---	
SS-18	07/03/13	0.5	270	<11	<8.1	<8.1	<27*	(M)	---	

### 1185 Solano Avenue

SS-6	01/17/13	0.5	<b>120,000</b>	<b>9,100</b>	270	71	7.2 (A)	(A)	---	Before excavation and venting
	04/25/13	0.5	<b>40,000</b>	<b>10,000</b>	<250	<250	---	<250	---	7 days after vent test end
	05/17/13	0.5	<b>19,000</b>	<b>3,800</b>	<250	<250	---	<250	---	Short test
	07/02/13	0.5	<b>18,000</b>	<b>3,100</b>	<250	<250	<500	<250	---	
SS-7	01/17/13	0.5	<b>54,000</b>	1,600	22	29	<27*	(B)	0.086	Before excavation and venting
	04/25/13	0.5	2,000	<250	<250	<250	---	<250	---	7 days after vent test end
	07/02/13	0.5	680	<250	<250	<250	<500	<250	---	
SS-10	04/25/13	0.5	<250	<250	<250	<250	---	<250	---	7 days after vent test end
	07/03/13	0.5	110	<11	<8.1	<8.1	<27*	(J)	---	
SS-11	07/02/13	0.5	1,500	<250	<250	<250	<500	<250	---	
SS-12	07/02/13	0.5	<b>120,000</b>	<b>15,000</b>	<2,500	<2,500	<5,000	<2,500	---	
SS-13	07/02/13	0.5	<b>22,000</b>	<b>18,000</b>	3,500	<500	<1,000	<500	---	
SS-14	07/02/13	0.5	<b>6,300</b>	310	<250	<250	<500	<250	---	
1185 Hall	07/02/13	0.5	<b>14,000</b>	740	<250	<250	<500	<250	---	
1185 Bath	07/02/13	0.5	<b>2,700</b>	<250	<250	<250	<500	<250	---	
SG-1185N	10/10/13	1.5	940	<0.25	<0.25	<0.25	<500	ND	---	Within Passive Subslab Vent Area

### 1187 Solano Avenue

SS-3	01/17/13	0.5	<b>27,000</b>	2,600	590	92	<27*	(C)	0.041	North - Before excavation
SS-4	01/17/13	0.5	<b>770,000</b>	<b>60,000</b>	2,200	1,000	28 (D)	(D)	---	At Former Machine - Before exc.
SS-5	01/17/13	0.5	<b>190,000</b>	<b>6,300</b>	81	56	<27*	ND	---	South - Before excavation

# Pangea

**Table 3. Subslab and Soil Gas Analytical Data - 1185 - 1191 Solano Avenue, Albany, California**

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	BTEX	Other VOCs	Helium	Notes
			ug/m <sup>3</sup>						%	
SS-8	07/03/13	0.5	56	<11	<8.1	<8.1	<27*	(K)	0.21	7 days after vent test end
SS-9	04/25/13	0.5	<250	<250	<250	<250	---	<250	---	7 days after vent test end
	08/01/13	1.5	<b>4,800</b>	75	<8.1	<8.1	<27*	ND	---	
SG-1187N	10/10/13	1.5	290	<0.25	<0.25	<0.25	<500	ND	---	Within Passive Subslab Vent Area
<i>1191 Solano Avenue</i>										
SS-PO-1	01/17/13	0.5	1,100	110	18	90	<27*	(E)	---	Before excavation and venting
	04/25/13	0.5	860	<250	<250	<250	---	<250	---	7 days after vent test end
	07/02/13	0.5	730	<250	<250	<250	<500	<250	---	
SS-PO-2	01/17/13	0.5	760	35	<8.1	28	<27*	(F)	---	Before excavation and venting
	04/25/13	0.5	<250	<250	<250	<250	---	<250	---	7 days after vent test end
	07/03/13	0.5	450	<11	<8.1	<8.1	<27*	(N)	---	
SS-PO-3	07/03/13	0.5	140	<11	<8.1	<8.1	<27*	(O)	---	
SS-PO-4	07/03/13	0.5	1,800	<11	<8.1	<8.1	<27*	(P)	---	
SS-PO-5	08/01/13	0.5	41	<11	<8.1	<8.1	<27*	ND	---	
CSV-1	01/17/13	0.2	<14	<11	<8.1	<8.1	19 (G)	(G)	---	Crawl Space
<i>Courtyard West of 1191 Solano Avenue</i>										
SS-19	07/03/13	0.5	34	<11	<8.1	<8.1	15 (I)	(I)	---	Courtyard
SS-20	07/03/13	0.5	59	<11	<8.1	<8.1	<27*	(H)	---	Courtyard
Residential ESL for subslab gas:			210	300	---	31,000	Varies	Varies	NA	
<b>Commercial ESL for subslab gas:</b>			<b>2,100</b>	<b>3,000</b>	---	<b>260,000</b>	Varies	Varies	NA	
<b>10X Residential ESL for subslab gas:</b>			<b>2,100</b>	<b>3,000</b>	---	<b>310,000</b>	Varies	Varies	NA	
Residential CHHSL for subslab gas:			8.24	24	730	1,460	Varies	Varies	NA	
Commercial CHHSL for subslab gas:			13.86	40.8	1,020	2,040	Varies	Varies	NA	
Residential CHHSL for indoor air:			0.412	1.22	36.5	73	Varies	Varies	NA	
Commercial CHHSL for indoor air:			0.693	2.04	51.1	102	Varies	Varies	NA	

# Pangea

**Table 3. Subslab and Soil Gas Analytical Data - 1185 - 1191 Solano Avenue, Albany, California**

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	BTEX	Other VOCs	Helium	Notes
			ug/m <sup>3</sup>						%	

## SOIL GAS (About 5 feet deep into site soil)

### 1187 Solano Avenue

SG-1	11/02/04	5.0	390	ND	ND	ND	(R)	misc	---	Outside
SG-2	11/02/04	5.0	<b>90,000</b>	<b>10,000</b>	100	390	(S)	misc	---	
SG-3	11/02/04	5.0	<b>100,000</b>	<b>7,900</b>	ND	ND	(T)	misc	---	
SG-4	11/02/04	5.0	<b>170,000</b>	<b>5,500</b>	ND	ND	(U)	misc	---	

Residential CHHSL for shallow soil gas:	180	528	15,900	31,900	Varies	Varies	NA
Commercial CHHSL for shallow soil gas:	600	1,770	44,400	88,700	Varies	Varies	NA
Residential ESL for shallow soil gas:	210	300	---	31,000	Varies	Varies	NA
<b>Commercial ESL for shallow soil gas:</b>	<b>2,100</b>	<b>3,000</b>	---	<b>260,000</b>	Varies	Varies	NA
<b>10x Residential ESL shallow soil gas:</b>	<b>2,100</b>	<b>3,000</b>	---	<b>310,000</b>	Varies	Varies	NA

### Abbreviations:

Tetrachloroethene, Trichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, and Helium analyzed by Method TO-15 or EPA Method 8260 (sometimes 8010 report list).

BTEX = Benzene, toluene, ethylbenzene, and xylenes by Method TO-15 or EPA Method 8260.

Other VOCs = Volatile Organic Compounds except for Tetrachloroethene, Trichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene and Helium analyzed by Method TO-15 or EPA Method 8260 (sometimes only 8010 list).

ug/m<sup>3</sup> = Micrograms per cubic meter of air.

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

NA= not applicable

ND = not detected above laboratory reporting limits.

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

CHHSL = California Human Health Screening Levels for Soil Gas below buildings constructed without engineered fill below sub-slab gravel with Commercial/Industrial Land Use Updated 9/23/2010. <http://oehha.ca.gov/risk/chhsltable.html>. Commercial CHHSL assumes 24 hr exposure, versus 8 hr exposure for commercial ESL.

CHHSL (subslab) = California Human Health Screening Levels for subslab gas has an attenuation factor of 0.05 of indoor air screening levels per CalEPA/DTSC Vapor Intrusion Guidance Document, October 2011 (p 21).

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 (Revised May 2013).

Tetrachloroethene also referred to as Perchloroethene, PCE or Perc.

**Bold** concentrations exceed **commercial** CHHSL.

\* BTEX detection limits for TO-15 = Benzene 6.5 ug/m<sup>3</sup>, toluene 8.8 ug/m<sup>3</sup>, ethylbenzene 8.8 ug/m<sup>3</sup>, and xylenes 27 ug/m<sup>3</sup>. Highest detection limit shown above.

Note A: 7.2 ug/m<sup>3</sup> **benzene** and 13 ug/m<sup>3</sup> chloroform

Note B: 7.2 ug/m<sup>3</sup> tetrahydrofuran and 32 ug/m<sup>3</sup> ethyl acetate

Note C: 23 ug/m<sup>3</sup> chloroform

Note D: 28 ug/m<sup>3</sup> **benzene**, 80 ug/m<sup>3</sup> chloroform, and 49 ug/m<sup>3</sup> 1,1-dichloroethene

Note E: 8.1 ug/m<sup>3</sup> tetrahydrofuran and 9.1 ug/m<sup>3</sup> vinyl chloride

Note F: 210 ug/m<sup>3</sup> ethanol and 14 ug/m<sup>3</sup> tetrahydrofuran

Note G: 290 ug/m<sup>3</sup> 4-methyl-2-pentanone and 19 ug/m<sup>3</sup> **toluene** (possibly associated with building materials).

Note H: 310 ug/m<sup>3</sup> acetone and 71 ug/m<sup>3</sup> tetrahydrofuran

Note I: 250 ug/m<sup>3</sup> acetone, 51 ug/m<sup>3</sup> isopropyl alcohol, 21 ug/m<sup>3</sup> styrene, 15 ug/m<sup>3</sup> **toluene**, 7.1 ug/m<sup>3</sup> carbon disulfide, and 8.9 ug/m<sup>3</sup> 4-methyl-2-pentanone

Note J: 390 ug/m<sup>3</sup> acetone, 13 ug/m<sup>3</sup> styrene, and 38 ug/m<sup>3</sup> tetrahydrofuran

Note K: 320 ug/m<sup>3</sup> acetone and 61 ug/m<sup>3</sup> tetrahydrofuran

Note L: 240 ug/m<sup>3</sup> acetone and 39 ug/m<sup>3</sup> tetrahydrofuran

Note M: 200 ug/m<sup>3</sup> acetone, 9.0 ug/m<sup>3</sup> carbon disulfide, and 22 ug/m<sup>3</sup> tetrahydrofuran

Note N: 200 ug/m<sup>3</sup> acetone, 20 ug/m<sup>3</sup> carbon disulfide, and 29 ug/m<sup>3</sup> tetrahydrofuran

Note O: 180 ug/m<sup>3</sup> acetone and 32 ug/m<sup>3</sup> tetrahydrofuran

Note P: 210 ug/m<sup>3</sup> acetone, 51 ug/m<sup>3</sup> ethyl acetate, and 35 ug/m<sup>3</sup> tetrahydrofuran

Note Q: 350 ug/m<sup>3</sup> ethyl acetate and 26,000 ug/m<sup>3</sup> ethanol

Note R: 650 ug/m<sup>3</sup> **toluene**, 170 ug/m<sup>3</sup> **ethylbenzene**, and 980 ug/m<sup>3</sup> **xylenes**

Note S: 500 ug/m<sup>3</sup> **toluene**, 120 ug/m<sup>3</sup> **ethylbenzene**, and 650 ug/m<sup>3</sup> **xylenes**

Note T: 1,400 ug/m<sup>3</sup> **toluene** and 1,400 ug/m<sup>3</sup> **xylenes**

Note U: 1,600 ug/m<sup>3</sup> **toluene** and 1,600 ug/m<sup>3</sup> **xylenes**

# Pangea

**Table 4. Indoor Air** - 1183 - 1191 Solano Avenue, Albany, California

Boring/ Sample ID	Date Sampled	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Carbon Tetrachloride	Acetone	Bromomethane	Chloroform	1,4-dichlorobenzene	Benzene	Ethylbenzene	Toluene	Xylenes	1,2-dibromomethane (EDB)	1,2-dichloroethane (1,2-DCP)	Naphthalene	Other VOCs	Notes
		←							ug/m <sup>3</sup>										→
Residential ESL for Indoor Air:		0.41	0.41	---	63	0.058	32,000	5.2	0.46	0.22	0.084	0.97	310	100	0.032	0.12	0.072	Varies	
Commercial ESL for Indoor Air:		<b>2.1</b>	<b>3.0</b>	---	260	<b>0.29</b>	140,000	22	2.3	1.1	<b>0.42</b>	4.9	1,300	440	0.17	<b>0.58</b>	<b>0.36</b>	Varies	
Residential CHHSL for Indoor Air:		0.412	1.22	36.5	73	0.0579	---	---	---	---	0.084	---	313	730	---	0.116	0.072	Varies	
10X Residential CHHSL for Indoor Air:		4.12	12.2	365	730	0.579	---	---	---	---	0.84	---	3,130	7,300	---	1.16	0.72	Varies	
Commercial CHHSL for Indoor Air:		0.693	2.04	51.1	102	0.0973	---	---	---	---	0.141	---	438	1,020	---	0.195	0.12	Varies	
<i>1183 Solano Avenue</i>																			
Air 1183 8hr	10/03/13	0.44	0.027	<0.40	<0.40	<b>0.54</b> <sup>(1,2)</sup>	45	0.89	0.28	0.078	0.39	1.9	1.3	11	0.023	<b>1.1</b>	<b>0.61</b> <sup>(2)</sup>	Varies	8 hr sample. Fan on.
Air 1183 24hr	10/03/13	1.1	0.048	<0.40	<0.40	<b>0.53</b> <sup>(1,2)</sup>	46	0.72	0.19	0.06	0.29	2.3	1.9	14	0.02	<b>1.7</b>	<b>0.51</b> <sup>(2)</sup>	Varies	24 hr sample. Fan on 8 hrs.
<i>1185 Solano Avenue</i>																			
Air 1185 8hr	FUTURE																		
<i>1187 Solano Avenue</i>																			
Air 1187	09/27/13	0.85	0.041	<0.40	<0.40	<b>0.57</b> <sup>(1,2)</sup>	100	0.82	0.20	0.056	<b>0.52</b> <sup>(2)</sup>	2.2	1.6	12	0.0086	0.084	0.25 <sup>(2)</sup>	Varies	8 hr sample
<i>1191 Solano Avenue</i>																			
Air 1191 Break 8hr	10/03/13	0.40	0.023	<0.40	<0.40	<b>0.66</b> <sup>(1,2)</sup>	30	0.82	0.30	0.14	0.37	0.92	4.1	4.7	0.015	0.093	<b>0.39</b> <sup>(2)</sup>	Varies	8 hr sample
Air 1191 8hr	10/03/13	0.36	0.020	<0.40	<0.40	<b>0.68</b> <sup>(1,2)</sup>	36	0.74	0.41	0.15	0.39	1.1	7.7	5.7	0.014	0.12	<b>0.38</b> <sup>(2)</sup>	Varies	8 hr sample
Air 1191 24hr	10/03/13	0.37	0.021	<0.40	<0.40	<b>0.73</b> <sup>(1,2)</sup>	37	0.81	0.41	0.16	0.39	1.8	6.3	9.4	0.013	0.15	<b>0.46</b> <sup>(2)</sup>	Varies	24 hour sample
<i>Background</i>																			
Air Background 8hr	10/03/13	0.053	<0.0055	<0.40	<0.40	<b>0.53</b> <sup>(1,2)</sup>	15	0.69	0.24	0.029	0.25	<0.44	0.47	<1.3	0.0093	0.038	0.16	Varies	Upwind 8 hr sample. On breezy roof.

## Abbreviations:

1= Carbon tetrachloride presumably associated with refrigerant as compound is involved with refrigerant manufacturing and other refrigerants detected in sample (dichlorodifluoromethane and trichlorofluoromethane).

2= Result could be representative of background conditions due to similar concentration detected in ambient air and other indoor air samples.

PCE = Tetrachloroethene, also referred to as Perchloroethene or 'Perc'.

TCE = 1,1,1-trichloroethene.

VOCs analyzed by Method TO-15

Other VOCs = Volatile Organic Compounds other than listed above as quantified by Method TO-15.

ug/m<sup>3</sup> = Micrograms per cubic meter of air.

NA= not applicable

ND = not detected above laboratory reporting limits.

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

CHHSL = California Human Health Screening Levels for Indoor Air Updated 9/23/2010. <http://oehha.ca.gov/risk/chhsltable.html>. Commercial CHHSL assumes 24 hr exposure, versus 8 hr exposure for commercial ESL.

ESL = Environmental Screening Level for Indoor Air (Table E-3). Established by the SFBRWQCB, Interim Final - November 2007 (Revised Feb 2013).

**Bold** concentrations exceed commercial ESL.

**Table 5 - Cleanup Levels and Goals** – Former Albany 1-Hr Cleaners, 1187 Solano Avenue, Albany, California

Media	Tetrachloroethene (PCE)			
	Current Maximum	Cleanup Goal	Cleanup Level	Current Estimated Risk and Comments
<b>Soil</b>	<b>0.31</b> mg/kg (GPA-4@10' and SW-EX-4@4')	<b>0.55</b> mg/kg (Residential Final ESL for Drinking Water Resource)	<b>0.55</b> mg/kg (Same as Goal) <b>(Met Goal: Residential and Commercial)</b>	<b>Risk &lt;1 x 10<sup>-6</sup> Residential and Commercial</b>  All soil excavated to below <b>RESIDENTIAL</b> screening level (ESL).
<b>Groundwater (Shallow, about 10')</b>	<b>200</b> ug/L (Well MW-1) <b>820</b> ug/L (Grab B-22)	<b>640</b> ug/L (Commercial ESL protective of indoor air)  <b>Alternate Goal: 63</b> ug/L (Residential ESL protective of indoor air)	<b>640</b> ug/L (Same as Goal) <b>(Met Goal: Commercial)</b>  <b>Alternate Level: 630</b> ug/L (10x Residential ESL protective - indoor air) <b>(Met Proposed Cleanup Level for Residential Use)</b>  <i>(Superseded by Subslab Gas and Indoor Air)</i>	<b>Risk &lt;1 x 10<sup>-6</sup> Commercial</b>  Also Met Risk <10 x 10 <sup>-6</sup> Residential  Well data below commercial ESL protective of indoor air. Plume delineated to cleanup goal by site wells and grab data. Clayey site soil will limit upward migration of PCE vapor from groundwater. Expect attenuation now that source removed. Once plume deemed delineated and stable, subslab gas is the primary driver for mitigation and case closure.
<b>Groundwater (Deeper, about 30')</b>	<1 ug/L	5 ug/L	5 ug/L <b>(Met Goal)</b>	No impact detected in deeper groundwater (about 30 ft bgs).
<b>Subslab Gas</b> <i>(Primary Cleanup Level)</i>	<b>940</b> ug/m <sup>3</sup> (1185+1187 Solano @SG-1185N) <b>1,200</b> ug/m <sup>3</sup> (1183 Solano @SS-17) <b>1,800</b> ug/m <sup>3</sup> (1191 Solano @SSPO-4)	<b>2,100</b> ug/m <sup>3</sup> (Commercial ESL)  <b>Alternate Goal: 210</b> ug/m <sup>3</sup> (Residential ESL)	<b>2,100</b> ug/m <sup>3</sup> (Same as Goal, and 10x Residential Goal) <b>(Met Goal: Commercial)</b> <b>(Met Level: Residential)</b>	<b>Risk &lt;1 x 10<sup>-6</sup> Commercial</b>  Also Met Risk <10 x 10 <sup>-6</sup> Residential  All subslab gas concentrations are below Commercial Goal (ESL). Passive subslab venting system is mitigation measure for additional safeguard for protection of indoor air.
<b>Indoor Air</b>	<b>0.85</b> ug/m <sup>3</sup> 1187 Solano 8 hr  <b>1.1</b> ug/m <sup>3</sup> 1183 Solano 24 hr  <b>0.40</b> ug/m <sup>3</sup> 1191 Solano 8 hr	<b>2.1</b> ug/m <sup>3</sup> (Commercial ESL)  <b>Alternate Goal: 0.41</b> ug/m <sup>3</sup> (Residential ESL)	<b>2.1</b> ug/m <sup>3</sup> (Same as Goal) <b>(Met Goal: Commercial)</b>  <b>Alternate Level 1: 4.1</b> ug/m <sup>3</sup> (10 x Residential ESL) <b>(Met Proposed Cleanup Level for Residential Use)</b>	<b>Risk &lt;1 x 10<sup>-6</sup> Commercial (All Units)</b>  <u>1191 Solano:</u> Risk is below 1 x 10 <sup>-6</sup> Residential Goal.  <u>1185 and 1187 Solano:</u> Risk expected to meet <b>Residential goal of 1 x 10<sup>-6</sup> upon slab installation.</b> Passive subslab venting system adds safeguard.  <u>1183 Solano:</u> Risk slightly above 1 x 10 <sup>-6</sup> for residential use. <b>Current risk of 10 x 10<sup>-6</sup> is acceptable for residential use.</b> Expect risk reduction and attenuation now that extensive source removal complete.

Notes and abbreviations:

Cleanup *Level* represents target concentration for remedial efforts, while Cleanup *Goal* represents long-term target concentration following natural attenuation of residual impact.

ESL = Environmental Screening Level Established by the SFBRWQCB, Interim Final - November 2007 (Revised May 2013).

bgs = Below grade surface

## **APPENDIX A**

### Site Photographs



1 - Front of Commercial Units



2 - Commercial Block Facing West



3 - View of Rear of Building



4 - 1187 Solano Prior to Excavation



5 - Drain in Former Rear Boiler Area



6 - Initial Excavation under 1187 Solano





7 - Initial Auger Excavation in Slots under 1191 Solano



8 - Forming Cement Slurry Slots under 1191 Solano



9 - Excavation Augering Between Slots under 1191 Solano



10 - Excavation Along Eastern Side of 1187 Solano After Slots



11 - Excavation Near Sewer in Rear of 1187 Solano



12 - Inspection of Sanitary Sewer Piping





13 - Excavating Middle of 1187 Solano



14 - Excavation Along Western Edge of 1187 Solano



15 - Compaction after Initial Backfilling in 1187 Solano



16 - Piping Manifold for Temporary Ventilation System (later removed)



17 - Temporary Vent Piping After Initial Excavation (later removed)



18 - Active or Passive Vent Pipe Configuration





19 - Excavation under 1185 Hallway



20 - Excavation under Hallway and Bathroom of 1185 Solano



21 - Sewer at Western Edge of 1185 Solano near 1183 Solano



22 - Gravel for Passive Venting System under 1185 and 1187 Solano



23 - Gravel Installation in 1185 Solano



24 - Vent Piping Installation after Backfilling with Sand in 1185 Solano





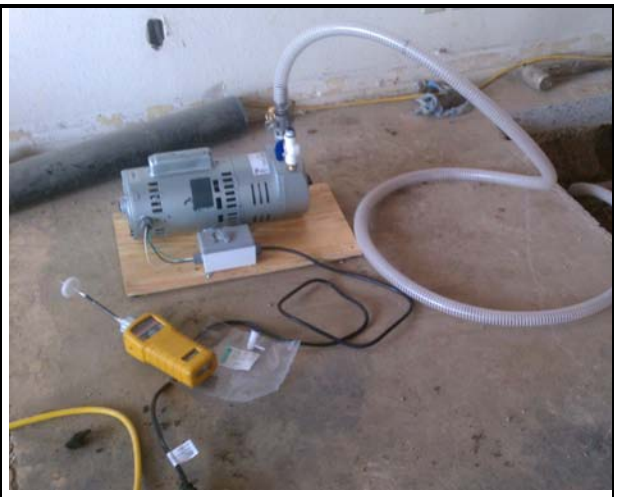
25 - Manifold of Vent Piping from All Units



26 - Passive Ventilation System in 1185 Solano



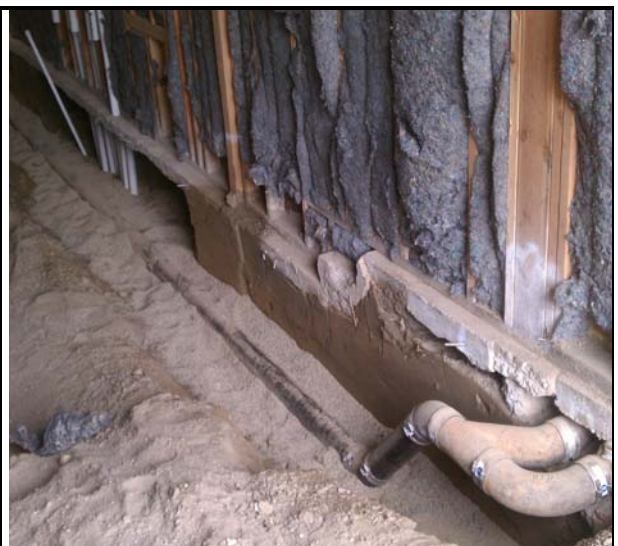
27 - Vent Piping for Active or Passive Extraction in 1185 Solano



28 - Initial Testing of Vent Under 1183 Solano



29 - New Sanitary Sewer Piping under 1185 and 1187 Solano



30 - New Sanitary Sewer Conduit in 1187 Solano



31 - Final Cement Slurry in 1187 Solano facing South (before Slab)



32 - Final Cement Slurry Surface in 1185 Solano (before Future Slab)



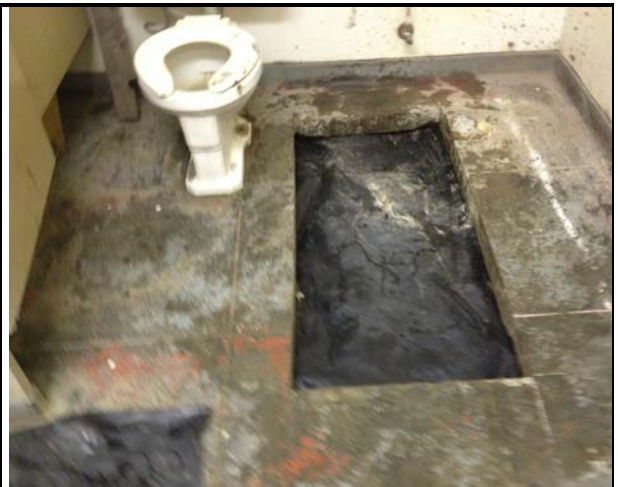
33 - 1191 Solano Bath and Storage



34 - 1191 Solano Vent Pipe before Seal and Sand



35 - 1191 Solano Vent Pipe with Bentonite Seal



36 - 1191 Solano Vent Pipe Plastic Barrier





37 - 1191 Solano Vent Pipe after Sand Backfill



38 - Sealing of Former Toilets and Water Supply in Storage Room in 1191 Solano



39 - Mechanical Room for 1183 Solano with Conduits Entering 1183 Subslab



40 - Sealing of Chair Utilities in 1183 Solano



41 - Sealing of Vent Piping Penetrations



42 - Slab Penetrations before Sealing in 1191 Solano



43 - Manifold Piping w probes and MW-4



44 - Soil Gas Probe in Gravel Layer before Final Connection



45 - Passive Vent Risers and Indoor Air Sampling



46 - Indoor Air Sampling in Work Room of 1191 Solano



47 - Large Work Area in 1191 Solano



48 - Large Work Room in 1191 Solano

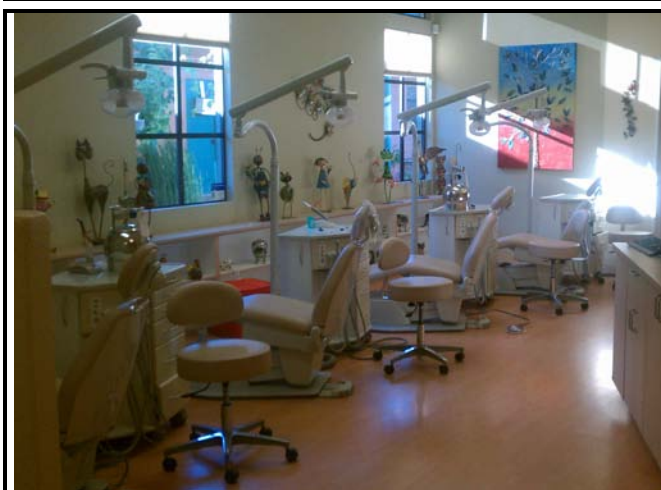




49 - Indoor Air Sampling in Break room in 1191 Solano



50 - Subslab Probe SS-16 Under Chair in 1183 Solano



51 - Indoor Air Sampling in 1183 Solano



52 - Indoor Air Sampling in 1187 Solano



53 - Contingent Excavation Area at 1191 Solano



54 - View of Bathroom and Storage Entrances at 1191 Solano

## **APPENDIX B**

### Boring and Well Permits

# Alameda County Public Works Agency - Water Resources Well Permit



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

Application Approved on: 01/17/2013 By jamesy

Permit Numbers: W2013-0044  
Permits Valid from 04/05/2013 to 04/08/2013

Application Id: 1358208615646  
Site Location: 2910 Ford Street and 2909 Chapman Street  
Project Start Date: 01/28/2013  
Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org  
Extension Start Date: 04/05/2013  
Extension Count: 1

City of Project Site:Oakland  
Completion Date:01/29/2013  
Extension End Date: 04/08/2013  
Extended By: priest

Applicant: L&W Construction Services, Inc - Jean Lindsay  
5200 Redwood Hwy. S., Petaluma, CA 94952  
Property Owner: Edward Forgeron  
c/o Marcus & Millichap, 915 Wilshire Blvd, Los Angeles, CA 90017  
Client: Arianne Dar  
PO Box 476, Bolinas, CA 94924  
Contact: George Wilson

Phone: 707-766-9511  
Phone: 213-943-1840  
Phone: 415-713-4519  
Phone: 707-766-9511  
Cell: 415-613-4840

Receipt Number: WR2013-0020 Total Due: \$265.00  
Payer Name : George J Wilson Total Amount Paid: \$265.00  
Paid By: MC PAID IN FULL

## Works Requesting Permits:

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 8 Boreholes  
Driller: Environmental Control Associates - Lic #: 695970 - Method: DP

Work Total: \$265.00

## Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2013-0044	01/17/2013	04/28/2013	8	2.00 in.	15.00 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 Steve Miller for an inspection time at (510) 670-5517 or email to stevem@acpwa.org 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. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters

## **Alameda County Public Works Agency - Water Resources Well Permit**

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. 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.

8. 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.

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# Alameda County Public Works Agency - Water Resources Well Permit



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

Application Approved on: 03/13/2013 By jamesy

Permit Numbers: W2013-0202  
Permits Valid from 04/25/2013 to 04/25/2013

Application Id: 1363129975477  
Site Location: 1187 Solano Ave  
Project Start Date: 03/20/2013  
Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org  
Extension Start Date: 04/25/2013  
Extension Count: 1

City of Project Site: Albany

Completion Date: 03/20/2013  
Extension End Date: 04/25/2013  
Extended By: priest

Applicant: Pangea Environmental Services, Inc. - Morgan  
Gillies  
1710 Franklin St, Suite 200, Oakland, CA 94612  
Property Owner: Solano Group  
PO Box 9026, Berkeley, CA 94709  
Client: \*\* same as Property Owner \*\*

Phone: 510-836-3700

Phone: --

Receipt Number: WR2013-0097 Total Due: \$265.00  
Total Amount Paid: \$265.00  
Payer Name : Robert Clark-Riddell Paid By: VISA PAID IN FULL

## Works Requesting Permits:

Borehole(s) for Investigation-Contamination Study - 15 Boreholes  
Driller: Cascade Drilling - Lic #: 938110 - Method: DP

Work Total: \$265.00

## Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2013-0202	03/13/2013	06/18/2013	15	3.25 in.	35.00 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. 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.

## **Alameda County Public Works Agency - Water Resources Well Permit**

5. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to [stevem@acpwa.org](mailto:stevem@acpwa.org) 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. 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. 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



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

Application Approved on: 05/09/2013 By jamesy

Permit Numbers: W2013-0343 to W2013-0345  
Permits Valid from 05/17/2013 to 05/31/2013

Application Id: 1367619037010  
Site Location: 1187 Solano Ave  
Project Start Date: 05/17/2013  
Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

City of Project Site: Albany

Completion Date: 05/31/2013

Applicant: Pangea Environmental Services, Inc. - Morgan  
Gillies  
1710 Franklin St, Suite 200, Oakland, CA 94612  
Property Owner: Solano Group  
PO Box 9026, Berkeley, CA 94709  
Client: \*\* same as Property Owner \*\*

Phone: 510-836-3700

Phone: --

Receipt Number: WR2013-0160 Total Due: \$1191.00  
Payer Name : Robert Clark-Riddell Total Amount Paid: \$1191.00  
Paid By: VISA PAID IN FULL

## Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 3 Wells  
Driller: Cascade Drilling - Lic #: 938110 - Method: DP

Work Total: \$1191.00

## Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2013-0343	05/09/2013	08/15/2013	MW-1	3.25 in.	0.75 in.	8.00 ft	14.00 ft
W2013-0344	05/09/2013	08/15/2013	MW-2	3.25 in.	0.75 in.	8.00 ft	14.00 ft
W2013-0345	05/09/2013	08/15/2013	MW-3	3.25 in.	0.75 in.	8.00 ft	14.00 ft

## Specific Work Permit Conditions

1. 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.
2. 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.
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.



## **Alameda County Public Works Agency - Water Resources Well Permit**

4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or 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. Include permit number and site map.
  5. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.
  6. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to [stevem@acpwa.org](mailto:stevem@acpwa.org) 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.
  7. 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.
  8. Minimum surface seal thickness is two inches of cement grout placed by tremie.
  9. Minimum seal (Neat Cement seal) depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.
  10. 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.
-

# Alameda County Public Works Agency - Water Resources Well Permit



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

Application Approved on: 09/06/2013 By jamesy

Permit Numbers: W2013-0759  
Permits Valid from 09/11/2013 to 09/11/2013

Application Id: 1378506139766  
Site Location: 1187 Solano Ave  
Project Start Date: 09/11/2013  
Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

City of Project Site: Albany

Completion Date: 09/11/2013

Applicant: Pangea Environmental Services, Inc. - Morgan  
Gillies  
1710 Franklin St, Suite 200, Oakland, CA 94612  
Property Owner: Solano Group  
PO Box 9026, Berkeley, CA 94709  
Client: \*\* same as Property Owner \*\*

Phone: 510-836-3700

Phone: --

Receipt Number: WR2013-0341 Total Due: \$397.00  
Payer Name : Robert Clark-Riddell Total Amount Paid: \$397.00  
Paid By: VISA PAID IN FULL

## Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 1 Wells  
Driller: Confluence Environmental - Lic #: 913194 - Method: hstem

Work Total: \$397.00

## Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2013-0759	09/06/2013	12/10/2013	MW-4	3.25 in.	1.00 in.	8.00 ft	14.00 ft

## Specific Work Permit Conditions

1. 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.
2. 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.
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. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and

## **Alameda County Public Works Agency - Water Resources Well Permit**

mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Include permit number and site map.

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  6. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to [stevem@acpwa.org](mailto:stevem@acpwa.org) 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.
  7. 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.
  8. Minimum surface seal thickness is two inches of cement grout placed by tremie.
  9. Minimum seal (Neat Cement seal) depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.
  10. 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.
-

## **APPENDIX C**

### Standard Operating Procedures

## **STANDARD FIELD PROCEDURES FOR EXCAVATION SAMPLING**

During remedial excavation activities compliance sampling is typically required to assess the extent of the contamination remaining in site soil. Pangea has developed standard field procedures for compliance sampling and excavation to provide sample collection, handling and documentation in compliance with State and local regulatory agency regulations.

### **Soil Sampling**

Soil samples are typically collected from the bottom and sidewalls of the excavation. If water is present in the excavation, soil samples are typically collected from the soil/water interface. The soil samples are collected in steam-cleaned brass or steel tubes from either a driven split-spoon type sampler or the bucket of a backhoe or excavator. When a backhoe or excavator is used, approximately three inches of soil are scraped from the surface and the tube is driven into the exposed soil. The location and number of samples is determined by the environmental professional and/or regulatory agency representatives overseeing the excavation.

When required or requested before sample collection, Pangea field staff screen soil with a portable photo-ionization detector (PID) to qualitatively assess the presence or absence of volatile contaminants. Excavated soil is typically segregated based on contaminant concentration and stockpiled on site on plastic sheeting. When field observations and/or PID measurements indicate that the contaminant-bearing soil has been satisfactorily removed, Pangea collects soil samples from excavation sidewalls and floor for confirmatory analysis at a State-certified analytic laboratory.

### **Stockpile Soil Sampling**

To facilitate soil disposal at approved offsite facilities, Pangea typically collects one four-point composite soil samples for 200 cubic yards or less of stockpiled soil. If the soil stockpile volume is between 200 and 1,000 cubic yards, two four-point composite samples are typically collected. If soil is segregated based on field observations, at least one four-point composite soil sample is collected for each segregated stockpile. To generate a composite sample, Pangea collects four individual soil samples in steam-cleaned brass or steel tubes by hand, or from either a driven split-spoon type sampler or the bucket of a backhoe or excavator. The sample locations and depths are selected to obtain composite soil sample representative of the stockpile. The four individual soil tubes are composited by the state-certified laboratory. When hand sampling or backhoe/excavator is used, approximately three inches of soil are scraped from the surface and the tube is driven into the exposed soil. Additional stockpile sampling procedures may be required to facilitate reuse of soil onsite in accordance with regulatory oversight.

### **Grab Ground Water Sampling**

If groundwater enters the excavation, grab ground water samples are typically collected from the open excavation. Grab groundwater sample can be collected from excavator equipment, disposable Tygon<sup>®</sup> tubing placed into the excavation, or other appropriate sampling equipment placed into the water. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory.

### **Sample Storage, Handling and Transport**

Upon removal from the sampler or the backhoe, soil samples are trimmed flush, 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. Groundwater samples in appropriate containers are labeled, placed in protective bags, and stored on crushed ice at or below 4° C. All samples are transported under chain-of-custody to a State-certified analytic laboratory.

## **Duplicates and Blanks**

Duplicate or blind duplicate samples can be collected, if requested. For water sampling, laboratory-supplied trip blanks can accompany samples to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory quality assurance/quality control (QA/QC) blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

# **STANDARD OPERATING PROCEDURE FOR SUBSLAB VAPOR SAMPLING**

## **1.0 PURPOSE**

This standard operating procedure (SOP) describes the procedures for collecting subslab vapor samples using evacuated stainless-steel Summa canisters for the purpose of assessing risk to building occupants. The SOP is modified from procedures and information presented in Cal/EPA 2012 (*Advisory-Active Soil Investigations*); Cal/EPA 2011; Cal/EPA 2010; U.S. EPA, 2006; and DiGiulio, 2003. This SOP includes (a) real-time leak-check procedures to evaluate integrity of the soil gas probe and sampling assembly during probe purging and post sampling, and (b) real-time field screening of soil gas concentrations during probe purging and post sampling.

## **2.0 REQUIRED EQUIPMENT**

- Hammer drill with 1" bit and smaller bits (slightly larger than vapor probe tubing)
- Tubing for cleaning boring
- Stainless-steel or Teflon vapor probe tubing with Swagelok threaded compression fitting, vapor-tight cap, and valves.
- Rubber stopper or Teflon disk
- Granulated bentonite, bentonite pellets and cement
- Vacuum pump with adjustable rotameter for purging and leak testing
- 1-Liter Summa canister for each sample
- Stainless-steel sampling manifold with vacuum gauges and critical orifice flow restrictor (request that laboratory leak-check sampling manifold prior to mobilization)
- Leak-check compound (e.g. helium)
- Helium gas analyzer (calibrated)
- Calibrated photoionization detector (PID) or other organic vapor analyzer
- Isobutylene for PID calibration
- Tedlar bags (for helium measurement and vapor screening)
- Vacuum chamber (iron lung) for pre- and post-sampling leak-check
- Leak-check enclosure (bucket with hydrated bentonite pellets [or weather stripping] for sealing enclosure to surface and openings for vapor probe tubing, helium and for sampling enclosure atmosphere)
- Recordkeeping materials
- Latex or nitrile gloves

## **3.0 PROCEDURES**

### **3.1 Boring Clearance**

Prior to installing subslab vapor probes, ensure that a utility clearance has been conducted to ensure that potential subsurface utility and rebar locations have been identified and marked.



### 3.2 Vapor Probe Construction

1. To protect interior surfaces, lay plastic sheeting around the probe location.
2. Use a rotary hammer drill to create an approximately 3-inch deep, 1 1/2 -inch diameter hole that *partially* penetrates the slab. Use a piece of flexible tubing to blow or vacuum concrete debris and dust from the hole. Do not blow or vacuum after the slab has been completely penetrated.
3. Drill a smaller diameter *inner hole* in the center of the outer hole, periodically blowing dust and debris from the hole until the slab is penetrated. The diameter of the inner hole should exceed the diameter of the vapor probe tubing by the minimum amount practicable. The inner hole should be drilled completely through the slab and 3 to 4 inches into the subslab material (baselrock or soil) to form a cavity (**Figure 1**).
4. Insert the capped vapor probe tubing through a tightly fitting rubber stopper or a Teflon disk and insert the stopper or disk into the bottom of the outer hole. The purpose of the stopper is to stop moisture from the annular seal from leaking into subslab materials. The fitting may either be constructed flush, or may protrude above the slab, depending on location and susceptibility to damage. If a lubricant is needed, use only high-vacuum silicone grease.
5. Clean the concrete surfaces in the borehole with a dampened towel to increase the potential of a good seal. Fill the remainder of the hole with hydrated bentonite (temporary probe) or hydrated bentonite topped with expanding cement (semi-permanent probe). Place a protective cap (temporary probe) or flush mounted well box (semi-permanent probe) over the probe to protect it from damage.

### 3.3 Vapor Sampling

During vapor sampling, record all valve open/close times and canister/manifold vacuum readings at each step. Do not conduct sampling within **5 days following a significant rain event** (0.5 inches of rainfall during any 24-hour period) or significant irrigation adjacent to the building.

#### Setup

1. Calculate and record the volume of the sampling assembly, tubing, vapor probe and void space created in subslab material.

$$\text{Volume} = \pi * r^2 * L = 3.14 \times (1/2 * \text{ID}) \times (1/2 * \text{ID}) * L,$$

where ID = cavity, tubing or manifold inside diameter and L = length of cavity or tubing/manifold segment.

2. Wear latex or nitrile gloves while handling sampling equipment. Change gloves whenever a new sample is collected and after handling leak-check compound.
3. Replace the vapor probe cap with a closed Swagelok valve. Connect the sampling manifold to the vapor probe, sample Summa canister and vacuum pump using Swagelok fittings and stainless-steel, Teflon or Tygon tubing. Check all fittings for tightness (do not overtighten).
4. Close all valves. Record pre-test vacuum readings on summa canister.

### Manifold Shut-In Check

1. Open valve on vapor sampling manifold and open 3-way valve #1 so the vacuum pump of the purging assembly can evacuate the vapor sampling manifold assembly (keep valves #2 and #3 closed to the Tedlar bag/vacuum chamber of the vapor screening assembly) (**Figure 2**). Start the vacuum pump. Do *not* open #1 valve to the probe assembly, or the valve on the sample Summa canister. Allow manifold/tubing vacuum to stabilize at approximately 10" Hg.
2. Stop the vacuum pump, close 3-way valves #2 and #3 (to allow shut-in testing of vapor sampling manifold), and conduct a shut-in test by waiting at least **5 minutes** (if using 150 inches of water gauge) or **10 minutes** (if using 30 inches of mercury gauge). Monitor manifold vacuum gauge to test for leaks. If the vacuum decreases, rectify the leak before proceeding.

### Purge, Flow and Leak Check

1. **Calculate purge volume and duration.** Determine the desired total purge volume and purging duration for the equipment setup. A critical orifice flow restrictor is intended to limit the maximum purge and sampling flow rate (approximately 150 ml/min). If step testing is not required to better determine optimal purge volume, **purge approximately 3 times** the volume of the sampling assembly, tubing, vapor probe and void space or any probe/filter pack material below the concrete slab.
2. **Leak-check enclosure.** Place leak-check enclosure over vapor probe and seal to floor using hydrated bentonite or weather stripping. Introduce helium gas into the leak-check enclosure and monitor with the helium gas analyzer until it reads between 20% and 30% helium.
3. **Conduct purging.** Start vacuum pump and open 3-way valve #1 (and 3-way valves #2 and #3) so the vacuum pump can evacuate the probe. Do *not* over-purge. Closely monitor the flow on the rotameter and the vacuum on the vacuum gauge. For most samples flow should be limited to 150mL/min or less. If the vacuum remains below approximately 7" Hg, then sufficient flow is present to collect a representative sample (Cal/EPA 2012) and continue purging for the planned purge duration.
4. If the probe-side vacuum exceeds approximately 7" Hg, then insufficient flow may be present to collect a representative sample and this condition should be noted. Evaluate probe integrity or consider re-installation of probe, especially if probe installed in coarse-grain material. If no significant flow is attained, the sampling line may be plugged or the vapor probe may be positioned in a low permeability or saturated layer. If the probe cap is opened for probe inspection, record the inspection procedures and duration. If purging and sampling is resumed after opening the probe cap, this information will help determine the representativeness of the sample. **To sample subslab gas under low flow conditions, follow this alternate sampling method** derived from Appendix D, Cal/EPA 2012. Make a reasonable attempt to purge one purge volume. After purging, open sample Summa canister until sampling manifold vacuum threshold is achieved, then close Summa sample valve until probe vacuum dissipates. Repeat this sampling procedure as necessary to sufficiently fill the sample Summa canister. Alternatively, consider installing a subslab gas probe with a larger probe annulus space, or employing passive soil gas sampling methods.
5. When purge duration complete and ready to discontinue purging, close 3-way valve #1 so that the probe is connected to the sampling manifold, and then stop the vacuum pump.

6. Record helium reading for leak-check enclosure at least once every minute during purging and sampling.

#### Sample Collection

1. **Opening Sample Canister.** Once a helium reading of at least 20% has been reached, open sample canister valve. **Sampling takes approximately 5 minutes for a 1-liter Summa canister** (at 150 ml/min sampling flow rate).
2. Close sampling canister valve when vacuum decreases to 5" mercury. Do *not* allow vacuum to fall below this range.
3. **Post-Sample Vapor Screening.** After sampling, open 3-way valve #1 so that the vapor screening assembly is connected to the probe, turn on the vacuum pump, and open 3-way valves #2 and #3 to partially fill the Tedlar bag within the vacuum chamber (iron lung). When Tedlar bag is sufficiently filled, return valves #2 and #3 to purging position. Check Tedlar bag for indication of sampling leakage using the helium gas analyzer. If helium concentration is below 1% then sample is sufficiently representative. If helium concentration is above 1%, then the sample may not be sufficiently representative; the probe may need to be repaired or re-installed and re-sampled. Additionally, check the Tedlar bag for contaminants using the PID for qualitative contaminant assessment (optional).
4. **Shroud Sample.** To confirm helium meter readings collect one shroud sample per day to analyze for percent helium. Connect the shroud sample summa canister and manifold to a port near the bottom of the shroud and open the canister valve at the beginning of sampling. Close sampling canister valve when vacuum decreases to 5" mercury. Do *not* allow vacuum to fall below this range. Disassemble sampling assembly, and cap (or remove and restore) vapor sampling point.
5. **Analyses.** Fill out chain-of-custody form for analysis for **chemicals of concern (i.e. TO-15)**, and for **leak-check compound** for at least 10% of samples. Analyze all samples for **percent oxygen** by ASTM D1946-90. Additionally, samples may be analyzed for **percent methane and carbon dioxide** by ASTM D1946-90 when in support of sensitive human health risk assessments for regulatory review. Include final vacuum reading and serial numbers of canister and flow restrictor on chain-of-custody form.
6. For vapor sampling in support of sensitive human health risk assessments for regulatory review, collect at least one *duplicate* sample per site per sampling event from the sampling point with the anticipated highest vapor concentrations. The duplicate sample should be collected by attaching a fresh sample canister following collection of the initial sample. If a new manifold is used, follow the same purging and sampling procedures used for the original sample. If the same manifold is used, collect a sample without further purging, using the same sampling procedures used for the original sample.

#### Decontamination and Decommissioning

1. Use a decontaminated sampling manifold and new tubing for each sample location. Return equipment to laboratory for decontamination.
2. Backfill any open soil vapor probe holes with bentonite slurry or Portland cement and cap with concrete or other surface material to match the area.
3. To retain the subslab probe for future sampling, cap the Swagelock fitting and cover the probe with a small vault or other protective device.

## REFERENCES

- Cal/EPA, 2012, Advisory-Active Soil Gas Investigation, California Environmental Protection Agency, Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board, San Francisco Regional Water Quality Control Board, April.
- Cal/EPA, 2011, Guidance for the evaluation and mitigation of subsurface vapor intrusion to indoor air (vapor intrusion guidance), California Environmental Protection Agency, Department of Toxic Substances Control, October).
- Cal/EPA, 2004, Interim final guidance for the evaluation and mitigation of subsurface vapor intrusion to indoor air, California Environmental Protection Agency, Department of Toxic Substances Control, December 15 (revised February 7, 2005).
- U.S. EPA, 2006, Office Of Research and Development, National Risk Management Research Laboratory, Cincinnati, OH, Assessment of vapor intrusion in homes near the Raymark Superfund Site using basement and sub-slab air samples, March.
- Dominic DiGiulio, 2003, Standard Operating Procedure (SOP) for installation of sub-slab vapor probes and sampling using EPA Method TO-15 to support vapor intrusion investigations, U.S. Environmental Protection Agency, Office of Research and Development, National Risk Management Research Laboratory, Ground-Water and Ecosystem Restoration Division, Ada, Oklahoma (included as Appendix C of Colorado Department of Public Health and Environment, 2004, Draft Indoor Air Guidance, Hazardous Materials and Waste Division), September.

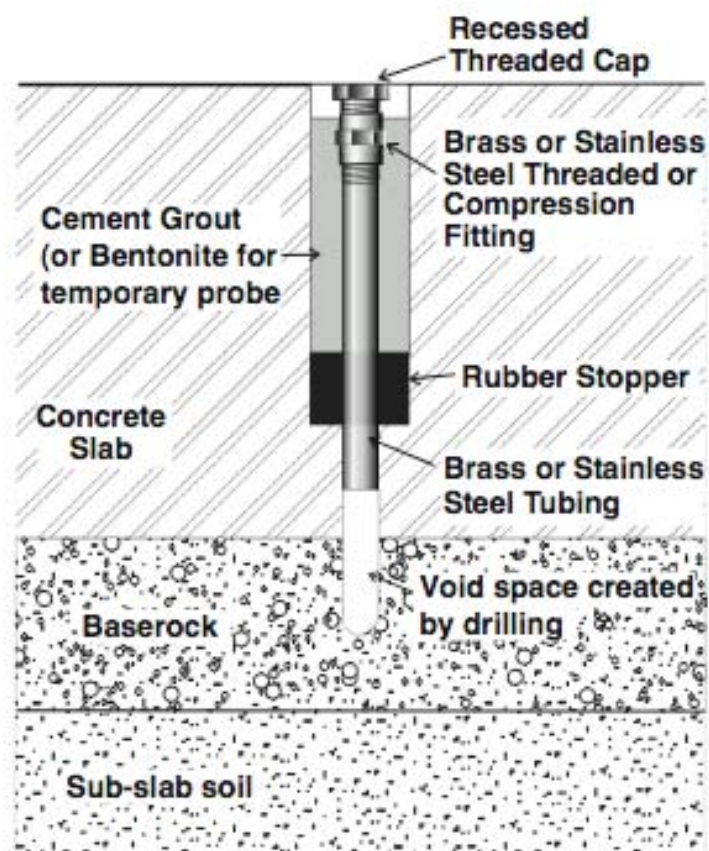







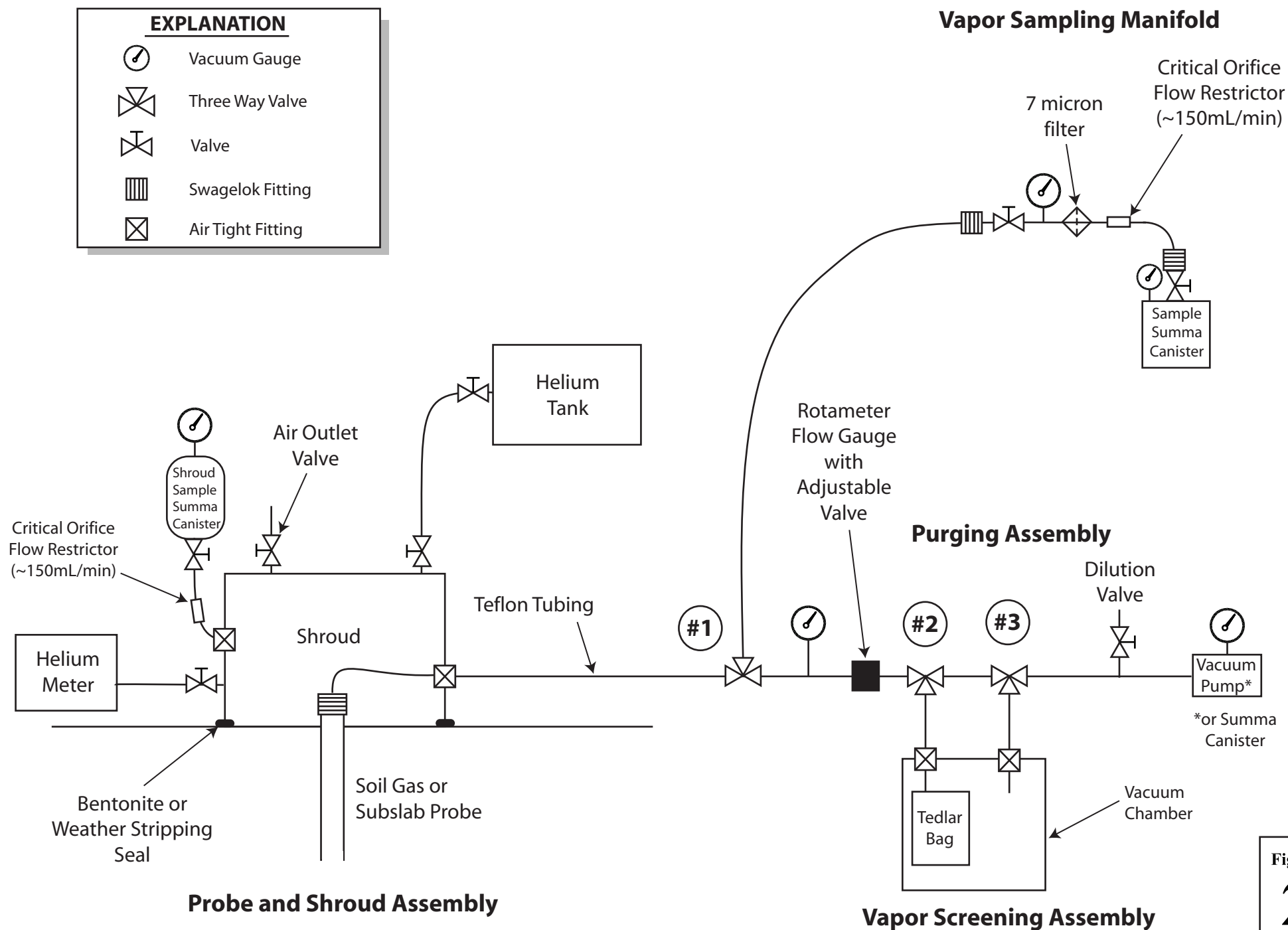
Figure  
**1**

Subslab Vapor Probe Schematic



### EXPLANATION

-  Vacuum Gauge
-  Three Way Valve
-  Valve
-  Swagelok Fitting
-  Air Tight Fitting



Figure

2

## 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.

## 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 MONITORING WELLS**

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

### **Well Construction and Surveying**

Groundwater monitoring wells are installed in soil borings to monitor groundwater quality and determine the groundwater elevation, flow direction and gradient. Well depths and screen lengths are based on groundwater depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 feet below and 5 feet above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three feet thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two ft above the well screen. A two feet thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I, II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security. The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

### **Well Development**

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates the groundwater and dislodges fine sediments from the sand pack. Wells may be surged prior to installation of the well seal to ensure that there are no voids in the sand pack. Development occurs 48 to 72 hours after seal installation to ensure that the Portland cement has set up correctly. After about ten minutes of surging, groundwater is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 72 hours after they are developed.

### **Groundwater Sampling**

Depending on local regulatory guidelines, three to four well-casing volumes of groundwater are purged prior to sampling. Purging continues until groundwater pH, conductivity, and temperature have stabilized. Groundwater samples are collected using bailers or pumps and 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. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

## **STANDARD FIELD PROCEDURES FOR PRE-PACK GEOPROBE® MONITORING WELLS**

This document describes Pangea Environmental Services' standard field methods for drilling, installing, developing and sampling pre-pack Geoprobe® groundwater monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

### **Well Construction and Surveying**

Monitoring wells are installed in soil borings to monitor groundwater quality and determine the groundwater elevation, flow direction and gradient. Well depths and screen lengths are based on groundwater depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 5 to 10 feet below and up to 5 feet above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three feet thick.

Pre-pack Geoprobe® groundwater monitoring wells are usually installed with 3.25-inch or 3.5-inch diameter direct-push dual wall tooling with an expendable drive point. The outer casing and inner sampler are advanced to the desired depth and after the inner sampler is removed the pre-packed well is constructed with the desired screen length and lowered into the open outer casing. Pre-pack wells can range from ¾-inch inner diameter (ID) to 2-inch ID and are supplied with a rinsed and graded sand pack wrapped around the screened section. At the top of the screened interval additional sand may be added to prevent bentonite from entering the filter pack and 1 to 2 ft of bentonite is added to seal the well. A surface seal of Portland type I, II cement is poured into the open borehole or through a tremmi-pipe to complete the annular seal. As each section of the annular space is filled the outer casing is incrementally removed from the borehole. Well casing and screen are typically flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security. The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

### **Well Development**

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates the groundwater and dislodges fine sediments from the sand pack. Wells may be surged prior to installation of the well seal to ensure that there are no voids in the sand pack. Development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly. After about ten minutes of surging, groundwater is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible. All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

## **Groundwater Sampling**

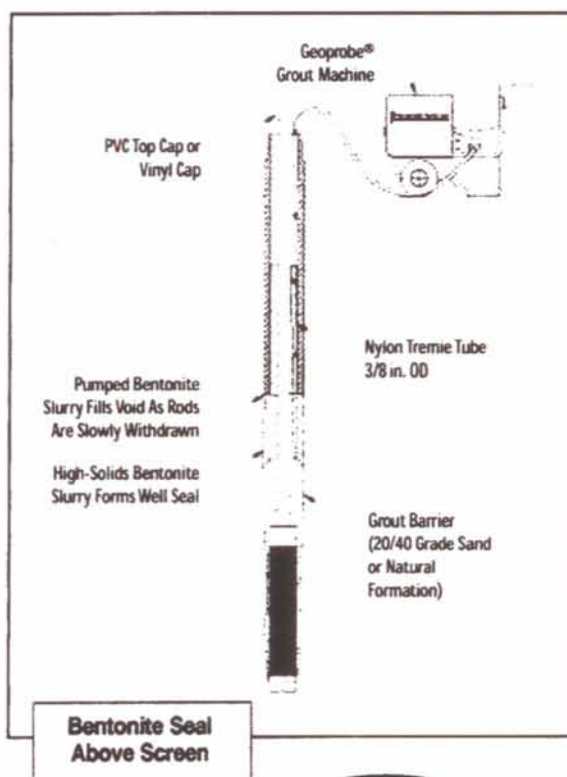
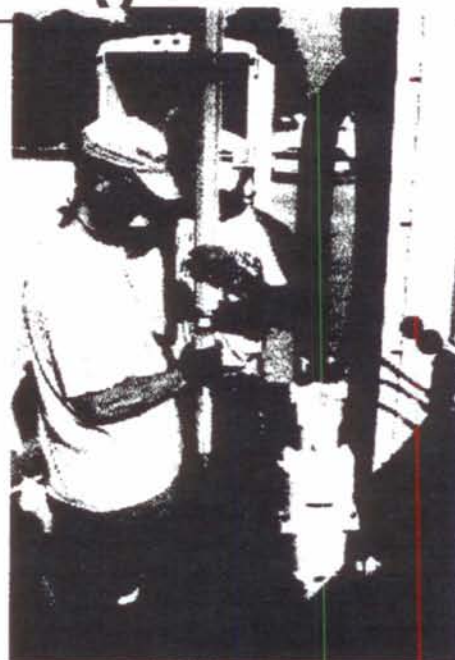
Depending on local regulatory guidelines, three to four well-casing volumes of groundwater are purged prior to sampling. Purging continues until groundwater pH, conductivity, and temperature have stabilized. Groundwater samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves or sealed plastic bags, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.



# Prepack Screen Monitoring Wells



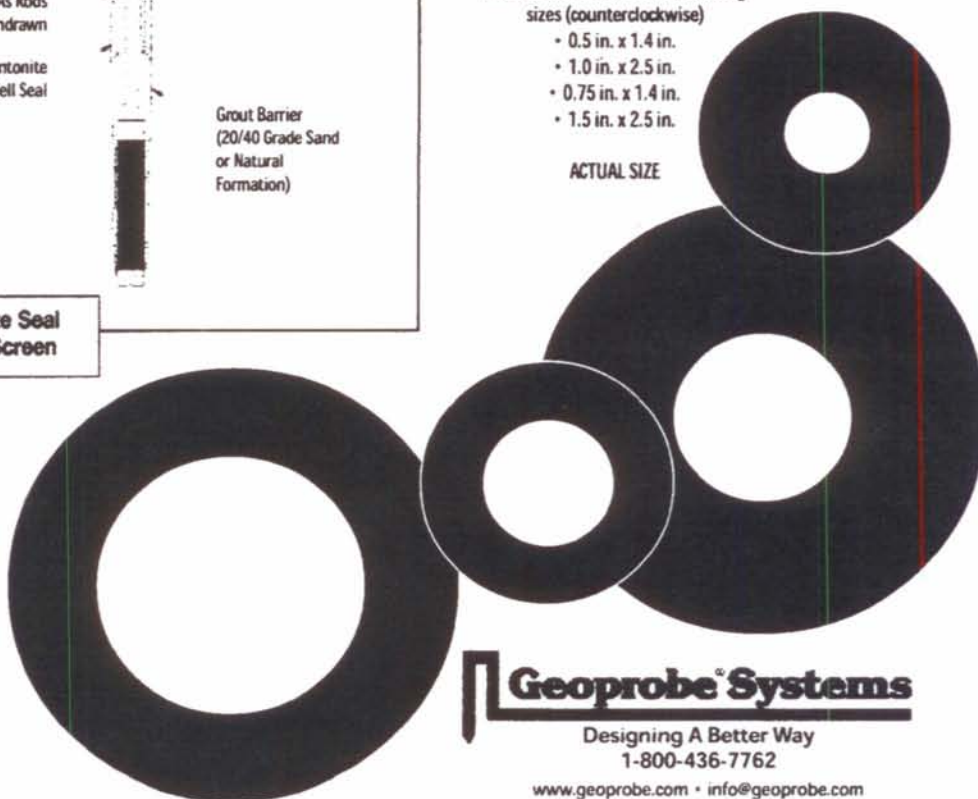
Well covers and locking and non-locking well plugs are available to "cap" off monitoring well projects.



Geoprobe® Prepack Screen Monitoring Wells are available in the following sizes (counterclockwise)

- 0.5 in. x 1.4 in.
- 1.0 in. x 2.5 in.
- 0.75 in. x 1.4 in.
- 1.5 in. x 2.5 in.

ACTUAL SIZE



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# Prepack Screen Monitoring Wells

## The environmental industry relies on Geoprobe® prepacks!

The most cost effective method for installing permanent monitoring wells!

- Available in sizes ranging from 0.5-inch through 1.5-inch ID.
- Manufactured using PVC and high quality stainless steel screens to assure high integrity samples.
- Assures accurate placement of filter media across desired interval.
- Fully groutable design protects the environment.
- Installation through cased borehole provides high integrity well construction and sample quality.
- Use with Geoprobe® Pneumatic Bladder Pump for collection of high integrity water quality samples.

What are the advantages of Geoprobe® prepack monitoring wells?

- Meets new ASTM Standard D6725 for Direct Push Monitoring Well Installation.
- Meets basic EPA and RCRA construction requirements.
- Direct push (DP) methods for installing monitoring wells are being accepted by many state regulatory agencies.
- DOD and EPA studies reveal no statistically significant difference between water quality samples collected from paired DP and conventionally drilled wells.
- Recently published research shows even small diameter DP wells can be slug tested to accurately determine hydraulic conductivity of the formation.

Look for the new ASTM Practice (D 6725) for installation of direct push prepack screen monitoring wells published by the American Society for Testing and Materials (ASTM).



	SLOTTED PIPE min. I.D.	SAND PACK	LENGTH	ROD SIZE		PART NO.
				O.D.	I.D.	
1.4 in. OD Prepack Screens	0.5 in. Sch. 80 PVC 0.010 in. slots	20/40 grade sand factory packed	3 feet 1 m	2.125 in. 54 mm	1.5 in. 38 mm	GW2010
	0.5 in. Sch. 80 PVC 0.010 in. slots	20/40 grade sand factory packed	5 feet 1.5 m	2.125 in. 54 mm	1.5 in. 38 mm	GW2020
	0.75 in. Sch. 40 PVC 0.010 in. slots	20/40 grade sand factory packed	3 feet 1 m	2.125 in. 54 mm	1.5 in. 38 mm	11678
	0.75 in. Sch. 40 PVC 0.010 in. slots	20/40 grade sand factory packed	5 feet 1.5 m	2.125 in. 54 mm	1.5 in. 38 mm	17466
2.5 in. OD Prepack Screens	1.0 in. Sch. 40 PVC 0.010 in. slots	20/40 grade sand factory packed	5 feet 1.5 m	3.25 in. 83 mm	2.625 in. 67 mm	17467
	1.0 in. Sch. 40 PVC 0.010 in. slots	20/40 grade sand field packed	5 feet 1.5 m	3.25 in. 83 mm	2.625 in. 67 mm	11679
	1.5 in. Sch. 40 PVC 0.010 in. slots	20/40 grade sand factory packed	5 feet 1.5 m	3.25 in. 83 mm	2.625 in. 67 mm	17401

## **APPENDIX D**

### Boring Logs and Well Construction Diagram



Pangea Environmental Services, Inc.  
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Oakland, CA 94612

# WELL NUMBER MW-1

PAGE 1 OF 1

CLIENT	Solano Group	PROJECT NAME	1187 Solano
PROJECT NUMBER	1435.002	PROJECT LOCATION	1187 Solano Avenue
DATE STARTED	5/17/13	COMPLETED	5/17/13
DRILLING CONTRACTOR	Cascade	GROUND ELEVATION	
DRILLING METHOD	Direct Push	HOLE SIZE	3.25"
LOGGED BY	Morgan Gillies	CHECKED BY	Bob Clark-Riddell
NOTES	Cored asphalt; Hand Auger to 5'.		
GROUND WATER LEVELS:			
AT TIME OF DRILLING		---	
AT END OF DRILLING		---	
AFTER DRILLING		---	

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	BLOW COUNTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
					0.5	Asphalt.	
					1.0	Baserock.	Concrete
				CL		<b>Silty Clay (CL)</b> ; black; 100% medium to high plasticity fines; medium stiff; moist.	
5						@6' Brown and trace-5% fine to coarse sand.	Cement
						<b>Silty Clay (CL)</b> ; brown; 100% medium to high plasticity fines; medium stiff; moist.	Bentonite
10						@9.5' Soft.	Sand (#2/12)
						<b>Sandy Clay (CL)</b> ; brown; 50-70% medium plasticity fines; 20-30% fine to coarse sand; 5-10% fine gravel; moist.	
						<b>Silty Clay (CL)</b> ; brown and tan; 100% medium to high plasticity fines; very stiff; moist.	
						@12' Hard drilling.	Pre-pack Well Screen
					14.0	(Remove drilling rods and ream borehole with 3.25" diameter hand auger to 14'.) Bottom of hole at 14.0 feet.	

TOTAL WELL LOG SOLANO MW-1.GPJ GINT US.GDT 6/4/13

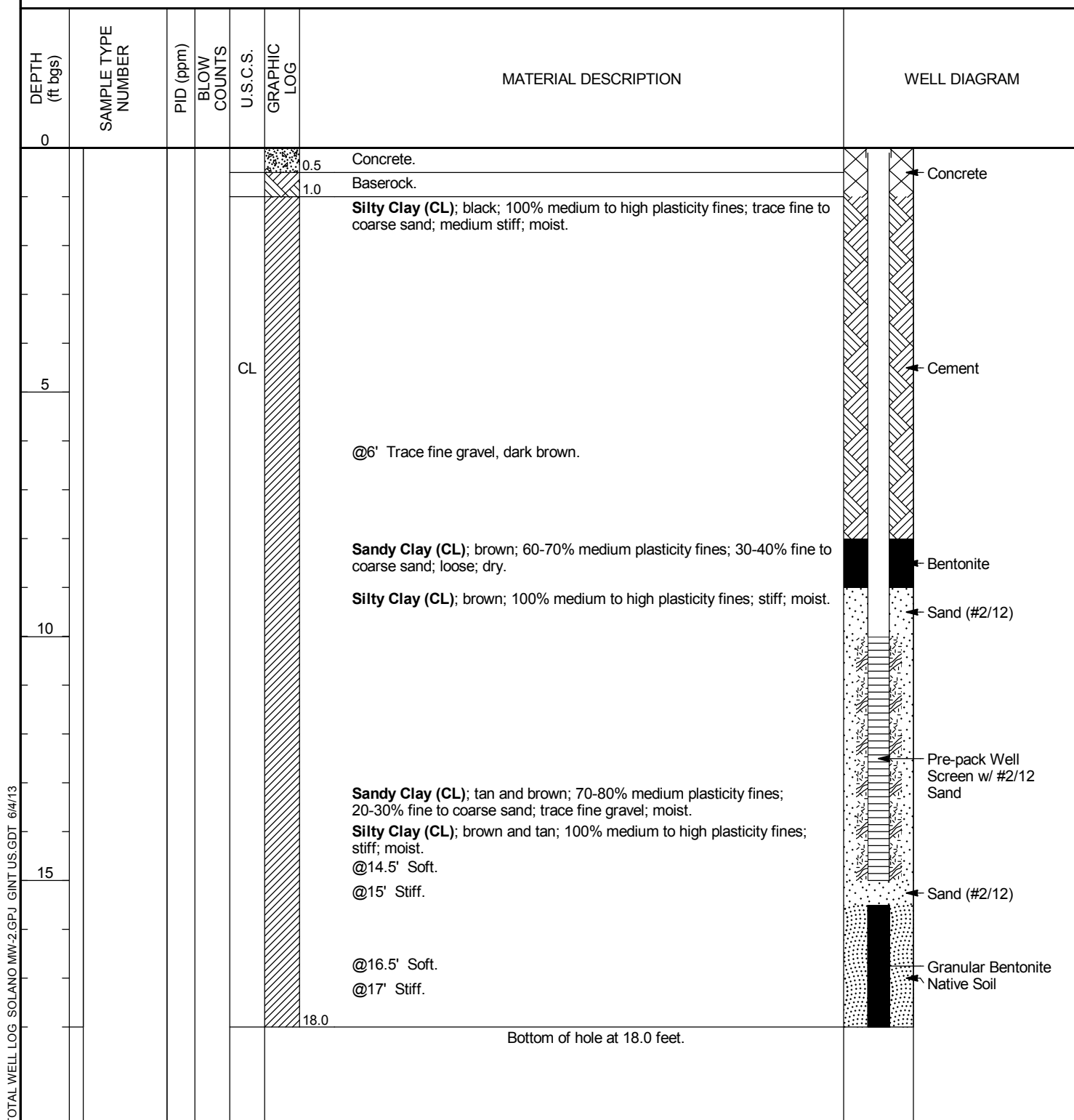


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# WELL NUMBER MW-2

PAGE 1 OF 1

CLIENT	Solano Group	PROJECT NAME	1187 Solano
PROJECT NUMBER	1435.002	PROJECT LOCATION	1187 Solano Avenue
DATE STARTED	5/17/13	COMPLETED	5/17/13
DRILLING CONTRACTOR	Cascade	GROUND ELEVATION	
DRILLING METHOD	Direct Push	HOLE SIZE	2.25"
LOGGED BY	Morgan Gillies	CHECKED BY	Bob Clark-Riddell
NOTES	Hand Auger to 5', Concrete Cored.		
GROUND WATER LEVELS:			
AT TIME OF DRILLING		---	
AT END OF DRILLING		---	
AFTER DRILLING		---	





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# WELL NUMBER MW-3

PAGE 1 OF 1

CLIENT	Solano Group	PROJECT NAME	1187 Solano
PROJECT NUMBER	1435.002	PROJECT LOCATION	1187 Solano Avenue
DATE STARTED	5/17/13	COMPLETED	5/17/13
DRILLING CONTRACTOR	Cascade	GROUND ELEVATION	
DRILLING METHOD	Direct Push	HOLE SIZE	3.25"
LOGGED BY	Morgan Gillies	CHECKED BY	Bob Clark-Riddell
NOTES	Cored asphalt; Hand Auger to 5'.		
GROUND WATER LEVELS:			
AT TIME OF DRILLING		---	
AT END OF DRILLING		---	
AFTER DRILLING		---	

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	BLOW COUNTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
						Concrete.	
						Baselock.	
						Silty Clay (CL); black; 100% medium to high plasticity fines; moist.	
				CL			
5						@4.5' Dark brown; trace gravel. Silty Clay (CL); dark brown; 95-100% medium plasticity fines; trace-5% fine to coarse sand; medium stiff; moist.	
						@8' Increasing sand 5-15%.	
10						Sandy Clay (CL); dark brown; 70-80% medium plasticity fines; 20-30% fine to coarse sand; moist.	
						@12.5' Moist to wet. Silty Clay (CL); dark brown; 100% medium to high plasticity fines; very stiff; moist.	
15						(Remove drilling rods and ream borehole with 3.25" diameter hand auger to 14'.) Bottom of hole at 15.0 feet.	

TOTAL WELL LOG SOLANO MW-3.GPJ GINT US.GDT 6/4/13





## PAGE 1 OF 1

**AFTER DRILLING** ---

3BH COPY SOLANO MW-4.GPJ GINT US.GDT 10/15/13





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BORING NUMBER **B-6**  
PAGE 1 OF 1

CLIENT _____	PROJECT NAME <u>Solano Group</u>
PROJECT NUMBER _____	PROJECT LOCATION _____
DATE STARTED _____ COMPLETED _____	GROUND ELEVATION _____ HOLE SIZE _____
DRILLING CONTRACTOR _____	GROUND WATER LEVELS: _____
DRILLING METHOD _____	AT TIME OF DRILLING _____
LOGGED BY _____ CHECKED BY _____	AT END OF DRILLING _____
NOTES _____	AFTER DRILLING _____

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0						
5						
10	<u>B-6-8</u> <del>1800</del> @1800				@7 Silty Clay (CL). Brown, 90-100% med plasticity fines; trace - 10% f sand, moist; med stiff	
	<u>B-6-12</u> <del>1810</del> @1810				@9 Sandy Clay (CL); Brown, 50-60% med plasticity fines; 40-50% f - coarse sand; moist; stiff	
15	<u>B-6-15</u> <del>1820</del> @1820				@11 Silty Clay; tan + olive; 100% med plasticity fines; very stiff	
20					B.O.H. @ 15	
20.0						



CLIENT \_\_\_\_\_

PROJECT NAME Solano Group - 1187 Solano

PROJECT NUMBER \_\_\_\_\_

PROJECT LOCATION \_\_\_\_\_

DATE STARTED \_\_\_\_\_

COMPLETED \_\_\_\_\_

GROUND ELEVATION \_\_\_\_\_

HOLE SIZE \_\_\_\_\_

DRILLING CONTRACTOR \_\_\_\_\_

GROUND WATER LEVELS:

DRILLING METHOD \_\_\_\_\_

AT TIME OF DRILLING ---

LOGGED BY \_\_\_\_\_

CHECKED BY \_\_\_\_\_

AT END OF DRILLING ---

NOTES \_\_\_\_\_

AFTER DRILLING ---

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0						
5						
10	B-7-8 <del>11772</del> @1730				@7.5 Clayey sand; tan; 50-60% f - med sand; 40-50% med plasticity fines @8.5 increasing sand (wet) + soft @9 Sandy clay; tan; 70-80% med plasticity fines 20-30% f - coarse sand; moist	
15	B-7-12 <del>11772</del> @1735				@17 Silty clay (tan); 100% med plasticity fines	
20	B-7-15 <del>11772</del> @1740					
20.0						



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BORING NUMBER B-11  
PAGE 1 OF 1

CLIENT \_\_\_\_\_ PROJECT NAME Solano Group  
PROJECT NUMBER \_\_\_\_\_ PROJECT LOCATION \_\_\_\_\_  
DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ GROUND ELEVATION \_\_\_\_\_ HOLE SIZE \_\_\_\_\_  
DRILLING CONTRACTOR \_\_\_\_\_ GROUND WATER LEVELS:  
DRILLING METHOD \_\_\_\_\_ AT TIME OF DRILLING \_\_\_\_\_  
LOGGED BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_ AT END OF DRILLING \_\_\_\_\_  
NOTES \_\_\_\_\_ AFTER DRILLING \_\_\_\_\_

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0						
5	<u>B-11-4</u> <del>11111</del> @1600				3' Brown Silty Clay (CL) 100% med plasticity fines; med stiff	
10	<u>B-11-8</u> @1610				@8 trace fine gravel; 100% fine sand  @10 Sandy Clay (CL); brown; 70-80% med plasticity fines; 20-30% f - coarse sand; trace gravel (fine) @12 olive + gray Silty Clay as @ 3 except stiff	
15	<u>B-11-15.5</u> <del>11111</del> @1640				Refusal @ 15.5'	
20						



CLIENT \_\_\_\_\_

PROJECT NAME Solano Group

PROJECT NUMBER \_\_\_\_\_

PROJECT LOCATION \_\_\_\_\_

DATE STARTED \_\_\_\_\_

COMPLETED \_\_\_\_\_

GROUND ELEVATION \_\_\_\_\_

HOLE SIZE \_\_\_\_\_

DRILLING CONTRACTOR \_\_\_\_\_

GROUND WATER LEVELS:

DRILLING METHOD \_\_\_\_\_

AT TIME OF DRILLING ---

LOGGED BY \_\_\_\_\_

CHECKED BY \_\_\_\_\_

AT END OF DRILLING ---

NOTES \_\_\_\_\_

AFTER DRILLING ---

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0						
5	B-12-4 <del>1517</del> @1500			(0.6)	3' Tan silty clay (CL) to 100% med plasticity fines; medium stiff 5' 100% fine sand; med stiff	
10	B-12-8 <del>1525</del> @1525			(0.7)	@10 Sandy Clay (CL); brown; 80-90% med plasticity fines; 10-20% f- med sand; moist; medium stiff	
15	B-12-12 <del>1520</del> @1520			(0.8)	@10.5 Clayey Sand (SC); brown 50-60% coarse sand; 40-50% med plasticity fines; moist med stiff @11 as @10' @12 as @3' @14 olive + brown	
20	B-12-16 <del>1520</del> @1520			(1.2)		



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BORING NUMBER **B-13**

PAGE 1 OF 1

CLIENT

*Solano Group*

PROJECT NAME

*Solano Group - 1187 Al Solano*

PROJECT NUMBER

PROJECT LOCATION

DATE STARTED

*1/18*

COMPLETED

GROUND ELEVATION

HOLE SIZE

DRILLING CONTRACTOR

GROUND WATER LEVELS:

DRILLING METHOD

AT TIME OF DRILLING

LOGGED BY

*MC*

CHECKED BY

AT END OF DRILLING

NOTES

AFTER DRILLING

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0						
5	<del>B-13-5</del> @1040				<i>Silty Tan clay; med stiff; very expansive clay</i>	
	<del>B-13-7</del> (1.2)				<i>@6.5 stiff</i>	
	@1100 <del>B-13-8</del>					
	@1115 (2.1)					
10					<i>@10 med stiff</i>	
					<i>@11 soft</i>	
	<del>B-13-12</del> (0.9)					
	@1125					
	<del>B-13-14</del> (1.0)				<i>@13 Clayey sand w/ gravel; tan; 40-50% ft to coarse sand; 20-30% clay; 10-20% fine gravel; moist</i>	
15	@1135				<i>@13.5 tan, soft, silty clay as @11 ft.</i>	
	<del>B-13-16</del> (0.7)				<i>@14.0 Clayey sand w/ gravel as @13 ft.</i>	
	@1145				<i>@14.5 Tan Silty Clay med stiff</i>	
					<i>- B.O.H. @16 ft.</i>	
20						



CLIENT

Solano Group

PROJECT NAME

Solano Group - 1187 Solano Ave

PROJECT NUMBER

PROJECT LOCATION

DATE STARTED

COMPLETED

GROUND ELEVATION

HOLE SIZE

DRILLING CONTRACTOR

GROUND WATER LEVELS:

DRILLING METHOD

DP - Caspale 420

AT TIME OF DRILLING

LOGGED BY

ML

CHECKED BY

AT END OF DRILLING

NOTES

Unit to concrete cured. HA to 3'

AFTER DRILLING

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0						
5	B-14-4 <del>1207</del> @1207				Tan Silty Clay (CL) red stiff expansive	
	B-14-6 <del>1205</del> @1205				Sandy tan @5.5 Silt (ML); 60-70% fines 20-30% f - coarse sand, trace - 10% fine gravel; dry; loose	
	B-14-8 <del>1210</del> @1210				Sandy @8 Silty clay - dark brown (CL); 50-60% red plasticity fines; 40-50% f - coarse sand; moist	
10	B-14-11 <del>1230</del> @1230				@10 Tan Silty Clay; 95-100% red plasticity fines; trace - 5% fine gravel; moist; red stiff	
	B-14-12 <del>1240</del> @1240				@12 Sandy Clay as @ 8 w/ trace gravel @13 increasing gravel (10%)	
15	B-14-16 <del>1250</del> @1250					
20					B.O.H. @16 ft.	



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CLIENT

Solano Group

PROJECT NAME

Solano Group

PROJECT NUMBER

PROJECT LOCATION

1187 Solano Ave, Albany

DATE STARTED

COMPLETED

GROUND ELEVATION

HOLE SIZE

DRILLING CONTRACTOR

Peracore

GROUND WATER LEVELS:

DRILLING METHOD

DP - Geoprobe 420

AT TIME OF DRILLING

LOGGED BY

ML

CHECKED BY

AT END OF DRILLING

NOTES

Concrete cored, HA to 3'

AFTER DRILLING

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0						
5	<u>B-15-5</u> <del>1415</del> @1415			(0.5)	Tan Silty Clay; med stiff	
10	<u>B-15-8</u> <del>1425</del> @1425			(0.3)	Gravelly Clay (LL) tan; 40-50% @10 <del>Sandy Clay w/ Gravel (CL)</del> med plasticity fines; 30-40% fine gravel; 10-20% ft coarse sand; moist	
15	<u>B-15-12</u> <del>1430</del> @1430			(0.7)		
20	<u>B-15-16</u> <del>1440</del> @1440			(0.8)	@15 Sand (SP) tan; 95-100% fine sand; trace - 50% med plasticity fines; moist	





## DAILY LOG

Date: <u>2/1</u>	Site Address: <u>1187 Solano</u>
Task/Purpose:	Project Name:
Log Notes By (Name):	Project Number:

### NOTES

- Auger
- Go under footing w/ Auger
- Dig parallel to footing 4' - hand dig under footing
- 2-3' under footing 2' - At least 2' under footing
- shallow soil @ 3'-4' important
- stiff soil @ 1-2' under footing
- Dig to 10' parallel to wall. Then use auger to break up wall.

915 Sample A-1-4 @ 22' from back wall, 4' below top of slab @  $\sim 35^\circ$  angle beneath footing.  
A-1 PID @ 5' = 40 ppm (no bag) Bag PID = 13-4

1015 Sample A-2-6 @ 19' from back wall, 6' below top of slab @  $\sim 35^\circ$  angle beneath footing. PID = 14

1025 Sample A-4-6 @ 4' from back wall, 6' below top of slab @  $\sim 30^\circ$  angle beneath footing. PID = 2.3  
(tos)

1020 Sample A-3-5 @ 12' from back wall, 5' below tos @  $\sim 35^\circ$  angle beneath footing. PID = 5.4

1025 Sample A-3-6 @ 12' from back wall, 6' below tos @  $\sim 30^\circ$  angle beneath footing. PID = 5.3

1040 Sample A-5-4 @ 33' from back wall, 4' below tos @  $\sim 35^\circ$  angle beneath footing. PID = 32.6

1045 Sample A-5-6 @ 33' from back wall, 6' below tos @  $\sim 35^\circ$  angle beneath footing. PID = 34

115 Sample A-6-6 @ 24' from back wall, 6' below tos @  $\sim 20^\circ$  angle beneath footing @  $30^\circ$  angle from N towards E PID = 118

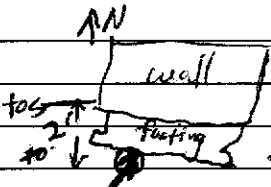
1120 Sample A-6-10 @ 20' from back wall, 10' below tos @  $\sim 20^\circ$  angle beneath footing @  $30^\circ$  angle from N towards E PID = 161



## DAILY LOG

Date: 2/1	Site Address: 1187 Solano Ave
Task/Purpose:	Project Name:
Log Notes By (Name):	Project Number:

### NOTES

A-6  Done in pot hole excavation  
tos  
20° down angle

1150 - A-5-8 @ 29' from backwall, 8 below tos  
@ ~45° angle beneath footing @ 30° angle from N towards E  
PID=299

1240 - A-5-13 @ 26' from backwall, ACTUAL MEAS  
7' below tos @ 30° angle from N towards E,  
PID=111

LUNCH

1350 - A-2-11 @ 14' from backwall, 11 below tos  
@ 30° angle beneath footing @ 30° angle from N to E  
PID=43

1410 - A-3-11 @ 7' from backwall, 11 below tos  
@ 30° angle beneath footing @ 30° angle from N to E.  
PID=13.6



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# BORING NUMBER

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B-19

CLIENT

PROJECT NAME

Solano Group

PROJECT NUMBER

PROJECT LOCATION

DATE STARTED

COMPLETED

GROUND ELEVATION

HOLE SIZE

DRILLING CONTRACTOR

GROUND WATER LEVELS:

DRILLING METHOD

AT TIME OF DRILLING

LOGGED BY

CHECKED BY

AT END OF DRILLING

NOTES

AFTER DRILLING

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0						
	B-18-2 <del>1115</del> @1115				were borehole (1) Silty Clay (CL); dark brown; 100% med plasticity fines; moist (2) Black	
5	B-18-5 <del>1110</del> @1110					
10					(9.5) Silty Clay (CL); brown; 80-90% med plasticity fines; 10-20% fine - coarse sand; trace fine gravel; moist (10) Silty Clay as @1, but with trace fine gravel (11) Silty Clay (CL); brown; 80-70% med plasticity fines; 30-40% fine to coarse sand; moist (11.5) Silty Clay - BOH (12) Install PVC w/ 5' screen, remove tooling + await water infiltration	
15						
20						



CLIENT

Solano Group

PROJECT NAME

PROJECT NUMBER

PROJECT LOCATION

DATE STARTED

COMPLETED

GROUND ELEVATION

HOLE SIZE 2.25

DRILLING CONTRACTOR

GROUND WATER LEVELS:

DRILLING METHOD

DR

AT TIME OF DRILLING

LOGGED BY

ML

CHECKED BY

AT END OF DRILLING

NOTES

AFTER DRILLING

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0					concrete basement	
	B-19-2 @1045				(1) Silty Clay (CL); dark brown; 95-100% med plasticity fines; trace - 5% fine sand; med stiff moist	
5	B-19-5 @1046					
					(7) Sandy Clay (CL); dark brown; 70-80% med plasticity fines; 20-30% fine to coarse sand; moist	
					(7.5) decreasing sand	
10					(8) Clay as @ 1 ft	
					(10.5) Sandy Clay as @ 7 ft	
					(11) Silty Clay as @ 1 ft.	
					Bottom (12) Push to 12 ft, ream to 12 ft install PVC w/ 5' screen section, + await water infiltration → remove tooling	
15						
20						



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# BORING NUMBER

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B-21

CLIENT

Solano Group

PROJECT NAME

PROJECT NUMBER

PROJECT LOCATION

DATE STARTED

COMPLETED

GROUND ELEVATION

HOLE SIZE 3.25

DRILLING CONTRACTOR

Cascade

GROUND WATER LEVELS:

DRILLING METHOD

Hand Auger

AT TIME OF DRILLING - 10

LOGGED BY

ML

CHECKED BY

AT END OF DRILLING - 8

NOTES

Concrete cored.

AFTER DRILLING

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0					Concrete	
0.5					Silty Clay (CL); black; 100% med-high plasticity fines; moist face coarse sand	
4					Light Brown	
5	B-21-5 @ 445			0.6	Increasing coarse sand	
9.5				0.9	Sandy Clay (CL); Light brown; 80-90% med plasticity fines; 10-20% coarse sand	
10					9.5 Sand (SP); Tan; 80-90% fine med sand.	
					(10) wet 10-20% med plasticity fines; moist to wet	
					Install 3/4" diameter PVC w/ filter sock and collect sample w/ new polyethylene Bottle @ 10 ft. tubing + <del>check valve</del> + per pump @ 1015	
15						
20						
20.0						



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**B-22**

CLIENT Solaro Group

PROJECT NAME \_\_\_\_\_

PROJECT NUMBER \_\_\_\_\_

PROJECT LOCATION \_\_\_\_\_

DATE STARTED 4/25 COMPLETED \_\_\_\_\_

GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 3.25

DRILLING CONTRACTOR Cascade

GROUND WATER LEVELS:

DRILLING METHOD Hand Auger

AT TIME OF DRILLING -9.5

LOGGED BY ML CHECKED BY \_\_\_\_\_

AT END OF DRILLING -8

NOTES concrete cored

AFTER DRILLING \_\_\_\_\_

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0					concrete	
1.0					<del>60% fine</del> Silty Clay (CL); black + dark brown; 100% med-high plasticity fines; moist	
2.5					Gravel to 2"	
					Coarse (4) increasing F-coarse sand	
5	B-22-5 <del>1045</del> 1045			1.2	(4) brown (5) Silty Clay (CL); brown; 85-95% med-high plasticity fines; 5-15% F-coarse sand	
					(7) increasing sand	
10					(9) Sandy Clay (CL); brown; 70-80% med plasticity fines; 20-30% F-coarse sand; wet	
					Bo. Hw 10 ft. Install 3/4" diameter PVC w/ filter sock + collect g/w sample w/ new polyethylene tubing + clean check valve @ 11/30	
15						
20					Hit large gravel @ 2.5-3 Move over 3' + concrete core	
20.0						



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**B-23**

CLIENT Solano Group

PROJECT NAME \_\_\_\_\_

PROJECT NUMBER \_\_\_\_\_

PROJECT LOCATION \_\_\_\_\_

DATE STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_

GROUND ELEVATION \_\_\_\_\_ HOLE SIZE \_\_\_\_\_

DRILLING CONTRACTOR \_\_\_\_\_

GROUND WATER LEVELS:

DRILLING METHOD \_\_\_\_\_

AT TIME OF DRILLING \_\_\_\_\_

LOGGED BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_

AT END OF DRILLING \_\_\_\_\_

NOTES \_\_\_\_\_

AFTER DRILLING \_\_\_\_\_

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0					Concrete	
					(0.5) Silty Clay (CL); black; 1000 <sup>+</sup> med plasticity fines; moist	
					(3) brown	
5	B-23-4.5 <del>WATER</del> @1630					
10	B-23-8.5 <del>WATER</del> @1645					
					Sandy Clay (CL); brown; 70-80 <sup>+</sup> med plasticity fines	
					B.O.H. @ 12	
15						
20						





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B-24

CLIENT

Solano Group

PROJECT NAME

PROJECT NUMBER

PROJECT LOCATION

1187 Solano Ave.

DATE STARTED

4/25

COMPLETED

GROUND ELEVATION

HOLE SIZE 2.125

DRILLING CONTRACTOR

Cascade

GROUND WATER LEVELS:

DRILLING METHOD

Hand Auger

AT TIME OF DRILLING

-10

LOGGED BY

PL

CHECKED BY

AT END OF DRILLING

NOTES

Hole saw thru wood, concrete drilled

AFTER DRILLING

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0					went thru concrete	
5	B-24-4.5 11/15/11 @ 1415				(1) Silty Clay (CL); black; 100% med-high plasticity fines; moist (2) brown	
10					(9) Sandy Clay (CL); brown; 80-90% med plasticity fines; 10-20% f-coarse sand; moist (10) wet	
15					(11) Silty Clay (CL); brown; 90-100% med plasticity fines; trace - 10% f-coarse sand	
20					<del>B.O.H. 12</del> Sandy Clay (CL) brown; 70-80% (12) med plasticity fines; 20-30% f-coarse sand; wet	
20.0						



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B-30

CLIENT Solano Group

PROJECT NAME

PROJECT NUMBER

PROJECT LOCATION 1187 Solano

DATE STARTED 4/25

COMPLETED

GROUND ELEVATION

HOLE SIZE 2.125

DRILLING CONTRACTOR Cascade

GROUND WATER LEVELS:

DRILLING METHOD Hand Auger

AT TIME OF DRILLING -9.5

LOGGED BY MB

CHECKED BY BCR

AT END OF DRILLING -9

NOTES

Concrete Cored

AFTER DRILLING

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0					concrete	
0.5					Silty Clay (CL); black; 100% med-high plasticity fines; moist	
5	<u>B-30-5</u> <u>noted</u> <u>@1215</u>			(1.7)	(4) Brown (6) trace - 50% f - coarse sand	
10					(8.5) Sandy Clay (CL); brown; 80-90% med plasticity fines 10-20% f - coarse sand; moist (9.5) Sandy Gravel (GM); brown; 60-70% fine gravel, 10-20% f - coarse sand; 10-20% med plasticity fines; wet BOH @ 10' Install 3/4" PVC diameter PVC w/ filter sock + collect BW sample w/ new polyethylene tubing + check valve @ 1255'	
15						
20						



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# BORING NUMBER

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DB-7

CLIENT Solano Group

PROJECT NAME 1187 Solano Ave.

PROJECT NUMBER 1435-002

PROJECT LOCATION 1187 Solano Ave.

DATE STARTED 3/20 COMPLETED \_\_\_\_\_

GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 2.25

DRILLING CONTRACTOR Penecore

GROUND WATER LEVELS:

DRILLING METHOD DP - Dual Wall

AT TIME OF DRILLING \_\_\_\_\_

LOGGED BY ML CHECKED BY \_\_\_\_\_

AT END OF DRILLING \_\_\_\_\_

NOTES \_\_\_\_\_

AFTER DRILLING 2 hrs - 32.0

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0					Concrete basement	
5					(1) Silty Clay (CL), brown; 90-100% med plasticity fines; trace - 100% fine sand; stiff, moist	
10					(8.5) Clayey Gravel (GC); brown; 60-70% fine gravel to 3/4"; 30-40% med plasticity fines; moist (9) Silty Clay as @ 1 ft.	
15					(10) Sandy Clay (CL); tan; 70-80% med plasticity fines; 20-30% fine - coarse sand; trace gravel; moist to wet (11) Silty Clay as @ 1 ft but tan and soft (13) Clayey Gravel (GC); brown; 60-70% fine gravel to 3/4"; 20-30% med plasticity fines; 10-20% fine- coarse sand; dry (15) Silty Clay (CL) <del>as @ 1 ft</del> (CL); 100% med plasticity fines; stiff; moist	
20					20.0	



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# BORING NUMBER

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DB-1

CLIENT <u>Selene Group</u>	PROJECT NAME _____
PROJECT NUMBER _____	PROJECT LOCATION _____
DATE STARTED _____ COMPLETED _____	GROUND ELEVATION _____ HOLE SIZE _____
DRILLING CONTRACTOR _____	GROUND WATER LEVELS:
DRILLING METHOD <u>DP</u>	AT TIME OF DRILLING _____
LOGGED BY <u>ME</u> CHECKED BY _____	AT END OF DRILLING _____
NOTES _____	AFTER DRILLING _____

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
2.0					(20) tan light brown	
2.5					(26) tan light tan	
3.0					(30) Lt. Brown Silt (ML); reddish brown; 95-100% low plasticity fines; trace - 5% fine gravel; dry	
					(31.5) Silty Clay (CL) brown; 100% red plasticity fines; very stiff; moist	
3.5					(33) tan (35) brown	
4.0					install PVC w/ 10' screen push to 40ft, pull back outer casing to 30' and leave open to await water infiltration	
					20.0	

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WELL NUMBER B-31

Boring

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CLIENT SOLANO GROUP

PROJECT NAME \_\_\_\_\_

PROJECT NUMBER \_\_\_\_\_

PROJECT LOCATION \_\_\_\_\_

DATE STARTED 7/2/13 COMPLETED \_\_\_\_\_GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 3.25"DRILLING CONTRACTOR CONFLUENCE

GROUND WATER LEVELS:

DRILLING METHOD \_\_\_\_\_

AT TIME OF DRILLING \_\_\_\_\_

LOGGED BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_

AT END OF DRILLING \_\_\_\_\_

NOTES \_\_\_\_\_

AFTER DRILLING \_\_\_\_\_

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	BLOW COUNTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						CONCRETE	
	<u>B-31-1</u> 1100	1				SILTY (CLAY) (CL): DARK GREY, 85-90% medium plast fines and 10-15% fine sand	
		1				@ 2' DRK BROWN & very stiff	
	<u>B-31-3</u> 1108	0.8				@ 3' increasing sands & lt brown	
		0.7				(4) SANDY CLAY (CL), LT BROWN; 40-75% medium plast fines and 25-30% fine sand	
5	<u>B-31-5</u> 1112	0					
10							
15							
20							

TOTAL WELL LOG BLANK (2) GPJ GINT US GDT 8/1/08

20.0

3.5 change



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WELL NUMBER B-32  
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CLIENT SOLANO GROUP PROJECT NAME \_\_\_\_\_  
PROJECT NUMBER \_\_\_\_\_ PROJECT LOCATION \_\_\_\_\_  
DATE STARTED 7/2/13 COMPLETED \_\_\_\_\_ GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 3.25  
DRILLING CONTRACTOR CONFLUENCE GROUND WATER LEVELS: \_\_\_\_\_  
DRILLING METHOD HAND AUGER AT TIME OF DRILLING \_\_\_\_\_  
LOGGED BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_ AT END OF DRILLING \_\_\_\_\_  
NOTES \_\_\_\_\_ AFTER DRILLING \_\_\_\_\_

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	BLOW COUNTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
	<u>B-32-1</u> <u>1220</u>	<u>8.9</u> <u>1.2</u>				(CL) SANDY CLAY (DARK GREY; 85-90% med plast fines and 10-15% fine sand	
	<u>B-32-3</u> <u>1228</u>	<u>1.3</u> <u>1.3</u>				(2) SILTY CLAY (CL); DARK BROWN; 90-95% med plast fines and 5-10% fine sand; stiff (3) lt brown	
5	<u>B-32-5</u> <u>1236</u>	<u>1.3</u> <u>1.3</u>				(4) SANDY CLAY (CL); LT BROWN; <sup>75</sup> <del>70</del> - <sup>80</sup> <del>75</del> %, med plast fines and 20- <sup>25</sup> <del>30</del> % fine sand	
10							
15							
20							

TOTAL WELL LOG BLANK (2) GPJ GINT US GDT 8/108



CLIENT SOLANO GROUP PROJECT NAME \_\_\_\_\_  
PROJECT NUMBER \_\_\_\_\_ PROJECT LOCATION \_\_\_\_\_  
DATE STARTED 7/2/13 COMPLETED \_\_\_\_\_ GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 3.25"  
DRILLING CONTRACTOR CONFLUENCE GROUND WATER LEVELS:  
DRILLING METHOD HAND AUGER AT TIME OF DRILLING \_\_\_\_\_  
LOGGED BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_ AT END OF DRILLING \_\_\_\_\_  
NOTES \_\_\_\_\_ AFTER DRILLING \_\_\_\_\_

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	BLOW COUNTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
	<u>B-33-1</u> <u>1255</u>	<u>10.9</u> <u>1.5</u>				SANDY CLAY (CL); DARK GREY; 80-85% med plast fines and 15-20% fine sand; stiff	
	<u>B-33-3</u> <u>1302</u>	<u>0.2</u> <u>0.1</u>				(3) LT BROWN & increasing fine sands (4) SANDY CLAY (CL); LT BROWN; 75-80% low plast fines and 20-25% fine sand	
5	<u>B-33-5</u> <u>1311</u>	<u>0.2</u>					
10							
15							
20							





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WELL NUMBER **B-34**  
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CLIENT SOLAND GROUP PROJECT NAME \_\_\_\_\_  
PROJECT NUMBER \_\_\_\_\_ PROJECT LOCATION \_\_\_\_\_  
DATE STARTED 7/2/13 COMPLETED \_\_\_\_\_ GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 2.25 3.25"  
DRILLING CONTRACTOR CONFLUENCE GROUND WATER LEVELS: \_\_\_\_\_  
DRILLING METHOD HAND AUGER AT TIME OF DRILLING \_\_\_\_\_  
LOGGED BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_ AT END OF DRILLING \_\_\_\_\_  
NOTES \_\_\_\_\_ AFTER DRILLING \_\_\_\_\_

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	BLOW COUNTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
	B-34-1 1000					1. CONCRETE SANDY CLAY (CL); DARK BROWN, 80-85% medium plast fines and 15% 20 fine sand	
	B-34-3 1010		1.4			2. SILTY CLAY (CL); DARK BROWN, 90-95% med plast fines and 5-10% fine sand; very stiff @ 3' medium st. ff	
5	B-34-5 1021					@ 4' LT BROWN @ 5' very st. ff	
10							
15							
20							

TOTAL WELL LOG BLANK (2) GPJ GINT US GDT 8/1/08



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WELL NUMBER A-9  
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CLIENT SOLANO GROUP PROJECT NAME SOLANO  
PROJECT NUMBER 1485.002 PROJECT LOCATION \_\_\_\_\_  
DATE STARTED 7/2/13 COMPLETED \_\_\_\_\_ GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 6"  
DRILLING CONTRACTOR S.T. GROUND WATER LEVELS:  
DRILLING METHOD HAND AUGER AT TIME OF DRILLING \_\_\_\_\_  
LOGGED BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_ AT END OF DRILLING \_\_\_\_\_  
NOTES 30° ANGLE AFTER DRILLING \_\_\_\_\_

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	BLOW COUNTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
		0.6				25 SILTY CLAY (CL); DARK BROWN; 95-100% MEDIUM PLASTICITY FINES AND TRACE-5% FINE SAND	
	A-9-3 0937	0.6				@4.5' INCREASING FINE SANDS	
5		0.2				(5) SANDY CLAY (CL); LT. BROWN; 65-70% MEDIUM PLASTICITY FINES AND 30-35% FINE TO MED SAND	
	A-9-6 1007	0.2				@6' DARK BROWN	
		0.2				(7) SANDY CLAY (CL); LT. BROWN; 60-65% MED PLASTICITY FINES AND 35-40% FINE SAND	
10		0.4					
	A-9-9	0.4					
		0.3					
	A-9-12	1.7				12 CLAYEY SAND (SC); LT. BROWN; 55-60% FINE TO MED SAND, 35-40% LOW PLASTICITY FINES, AND 5-10% FINE GRAVEL	
		0.6				@12.5' REFUSAL (POSSIBLY CONCRETE)	
20							

TOTAL WELL LOG BLANK (2) GPJ GINT US.GDT 8/1/08

CLIENT SOLANO GROUP

PROJECT NAME \_\_\_\_\_

PROJECT NUMBER \_\_\_\_\_

PROJECT LOCATION \_\_\_\_\_

DATE STARTED 7/2/13 COMPLETED \_\_\_\_\_GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 6"DRILLING CONTRACTOR S.T

GROUND WATER LEVELS:

DRILLING METHOD HAND AUGER

AT TIME OF DRILLING \_\_\_\_\_

LOGGED BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_

AT END OF DRILLING \_\_\_\_\_

NOTES 10° Angle

AFTER DRILLING \_\_\_\_\_

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	BLOW COUNTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
	<u>A-10-3</u> <u>1045</u>	<u>1.0</u>				SANDY CLAY (CL) DARK GREY; 80-85% med plast fines, 15-20% fine sand and trace - 5% fine gravel	
5		<u>0.5</u>					
	<u>A-10-4.5</u> <u>1127</u>	<u>0.5</u>				SANDY CLAY (CL); DARK BROWN; 70-75% low plast fines, 25-30% fine to medium sand	
		<u>0.6</u>				@ 6.5' trace fine gravel	
	<u>A-10-9</u> <u>1250</u>	<u>0.7</u>				@ 9' increasing fine sands & LT BROWN	
10		<u>1.1</u>				10.5 SANDY CLAY (CL); LT BROWN; 60-65% low plast fines and 35-40% fine sand	
	<u>A-10-12</u> <u>1352</u>	<u>1.6</u>				12 same as at 1 but lt brown & no gravel	
	<u>A-10-13.5</u> <u>1410</u>	<u>1.5</u>				13.5 same as a 5' but lt brown	
15							
20							



CLIENT SOLANO Group PROJECT NAME \_\_\_\_\_  
PROJECT NUMBER \_\_\_\_\_ PROJECT LOCATION \_\_\_\_\_  
DATE STARTED 7/2/13 COMPLETED 7/3/13 GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 6"  
DRILLING CONTRACTOR S.T. GROUND WATER LEVELS: \_\_\_\_\_  
DRILLING METHOD HAND AUGER AT TIME OF DRILLING \_\_\_\_\_  
LOGGED BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_ AT END OF DRILLING \_\_\_\_\_  
NOTES 45° Angle AFTER DRILLING \_\_\_\_\_

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	BLOW COUNTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
		1.7				(2) SILTY CLAY (CL); DARK BROWN; 85-90% low plast fines and 10-15% fine sand	
	A-11-3 1345	1.5				(3) SANDY CLAY (CL); <del>LT</del> BROWN; <sup>80-85</sup> <del>75-80</del> % low plast fines and 15-20% fine sand	
5	A-11-5 1455	0.0					
	A-11-8 <del>1411</del>	0.2					
10							
15							
20							

## **APPENDIX E**

### Field Forms for Subslab Gas Sampling

## Soil Vapor Probe Purging/Sampling Log

Project Name: Solano Group  
Job Number: 14351002  
Date: 1/16/2013

**Sampler(s):** Scott Polston

Sample ID and Time: SS-PO-1-1530

Notes: Held 110" H<sub>2</sub>O Vne For Swn.  
(Breakroom)

Sub-Slab Probe ID: SS-PO-1  
Suma Can Serial #: 6169  
Flow Controller #: 845  
Initial Vacuum: 3.0"  
Final Vacuum: 4.5"

Initial Vacuum: 30"

Final Vacuum: 4.5"

### Specifications

Tubing length: \_\_\_\_\_ cm  
Tubing inner diameter: \_\_\_\_\_ cm  
Boring diameter: \_\_\_\_\_ cm  
Sandpack height: \_\_\_\_\_ cm  
Probe length: \_\_\_\_\_ cm  
Probe diameter: \_\_\_\_\_ cm  
Summa flow rate: 150 mL/min  
Purge flow rate: 25 mL/min

### Purge Volume Calculation

Purge volume = tubing + sandpack

$$\text{Tubing} = \pi * (\text{inner diameter}/2)^2 * \text{length}$$
$$= \quad \text{cm}^3$$
$$\text{Sandpack} = \pi * (\text{boring diameter}/2)^2 * \text{sandpack height} * \text{porosity}$$
$$= \quad \text{cm}^3$$

Single purge volume: 2.4 cm<sup>3</sup>

Start Time: 1524

Total purge volumes extracted: 3 10

Total Purge Time: 1 min

$\pi = 3.1416$       1 inch = 2.54 cm

Est. max. porosity = 0.375

$$1 \text{ ml} = 1 \text{ cm}^3$$

Time	He Delivery Pressure (psi)	He in Shroud (% or ppm)	Purge Time (min./sec.)	He in Purge Sample (% or ppm)	VOCs (ppmv)	O <sub>2</sub> (%)	CO <sub>2</sub> (%)	CH <sub>4</sub> (%)	Comments
1526	N/A	30%	0	N/A	N/A				
1527	1	29.9%	1	0%	1.0 ppm				
1531		29.8							
1532		29.8							
1534		29.5							
1536		29.83							
1538		28.9							
1539		28.6		0%	0.7 ppm				



## Soil Vapor Probe Purging/Sampling Log

Project Name: **Solano Group**

Job Number: 1435.002

Date: 1/16/2013

Sampler(s): **Scott Polston**

Sample ID and Time: SS-P0-2 1601

Notes: Held 150" Vac

## 11 Po Boxes

Sub-Slab Probe ID: SS-P0-2

Suma Can Serial #: A7509

Flow Controller #: 664

Initial Vacuum: 30

Final Vacuum: 4

### Specifications

Tubing length: \_\_\_\_\_ cm

Tubing inner diameter: \_\_\_\_\_ cm

Boring diameter: \_\_\_\_\_ cm

Sandpack height: \_\_\_\_\_ cm

Probe length: \_\_\_\_\_ cm

Probe diameter: \_\_\_\_\_ cm

Summa flow rate: 150 mL/min

Purge flow rate: 25 mL/min

### Purge Volume Calculation

Purge volume = tubing + sandpack

$$\text{Tubing} = \text{Pi} * (\text{inner diameter}/2)^2 * \text{length}$$
$$= \quad \text{cm}^3$$
$$\text{Sandpack} = \pi * (\text{boring diameter}/2)^2 * \text{sandpack height} * \text{porosity}$$
$$= \quad \text{cm}^3$$

Single purge volume: 119 cm<sup>3</sup>

Start Time: 1600

Total purge volumes extracted: 13

Total Purge Time:           

$$P_i = 3.1416$$

1 inch = 2.54 cm

Est. max. porosity = 0.375

$$1 \text{ ml} = 1 \text{ cm}^3$$

Time	He Delivery Pressure (psi)	He in Shroud (% or ppm)	Purge Time (min./sec.)	He in Purge Sample (% or ppm)	VOCs (ppmv)	O <sub>2</sub> (%)	CO <sub>2</sub> (%)	CH <sub>4</sub> (%)	Comments
1559	N/A	30%	0	N/A	N/A				
1600		29.9	1	0%	15				
1601		29.7							
1603		29.6							
1605		29.3							
1607		28.6							
1608		28.3							
1609		28.0		0%	17 ppm				



## Soil Vapor Probe Purging/Sampling Log

Project Name: **Solano Group**

Job Number: 1435,002

Date: ~~1/16/2013~~ 1/17/13

Sampler(s): **Scott Polston**, *morgan*

Sample ID and Time: 55-3-1006

Notes: Hele 70<sup>th</sup> H<sub>2</sub>O

Sub-Slab Probe ID: 55-3

Suma Can Serial #: 6302

Flow Controller #: 606

Initial Vacuum: -30

Final Vacuum: -5

### Specifications

Tubing length: \_\_\_\_\_ cm

Tubing inner diameter: \_\_\_\_\_ cm

Boring diameter: \_\_\_\_\_ cm

Sandpack height: \_\_\_\_\_ cm

Probe length: \_\_\_\_\_ cm

Probe diameter: \_\_\_\_\_ cm

Summa flow rate: 150 mL/min

Purge flow rate: 25 mL/min

### Purge Volume Calculation

Purge volume = tubing + sandpack

$$\text{Tubing} = \pi * (\text{inner diameter}/2)^2 * \text{length}$$
$$= \quad \text{cm}^3$$
$$\text{Sandpack} = \pi * (\text{boring diameter}/2)^2 * \text{sandpack height} * \text{porosity}$$
$$= \text{cm}^3$$

Single purge volume: 101 cm<sup>3</sup>

Start Time: 1003

Total purge volumes extracted: 3 14

Total Purge Time: 1 min

$P_i = 3.1416$

1 inch = 2.54 cm

Est. max. porosity = 0.375

$$1 \text{ ml} = 1 \text{ cm}^3$$
[illegible]



## Soil Vapor Probe Purging/Sampling Log

Project Name: **Solano Group**

Job Number: 1435.002

Date: ~~1/16/2013~~ 1/17/13

Sampler(s): Scott Polston ; monk-an

Sample ID and Time: 55-4' 1034

Notes: Heli 150" at

Sub-Slab Probe ID: SS-4

Suma Can Serial #: 7519

Flow Controller #: 680

Initial Vacuum: 29

Final Vacuum:  $-3'$

Notes: Held 150" at VAC for 3 min

### Specifications

Tubing length: \_\_\_\_\_ cm

Tubing inner diameter: \_\_\_\_\_ cm

Boring diameter: \_\_\_\_\_ cm

Sandpack height: \_\_\_\_\_ cm

Probe length: \_\_\_\_\_ cm

Probe diameter: \_\_\_\_\_ cm

Summa flow rate: 150 mL/min

Purge flow rate: 25 mL/min

### Purge Volume Calculation

Purge volume = tubing + sandpack

$$\text{Tubing} = \pi * (\text{inner diameter}/2)^2 * \text{length}$$

=                      cm<sup>3</sup>

$$\text{Sandpack} = \text{Pi} * (\text{boring diameter}/2)^2 * \text{sandpack height} * \text{porosity}$$
$$= \quad \text{cm}^3$$

Single purge volume: 1.7 cm<sup>3</sup>

Start Time: 1028

Total purge volumes extracted: 214

Total Purge Time: 1 min

$\pi = 3.1416$       1 inch = 2.54 cm

Est. max. porosity = 0.375

$$1 \text{ ml} = 1 \text{ cm}^3$$
[illegible]



## Soil Vapor Probe Purging/Sampling Log

Project Name: **Solano Group**

Job Number: 1435.002

Date: ~~1/16/2013~~ 1/17/2013

Sampler(s): **Scott Polston** , *more later*

Sample ID and Time: SS-5 - 1105

Notes: Itcd 130" of

Sub-Slab Probe ID: SS-5

Suma Can Serial #: 0164

Flow Controller #: 763

Initial Vacuum: -30

Final Vacuum: -4

## Specifications

Tubing length: \_\_\_\_\_ cm

Tubing inner diameter: \_\_\_\_\_ cm

Boring diameter: \_\_\_\_\_ cm

Sandpack height: \_\_\_\_\_ cm

Probe length: \_\_\_\_\_ cm

Probe diameter: \_\_\_\_\_ cm

Summa flow rate: 150 mL/min

Purge flow rate: 25 mL/min

### Purge Volume Calculation

Purge volume = tubing + sandpack

$$\text{Tubing} = \text{Pi} * (\text{inner diameter}/2)^2 * \text{length}$$
$$= \quad \text{cm}^3$$
$$\text{Sandpack} = \text{Pi} * (\text{boring diameter}/2)^2 * \text{sandpack height} * \text{porosity}$$
$$= \text{cm}^3$$

Single purge volume: 1.7 cm<sup>3</sup>      Start Time: 1100

Total purge volumes extracted: 3 N/A 14 Total Purge Time: 1

$P_i = 3.1416$

1 inch = 2.54 cm

Est. max. porosity = 0.375

$$1 \text{ ml} = 1 \text{ cm}^3$$
[illegible]



## Soil Vapor Probe Purging/Sampling Log

Project Name: **Solano Group**

Job Number: 14351002

Date: 1/16/2013 1/17/13

Sampler(s): **Scott Polston** *mexican*

Sample ID and Time: 55-6 -1136

Notes: 1+cond 75" at

Sub-Slab Probe ID: SS-6

Suma Can Serial #: 6423

Flow Controller #: 678

Initial Vacuum: -30

Final Vacuum: -4

## Specifications

Tubing length: \_\_\_\_\_ cm

Tubing inner diameter: \_\_\_\_\_ cm

Boring diameter: \_\_\_\_\_ cm

Sandpack height: \_\_\_\_\_ cm

Probe length: \_\_\_\_\_ cm

Probe diameter: \_\_\_\_\_ cm

Summa flow rate: 150 mL/min

Purge flow rate: 25 mL/min

### Purge Volume Calculation

Purge volume = tubing + sandpack

$$\text{Tubing} = \pi * (\text{inner diameter}/2)^2 * \text{length}$$
$$= \quad \text{cm}^3$$
$$\text{Sandpack} = \text{Pi} * (\text{boring diameter}/2)^2 * \text{sandpack height} * \text{porosity}$$
$$= \quad \text{cm}^3$$

Single purge volume: 1.7 cm<sup>3</sup> Start Time: 1131

Total purge volumes extracted: 214 Total Purge Time: 1

$$P_i = 3.1416$$

1 inch = 2.54 cm

Est. max. porosity = 0.375

$$1 \text{ ml} = 1 \text{ cm}^3$$
[illegible]



## Soil Vapor Probe Purging/Sampling Log

Project Name: **Solano Group**

Job Number: 1435.002

Date: ~~1/10/2013~~ , 1/17/13

Sampler(s): **Scott Polston** *Morgan*

Sample ID and Time: SS-7-1254

Notes: HCD 105" of

Sub-Slab Probe ID: 55-7

Suma Can Serial #: 7526

Flow Controller #: 1226

Initial Vacuum: -30

Final Vacuum: -4

### Specifications

Tubing length: \_\_\_\_\_ cm

Tubing inner diameter: \_\_\_\_\_ cm

Boring diameter: \_\_\_\_\_ cm

Sandpack height: \_\_\_\_\_ cm

Probe length: \_\_\_\_\_ cm

Probe diameter: \_\_\_\_\_ cm

Summa flow rate: 150 mL/min

Purge flow rate: 25 mL/min

### Purge Volume Calculation

Purge volume = tubing + sandpack

$$\text{Tubing} = \pi * (\text{inner diameter}/2)^2 * \text{length}$$
$$= \quad \text{cm}^3$$
$$\text{Sandpack} = \pi * (\text{boring diameter}/2)^2 * \text{sandpack height} * \text{porosity}$$
$$= \quad \text{cm}^3$$

Single purge volume: 1.7 cm<sup>3</sup>

Start Time: 1251

Total purge volumes extracted: 214

Total Purge Time: 1 min

$\pi = 3.1416$       1 inch = 2.54 cm

Est. max. porosity = 0.375

1 ml = 1 cm<sup>3</sup>

[illegible]





## DAILY LOG

Date: 7/3/13	Site Address: 1187 Solano Ave.
Task/Purpose: Subslab Gas Sampling	Project Name: Solano Group
Log Notes By (Name): ML	Project Number:

### NOTES

purge volume calc - tubing length = 6'  
 $\pi (0.085)(0.085) \times 6' = 0.84 \text{ in}^3 = 13.4 \text{ mL} \times 3 \text{ volumes} = 40.2 \text{ mL}$   
 $1 \text{ in}^3 = 16.4 \text{ mL}$   $1.6 \text{ in}^3 \rightarrow 27 \text{ mL} \times 3 \text{ volumes} = 81 \text{ mL}$   
void space calc -  $\pi (.25)(.25) 2 = 0.4 \text{ in}^3 \rightarrow 6.4 \text{ mL} \times 3 \text{ volumes} = 18$   
735 SS-20 Leak Check Shut in Test @ 61" H<sub>2</sub>O 99 mL purge  
742 Shut in Test OK still @ 61" H<sub>2</sub>O  
Connect to probe  
815 Introduce He @ 38.0°  
824 He = 25.4°  
825 Purge ~ 100 mL, Check bag 0% He  
833 He = 22.5°  
834 Summa vacuum = 28.5, Start sample, Summa #6409  
835 He = 21.1°, Introduce more Man 316-817  
836 He = 25.4°  
837 He = 24.7°  
838 He = 23.8°  
839 He = 23.2°, Stop Sample @ 4.5" Hg  
Post Sample He check = 0%, PID screen = 0.6 ppm  
SS-19 Shut in Test Summa #6203, Man. 316-722  
907 - 52" H<sub>2</sub>O  
932 - Shut in Test OK  
He = 25.2°  
937 - Purge ~ 100 mL, Check bag 0% He  
938 He = 28.5°  
940 Summa vacuum = 28.2" Hg, Start Sample  
941 He = 24.9°, 942 = 23.8°, 943 = 22.0°, 944 = 21.3°  
945 Sample stop  
Post sample He check = 0%, PID screen = 1.0 ppm  
1025-SS-10 Shut in Test 66" H<sub>2</sub>O, Summa #5805-736, Man #316-767  
1030 - Shut in Test OK, He = 39.7°  
1032 - Purge ~ 100 mL, Check bag 0% He  
1034 - He = 29.7°, Summa Vacuum = 29.7", Start sample  
1035 - He = 28.2°, 1036 = 28.2, 1037 = 27.4, 1038 = 26.9°  
1039 = 25.9





## DAILY LOG

Date: 7/3/13	Site Address: 1187 So Lane
Task/Purpose: Soils Lab Gas Sampling	Project Name:
Log Notes By (Name): MLC	Project Number:

### NOTES

SS-10 (Cont'd) 1040, He = 25.2%, Stop Sample Vac = 3" Hg  
Post sample He check = 0%, PID screen = 1.2 ppm

1119-SS-9 - Shut in Test - 75" H<sub>2</sub>O, PID screen = 1.5 ppm  
He = 34.1%, Purge ~ 100 mL, He = 15.0%, retighten nut  
Introduce He, He = 24.3% in bag  
Purge @ 50 mL/min for 2 min  
He = 22.3% in shroud, Bag Check He = 0%  
No Flow, Vac in probe side 25+ "Hg  
Stop sample. Leave summa + manifold connected to probe.  
Checked probe w/ wire, clogged @ ~ 3".

1200 SS-8 - Shut in test @ 70" H<sub>2</sub>O!!

He = 25.5%, Purge ~ 100 mL

1205 - Shut in test OK Summa = A75-13, Man = #673  
Purge ~ 100 mL, He = 0%, PID screen = 2.0

1209 Summa start sample @ 30" Hg.

He = 23.1%, 1210 = 20.8%, 1211 = 20.5%, 1212 = 19.8%  
1213 = 19.1%, 1214 = 21.4%, 1215 = 20.9%

1218 Stop sample @ 4.5" Hg  
LUNCH

SS-17 - Shut in Test

1329 Start Shut in @ 60" H<sub>2</sub>O, Shut in Test OK

Man 316-672, Can 524-872, S/N A7524

1335 He = 22%, Purge ~ 100 mL, He in Bag = 0, PID = 2.0  
Summa Start @ 29" Hg

1337 Start sample, He = 20.5%, 1339 = 19.1%, 1340 = 19.0, 1341 = 18.5%

1342 He = 18.0, 1343 = 17.4%

1344 Stop Sample

Post Sample Check He = 0%, PID = 1.1 ppm

1355-SS-18 - Shut in Test 66" H<sub>2</sub>O, He = 21.7%

1400 - Shut in OK, Purge ~ 100 mL, He in Bag = 0%, PID = 1.6

1402 - Start Sample, Summa = 29" Hg, Summa = 6469, Man = 724

1404 He = 19.3%, 1405 = 20.8%, 1406 = 20.3%, 1407 = 19.9%

1408 - Stop Sample @ 4.5" Hg,

Post Sample Check He = 0%, PID = 0.6 ppm





## DAILY LOG

Date: 7/3/13	Site Address: 1187 Solano
Task/Purpose: Subslab Gas Sampling	Project Name:
Log Notes By (Name): M6	Project Number:

### NOTES

1415 - Stop Sample @ SS-9, No vapor collected.

SSPO-2

Shut in Test 45" H<sub>2</sub>O, He = 23.1

1442<sup>2</sup> Man # 830, Sensor # 6420, 30" Hg  
He = 22.4%

1448 Start Sample, 1449 = 21.7, 1450 = 21.2%, 1451 = 21.0%  
1452 = 20.6, 1453 = 19.9, 1454 = 19.6%, 1455 = 19.0%

1456 = Stop Sample

Post Sample Bag He = 0.0%, PID = 2.1 ppm

SSPO-3

1511 Shut in Test 65" H<sub>2</sub>O, He = 22.1%

1516 Man 316-669, Can #6307, Sensor Hg = 28.5" Hg.

Purge ~ 100mL, Bag Screen He = 0.0%, PID = 1.0

1519 Start Sample, He = 20.7, 1520 = 20.3, 1521 = 19.9%  
1522 = 21.7%, 1523 = 21.3%

1524 Stop Sample @ -4.5 Hg.

Post Sample Bag He = 0.0%, PID = 0.8 ppm

SSPO-4 Shut in Test 72" H<sub>2</sub>O,

1530

1535 - Shut in Test OK, Man 665, Sensor A7521, Start 30" Hg

Purge ~ 100mL, Bag Screen He = 0.0%, PID = 1.4 ppm

1540 Start Sample, He = 22.5%, 1541 = 22.8%, 1542 = 22.3%

1543 = 21.7%, 1544 = 21.0%, 1545 = 20.1%,

1546 Stop sample

Post Sample Bag He = 0.0%, PID = 1.8 ppm

PID readings from boxing under Hall/Bathroom @ rear of 1185

A-11-5 - 0.0 ppm

A-12-3 - 0.2 ppm

A-13-3 - 0.2 ppm

A-11-8 - 0.2 ppm

A-12-5 - 0.1 ppm

A-13-5 - 0.0 ppm

A-12-8 - 0.3

A-13-8 - 0.6 ppm

SS-8-2 He



## Soil Vapor Probe Purging/Sampling Log

**Project Name: Solano Group**

Job Number: 1435.002

Date: 10/10/13

Sampler(s): BOB CLARK - RIDDELL

Sample ID and Time: 1185 NORTH 11:30 AM

**Notes:**

Sub-Slab Probe ID: 1185 NORTH-SG

Suma Can Serial #:

Flow Controller #:

**Initial Vacuum:**

**Final Vacuum:**

### Specifications

Tubing length: 609.6 cm

Tubing inner diameter: 0.32 cm

Boring diameter: \_\_\_\_\_ cm

Sandpack height: \_\_\_\_\_ cm

Probe length: \_\_\_\_\_ cm

Probe diameter: \_\_\_\_\_ cm

Summa flow rate: \_\_\_\_\_ mL/min

Purge flow rate: \_\_\_\_\_ mL/min

### Purge Volume Calculation

**Purge volume = tubing + sandpack**

$$\text{Tubing} = \text{Pi} * (\text{inner diameter}/2)^2 * \text{length}$$
cm<sup>3</sup>
$$\text{Sandpack} = \pi * (\text{boring diameter}/2)^2 * \text{sandpack height} * \text{porosity}$$
$$= \quad \text{cm}^3$$

Single purge volume: 49 cm<sup>3</sup>

Total purge volumes extracted: 41

Total Purge Time: \_\_\_\_\_

$$P_i = 3.1416$$

1 inch = 2.54 cm

Est. max. porosity = 0.375

**1 ml = 1 cm<sup>3</sup>**

[illegible]



## Soil Vapor Probe Purging/Sampling Log

**Project Name: Solano Group**

Job Number: 1435.002

Date: 10/10/13

**Sampler(s):** BOB CLARK-RIDDELL

Sample ID and Time: 1187 NORTH 11:25 AM

Notes: \_\_\_\_\_

Sub-Slab Probe ID: 1187 NORTH - SG

Suma Can Serial #:

Flow Controller #: \_\_\_\_\_

Initial Vacuum: \_\_\_\_\_

Final Vacuum: \_\_\_\_\_

### Specifications

Tubing length: 609.6 cm

Tubing inner diameter: 0.32 cm

Boring diameter: \_\_\_\_\_ cm

Sandpack height: \_\_\_\_\_ cm

Probe length: \_\_\_\_\_ cm

Probe diameter: \_\_\_\_\_ cm

Summa flow rate: \_\_\_\_\_ mL/min

Purge flow rate: \_\_\_\_\_ mL/min

### Purge Volume Calculation

**Purge volume = tubing + sandpack**

$$\text{Tubing} = \text{Pi} * (\text{inner diameter}/2)^2 * \text{length}$$
$$= \text{cm}^3$$
$$\text{Sandpack} = \text{Pi} * (\text{boring diameter}/2)^2 * \text{sandpack height} * \text{porosity}$$
$$= \text{cm}^3$$

Single purge volume: 49 cm<sup>3</sup>

Start Time: \_\_\_\_\_

Total purge volumes extracted: 41

Total Purge Time: \_\_\_\_\_

**Pi = 3.1416      1 inch = 2.54 cm**

Est. max. porosity = 0.375

**1 ml = 1 cm<sup>3</sup>**

[illegible]



## Soil Vapor Probe Purging/Sampling Log

**Project Name: Solano Group**

Job Number: 1435.002

Date: 10/11/13

Sampler(s): BOB CLARK-RIDDELL

Sample ID and Time: SS-16 12:10 PM

**Notes:**

Sub-Slab Probe ID: SS-16

Suma Can Serial #:

Flow Controller #: \_\_\_\_\_

Initial Vacuum: \_\_\_\_\_

Final Vacuum: \_\_\_\_\_

### Specifications

Tubing length: 60.96 cm

Tubing inner diameter: .32 cm

Boring diameter: \_\_\_\_\_ cm

**Sandpack height:** \_\_\_\_\_ cm

Probe length: \_\_\_\_\_ cm

Probe diameter: \_\_\_\_\_ cm

Summa flow rate: \_\_\_\_\_ mL/min

Purge flow rate: \_\_\_\_\_ mL/min

### Purge Volume Calculation

**Purge volume = tubing + sandpack**

$$\text{Tubing} = \text{Pi} * (\text{inner diameter}/2)^2 * \text{length}$$
$$= \quad \text{cm}^3$$
$$\text{Sandpack} = \pi * (\text{boring diameter}/2)^2 * \text{sandpack height} * \text{porosity}$$
$$= \quad \text{cm}^3$$

Single purge volume: 4.9 cm<sup>3</sup>

Start Time: \_\_\_\_\_

Total purge volumes extracted: 102

Total Purge Time: \_\_\_\_\_

**Pi = 3.1416      1 inch = 2.54 cm**

Est. max. porosity = 0.375

**1 ml = 1 cm<sup>3</sup>**

[illegible]



## Soil Vapor Probe Purging/Sampling Log

**Project Name: Solano Group**

Job Number: 1435.002

Date: 10/11/13

Sampler(s): BOB CLARK-RIDDELL

Sample ID and Time: SS-17 12:05 PM

**Notes:**

Sub-Slab Probe ID: SS-17

Suma Can Serial #:

Flow Controller #: \_\_\_\_\_

Initial Vacuum: \_\_\_\_\_

Final Vacuum: \_\_\_\_\_

### Specifications

Tubing length: 60.96 cm

Tubing inner diameter: 0.32 cm

Boring diameter: \_\_\_\_\_ cm

**Sandpack height:** \_\_\_\_\_ cm

Probe length: \_\_\_\_\_ cm

Probe diameter: \_\_\_\_\_ cm

Summa flow rate: mL/min

Purge flow rate: mL/min

### Purge Volume Calculation

Purge volume = tubing + sandpack

$$\text{Tubing} = \pi * (\text{inner diameter}/2)^2 * \text{length}$$
= cm<sup>3</sup>
$$\text{Sandpack} = \text{Pi} * (\text{boring diameter}/2)^2 * \text{sandpack height} * \text{porosity}$$
$$= \text{cm}^3$$

Single purge volume: 4.9 cm<sup>3</sup>

Total purge volumes extracted: 102

**Pi = 3.1416**      **1 inch = 2.54 cm**

**1 ml = 1 cm<sup>3</sup>**

Start Time: \_\_\_\_\_

Total Purge Time: \_\_\_\_\_

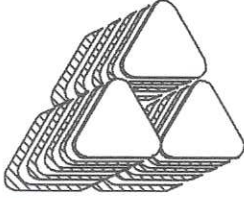
Est. max. porosity = 0.375

[illegible]

## **APPENDIX F**

### Structural Engineering Drawings





# **J.M. TURNER ENGINEERING, INC.**

## **CONSULTING ENGINEERS**

CIVIL, STRUCTURAL, & CONSTRUCTION ENGINEERING

1325 College Avenue \* Santa Rosa, CA 95404 \* Phone (707) 528-4503 \* Fax (707) 528-4505

## **E-MAIL TRANSMITTAL COVER SHEET**

TO: Bob Clark-Riddell  
COMPANY: Pangea Environmental Svcs  
PHONE: 510-435-8664  
E-MAIL: briddell@pangeaenv.com

FROM: Hans Vermeulen  
DATE: 02/22/2012  
PAGES: 03 including cover sheet  
RE: Excavation Plan

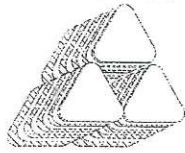
E-MAILED BY: LS TIME: 1:15 PM

### **MESSAGE:**

CC: james@sustainabletech.cc

Please note that mailed copies can be provided upon request.

Thank you.



# **J.M. TURNER ENGINEERING, INC.**

**CONSULTING ENGINEERS**

CIVIL ENGINEERING  
STRUCTURAL ENGINEERING  
CONSTRUCTION ENGINEERING

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

February 22, 2013

Re: **1187 Solano Avenue**  
**Soil Remediation**  
Albany, CA  
Excavation Plan

Attn: Mr. Clark-Riddell,

**This letter serves to address the following requests from Pangea Environmental Services:**

1. To widen the Stage 1 slots from 4' to 6' max.
2. To clarify the acceptable backfill.
3. To combine Stage 2 and Stage 3 excavations.
4. To use 3-1/2 sack CDF for the backfill of Stage 1 excavation in lieu of 2 sack cement slurry as stated in the Excavation Plan.

**The following are J.M. Turner Engineering's responses to the above requests:**

1. Due to the conditions of the site it is acceptable to widen the Stage 1 slots to a maximum of 6'.
2. Crushed rock is an acceptable backfill material provided compaction via vibration equipment is used at approximately 4' lifts. Verify backfill & compaction requirements with the City of Albany Standards or Geotechnical requirements.
3. It is acceptable to combine Stage 2 and Stage 3 excavations provided the maximum excavation depth does not exceed 10'.
4. It is acceptable to use 3-1/2 sack CDF that meets EBMUD specifications in lieu of 2 sack cement slurry.

The excavation plan drawings have been revised to reflect these changes.

Please call with any questions or comments.

Sincerely,

Adrianus Vermeulen, P.E.  
J.M. Turner Engineering, Inc.





SOIL TYPES ANTICIPATED
SILTY CLAY
SOILS ARE BASED ON BORING LOGS FROM THE GEOTECHNICAL REPORT PREPARED BY AVALON ENVIRONMENTAL CONSULTANTS DATED MAY 4, 2005 PROJECT No. 0420-458-3.

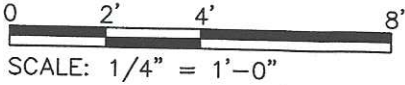
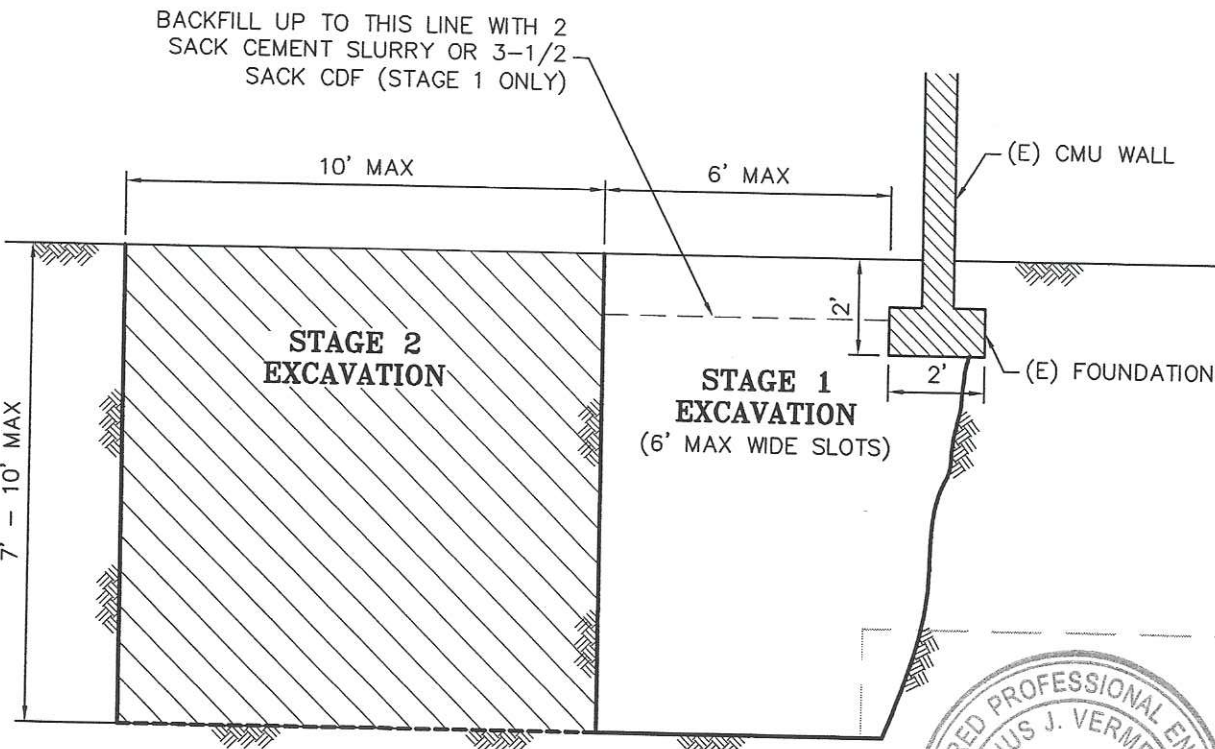
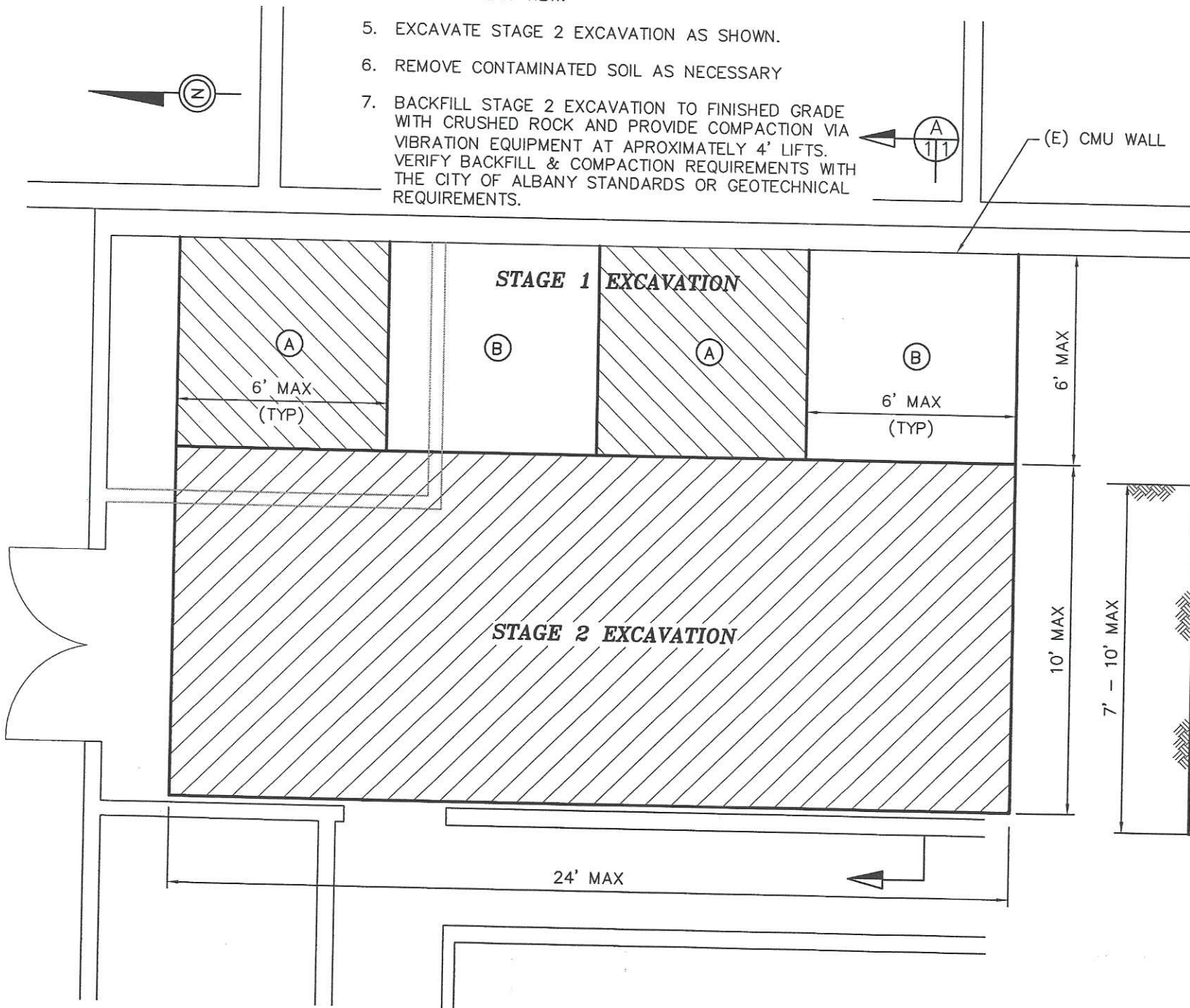
EXCAVATION SEQUENCE

- EXCAVATE EVERY OTHER 6' WIDE SLOT (LABELED "A" ON THE PLAN VIEW).
- REMOVE CONTAMINATED SOIL AS NECESSARY.
- COMPLETELY BACKFILL WITH 2 SACK CEMENT SLURRY OR 3-1/2 SACK CDF TO BACKFILL LINE AS SHOWN (STAGE 1 ONLY). BACKFILL ABOVE BACKFILL LINE WITH APPROVED BACKFILL MATERIAL
- REPEAT STEPS 1-3 FOR SLOTTED CUTS LABELED "B" ON THE PLAN VIEW.
- EXCAVATE STAGE 2 EXCAVATION AS SHOWN.
- REMOVE CONTAMINATED SOIL AS NECESSARY
- BACKFILL STAGE 2 EXCAVATION TO FINISHED GRADE WITH CRUSHED ROCK AND PROVIDE COMPACTION VIA VIBRATION EQUIPMENT AT APROXIMATELY 4' LIFTS. VERIFY BACKFILL & COMPACTION REQUIREMENTS WITH THE CITY OF ALBANY STANDARDS OR GEOTECHNICAL REQUIREMENTS.

1187 SOLANO AVENUE  
ALBANY, CA  
SOIL REMEDIATION  
EXCAVATION PLAN

GENERAL NOTES

- THESE PLANS ARE NOT INTENDED TO SHOW THE METHOD AND MEANS OF EXCAVATION OF THE WORK, WHICH IS THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL HAVE A COMPETENT PERSON AT THE SITE WHERE THIS PLAN IS IN USE. HE/SHE SHALL BE RESPONSIBLE MAKING SURE THAT ALL ELEMENTS OF THIS PLAN ARE ADHERED TO AND SHALL NOTIFY THE ENGINEER IF CONDITIONS ENCOUNTERED ARE DIFFERENT THAN ANTICIPATED AND SHOWN ON THIS PLAN. IF CONDITIONS ARE DIFFERENT, THIS PLAN MUST BE MODIFIED TO COVER THOSE CONDITIONS OR A NEW PLAN SHALL BE USED.
- CONTRACTOR TO VERIFY THAT REQUIRED CLEARANCES ARE OBTAINED.
- NO WORKERS ARE ALLOWED INSIDE THE EXCAVATION AT ANY TIME UNLESS EXCAVATION IS SHORED (i.e. HYDRAULIC TRENCH JACKS).
- DESIGN IS BASED ON SITE VISIT PERFORMED BY J.M. TURNER ENGINEERING ON 1/29/2013.
- IF SLOUGHING OR RAVELING OCCURS IMMEDIATELY STOP EXCAVATION AND NOTIFY J.M. TURNER ENGINEERING FOR POSSIBLE PLAN REVISION.
- SOILS ARE BASED ON BORING LOGS FROM THE GEOTECHNICAL REPORT PREPARED BY AVALON ENVIRONMENTAL CONSULTANTS DATED MAY 4, 2005 PROJECT No. 0420-458-3.



REVISIONS	BY
02/22/13	PM

1187 SOLANO AVENUE  
ALBANY, CA  
SOIL REMEDIATION  
EXCAVATION PLAN

SUSTAINABLE TECHNOLOGIES  
1800 ORION STREET, SUITE 101  
ALAMEDA, CA 94501

J.M. TURNER ENGINEERING, INC.  
CONSULTING ENGINEERS  
1325 COLLEGE AVE., SANTA ROSA, CA 95404  
(707) 528-4503 FAX (707) 528-4505

SCALE:	1/4"=1'
DATE:	01/30/13
DRAWN BY:	P.P.M.
CHECKED BY:	A.J.V.
DRAWING NO:	13440-1/S1
SHEET:	1 OF 1

## **APPENDIX G**

### Soil Disposal Manifests

Solano Group  
Job Proposal # 7072

Class I Non RCRA  
Profile # CH611673B  
May 09 2013

<u>Manifest</u>	<u>Date Rec'd</u>	<u>Weight Tag #</u>	<u>Gross Weight</u>	<u>Tare Weight</u>	<u>Net Weight</u>	<u>Net Tons</u>
7397752JJK	Feb 15 2013	252089	75920	31540	44380	22.19
7397754JJK	Feb 15 2013	252084	77760	35600	42160	21.08
7397751JJK	Feb 15 2013	252056	62140	34460	27680	13.84
6096422JJK	Feb 18 2013	252165	64500	41980	22520	11.26
6096417JJK	Feb 20 2013	252355	63340	30560	24780	12.39
6096421JJK	Feb 21 2013	252409	65260	39460	25800	12.90
5937007JJK	Feb 22 2013	252526	64960	<u>32420</u>	32540	16.27
5937014JJK	Feb 22 2013	252517	60520	33060	27460	13.73
6096418JJK	Feb 22 2013	252518	63580	38780	24800	12.40
6096420JJK	Feb 22 2013	252520	64980	40380	24600	12.30
6096419JJK	Feb 25 2013	252613	65120	41040	24080	12.04
5937008JJK	Feb 26 2013	252732	57020	35600	21420	10.71
5937013JJK	Feb 27 2013	252817	61480	39200	22280	11.14
5937012JJK	Feb 28 2013	252886	62140	39620	22520	11.26
5937011JJK	Mar 01 2013	252975	63080	39400	23680	11.84
5937009JJK	Mar 06 2013	253224	70760	42120	28640	14.32
5937010JJK	Mar 07 2013	253316	64300	40800	23500	11.75
5937054JJK.	Mar 08 2013	253372	67420	40760	26660	13.33
5937055JJK	Mar 11 2013	253467	66480	40740	25740	12.87
5937062JJK	Mar 12 2013	253583	66680	40460	26040	13.02
5937063JJK	Mar 13 2013	253623	69720	42420	27300	13.65
5937061JJK	Mar 14 2013	253742	79560	33260	46300	23.15
5937056JJK	Mar 15 2013	253777	79220	33320	45900	22.95
5937057JJK	Mar 19 2013	254005	79980	31380	48600	24.30
5937059JJK	Apr 11 2013	255534	43180	31000	12180	6.09
					721,560	360.78

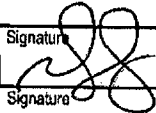



<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000 834476</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>500 823 1477</b>	4. Manifest Tracking Number <b>007397752 JJK</b>			
5. Generator's Name and Mailing Address <b>AIRWAY 1 HOUR CLEANERS 1625 Madison BAY POINT CA 94565 USA 925-861-9607</b>				Generator's Site Address (if different than mailing address) <b>1127 SOLING AVE AIRWAY CA 94706 USA</b>				
6. Transporter 1 Company Name <b>NEAREST TEMPERATURE INC. HERALD 1047</b>				U.S. EPA ID Number <b>CA298250633</b>				
7. Transporter 2 Company Name				U.S. EPA ID Number <b>01200177933</b>				
8. Designated Facility Name and Site Address <b>CLEAN HARBOR ENVIRONMENTAL 3500 WEST LORRAINE RD. BUTTEVILLE CA 93206 USA 831-762-6200</b>				U.S. EPA ID Number <b>CAD980875376</b>				
Facility's Phone:								
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt/Vol	13. Waste Codes
				No.	Type			
	1	HA3677 HAZARDOUS WASTE SOLIDS, N.O.S. (TETRAETHYLENIC) 9. PG III		1	DT	18	Y	F003 G11
	2							F001
	3							
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH011673B SALES ORDER NUMBER DT499,2175 DIVERSE DOCUMENT 2 DB12523 600171</b> <b>WEAR AN APPROPRIATE PPE WHEN HANDLING MATERIAL</b>								
15. GENERATOR/SUPPLIER'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Supplier's Printed/Typed Name <b>James Bauer</b> Signature <b>James Bauer</b> Month Day Year <b>02/15/13</b>								
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:							
	17. Transporter Acknowledgment of Receipt of Materials							
DESIGNATED FACILITY	Transporter 1 Printed/Typed Name <b>THOMAS LOPEZ</b> Signature <b>THOMAS LOPEZ</b> Month Day Year <b>03/15/13</b>							
	Transporter 2 Printed/Typed Name Signature Month Day Year							
18. Discrepancy								
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection <b>13. FOOT Cans in Tray Rejected, Generator.</b>								
18b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number								
Facility's Phone:								
18c. Signature of Alternate Facility (or Generator) Month Day Year								
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1. 2. 3. 4.								
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a								
Printed/Typed Name <b>CRISTINA</b> Signature <b>CRISTINA</b> Month Day Year <b>03/14/13</b>								

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number CA P000 2344 76	2. Page 1 of 1	3. Emergency Response Phone 800 888 1477	4. Manifest Tracking Number 007397754 JJK	
5. Generator's Name and Mailing Address ALBANY 1 HOUR CLEANERS 162 SHANNON BAY POINTE CA 94565 USA Generator's Phone: 925-261-9607			Generator's Site Address (if different than mailing address) 1187 SOLANO AVE ALBANY CA 94706 USA			
6. Transporter 1 Company Name DENBESTE TRANSPORTATION			U.S. EPA ID Number CA 982513632			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKEN RD. BUTTEVILLE CA 93206 USA Facility's Phone: 881-762-6200			U.S. EPA ID Number CA 980875276			
GENERATOR	9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
			No.	Type		
	1.	NA 3077 HAZARDOUS WASTE SOLID N.O.S. (TETRACHLOROETHYLENE) 9. PG III	1	DT	12	Y
	2.					
	3.					
13. Waste Codes						
						F002 611 F001
14. Special Handling Instructions and Additional Information WASTE PROFILE: CA 011673 B SALES NUMBER DJ4992175 DENBESTE JOB NUMBER WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL D12833 GR6171						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Officer's Printed/Typed Name ON BEHALF OF Solano Group Signature James Bauer Month 2 Day 15 Year 13						
TRANSPORTER INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:					
	Transporter signature (for exports only):					
	17. Transporter Acknowledgment of Receipt of Materials					
	Transporter 1 Printed/Typed Name Signature Month 2 Day 15 Year 13					
DESIGNATED FACILITY	Transporter 2 Printed/Typed Name Signature Month Day Year					
	18. Discrepancy					
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection 13. F001 color tank kerosene - Generator Manifest Reference Number:					
	18b. Alternate Facility (or Generator) U.S. EPA ID Number					
Facility's Phone:						
18c. Signature of Alternate Facility (or Generator) Month Day Year						
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1. H132 2. 3. 4.						
20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in item 19a						
Printed/Typed Name Signature Month 02 Day 15 Year 13						

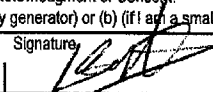
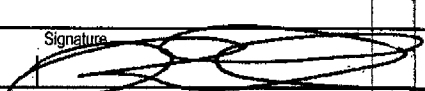
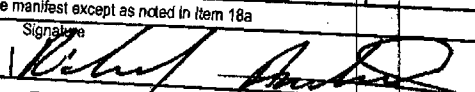
Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CA P000234476</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>8008381477</b>	4. Manifest Tracking Number <b>007397751 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1 HOUR CLEANERS 162 S HANNON BAY POINT CA 94565 USA</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY CA 94706 USA</b>				
Generator's Phone: <b>925-261-9607</b>							
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC.</b>			U.S. EPA ID Number <b>CAD982513632</b>				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERVA RD. BUTTEVILLE CA 95206 USA</b>			U.S. EPA ID Number <b>CAD980875276</b>				
Facility's Phone: <b>881-762-6200</b>							
GENERATOR	9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
			No.	Type			
	1.	<b>NABOTT HAZARDOUS WASTE SOLID N.O.S. (TETRA CHLOROETHYLENE) 9. PG III</b>	<b>1</b>	<b>DT</b>	<b>18</b>	<b>Y</b>	<b>F002 611</b>
	2.						<b>F001</b>
	3.						
4.							
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH 611673 B SALES NUMBER DI 4992175 DENBESTE JOB NUMBER DI 2833 ECG 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name <b>James Bauer</b>		On Behalf of <b>SOLANO GROUP</b>		Signature <b>James Bauer</b>		Month Day Year <b>2 15 13</b>	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name <b>George Lima</b>		Signature 		Month Day Year <b>2 15 13</b>			
Transporter 2 Printed/Typed Name		Signature		Month Day Year			
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	<b>13. FORI code by Tony Koushew, Anaheim</b>						
	18b. Alternate Facility (or Generator)				Manifest Reference Number: _____ U.S. EPA ID Number: _____		
	Facility's Phone: _____						
18c. Signature of Alternate Facility (or Generator)						Month Day Year	
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. <b>H132</b>		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name <b>Richard Andrews</b>		Signature 		Month Day Year <b>2 15 13</b>			

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234476</b>		2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800 928 4477</b>		4. Manifest Tracking Number <b>006096422 JJK</b>						
		5. Generator's Name and Mailing Address <b>ALBANY 24 HOUR CLEANERS 162 SHANNON BAY POINT, CA 94585 USA</b>		Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>									
Generator's Phone: <b>925-261-9607</b>		6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>				U.S. EPA ID Number <b>CAN990513632</b>							
		7. Transporter 2 Company Name				U.S. EPA ID Number							
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTERN MILLOW, CA 93206 USA</b>						U.S. EPA ID Number <b>CAN990513632</b>							
Facility's Phone: <b>661-762-6200</b>													
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))  <b>1. NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII</b>			10. Containers		11. Total Quantity <b>10</b>	12. Unit Wt./Vol. <b>7</b>	13. Waste Codes <b>5002 811</b> <b>R201</b>				
					No.	Type							
					<b>1</b>	<b>QA</b>							
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611673B SALES ORDER NUMBER: D4982175 DENBESTE JOB NUMBER: DB12633 FRG-171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>													
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.													
Generator's/Officer's Printed/Typed Name <b>Solano Group, Ernesto Monreal</b>								Signature 		Month <b>2</b>	Day <b>18</b>	Year <b>2013</b>	
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____												
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name <b>Brian W. Meelin</b>												
	Transporter 2 Printed/Typed Name Signature 												
DESIGNATED FACILITY	18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: _____												
	18b. Alternate Facility (or Generator) U.S. EPA ID Number												
	Facility's Phone: _____												
	18c. Signature of Alternate Facility (or Generator) Month Day Year												
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. <b>H132</b> 2. 3. 4.												
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a Printed/Typed Name <b>Richard Andrews</b>													
Signature 								Month <b>02</b>		Day <b>18</b>		Year <b>2013</b>	
DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)													

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number CAP000234476	2. Page 1 of 1	3. Emergency Response Phone 800-838-1477	4. Manifest Tracking Number <b>006096417 JJK</b>			
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA 925-281-0007</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94708 USA</b>					
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAD082513632</b>					
7. Transporter 2 Company Name			U.S. EPA ID Number					
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93208 USA Facility's Phone: 661-762-6200</b>			U.S. EPA ID Number <b>CAD000675276</b>					
9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)).		10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes	
			No.	Type				
	1. <b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S. (TETRACHLOROETHYLENE), 9, PGIII</b>		1	DR	18	Y	F002	011
							F001	
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH011673B SALES ORDER NUMBER: DJ4902175 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b> <i>Code 501 and 101 items 13 per</i>								
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Officer's Printed/Typed Name <b>ON BEHALF OF</b> Signature <i>[Signature]</i> Month <b>2</b> Day <b>20</b> Year <b>13</b> <b>James Bauer Solano Group</b>								
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:								
17. Transporter Acknowledgment of Receipt of Materials								
Transporter 1 Printed/Typed Name <b>Dennis Springer</b> Signature <i>[Signature]</i> Month <b>2</b> Day <b>20</b> Year <b>13</b>								
Transporter 2 Printed/Typed Name Signature Month Day Year								
18. Discrepancy								
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection								
Manifest Reference Number:								
18b. Alternate Facility (or Generator) U.S. EPA ID Number								
Facility's Phone:								
18c. Signature of Alternate Facility (or Generator) Month Day Year								
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1. <b>H132</b> 2. 3. 4.								
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a								
Printed/Typed Name <b>Dennis Springer</b> Signature <i>[Signature]</i> Month <b>02</b> Day <b>20</b> Year <b>13</b>								



<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number CAP000234478	2. Page 1 of 1	3. Emergency Response Phone 800-838-1477	4. Manifest Tracking Number 006098421 JJK		
5. Generator's Name and Mailing Address ALBANY 1-HOUR CLEANERS 182 SHANNON BAY POINT, CA 94566 USA Generator's Phone: 925-261-9607			Generator's Site Address (if different than mailing address) 1187 SOLANO AVE ALBANY, CA 94706 USA				
6. Transporter 1 Company Name DENBESTE TRANSPORTATION INC			U.S. EPA ID Number CAD982513632				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address CLEAN HARBORS ENVIRONMENTAL 2600 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA Facility's Phone: 601-762-6200			U.S. EPA ID Number CAD980675276				
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes
	1. NA3077 HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII		1 9A		10	Y	F002 011
	2.						F001
	3.						
	4.						
14. Special Handling Instructions and Additional Information WASTE PROFILE: CH811673B SALES ORDER NUMBER: DJ4982175 DENBESTE JOB NUMBER: DB12633 ERG: 171 WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name Sage Appel-Minotti Signature Sage Appel-Minotti Month Day Year 2 21 13							
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Transporter signature (for exports only): Port of entry/exit: Date leaving U.S.:							
17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name Dennis Springer Signature Dennis Springer Month Day Year 2 21 13 Transporter 2 Printed/Typed Name Signature Month Day Year							
18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: U.S. EPA ID Number							
18b. Alternate Facility (or Generator) Facility's Phone: 18c. Signature of Alternate Facility (or Generator) Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. 1177 2. 3. 4.							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a Printed/Typed Name Signature Month Day Year							

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number CAP000234476	2. Page 1 of 1	3. Emergency Response Phone 800-838-1477	4. Manifest Tracking Number <b>005937007 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94585 USA</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>				
Generator's Phone: <b>925-281-8807</b>							
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAR000199365</b>				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTERNWILLOW, CA 93206 USA</b>			U.S. EPA ID Number <b>CAD980676276</b>				
Facility's Phone: <b>661-762-6200</b>							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes
			No.	Type			
	1.	<b>HA3077 HAZARDOUS WASTE, SOLIDS N.O.S. (TETRACHLOROETHYLENE), 9, PG/II</b>	1	DI	18	Y	F002, 611, 700
	2.						
	3.						
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12033 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>							
15. GENERATOR/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name <b>On behalf of James Bauer Solano Group</b> Signature <i>[Signature]</i> Month <b>12</b> Day <b>22</b> Year <b>13</b>							
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____						
	17. Transporter Acknowledgment of Receipt of Materials: Transporter 1 Printed/Typed Name <b>LAKHVIR SINGH</b> Signature <i>Lakhvir Singh</i> Month <b>12</b> Day <b>22</b> Year <b>13</b> Transporter 2 Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____						
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input checked="" type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	18b. Alternate Facility (or Generator) Manifest Reference Number: _____ U.S. EPA ID Number _____						
	Facility's Phone: _____						
	18c. Signature of Alternate Facility (or Generator) _____ Month _____ Day _____ Year _____						
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. <b>1453</b> 2. 3. 4.							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a Printed/Typed Name <i>[Signature]</i> Signature <i>[Signature]</i> Month <b>12</b> Day <b>22</b> Year <b>13</b>							

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAP000234476	2. Page 1 of 1	3. Emergency Response Phone 800-838-1477	4. Manifest Tracking Number 005937014 JJK		
5. Generator's Name and Mailing Address ALBANY 1-HOUR CLEANERS 182 SHANNON BAY POINT, CA 94665 USA Generator's Phone: 925-261-9907		Generator's Site Address (if different than mailing address) 1187 SOLANO AVE ALBANY, CA 94706 USA					
6. Transporter 1 Company Name DENBESTE TRANSPORTATION INC		U.S. EPA ID Number CA2000140947			CAD000013432		
7. Transporter 2 Company Name MILLAN TRUCKING		U.S. EPA ID Number					
8. Designated Facility Name and Site Address CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA Facility's Phone: 661-762-8200		U.S. EPA ID Number CAD0000675276					
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes	
1.	HA3077 HAZARDOUS WASTE, SOLIDS, N.O.S. (TETRACHLOROETHYLENE), 9 PGIII	1	DR	18	Y	F002 611 F001	
2.							
3.							
4.							
14. Special Handling Instructions and Additional Information WASTE PROFILE: CH011673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12633 ERG: 171 WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name James B. Guer		Signature [Signature]			Month Day Year 2 22 13		
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name CESAIL MILLAN Signature [Signature] Month Day Year 2 22 13 Transporter 2 Printed/Typed Name Signature [Signature] Month Day Year Month Day Year							
18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection 18b. Alternate Facility (or Generator) Manifest Reference Number: _____ U.S. EPA ID Number: _____ Facility's Phone: _____ 18c. Signature of Alternate Facility (or Generator) Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. 11127 2. 3. 4.							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a Printed/Typed Name D. [Signature] Signature [Signature] Month Day Year 2 22 13							

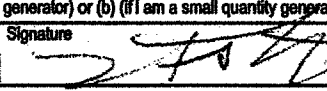
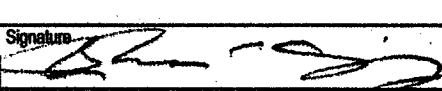
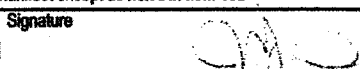
<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number CAP000234476	2. Page 1 of 1	3. Emergency Response Phone 800-838-1477	4. Manifest Tracking Number <b>006096418 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94585 USA</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94708 USA</b>				
Generator's Phone: <b>925-261-9807</b>							
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAD982513832</b>				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93208 USA</b>			U.S. EPA ID Number <b>CAD980675276</b>				
Facility's Phone: <b>601-762-6200</b>							
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes
			No.	Type			
	1. <b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGH</b>		1	DT	10	Y	F002 011 F
	2.						
	3.						
4.							
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH011673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name <b>James Bauer of Solano Group</b> Signature <i>[Signature]</i> Month <b>2</b> Day <b>22</b> Year <b>13</b>							
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name <b>Dennis Springer</b> Signature <i>[Signature]</i> Month <b>2</b> Day <b>22</b> Year <b>13</b>							
Transporter 2 Printed/Typed Name Signature Month Day Year							
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
18b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number							
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator) Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. 1112 2. 3. 4.							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name <b>Richard Anderson</b> Signature <i>[Signature]</i> Month <b>2</b> Day <b>22</b> Year <b>13</b>							

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number CAP000234476	2. Page 1 of 1	3. Emergency Response Phone 800-838-1477	4. Manifest Tracking Number <b>006096420 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>				
Generator's Phone: <b>925-261-9807</b>							
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAD082513632</b>				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA</b>			U.S. EPA ID Number <b>CAD080675276</b>				
Facility's Phone: <b>661-762-6200</b>							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
			No.	Type			
	1.	<b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII</b>	1	DM	10	Y	F002 611 Foo
	2.						
	3.						
4.							
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH011673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name <b>ON Behalf of James H. H. of Solano Group</b> Signature <i>[Signature]</i> Month <b>2</b> Day <b>22</b> Year <b>13</b>							
TRANSPORTER INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:						
	Transporter signature (for exports only):						
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name <b>A. P. ORC White</b> Signature <i>[Signature]</i> Month <b>2</b> Day <b>22</b> Year <b>13</b>						
DESIGNATED FACILITY	Transporter 2 Printed/Typed Name Signature Month Day Year						
	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number: U.S. EPA ID Number						
	18b. Alternate Facility (or Generator) Facility's Phone: Month Day Year						
18c. Signature of Alternate Facility (or Generator) Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. <b>H122</b> 2. 3. 4.							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a							
Printed/Typed Name <i>[Signature]</i> Signature <i>[Signature]</i> Month <b>2</b> Day <b>22</b> Year <b>13</b>							



<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234476</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>006096419 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94585 USA 925-261-9607</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>				
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAD982513632</b>				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONVILLOW, CA 93206 USA 661-762-0200</b>			U.S. EPA ID Number <b>CAD880675270</b>				
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes
			No.	Type			
	1.	NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S. (TETRACHLOROETHYLENE), 9, PGIII	1	OTM	10	24	F002 (811)
	2.						F001
	3.						
4.							
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH8116738 SALES ORDER NUMBER: D4092175 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b> <i>Item 12 being shipped per Special Handling Detail agent for generator, through Munk Bunker, CA, by Jerry, 1/14</i>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name <b>ON BEHALF OF SOLANO GROUP</b> Signature <i>[Signature]</i> Month <b>2</b> Day <b>25</b> Year <b>13</b>							
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____						
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name <b>CST Rolland</b> Signature <i>[Signature]</i> Month <b>12</b> Day <b>25</b> Year <b>13</b> Transporter 2 Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____						
	18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection 18b. Alternate Facility (or Generator) Manifest Reference Number: _____ U.S. EPA ID Number: _____ Facility's Phone: _____ 18c. Signature of Alternate Facility (or Generator) _____ Month _____ Day _____ Year _____						
DESIGNATED FACILITY	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. <b>H12</b> 2. _____ 3. _____ 4. _____						
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name <b>John Grant</b> Signature <i>[Signature]</i> Month <b>12</b> Day <b>25</b> Year <b>13</b>						

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CA P000234476</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>005937008 JJK</b>				
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 182 SHANNON BAY POINT, CA 94585 USA 925-261-8807</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94708 USA</b>						
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAD882513632</b>						
7. Transporter 2 Company Name			U.S. EPA ID Number						
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTERNMALLOW, CA 93208 USA 681-762-6200</b>			U.S. EPA ID Number <b>CAD980675276</b>						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes:		
			No.	Type					
	1. <b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII</b>		<b>1</b>	<b>DT</b>	<b>18</b>	<b>Y</b>	<b>F002</b>	<b>611</b>	<b>F001</b>
	2.								
	3.								
4.									
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH011673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in safe condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Officer's Printed/Typed Name <b>James B. ...</b>			Signature <i>[Signature]</i>			Month Day Year <b>2 26 13</b>			
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____									
17. Transporter Acknowledgment of Receipt of Materials									
Transporter 1 Printed/Typed Name <b>Nathan Wallin</b>			Signature <i>[Signature]</i>			Month Day Year <b>2 26 13</b>			
Transporter 2 Printed/Typed Name			Signature			Month Day Year			
18. Discrepancy									
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
Manifest Reference Number: _____									
18b. Alternate Facility (or Generator) U.S. EPA ID Number									
Facility's Phone: _____									
18c. Signature of Alternate Facility (or Generator) Month Day Year									
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. <b>H132</b>			2. _____		3. _____		4. _____		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a									
Printed/Typed Name <b>Dennis Barton</b>			Signature <i>[Signature]</i>			Month Day Year <b>02 26 13</b>			

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAP000234476	2. Page 1 of 1	3. Emergency Response Phone 800-838-1477	4. Manifest Tracking Number 005937013 JJK					
5. Generator's Name and Mailing Address ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA Generator's Phone: 925-281-9807		Generator's Site Address (if different than mailing address) 1187 SOLANO AVE ALBANY, CA 94708 USA								
6. Transporter 1 Company Name DENBESTE TRANSPORTATION INC		U.S. EPA ID Number CAD882513632								
7. Transporter 2 Company Name		U.S. EPA ID Number								
8. Designated Facility Name and Site Address CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTERNWILLOW, CA 93208 USA Facility's Phone: 861-782-8200		U.S. EPA ID Number CAD990676278								
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes				
		No.	Type							
		1	CM			10	Y	F002	611	F001
		2								
		3								
4										
14. Special Handling Instructions and Additional Information WASTE PROFILE: CH611673B SALES ORDER NUMBER: DJ4892175 DENBESTE JOB NUMBER: DB12633 ERG: 171 WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL										
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.										
Generator's/Offeror's Printed/Typed Name Perry Thompson				Signature 		Month Day Year 12 27 13				
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:										
17. Transporter Acknowledgment of Receipt of Materials										
Transporter 1 Printed/Typed Name JOHN SPRINGER				Signature 		Month Day Year 12 27 13				
Transporter 2 Printed/Typed Name				Signature		Month Day Year				
18. Discrepancy										
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection										
Manifest Reference Number:										
18b. Alternate Facility (or Generator) U.S. EPA ID Number										
Facility's Phone:										
18c. Signature of Alternate Facility (or Generator) Month Day Year										
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)										
1. 1131		2.		3.		4.				
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a										
Printed/Typed Name John Springer				Signature 		Month Day Year 12 27 13				

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAPOKU234476</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>005937012 JJK</b>				
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA Generator's Phone: 925-261-9007</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>						
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAD962513632</b>						
7. Transporter 2 Company Name			U.S. EPA ID Number						
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTERNWILLOW, CA 93206 USA Facility's Phone: 661-762-6200</b>			U.S. EPA ID Number <b>CAD960675276</b>						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes		
			No.	Type					
	1. <b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S. (TETRACHLOROETHYLENE), 9, PGIII</b>		<b>1</b>	<b>CH</b>	<b>15</b>	<b>Y</b>	<b>F002</b>	<b>011</b>	<b>F001</b>
	2.								
	3.								
4.									
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH011673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Officer's Printed/Typed Name <i>Kevin H. ...</i>			Signature <i>[Signature]</i>			Month Day Year <b>2 28 13</b>			
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.			Port of entry/exit: Date leaving U.S.:						
17. Transporter Acknowledgment of Receipt of Materials									
Transporter 1 Printed/Typed Name <b>JOHN SPRINGER</b>			Signature <i>[Signature]</i>			Month Day Year <b>2 28 13</b>			
Transporter 2 Printed/Typed Name			Signature			Month Day Year			
18. Discrepancy									
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
18b. Alternate Facility (or Generator)						Manifest Reference Number: U.S. EPA ID Number			
Facility's Phone:									
18c. Signature of Alternate Facility (or Generator)						Month Day Year			
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. <b>H132</b>		2.		3.		4.			
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
Printed/Typed Name <b>Herb's Barten</b>			Signature <i>[Signature]</i>			Month Day Year <b>2 28 13</b>			

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234476</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>005937011 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>				
Generator's Phone: <b>925-261-9607</b>							
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAD982513632</b>				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTOMMILLOW, CA 93206 USA</b>			U.S. EPA ID Number <b>CAD980675276</b>				
Facility's Phone: <b>661-762-6200</b>							
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes
			No.	Type			
	1. <b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S. (TETRACHLOROETHYLENE), 9, PGIII</b>		1	<b>CM</b>	18	Y	F002 611 F001
	2.						
	3.						
4.							
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH011673B SALES ORDER NUMBER: D14992175 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name <b>Sage Apple Minotti on behalf of Solano Group</b> Signature <i>[Signature]</i> Month Day Year <b>13 1 13</b>							
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry exit: Transporter signature (for exports only): Date leaving U.S.:							
17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name <b>JOHN SPRAWLER</b> Signature <i>[Signature]</i> Month Day Year <b>13 1 13</b> Transporter 2 Printed/Typed Name Signature Month Day Year							
18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: 18b. Alternate Facility (or Generator) U.S. EPA ID Number Facility's Phone: 18c. Signature of Alternate Facility (or Generator) Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. <b>H132</b> 2. 3. 4.							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a Printed/Typed Name <b>Richard Andrews</b> Signature <i>[Signature]</i> Month Day Year <b>03 01 13</b>							



TK 284 VP 71828

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAP000234476	2. Page 1 of 1	3. Emergency Response Phone 800-838-1477	4. Manifest Tracking Number 005937009 JJK				
5. Generator's Name and Mailing Address ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA Generator's Phone: 925-281-9807			Generator's Site Address (if different than mailing address) 1187 SOLANO AVE ALBANY, CA 94706 USA						
6. Transporter 1 Company Name DENBESTE TRANSPORTATION INC			U.S. EPA ID Number CAD982513632						
7. Transporter 2 Company Name			U.S. EPA ID Number						
8. Designated Facility Name and Site Address CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA Facility's Phone: 661-762-6200			U.S. EPA ID Number CAD980875276						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes		
			No.	Type					
	1. NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII.		1	CM	16	Y	F002	011	F001
	2.								
	3.								
4.									
14. Special Handling Instructions and Additional Information WASTE PROFILE: CH011673B SALES ORDER NUMBER: DJ4892175 DENBESTE JOB NUMBER: DB12033 ERG: 171 WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL AT 5045792									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Offeror's Printed/Typed Name Sage Appel-Minotti: on behalf of Solano Group									
Signature [Signature]									
Month Day Year 13/6/13									
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Transporter signature (for exports only): Date leaving U.S.:									
17. Transporter Acknowledgment of Receipt of Materials									
Transporter 1 Printed/Typed Name Carlos Gonzalez									
Signature [Signature]									
Month Day Year 13/6/13									
Transporter 2 Printed/Typed Name									
Signature									
Month Day Year									
18. Discrepancy									
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
Manifest Reference Number:									
18b. Alternate Facility (or Generator) U.S. EPA ID Number									
Facility's Phone:									
18c. Signature of Alternate Facility (or Generator) Month Day Year									
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. H132 2. 3. 4.									
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
Printed/Typed Name Dennis Barton									
Signature [Signature]									
Month Day Year 03/06/13									

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

TK 284 VP 71828

DB 1251

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<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number CAP000234476	2. Page 1 of 1	3. Emergency Response Phone 800-838-1477	4. Manifest Tracking Number 005937010 JJK		
5. Generator's Name and Mailing Address ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA Generator's Phone: 925-261-9607			Generator's Site Address (if different than mailing address) 1187 SOLANO AVE ALBANY, CA 94706 USA				
6. Transporter 1 Company Name DENBESTE TRANSPORTATION INC			U.S. EPA ID Number CAD882513632				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA Facility's Phone: 861-762-8200			U.S. EPA ID Number CAD880675278				
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit WL/Vol	13. Waste Codes
	1.	HA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII	1	200 CM	15	Y	F002 611 F001
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information WASTE PROFILE: CH811673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12633 ERG: 171 WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offeror's Printed/Typed Name Forrest G. Smith and Michael F. B. Solano-Garcia							
Signature [Signature] Month Day Year 1 5 7 13							
TRANSPORTER	16. International Shipments <input checked="" type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:						
	Transporter signature (for exports only):						
	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name CARLOS JOSE ZALEZ						
DESIGNATED FACILITY	Signature [Signature] Month Day Year 13 7 13						
	Signature [Signature] Month Day Year						
	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number:						
18b. Alternate Facility (or Generator) U.S. EPA ID Number							
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator) Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H132 2. 3. 4.							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name Richard Andriens							
Signature [Signature] Month Day Year 07 07 13							

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Form Approved. OMB No. 2050-0039

TK 284 UP 71828

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234476</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>005937054 JJK</b>
5. Generator's Name and Mailing Address <b>ALBANY TUNIC CLEANERS 162 SHANNON BAY POINT, CA 94565 USA 925-261-9607</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>		
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAD882513632</b>		
7. Transporter 2 Company Name			U.S. EPA ID Number		
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA 861-762-6200</b>			U.S. EPA ID Number <b>CAD980675276</b>		
Facility's Phone:					
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity
			No.	Type	12. Unit Wt./Vol.
	1.	<b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S. (TETRACHLOROETHYLENE), 9, PGIII</b>	1	<b>CARFF E12</b>	18
	2.				
	3.				
13. Waste Codes					
					F002 611
					F01
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>					
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.					
Generator's/Officer's Printed/Typed Name <b>SAUL ARKIMMOTTI on behalf of Solano group</b>					
Signature <i>[Signature]</i>					
Month Day Year <b>13 8 13</b>					
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____				
	17. Transporter Acknowledgment of Receipt of Materials				
	Transporter 1 Printed/Typed Name <b>ARIELAS GONZALES</b>				
	Signature <i>[Signature]</i>				
	Month Day Year <b>13 8 13</b>				
DESIGNATED FACILITY	18. Discrepancy				
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection				
	<b>B. Generated P001 code.</b>				
	Manifest Reference Number:				
	18b. Alternate Facility (or Generator) U.S. EPA ID Number				
Facility's Phone:					
18c. Signature of Alternate Facility (or Generator)					
Month Day Year					
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)					
1. <b>H132</b>		2.		3.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a					
Printed/Typed Name <b>Richard Andrews</b>					
Signature <i>[Signature]</i>					
Month Day Year <b>03 08 13</b>					

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

TK #284 VP 71828

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

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<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234478</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>005937055 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>				
Generator's Phone: <b>925-281-8607</b>							
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>				U.S. EPA ID Number <b>CAD982513632</b>			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93208 USA</b>			U.S. EPA ID Number <b>CAD980675276</b>				
Facility's Phone: <b>861-762-6200</b>							
GENERATOR	9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
			No.	Type			
	1.	<b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII</b>	1	<b>CM</b>	18	Y	<b>F002 611 1001</b>
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name <b>Sage Appel-Minotti on behalf of Solano group</b>							
Signature <i>[Signature]</i> Month Day Year <b>13 11 13</b>							
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:						
	Transporter signature (for exports only):						
	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name <b>Carlos Gonzalez</b>			Signature <i>[Signature]</i>		Month Day Year <b>13 11 13</b>	
	Transporter 2 Printed/Typed Name			Signature		Month Day Year	
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number:						
	18b. Alternate Facility (or Generator)			U.S. EPA ID Number			
	Facility's Phone:						
	18c. Signature of Alternate Facility (or Generator) Month Day Year						
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. <b>H32</b>		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name <b>Dennis Barber</b>				Signature <i>[Signature]</i>		Month Day Year <b>13 11 13</b>	

TK 284 UP 718'28

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<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234478</b>	2. Page 1 of 1	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>005937062 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA 925-261-9607</b>				Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>			
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>				U.S. EPA ID Number <b>CAD982513632</b>			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA 661-762-8200</b>				U.S. EPA ID Number <b>CAD980675276</b>			
Facility's Phone:							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes
			No.	Type			
	1.	<b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII</b>	1	<b>DT CM</b>	18	Y	F002 611 <i>Fool</i>
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name <b>ON Behave of Solano Group</b> Signature <i>[Signature]</i> Month <b>13</b> Day <b>12</b> Year <b>13</b>							
INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:						
	Transporter signature (for exports only):						
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name <b>Carlos Gonzalez</b> Signature <i>[Signature]</i> Month <b>3</b> Day <b>12</b> Year <b>13</b>						
	Transporter 2 Printed/Typed Name <b>GA</b> Signature Month Day Year						
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number:						
	18b. Alternate Facility (or Generator)				U.S. EPA ID Number		
	Facility's Phone:						
	18c. Signature of Alternate Facility (or Generator)				Month Day Year		
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
	1. <b>H132</b>		2.		3.		4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name <b>Richard Andrews</b> Signature <i>[Signature]</i> Month <b>03</b> Day <b>12</b> Year <b>13</b>							



UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAP000234476	2. Page 1 of 1	3. Emergency Response Phone 800-838-1477	4. Manifest Tracking Number 005937063 JJK				
5. Generator's Name and Mailing Address ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA Generator's Phone: 925-261-9607		Generator's Site Address (if different than mailing address) 1187 SOLANO AVE ALBANY, CA 94708 USA							
6. Transporter 1 Company Name DENBESTE TRANSPORTATION INC		U.S. EPA ID Number CAD982513632							
7. Transporter 2 Company Name		U.S. EPA ID Number							
8. Designated Facility Name and Site Address CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA Facility's Phone: 661-762-6200		U.S. EPA ID Number CAD980875276							
9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
				No. Type					
	1. NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII			1 CM		18	Y	F002	611 F001
	2.								
	3.								
4.									
14. Special Handling Instructions and Additional Information WASTE PROFILE: CH611673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12633 ERG: 171 WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/picarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Officer's Printed/Typed Name ON BEHALF OF Solano Group			Signature [Signature]			Month Day Year 13 12 13			
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____									
17. Transporter Acknowledgment of Receipt of Materials									
Transporter 1 Printed/Typed Name CARLOS GONZALEZ			Signature [Signature]			Month Day Year 13 12 13			
Transporter 2 Printed/Typed Name ON BEHALF OF Solano Group			Signature [Signature]			Month Day Year 13 12 13			
18. Discrepancy									
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
18b. Alternate Facility (or Generator) Manifest Reference Number: _____ U.S. EPA ID Number _____									
Facility's Phone: _____									
18c. Signature of Alternate Facility (or Generator) _____ Month Day Year _____									
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. H132			2.		3.		4.		
20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
Printed/Typed Name Richard Andrews			Signature [Signature]			Month Day Year 03 12 13			

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

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<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234476</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>005937061 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA</b>				Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>			
Generator's Phone: <b>925-281-9807</b>							
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>				U.S. EPA ID Number <b>CAD982513632</b>			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93208 USA</b>				U.S. EPA ID Number <b>CAD990675276</b>			
Facility's Phone: <b>861-762-6200</b>							

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes		
		No.	Type			F002	611	F001
1.	<b>HA3077,HAZARDOUS WASTE, SOLIDS,N.O.S, (TETRACHLOROETHYLENE),9,PGIII</b>	<b>1</b>	<b>DT</b>	<b>18</b>	<b>Y</b>			
2.								
3.								
4.								

14. Special Handling Instructions and Additional Information  
**WASTE PROFILE: CH811673B SALES ORDER NUMBER:DJ4992175 DENBESTE JOB NUMBER: DB12633 ERG: 171**  
**WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL**

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Officer's Printed/Typed Name: **Sage Appel/Moffitt in Behalf of Solano Group** Signature: *[Signature]* Month: **3** Day: **14** Year: **13**

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: \_\_\_\_\_ Date leaving U.S.: \_\_\_\_\_

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: <b>Antonio Lopez</b>	Signature: <i>[Signature]</i>	Month: <b>03</b> Day: <b>14</b> Year: <b>13</b>
Transporter 2 Printed/Typed Name:	Signature:	Month: Day: Year:

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number: \_\_\_\_\_

18b. Alternate Facility (or Generator) \_\_\_\_\_ U.S. EPA ID Number \_\_\_\_\_

Facility's Phone: \_\_\_\_\_

18c. Signature of Alternate Facility (or Generator) \_\_\_\_\_ Month: Day: Year: \_\_\_\_\_

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. <b>H132</b>	2.	3.	4.
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20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a

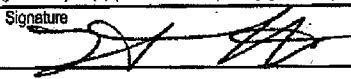
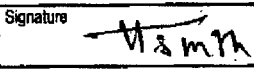
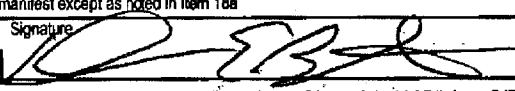
Printed/Typed Name: **Henri's Barton** Signature: *[Signature]* Month: **03** Day: **14** Year: **13**

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAPO00234476</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>005937056 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY LOCKER CLEANERS 162 SHANNON BAY POINT, CA 94585 USA 825-261-8607</b>			Generator's Site Address (if different than mailing address) <b>1187-SOLANO AVE ALBANY, CA 94706 USA</b>				
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAD982513632</b>				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA 061-762-6200</b>			U.S. EPA ID Number <b>CAD980675278</b>				
Facility's Phone:							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1.	NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PG II	1	DT	18	Y	F002 611 F001
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611673B SALES ORDER NUMBER: DJ4892175 DENBESTE JOB NUMBER: DB12833 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name <b>Sage Anne Minetti on behalf of Solano Group</b> Signature <i>[Signature]</i> Month Day Year <b>13/14/13</b>							
INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:						
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name <b>Garrett Caldera</b>		Signature <i>[Signature]</i>		Month Day Year <b>13/14/13</b>		
DESIGNATED FACILITY	Transporter 2 Printed/Typed Name <b>Jose Gomez</b>		Signature <i>[Signature]</i>		Month Day Year <b>10/15/13</b>		
	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number:						
18b. Alternate Facility (or Generator) U.S. EPA ID Number							
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator) Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. <b>H132</b>		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name <b>Richard Andrews</b>		Signature <i>[Signature]</i>		Month Day Year <b>10/15/13</b>			

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved, OMB No. 2050-0039

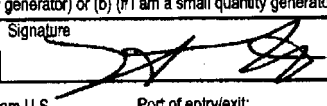
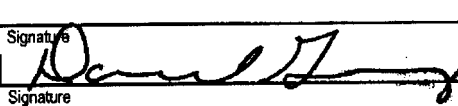
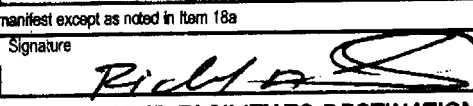
<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234478</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>005937057 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94585 USA</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94708 USA</b>				
Generator's Phone: <b>925-261-9607</b>							
6. Transporter 1 Company Name <b>HL DENBESTE TRANSPORTATION INC.</b>			U.S. EPA ID Number <b>CAP000177733</b>				
7. Transporter 2 Company Name <b>HAROLD LIPOL TRANI.</b>			U.S. EPA ID Number <b>CAD0062510632</b>				
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA</b>			U.S. EPA ID Number <b>CAD0060675276</b>				
Facility's Phone: <b>661-762-6200</b>							
GENERATOR	9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
			No.	Type			
	1.	NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S. (TETRACHLOROETHYLENE), 9, PGIII	1	DT	18	Y	F002 811 F001
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611673B SALES ORDER NUMBER: DJ4992175 DENBESTE JOB NUMBER: DB12633. ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b> <b>15506 2743</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name <b>Forrest G. Smith on behalf of Solano County</b>							
Signature <i>[Signature]</i>							
Month Day Year <b>3 19 13</b>							
TRANSPORTER / INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____						
	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name <b>HAROLD LIPOL</b>		Signature <i>[Signature]</i>		Month Day Year <b>3 19 13</b>		
Transporter 2 Printed/Typed Name		Signature		Month Day Year			
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number: _____						
	18b. Alternate Facility (or Generator) U.S. EPA ID Number						
	Facility's Phone: _____						
18c. Signature of Alternate Facility (or Generator) Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. <b>H132</b>		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a							
Printed/Typed Name <b>Richard Andrews</b>				Signature <i>[Signature]</i>		Month Day Year <b>10 3 11 9 13</b>	

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234476</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>005937058 JJK</b>				
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA 925-261-9807</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>						
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAD982513632</b>						
7. Transporter 2 Company Name			U.S. EPA ID Number						
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA 881-762-6200</b>			U.S. EPA ID Number <b>CAD980675276</b>						
9a. HM			9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type	11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes	
1.			<b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII</b>		<b>1</b> <b>DT</b>	<b>10</b>	<b>Y</b>	<b>F002</b> <b>611</b> <b>F003</b>	
2.									
3.									
4.									
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611873B SALES ORDER NUMBER: DJ4892175 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b> <b>DJ 514 5917</b>									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Officer's Printed/Typed Name <b>Format Smith on Behalf of Solano County</b>					Signature 	Month <b>4</b>	Day <b>11</b>	Year <b>13</b>	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:									
17. Transporter Acknowledgment of Receipt of Materials									
Transporter 1 Printed/Typed Name <b>HARTINDER, S. KAHN</b>					Signature 	Month <b>4</b>	Day <b>11</b>	Year <b>13</b>	
Transporter 2 Printed/Typed Name					Signature	Month	Day	Year	
18. Discrepancy									
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
Manifest Reference Number:									
18b. Alternate Facility (or Generator) U.S. EPA ID Number									
Facility's Phone:									
18c. Signature of Alternate Facility (or Generator) Month Day Year									
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. <b>H132</b>			2.		3.		4.		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
Printed/Typed Name <b>Arnis Berta</b>					Signature 	Month <b>4</b>	Day <b>11</b>	Year <b>13</b>	



Albany Cleaners  
Solano Group  
Sept 16 2013  
CH6116738

<u>Date</u>	<u>Profile #</u>	<u>Ticket</u>	<u>Net Wt.</u>	<u>Tons</u>
9/11/2013	011240894JJK	33562589	48700	24.35
	011240895JJK	3358259	39400	19.70
	011240605JJK	3356947	47020	23.51
	011240606JJK	3356948	48800	24.40
	011240607JJK	3356949	48400	24.20
	011240608JJK	3356588	49240	24.62
Totals		6	281560	140.78

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234476</b>		2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>		4. Manifest Tracking Number <b>011240894 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 102 SHANNON BAY POINT, CA 94585 USA</b>					Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>				
Generator's Phone: <b>925-281-9807</b>					U.S. EPA ID Number <b>CAR000154476</b> <del>048802513932</del>				
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>					U.S. EPA ID Number				
7. Transporter 2 Company Name					U.S. EPA ID Number				
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA</b>					U.S. EPA ID Number <b>CAD980675276</b>				
Facility's Phone: <b>861-762-8200</b>									
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1.	<b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S. (TETRACHLOROETHYLENE), 9, PGIII</b>			<b>1 DT</b>		<b>18</b>	<b>Y</b>	<b>F001 F002 611</b>
	2.								
	3.								
	4.								
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH811673B SALES ORDER NUMBER: DJ7841210 DENBESTE JOB NUMBER: DB12833 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b> <b>9007540 #69</b>									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Offor's Printed/Typed Name <b>Forrest Canutt on behalf of Solano Group</b>					Signature 		Month Day Year <b>9 11 13</b>		
INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____								
	Transporter signature (for exports only): _____								
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials								
	Transporter 1 Printed/Typed Name <b>Daniel Gomer</b>					Signature 		Month Day Year <b>09 11 13</b>	
Transporter 2 Printed/Typed Name					Signature		Month Day Year		
DESIGNATED FACILITY	18. Discrepancy								
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection								
	Manifest Reference Number: _____								
	18b. Alternate Facility (or Generator) U.S. EPA ID Number								
	Facility's Phone: _____								
18c. Signature of Alternate Facility (or Generator) Month Day Year									
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. <b>H132</b>		2.		3.		4.			
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
Printed/Typed Name <b>Richard Andrews</b>					Signature 		Month Day Year <b>09 01 13</b>		



ENVIRONMENTAL SERVICES  
MANIFEST INFORMATION

Land Disposal Restriction  
Notification Form

Page : 1 of 1

Printed Date : Feb 15, 2013

Generator : Albany 1-Hour Cleaners

Address : 1187 Solano Avenue  
Albany, CA 94706

Manifest Tracking Info.

011240894 JJK

Sales Order No: DJ7841210

EPA ID# : CAP000234478

LINE ITEM INFORMATION		Profile No.	Treatability Group	LDR Disposal Category
Line Item	Page No.			
1.		CHB116738	NON-WASTEWATER	7 (Alternate Soil Std-meets std. (with listed hazardous waste only))

EPA Waste Code  
F001F002 CWC61T

EPA Waste Sub-Category  
NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
TETRACHLOROETHYLENE	N	Y	N
TRICHLOROETHYLENE	N	Y	N

Certification

Applies to  
Manifest Line  
Item

This contaminated soil does contain listed hazardous waste and does not exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by 40 CFR 268.40(c) or the universal treatment standards. I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Waste analysis data, where available, is attached.

Signature :

Print Name

J. Anthony Kershaw

Title :

G.P. Solano Group

Date :

9-11-13

NO. 265353

# CLEANHARBORS BUTTONWILLOW, LLC WEIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed in Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

WEIGHMASTER CLEANHARBORS BUTTONWILLOW, LLC

1:50 PM 09/11/13  
REG. ( 59)  
INBOUND 78960 lb

2:02 PM 09/11/13

REG. ( 59)  
78960 lb GROSS  
30260 lb TARE  
48700 lb NET

☒ END DUMP ☐ TRANSFER ☐ VACUUM ☐ VAN  
☐ ROLL OFF ☐ FLAT BED ☐

PROFILE NO. <i>CH611673 B</i>	GROSS WT. BY: <i>[Signature]</i>	DATE <i>09-11-13</i>
DISPOSAL LOCATION <i>35-4 26-I-B</i>	TARE WT. BY: <i>[Signature]</i>	DATE <i>09/11/13</i>
DRIVER'S NAME PRINTED <i>Daniel Gomez</i>	WEIGHING LOCATION: <i>2800 W. LOKERN ROAD BUTTONWILLOW, CA 93206</i>	
DRIVER'S NAME SIGNATURE <i>Daniel Gomez</i>	GENERATOR <i>Albany</i>	
TRACTOR NO. <i>69</i>	TRANSPORTER <i>JJ Perez Trucking</i>	
TRACTOR LIC. NO. <i>9007540</i>	MANIFEST NO. <i>011240894 JJE</i>	
TRAILER LIC. NO. <i>305 IES</i>	SERVICE ORDER NO. <i>DS 7891210</i>	
BIN NUMBERS: <i>E/D 386</i>	BIN TRACKING	

DRUM NUMBER:

*33562589*

COMMENTS:

VIS	pH	SUL	CYA	OX	FL	FLASH	20%
<i>+</i>	<i>8.61</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>~</i>	<i>~</i>	

OTHER:

IC	CR	PR	B.W. W.B.	LAB	SOLID BULK	WORK SHEET	LAND TRACK	W.T. SCAN	MAN- SCAN	RE- SCAN
<i>2</i>						<i>✓</i>				

BIN DROP FULL:

MOVE  
BIN TO:

DATE:

BY:

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234476</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-836-1477</b>	4. Manifest Tracking Number <b>011240895 JJK</b>					
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA</b>					Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>					
Generator's Phone: <b>925-261-9807</b>					U.S. EPA ID Number					
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>					U.S. EPA ID Number <b>CAD000013082</b>					
7. Transporter 2 Company Name <b>J TORRES Co. Inc.</b>					U.S. EPA ID Number <b>CAD000133772</b>					
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA</b>					U.S. EPA ID Number <b>CAD000675276</b>					
Facility's Phone: <b>861-782-6200</b>										
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
				No.	Type					
		<b>NA2077 HAZARDOUS WASTE, SOLIDS, N.O.S. (TETRACHLOROETHYLENE), 9, PGIII</b>		<b>1</b>	<b>DT</b>	<b>18</b>	<b>Y</b>	<b>F001</b>	<b>F002</b>	<b>011</b>
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611073B SALES ORDER NUMBER: DJ7841210 DENBESTE JOB NUMBER: DB12833 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>										
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.										
Generator's/Offor's Printed/Typed Name <b>Forest Consultant for Hall &amp; Associates Group</b>										
Signature <i>[Signature]</i>										
Month Day Year <b>9/12/13</b>										
TRANSPORTER INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____									
	Transporter signature (for exports only): _____									
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials									
	Transporter 1 Printed/Typed Name _____ Signature _____ Month Day Year _____									
DESIGNATED FACILITY	Transporter 2 Printed/Typed Name _____ Signature _____ Month Day Year _____									
	<b>Thomas Green</b> <i>[Signature]</i> <b>9/12/13</b>									
DESIGNATED FACILITY	18. Discrepancy									
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
	Manifest Reference Number: _____ U.S. EPA ID Number _____									
	18b. Alternate Facility (or Generator)									
	Facility's Phone: _____									
DESIGNATED FACILITY	18c. Signature of Alternate Facility (or Generator) _____ Month Day Year _____									
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
	1. <b>H172</b> 2. _____ 3. _____ 4. _____									
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
	Printed/Typed Name _____ Signature _____ Month Day Year _____									
<b>KONAMANI LINGRATH</b> <i>[Signature]</i> <b>9/12/13</b>										



NO. 265474

# CLEANHARBORS BUTTONWILLOW, LLC

## WEIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed in Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

WEIGHMASTER CLEANHARBORS BUTTONWILLOW, LLC

3:59 pm 09/12/13  
REG. ( 88)  
INBOUND 70280 lb

4:19 pm 09/12/13

REG. ( 88)  
70280 lb GROSS  
30880 lb TARE  
39400 lb NET

☒ END DUMP ☐ TRANSFER ☐ VACUUM ☐ VAN  
☐ ROLL OFF - ☐ FLAT BED ☐

PROFILE NO. <u>01411077B</u>	GROSS WT. BY: <u>[Signature]</u> DEPUTY <u>[Signature]</u>	DATE <u>9/12/13</u>
DISPOSAL LOCATION <u>75-04 24-L-5</u>	TARE WT. BY: <u>[Signature]</u> DEPUTY <u>[Signature]</u>	DATE <u>9/12/13</u>
DRIVER'S NAME PRINTED <u>Thomas Green</u>	WEIGHING LOCATION: <u>2500 W. LOKERN ROAD BUTTONWILLOW, CA 93206</u>	
DRIVER'S NAME SIGNATURE <u>Thomas Green</u>	GENERATOR <u>Alband 1 Hour Cleaners</u>	
TRACTOR NO. <u>8 13</u>	TRANSPORTER <u>1 TIRES.</u>	
TRACTOR LIC. NO. <u>SP60103</u>	MANIFEST NO. <u>011-240495JJK</u>	
TRAILER LIC. NO. <u>1W2C5188</u>	SERVICE ORDER NO. <u>057441210</u>	
BIN NUMBERS:	BIN TRACKING	

VIS	pH	SUL	CYA	OX	FL	FLASH	20%
+	7.77	-	-	-	-	N	
OTHER:							

IC	CR	PR	B.W. W.B.	LAB	SOLID BULK	WORK SHEET	LAND TRACK	W.T. SCAN	MAN- SCAN	RE- SCAN
W					W					

DRUM NUMBER:

33587259

COMMENTS:

BIN DROP FULL:

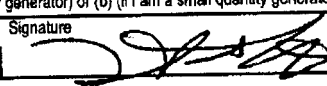
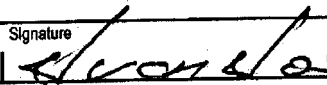
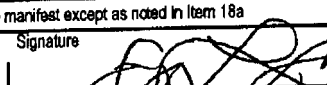
MOVE  
BIN TO:

DATE:

BY:

REVISED (3/10)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234478</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>011240905 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94565 USA</b> Generator's Phone: <b>925-281-9607</b>							
Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>							
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC.</b>				U.S. EPA ID Number <b>CAP00017389</b>			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA</b> Facility's Phone: <b>861-782-8200</b>				U.S. EPA ID Number <b>CAD980675276</b>			
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
			No.	Type			
	1.	<b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S. (TETRACHLOROETHYLENE), 9, PGIII</b>	<b>1</b>	<b>DT</b>	<b>18</b>	<b>Y</b>	<b>F001 F002 611</b>
	2.						
	3.						
4.							
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611673B SALES ORDER NUMBER: DJ7841210 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name <b>Forrest Canett on behalf of Solano Group</b>					Signature 		Month Day Year <b>9 11 13</b>
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: Date leaving U.S.:				
	Transporter signature (for exports only):						
DESIGNATED FACILITY	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name <b>John Jose Bate</b>		Signature 		Month Day Year <b>9 11 13</b>		
	Transporter 2 Printed/Typed Name		Signature		Month Day Year		
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number:						
	18b. Alternate Facility (or Generator) U.S. EPA ID Number						
	18c. Signature of Alternate Facility (or Generator) Month Day Year						
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. <b>H772</b>		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name <b>Kongman Luangrath</b>					Signature 		Month Day Year <b>09 11 17</b>



Land Disposal Restriction  
Notification Form

Page: 1 of 1

Printed Date: Feb 15, 2013

MANIFEST INFORMATION

Generator: Albany 1-Hour Cleaners

Address: 1187 Solano Avenue  
Albany, CA 94706

Manifest Tracking Info.

Sales Order No: DJ7891210

EPA ID #: CAP000234476

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH611673B	NON-WASTEWATER	7 (Alternate Soil Std-meets std. (with listed hazardous waste only))

EPA Waste Code  
F001F002 CWC61T

EPA Waste SubCategory  
NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
TETRACHLOROETHYLENE	N	Y	N
TRICHLOROETHYLENE	N	Y	N

Certification

Applies to  
Manifest Line  
Items

This contaminated soil does contain listed hazardous waste and does not exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by 40 CFR 268.49(c) or the universal treatment standards. I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Waste analysis data, where available, is attached.

Signature:

Print Name

Title:

Date:

J. Anthony Kershaw  
9/11/13

NO.265388

# CLEANHARBORS BUTTONWILLOW, LLC

## WEIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed in Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

WEIGHMASTER CLEANHARBORS BUTTONWILLOW, LLC

4:28 PM 09/11/13  
REG. ( 96)  
INBOUND 79080 lb

4:47 PM 09/11/13  
REG. ( 96)  
79080 lb GROSS  
32060 lb TARE  
47020 lb NET

☒ END DUMP ☐ TRANSFER ☐ VACUUM ☐ VAN  
☐ ROLL OFF - ☐ FLAT BED ☐

PROFILE NO. CHW14770	GROSS WT. BY: <i>[Signature]</i> DEPUTY	DATE 09/11/13
DISPOSAL LOCATION 75-14 24-H-10	TARE WT. BY: <i>[Signature]</i> DEPUTY	DATE 09/11/13
DRIVER'S NAME PRINTED <i>[Signature]</i>	WEIGHING LOCATION: 2500 W. LOKERN ROAD BUTTONWILLOW, CA 93206	
DRIVER'S NAME SIGNATURE <i>[Signature]</i>	GENERATOR <i>Alamy 1-Hour Cleaners</i>	
TRACTOR NO. <i>B-1</i>	TRANSPORTER <i>SUAN Trucking</i>	
TRACTOR LIC. NO. <i>9E21140</i>	MANIFEST NO. <i>011240105 JJK</i>	
TRAILER LIC. NO. <i>5FB305</i>	SERVICE ORDER NO. <i>0J741210</i>	
BIN NUMBERS:	BIN TRACKING	

VIS	pH	SUL	CYA	OX	FL	FLASH	20%
+	245	-	-	-	-	N	
OTHER:							

IC	CR	PR	B.W. W.B.	LAB	SOLID BULK	WORK SHEET	LAND TRACK	W.T. SCAN	MAN- SCAN	RE- SCAN
<i>3</i>					<i>W</i>					

DRUM NUMBER: *33563947*

COMMENTS:

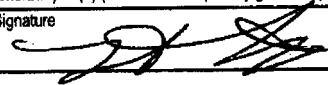
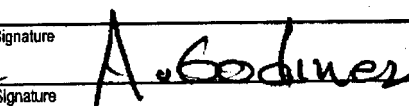
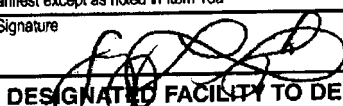
BIN DROP FULL:

MOVE  
BIN TO:

DATE:

BY:

REVISED (3/10)

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234478</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>011240906 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94585 USA</b>			Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>				
Generator's Phone: <b>925-281-9807</b>							
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>			U.S. EPA ID Number <b>CAD9908148809</b>				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONMILLOW, CA 93206 USA</b>			U.S. EPA ID Number <b>CAD990875278</b>				
Facility's Phone: <b>861-762-8200</b>							
9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
1.	<b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII</b>	1	DT	18	Y	F001 F002 611	
2.							
3.							
4.							
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611673B SALES ORDER NUMBER: DJ7841210 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name <b>Forrest Cassatt, Chief of Police, Solano County</b>				Signature 	Month <b>9</b>	Day <b>12</b>	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.				Port of entry/exit: Date leaving U.S.:			
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name <b>ANDREW BOWDIN</b>				Signature 	Month <b>9</b>	Day <b>11</b>	
Transporter 2 Printed/Typed Name				Signature	Month	Day	
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
Manifest Reference Number:							
18b. Alternate Facility (or Generator) U.S. EPA ID Number							
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator)							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. <b>H172</b> 2. 3. 4.							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name <b>KONGMAY WANGRATH</b>				Signature 	Month <b>9</b>	Day <b>11</b>	





ENVIRONMENTAL SERVICES  
MANIFEST INFORMATION

Land Disposal Restriction  
Notification Form

Page : 1 of 1

Printed Date : Feb 15, 2013

Generator : Albany 1-Hour Cleaners

Address : 1187 Solano Avenue  
Albany, CA 94706

Manifest Tracking Info.

EPA ID #: CAP000234476

Sales Order No: DJ7841210

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH811673B	NON-WASTEWATER	7 (Alternate Soil Std-meets std. (with listed hazardous waste only))

EPA Waste Code  
F001F002 CWC61T

EPA Waste SubCategory  
NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
TETRACHLOROETHYLENE	N	Y	N
TRICHLOROETHYLENE	N	Y	N

Certification

Applies to  
Manifest Line  
Items

This contaminated soil does contain listed hazardous waste and does not exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by 40 CFR 268.49(c) or the universal treatment standards. I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Waste analysis data, where available, is attached.

Signature :

Print Name

Title :

Date :

J. Anthony Kershaw  
9/21/13

NO. 265381

# CLEANHARBORS BUTTONWILLOW, LLC

## WEIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed in Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

WEIGHMASTER CLEANHARBORS BUTTONWILLOW, LLC

3:50 pm 09/11/13  
REG. ( 88)  
INBOUND 79160 lb

4:06 pm 09/11/13

REG. ( 88)  
79160 lb GROSS  
30360 lb TARE  
48800 lb NET

☒ END DUMP ☐ TRANSFER ☐ VACUUM ☐ VAN

☐ ROLL OFF - ☐ FLAT BED ☐

PROFILE NO. CH411477P	GROSS WT. BY: <i>[Signature]</i> DEPUTY <i>[Signature]</i> DATE 09/11/13
DISPOSAL LOCATION 7504 24-H-H	TARE WT. BY: <i>[Signature]</i> DEPUTY <i>[Signature]</i> DATE 09/11/13
DRIVER'S NAME PRINTED Antonio	WEIGHING LOCATION: 2500 W. LOKERN ROAD BUTTONWILLOW, CA 93206
DRIVER'S NAME SIGNATURE A. Bodine	GENERATOR Albany 1-Hour Cleaners
TRACTOR NO. 68	TRANSPORTER TRO
TRACTOR LIC. NO. 9B83006	MANIFEST NO. 011240906 JJK
TRAILER LIC. NO. 4CD2398	SERVICE ORDER NO. 15741210
BIN NUMBERS:	BIN TRACKING

VIS	pH	SUL	CYA	OX	FL	FLASH	20%
+							Y
OTHER:							

IC	CR	PR	B.W. W.B.	LAB	SOLID BULK	WORK SHEET	LAND TRACK	W.T. SCAN	MAN- SCAN	RE- SCAN
4										

DRUM NUMBER:

33563948

COMMENTS:

BIN DROP FULL:

MOVE  
BIN TO:

DATE:

BY:

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234476</b>		2. Page 1 of <b>1</b>		3. Emergency Response Phone <b>800-838-1477</b>		4. Manifest Tracking Number <b>011240907 JJK</b>	
		5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 182 SHANNON BAY POINT, CA 94565 USA</b>		Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94706 USA</b>					
Generator's Phone: <b>925-261-9807</b>		6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>		U.S. EPA ID Number <b>CA0002513434</b>		7. Transporter 2 Company Name			
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA</b>		Facility's Phone: <b>881-782-8200</b>		U.S. EPA ID Number <b>CAD980675278</b>					
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
					No.	Type			
	1.	<b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S., (TETRACHLOROETHYLENE), 9, PGIII</b>			<b>1</b>	<b>DT</b>	<b>18</b>	<b>Y</b>	<b>F001 F002 611</b>
	2.								
	3.								
	4.								
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611873B SALES ORDER NUMBER: DJ7841210 DENBESTE JOB NUMBER: DB12833 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Offoror's Printed/Typed Name <b>Forrest G. Smith on behalf of Slanet Group</b>				Signature <i>[Signature]</i>		Month Day Year <b>9 11 13</b>			
TRANSPORTER INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____								
	Transporter signature (for exports only): _____								
	17. Transporter Acknowledgment of Receipt of Materials								
DESIGNATED FACILITY	Transporter 1 Printed/Typed Name <b>Salvador Zavaleta</b>				Signature <i>[Signature]</i>		Month Day Year <b>9 11 13</b>		
	Transporter 2 Printed/Typed Name				Signature		Month Day Year		
	18. Discrepancy								
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
Manifest Reference Number: _____									
18b. Alternate Facility (or Generator) U.S. EPA ID Number									
Facility's Phone: _____									
18c. Signature of Alternate Facility (or Generator) Month Day Year									
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. <b>H132</b>		2.		3.		4.			
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
Printed/Typed Name <b>Richard Andrews</b>				Signature <i>[Signature]</i>		Month Day Year <b>09 11 13</b>			



ENVIRONMENTAL SERVICES  
MANIFEST INFORMATION

Land Disposal Restriction  
Notification Form

Page : 1 of 1

Printed Date : Feb 15, 2013

Generator : Albany 1-Hour Cleaners

Address: 1187 Solano Avenue  
Albany, CA 94706

Manifest Tracking Info.

EPA ID #: CAP000234476

Sales Order No: DJ7841210

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH611673B	NON-WASTEWATER	7 (Alternate Soil Std-meets std. (with listed hazardous waste only))

EPA Waste Code  
F001F002 CWC61T

EPA Waste SubCategory  
NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
TETRACHLOROETHYLENE	N	Y	N
TRICHLOROETHYLENE	N	Y	N

Certification

Applies to  
Manifest Line  
Items

This contaminated soil does contain listed hazardous waste and does not exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by 40 CFR 268.49(c) or the universal treatment standards. I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Waste analysis data, where available, is attached.

Signature:

Print Name

Title:

Date:

*[Signature]*  
6. P. Solano Group

*[Signature]*  
J. Anthony Kershaw  
9/11/13

No. 265377

# CLEANHARBORS BUTTONWILLOW, LLC WEIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed in Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

WEIGHMASTER CLEANHARBORS BUTTONWILLOW, LLC

3:31 PM 09/11/13  
REG. ( 85)  
INBOUND 78820 lb

3:58 PM 09/11/13

REG. ( 85)  
78820 lb GROSS  
30420 lb TARE  
48400 lb NET

☒ END DUMP ☐ TRANSFER ☐ VACUUM ☐ VAN  
☐ ROLL OFF - ☐ FLAT BED ☐

PROFILE NO. <u>CH 611673B</u>	GROSS WT. BY: <u>[Signature]</u> DEPUTY <u>[Signature]</u>	DATE <u>09-11-13</u>
DISPOSAL LOCATION <u>35-4 26-H-C</u>	TARE WT. BY: <u>[Signature]</u> DEPUTY <u>[Signature]</u>	DATE <u>09/11/13</u>
DRIVER'S NAME PRINTED <u>[Signature]</u>	WEIGHING LOCATION: 2500 W. LOKERN ROAD BUTTONWILLOW, CA 93206	
DRIVER'S NAME SIGNATURE <u>[Signature]</u>	GENERATOR <u>ALBANY</u>	
TRACTOR NO. <u>25</u>	TRANSPORTER <u>ZAVARIA TAK</u>	
TRACTOR LIC. NO. <u>9D95153</u>	MANIFEST NO. <u>011240907 Jk</u>	
TRAILER LIC. NO. <u>9032 FJ</u>	SERVICE ORDER NO. <u>DS 7841210</u>	
BIN NUMBERS:	BIN TRACKING	

VIS	pH	SUL	CYA	OX	FL	FLASH	20%	
<u>+</u>							<u>y</u>	
OTHER:								

IC	CR	PR	B.W. W.B.	LAB	SOLID BULK	WORK SHEET	LAND TRACK	W.T. SCAN	MAN- SCAN	RE- SCAN
<u>3</u>					<u>[Signature]</u>					

DRUM NUMBER: 33563949

COMMENTS:

BIN DROP FULL:

MOVE  
BIN TO:

DATE:

BY:

REVISED (3/10)



<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAP000234478</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-838-1477</b>	4. Manifest Tracking Number <b>011240908 JJK</b>		
5. Generator's Name and Mailing Address <b>ALBANY 1-HOUR CLEANERS 162 SHANNON BAY POINT, CA 94585 USA</b>		Generator's Site Address (if different than mailing address) <b>1187 SOLANO AVE ALBANY, CA 94708 USA</b>					
Generator's Phone: <b>925-261-9607</b>		U.S. EPA ID Number <b>CAD980015497C</b>					
6. Transporter 1 Company Name <b>DENBESTE TRANSPORTATION INC</b>		U.S. EPA ID Number <b>CAD9802513632</b>					
7. Transporter 2 Company Name		U.S. EPA ID Number					
8. Designated Facility Name and Site Address <b>CLEAN HARBORS ENVIRONMENTAL 2500 WEST LOKERN RD BUTTONWILLOW, CA 93206 USA</b>		U.S. EPA ID Number <b>CAD980675278</b>					
Facility's Phone: <b>861-762-8200</b>							
9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
1.	<b>NA3077, HAZARDOUS WASTE, SOLIDS, N.O.S. (TETRACHLOROETHYLENE), 9, PGIII</b>	1	DT	18	Y	F001 F002 611	
2.							
3.							
4.							
14. Special Handling Instructions and Additional Information <b>WASTE PROFILE: CH611673B SALES ORDER NUMBER: DJ7841210 DENBESTE JOB NUMBER: DB12633 ERG: 171</b> <b>WEAR ALL APPROPRIATE PPE WHEN HANDLING MATERIAL</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name <b>Forrest G. Smith on behalf of Solano Group</b>		Signature <i>[Signature]</i>		Month Day Year <b>9/11/13</b>			
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name <b>Francis Cleaver</b>		Signature <i>[Signature]</i>		Month Day Year <b>9/11/13</b>			
Transporter 2 Printed/Typed Name		Signature		Month Day Year			
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
Manifest Reference Number: _____ U.S. EPA ID Number							
18b. Alternate Facility (or Generator)							
Facility's Phone: _____							
18c. Signature of Alternate Facility (or Generator) _____ Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1.	2.	3.	4.				
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name <b>Richard Andrews</b>		Signature <i>[Signature]</i>		Month Day Year <b>09/11/13</b>			



Land Disposal Restriction  
Notification Form

Page : 1 of 1

Printed Date : Feb 15, 2013

MANIFEST INFORMATION

Generator : Albany 1-Hour Cleaners

Address : 1187 Solano Avenue  
Albany, CA 94706

Manifest Tracking Info.

EPA ID #: CAP000234476

Sales Order No: DJ7841210

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH611673B	NON-WASTEWATER	7 (Alternate Soil Std-meets std. (with listed hazardous waste only))

EPA Waste Code  
F001F002 CWC611

EPA Waste SubCategory  
NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
TETRACHLOROETHYLENE	N	Y	N
TRICHLOROETHYLENE	N	Y	N

Certification

Applies to  
Manifest Line  
Items

This contaminated soil does contain listed hazardous waste and does not exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by 40 CFR 268.49(c) or the universal treatment standards. I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Waste analysis data, where available, is attached.

Signature :

Print Name

Title :

Date :

*[Signature]*  
6. P. Solano Group

J. Anthony Kershaw  
9/11/13

No. 265361

# CLEANHARBORS BUTTONWILLOW, LLC

## WEIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed in Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

WEIGHMASTER CLEANHARBORS BUTTONWILLOW, LLC

2:13 PM 09/11/13  
REG. (68)  
INBOUND 78680 lb

2:33 PM 09/11/13

REG. (68)  
78680 lb GROSS  
29440 lb TARE  
49240 lb NET

☒ END DUMP ☐ TRANSFER ☐ VACUUM ☐ VAN  
☐ ROLL OFF - ☐ FLAT BED ☐

PROFILE NO. <b>CH 611673B</b>	GROSS WT. BY: <b>R. [Signature]</b> DEPUTY <b>09-11-13</b>	DATE
DISPOSAL LOCATION <b>35-4 26-I-6</b>	TARE WT. BY: <b>[Signature]</b> DEPUTY <b>09/11/13</b>	DATE
DRIVER'S NAME PRINTED <b>FLAVIO GONZALEZ</b>	WEIGHING LOCATION: <b>2500 W. LOKERN ROAD BUTTONWILLOW, CA 93206</b>	
DRIVER'S NAME SIGNATURE <b>FLAVIO GONZALEZ</b>	GENERATOR <b>ALBANY</b>	
TRACTOR NO. <b>64</b>	TRANSPORTER <b>JJ PEREZ TRUCK</b>	
TRACTOR LIC. NO. <b>WP 17076</b>	MANIFEST NO. <b>011240908 JSA</b>	
TRAILER LIC. NO. <b>803495</b>	SERVICE ORDER NO. <b>DS 7841210</b>	
BIN NUMBERS:	BIN TRACKING	

VIS	pH	SUL	CYA	OX	FL	FLASH	20%
+	7.37	-	-	-	h	h	
OTHER:							

IC	CR	PR	B.W. W.B.	LAB	SOLID BULK	WORK SHEET	LAND TRACK	W.T. SCAN	MAN- SCAN	RE- SCAN
1					h					

DRUM NUMBER: **33562588**

COMMENTS:

BIN DROP FULL:

MOVE  
BIN TO:

DATE:

BY:

REVISED (3/10)

## **APPENDIX H**

### Soil Compaction Test Report



Inspection Services, Inc.  
1798 University Ave.  
Berkeley, CA 94703  
Phone: 415-243-3265  
Fax: 415-243-3266

# GENERAL INSPECTION REPORT

Inspector: J Stocke  
Date: 3-22-13  
Day (check one): ☐ Mon ☐ Tue ☐ Wed ☐ Thu ☒ Fri ☐ Sat ☐ Sun  
Time arrived at ISI lab for pick-up (if applicable): 12:30 ☐ AM / ☐ PM  
Time arrived at jobsite: 1:00 ☐ AM / ☐ PM  
Time departed jobsite: 4:00 ☐ AM / ☐ PM  
Time departed ISI lab after drop-off (if applicable): 4:30 ☐ AM / ☐ PM  
Hours Worked: 4 ST 0 OT 0 DT 0 NS 0 NSOT  
Work Shift (check one): ☒ Day ☐ Swing ☐ Graveyard

ISI Project No.: 6101-001.0  
ISI Project Name: 1187 Solano Ave  
Address: Albany Ave  
OSHDP/Permit#:           
Other: D # 72450  
Met with: Ernesto  
Parking:          Tolls:           
Travel Time:          Mileage: 24  
Noon Break (hrs):           
Service Code(s): 2701  
Re-inspection: ☐ Yes / ☒ No

Performed compaction testing on recycled sand placed as backfill beneath S&B, see attached nuclear density tests and map for details.

J Stocke 3-22-13

The material inspected does not meet the requirements for compaction.

J Stocke 3-22-13

Any NCR's?

If any NCR, Fax to ISI office

Any attachments to this report?

Nuclear Density Tests, Map

Person notified of inspection results

Ernesto

Copy of hand-written report left at jobsite

☐ Yes ☒ No

Report/times reviewed by client/contractor

I verify that the work observed/performed ☒ does / ☐ does not (check one) comply with the approved drawings, specifications and the applicable building codes.

Reviewed by ISI Supervisor: [Signature]

[Signature]  
ISI Inspector Signature

Copy of inspector's/technician's handwritten daily reports are left at the jobsite (or shop) as a convenience to the contractor, owner's representative and/or other ISI inspectors. Official reporting of such daily reports will be submitted to the approved distribution, in a timely manner, after review/edit/clarification by ISI managers and/or professional engineers. This procedure may not be followed to its full extent if copy machine is not available at the jobsite for use.



Inspection Services, Inc.  
1798 University Ave  
Berkeley, CA 94703  
Phone: 415-243-3265 / Fax: 415-243-3266

# NUCLEAR GAUGE FIELD DENSITY TEST

Inspector:

Date:

Day (circle one):

Time arrived at ISI lab for pick-up

Time arrived at jobsite:

Time departed jobsite:

Time departed ISI lab after drop-off

Hours Worked:

Work Shift (circle one):

Travel Time:

Mileage:

## LOCATION KEY

BF-Backfill

ST-Station

SW-Sewer Line

WL-Wall

## ELEVATION KEY

SG-Subgrade

TOPC-Top of Pile Cap

FAB-Finish Aggregate Base

BP-Building Pad

EXC-Excavation

SD-Storm Drain

WTL-Water Line

FG-Finish Grade

TOP-Top of Pipe

BTM-Bottom

ELC-Electrical

FTG-Footing

TR-Trench

RT-Retest

AB-Aggregate Base

FSG-Finish Subgrade

BTP-Below Top of Pipe

Test #	Test Date	General Location	Elevation	Moisture [%]	Dry Density [pcf]	Reference Curve	Rel. Compaction [%]	Specified Comp. [%]	Probe Depth [in.]
1	3-22	Location 1	Sand	12.1	106.9	LS2026A	92	95	12
2	3-22	Location 2	"	12.5	107.2	"	92	"	"
3	3-22	Location 3	"	12.0	105.6	"	90	"	"
4									
5									
6									
7									
8									
9									
10									

Moisture determined by burn-back method  
dry densities corrected accordingly

TESTS MEET OR EXCEED THE SPECIFIED COMPACTION REQUIREMENTS EXCEPT AS NOTED

\*\*DENOTES FAILURE TO MEET SPECIFIED COMPACTION REQUIREMENTS

Laboratory Standard:

D-1557

Reference Curve #

Soil Description

Max. Dry Density [pcf]

Opt. Moisture [%]

Field Test Method:

D-2922 D-3017

Standard Density Count:

31326

Standard Moisture Count:

9261

Gauge Model and S/N, underline one:

T3440:4650

T3440:4749

MC-1 DR-P: 4474

MC-1 DR-P: 5302

MC-3 6761

MC-1 DR-P: 8293

ISI Inspector Signature

Person notified of inspection results:

Ernesto

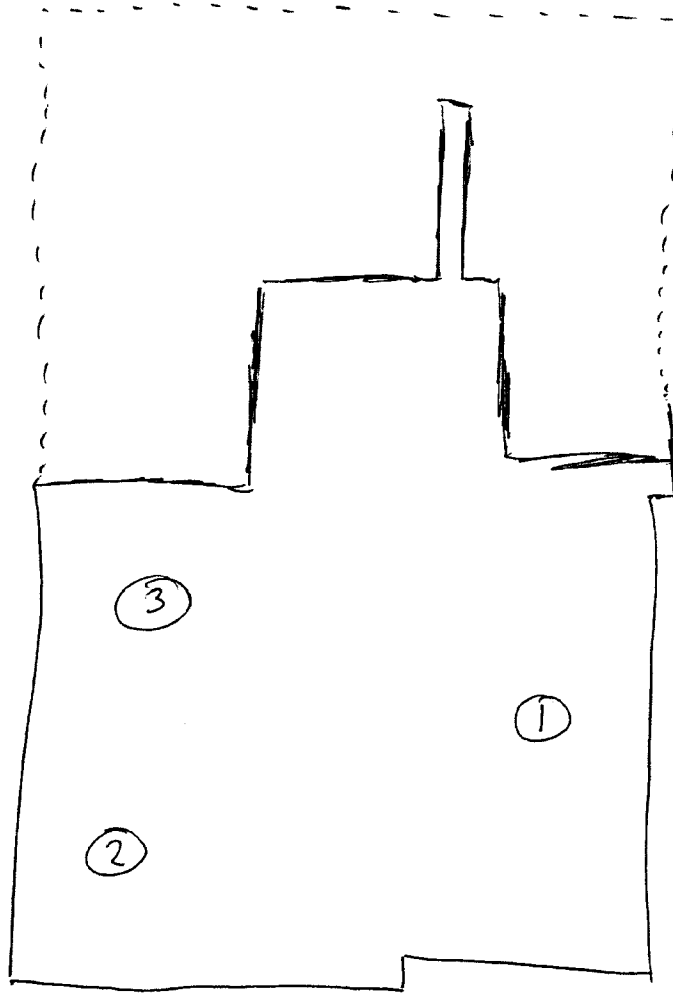
Reviewed by ISI Supervisor:

Report/times reviewed by client/contractor

Copy of hand-written results left at jobsite Yes ☐ No ☒



6101-001.0  
1187 Solano Ave  
Albany, CA  
3-22-13



## **APPENDIX I**

Retro-Coat™ Literature

## Vapor Intrusion Coating System for Existing Structures

### **Product Description**

The **Retro-Coat™** (patent pending) Vapor Intrusion Coating System is a complete product line that consists of chemically resistant materials to properly protect existing structures from the threat of contaminant vapor intrusion without the need for additional concrete protection. Developed by the R&D team of Land Science Technologies™, the Retro-Coat system has been subjected to rigorous testing procedures to prove its ability to combat the most aggressive chemical vapors. The main component of the Retro-Coat system is the **Retro-Coat** coating which is a two part, odorless, no VOC, 100% solids coating.

**Retro-Coat** finishes to a high gloss, easy-to-clean surface that is impervious to vapor and moisture transmission. Available in a variety of colors, **Retro-Coat** can be applied on damp as well as dry concrete, concrete masonry units, tile, brick and metal. For enhanced slip resistance, a suitable aggregate can be added. In addition, other additives or materials can be utilized to achieve a desired performance or aesthetic look.

### **Typical Application**

**Retro-Coat** is suitable as a barrier to block contaminated vapors from entering existing structures. Particular uses include coating the horizontal surfaces of existing structures where contamination under, or adjacent to, a structure can potentially migrate inside the structure and create a vapor encroachment condition. This condition is most commonly found when the existing structure was operated as a dry cleaner, gas station, manufacturing facility or located in close proximity to any structure where carcinogenic chemicals were utilized.

A typical application consists of a minimum 20 mil thick system; consisting of two 10 mil coats of **Retro-Coat** at 160 SF/gallon per coat and is recommended along with a 6 mil coat of **Retro-Coat PRIMER**. The typical 20 mil application can withstand forklift traffic, other machinery and even act as secondary containment. However, if **Retro-Coat** may be exposed to more harsh conditions over a longer period of time, thicker applications ranging from 60 mil to ¼ -inch may be more suitable.

In either application, **Retro-Coat** is a traffic bearing surface and does not need a protective course placed over it.

### **Retro-Coat Advantages**

- ***Our R&D team developed all of the Retro-Coat system components specifically for vapor intrusion protection in existing structures***
- ***Retro-Coat is resistant to both TCE and PCE, the vast majority of coatings cringe at such aggressive chemicals***
- ***Retro-Coat is a wearing surface, meaning no additional concrete protection is necessary***
- ***No odor and fast cure time reduce building downtime***
- ***Carpet, tile, linoleum or other floor coverings can be applied directly over Retro-Coat, if desired***
- ***Eliminates the need to remove the existing slab and when combined with in-situ treatment, lowers overall remediation cost***
- ***Retro-Coat can increase the performance of an existing active sub-slab depressurization system***
- ***Retro-Coat can aid in the retiring of existing active systems***
- ***Available and installed by Land Science Technologies certified contractors***



Completed surface preparation consisting of shot blasting, Retro-Coat PREP to fill joints and cracks and a 6 mil application of Retro-Coat PRIMER



Application of Retro-Coat SEALANT to a 20 mil total thickness

### ***Installation***

**Particular care must be taken to follow those instructions precisely to assure proper installation. These instructions pertain to a standard 20 mil application; please contact us if the desired application is different.**

1. New concrete should be allowed to cure a minimum of 28 days and/or be checked with a rubber mat or plastic sheet to ensure adequate curing time has occurred.
2. All surfaces to be covered should be power washed, shot blasted, acid etched, scarified or sanded to present a clean, sound substrate to which to bond to. The prepared surface should have a ph of 7.
3. Any bugholes and cracks wider than 1/8" should be filled with **Retro-Coat PREP** and allowed to dry before coating. More severely damaged concrete or other special conditions will require the proper **Retro-Coat** product.
4. When installing the standard 20 mil application of **Retro-Coat**, apply a 6 mil coat of **Retro-Coat PRIMER** and allow to dry prior to applying the initial coat of **Retro-Coat**. Priming may not be necessary when **Retro-Coat** is applied to a thickness greater than 20 mils. On new concrete or old concrete with an open porosity and on wood surfaces apply **Retro-Coat PRIMER** and allow to dry.
5. The two **Retro-Coat** ingredients should be mixed in the prescribed ratios, using a low speed "jiffy-style" mixer, (maximum 750 rpm). Mix Part A for about 1 minute then, add Part B and mix until uniform in color and consistency (at least one additional minute.)
6. Do not mix less than the prescribed amount of any ingredient or add any solvent to the mix.
7. Apply the mixed **Retro-Coat** material with a short nap roller, a squeegee or a brush. Apply approximately 160 SF per gallon per coat to achieve 10 mils of coating.
8. Apply a second coat while the first coat is still tacky if using spike shoes or dry enough to walk on, but before 7 hours at 75°F. If the first coat has set and is no longer tacky then the first coat should be sanded before recoating.
9. A suitable aggregate may be broadcast onto the surface after backrolling to provide more anti-slip profile to the finished surface. It is advisable to test various types and sizes of aggregate to achieve the desired finished profile.

### ***Product Specification***

The specified area shall receive an application of **Retro-Coat** as manufactured by **Land Science Technologies, San Clemente, California**. The material shall be installed by precisely following the manufacturer's published recommendations pertaining to surface preparation, mixing and application. The material shall be a low odor, two part, solvent free 100% solids, high gloss flexibilized system with good resilience to resist thermal and mechanical shock. It should be able to be roller applied at a minimum of 10 mils thickness per coat on vertical surfaces without sagging (at ambient conditions). The system must adhere to damp as well as dry concrete, wood, metal tile, terrazzo and sound existing epoxy and urethane coatings. It shall have tensile elongation of at least 6.0% when tested under ASTM-638. Its bond strength to quarry tile shall exceed 1000 psi when tested with an Elcometer pull test. Its hardness shall not exceed 83, as measured on the Shore D scale. The system shall be unaffected by oils and greases and shall withstand chemical attack for at least 72 hours against 98% sulfuric, 50% hydrofluoric acid, glacial acetic acid and acrylonitrile.

## Precautions

1. This is a fast reacting product; immediately pour onto floor after mixing and spread with notched squeegee. Recoat window without sanding at 70°F: 8 hours
2. A severe skin and eye irritant; check MSDS before use
3. Do not apply below 50°F

**Note:** Failure to follow the above instruction, unless expressly authorized by a Land Science Technologies Representative, will void our material warranty.

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## Chemical Resistance

**Retro-Coat™** is considered chemically resistant to neat concentrated acids, caustics and solvents. For permeation or diffusion coefficients please contact Land Science Technologies.

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## Physical Properties

Tensile Strength (ASTM D-638)	: 9800 psi	Bond Strength to Quarry Tile	: >1000 psi
Tensile Elongation (D-638)	: 6.0%	Vapor Transmission Rate (E-96)	: .027 perms
Flexural Strength (D-790)	: 7035 psi	Water Absorption (D-570)	: 0.2% in 24hrs.
Hardness, Shore D (D-2240)	: 83	Taber Abrasion (D-1044)	: 86 mg loss.
Gardner Impact Strength (D-2794)	: 80 in. lbs.	60° Gloss	: 100

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## Physical Characteristics

Density, lbs/gal.	Mixing Ratios	By Volume	By Weight	
Pt. A : 11.0	Pt. A : Pt. B	2:1	2.3:1	
Pt. B : 8.9				
A&B Mixed : 9.3	<b>Curing Times @</b>	<b>50° F</b>	<b>77°F</b>	<b>90°F</b>
<b>Viscosity @ 77°F, cps</b>	Pot Life	35 min.	30 min.	20 min.
Pt. A : 18,400	Working Times	20 min.	20 min.	15 min.
Pt. B : 500	Hard, Foot Traffic	14 hrs.	7 hrs.	3 ½ hrs.
A&B Mixed : 4800	Maximum hardness and chemical resistance are achieved after 7 days at 77°F			

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## Color Availability

Standard colors: beige, black, blue, dark gray, green, gray, red, white, yellow  
**Shelf Life:** 1 Year at 77°F in unopened containers

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## Packaging and Coverage Rates (for 20 mil coverage)

4 Gallon Kit	:	320 SF
20 Gallon Kit	:	1600 SF
100 Gallon Kit	:	8,000 SF

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The data, statements and recommendations set forth in this product information sheet are based on testing, research and other development work which has been carefully conducted by Land Science Technologies, and we believe such data, statements and recommendations will serve as reliable guidelines. However, this product is subject to numerous uses under varying conditions over which we have no control, and accordingly, we do NOT warrant that this product is suitable for any particular use. Users are advised to test the product in advance to make certain it is suitable for their particular production conditions and particular use or uses.

**WARRANTY** – All products manufactured by us are warranted to be first class material and free from defects in material and workmanship.

Liability under this warranty is limited to the net purchase price of any such products proven defective or, at our option, to the repair or replacement of said products upon their return to us transportation prepaid. All claims hereunder on defective products must be made in writing within 30 days after the receipt of such products in your plant and prior to further processing or combining with other materials and products. WE MAKE NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE SUITABILITY OF ANY OF OUR PRODUCTS FOR ANY PARTICULAR USE, AND WE SHALL NOT BE SUBJECT TO LIABILITY FROM ANY DAMAGES RESULTING FROM THEIR USE IN OPERATIONS NOT UNDER OUR DIRECT CONTROL.

THIS WARRANTY IS EXCLUSIVE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NO REPRESENTATIVE OF OURS OR ANY OTHER PERSON IS AUTHORIZED TO ASSUME FOR US ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF OUR PRODUCTS.

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# PRODUCT DATA SHEET

## Retro-Coat™ CAULK

### Product Description

**Retro-Coat CAULK™** is a single component silicone sealant with a broad range of chemical resistance to acids, caustics and solvents under splash/spill conditions. It can withstand movement either in tension or compression of 50% provided proper expansion joint design is practiced. **Retro-Coat CAULK** stays elastic down to -65°F. It bonds to concrete, metal, wood and plastic surfaces without use of a primer. It possesses excellent weatherability. Under normal atmospheric conditions, **Retro-Coat CAULK** dries tack free in 2 hours and dries hard in 24 hrs.

### Product Application

**Retro-Coat CAULK** is primarily used for sealing moving cracks, expansion joints and providing the initial seal around penetration through the slab. With excellent sag resistance and available in 10 oz. cartridges, it can be applied in vertical, as well as horizontal joints. For areas with heavy traffic, or areas where more significant repair is needed, contact Land Science Technologies for the necessary product information.

### Physical Properties

Tensile Strength (D-412)	: 150 psi	Joint Movement Capability	: ± 50%
Tensile Elongation (D-412)	: 550%	Durometer Hardness, Shore A	: 28
Tear Strength, ASTM D-624 (Die B)	: 27 psi	Weatherability (1500 hours in Atlas Weatherometer)	: Remains Elastomeric
Adhesion, Peel Strength	: 20 psi		

### Physical Characteristics

Specific Gravity	1.5
Flow (slump)	0.1 inches

#### Curing Times (@ 50% R.H., 77°F):

Working Time	30 minutes
Skinover Time	2-3 hours
Cure Time (1/8" thickness)	24 hours
Full Cure	14 days

### Color Availability

Black, Gray, and Red

### Packaging and Coverage Rates (for ½ x ½" joint)

10.3 ounce cartridges	: 6 LF
2 gallon pails	: 150 LF

**Shelf Life:** 6 months at 77° in unopened containers. Avoid contact with moisture prior to use.

The data, statements and recommendations set forth in this product information sheet are based on testing, research and other development work which has been carefully conducted by Land Science Technologies, and we believe such data, statements and recommendations will serve as reliable guidelines. However, this product is subject to numerous uses under varying conditions over which we have no control, and accordingly, we do NOT warrant that this product is suitable for any particular use. Users are advised to test the product in advance to make certain it is suitable for their particular production conditions and particular use or uses.

**WARRANTY** – All products manufactured by us are warranted to be first class material and free from defects in material and workmanship.

Liability under this warranty is limited to the net purchase price of any such products proven defective or, at our option, to the repair or replacement of said products upon their return to us transportation prepaid. All claims hereunder on defective products must be made in writing within 30 days after the receipt of such products in your plant and prior to further processing or combining with other materials and products. WE MAKE NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE SUITABILITY OF ANY OF OUR PRODUCTS FOR ANY PARTICULAR USE, AND WE SHALL NOT BE SUBJECT TO LIABILITY FROM ANY DAMAGES RESULTING FROM THEIR USE IN OPERATIONS NOT UNDER OUR DIRECT CONTROL.

THIS WARRANTY IS EXCLUSIVE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NO REPRESENTATIVE OF OURS OR ANY OTHER PERSON IS AUTHORIZED TO ASSUME FOR US ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF OUR PRODUCTS.



## **APPENDIX J**

Tabular SCM

## SITE CONCEPTUAL MODEL

The following table presents the site conceptual model (SCM) in tabular format. Attached Table 5 summarizes the risk summary for PCE at this site, providing detailed media-specific numerical concentration goals and a numerical assessment of progress in achieving those goals. Since PCE is the primary risk driver, assessment of the PCE goals alone provides a valid assessment of human health risks at the site. For further details on secondary site contaminants, please refer to the body of the report and the complete tables of analytical results (Tables 1 through 4). Post-remediation site conditions for groundwater, soil, subslab gas, and indoor air are best summarized by attached Figures 7, 18, 26 and 27, respectively. Cross-sections are shown on Figures 20 and 21, which show the subslab venting system.

<b>Site Address:</b>	1187 Solano Ave	<b>ACEH Case No.</b>	RO0002857	
<b>City:</b>	Albany	<b>Regulator:</b>	Dilan Roe	
<b>SCM Element/ Sub-Element</b>	<b>Description</b>	<b>Data Gap No. and Description</b>	<b>Proposed Investigation</b>	<b>Rationale</b>
<b>Site Description</b>				
<b>Land Use and Site History</b>	<p>The subject site consists of a vacant, one-story commercial unit at 1187 Solano Avenue (Figures 1 and 2). Dry cleaning operations occurred at Albany 1-Hour Cleaners at the subject site from approximately 1986 to 2011. In 2004, hydrocarbon-based cleaning equipment was installed to replace equipment that had used tetrachloroethene, also known as perchloroethene (PCE).</p> <p>The subject site represents one unit of an entire commercial block of single-story units/buildings along Solano Avenue, for which the responsible party (Solano Group) owns the north side of the block. Parcel number 66.2801-22-1 includes 1175 Solano (pizza restaurant), 1181 Solano (medical offices), 1183 Solano (dentist office), and 1185 Solano (vacant and immediately adjacent subject site). Parcel number 66.2801-20 is 1191 Solano (U.S. Post Office). A parking lot lies immediately north of the site. Properties north and northwest of the parking lot are residential. Facing properties along the south side of Solano Avenue are also commercial. Properties to the south of Solano Avenue are residential. Cornell Elementary School is present about 150 ft southeast (upgradient) of the site.</p>	None	NA	NA
Nearby Sites	Based on Geotracker information, the only nearby sites are leaking underground tank sites associated with existing and prior gasoline stations or automobile workshops. The nearest of those sites is approximately 1,000 feet to the northwest of the site at the intersection of San Pablo Avenue and Washington Avenue.	None	NA	NA

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Building Characteristics	<p>The Site is part of a dual-unit single-story commercial building that consists of 1185, and 1187 Solano Avenue. These addresses were previously separate businesses, but the partition wall has recently been removed between 1185 and 1187 to create a larger single space. 1183 remains a separate dentist's office and this unit was constructed subsequent to 1185/1187 Solano. A wall separates 1183 from 1185 Solano. These buildings are of slab-on-grade construction. During drilling and partial demolition of the floors in 1185 and 1187, it was observed that the slabs were underlain with several inches of coarse baserock. In addition, the dentist's office contains a large number of slab penetrations and shallow subsurface vaults that accommodate dental chair penetrations and plumbing for numerous sinks (penetrations were subsequently sealed). The floor slabs in 1185 and 1187 have been demolished and replacement has not yet been completed.</p> <p>Adjoining the Site building to the east is 1191 Solano Avenue (US Post Office). This is a separate, primarily slab-on-grade building with a floor level approximately 2.5 ft higher than the Site property. A portion of the front section of the post office has a perimeter foundation and crawlspace. To the west of the Site building is a wide alleyway, and then a single-story medical office building (1181 Solano) of unknown construction type.</p> <p>The original sanitary sewer piping beneath the Site building ran westwards from the rear of the 1187 Solano unit beneath the 1185 Solano unit, into the 1183 Solano unit. The piping then turns south and exits into Solano Avenue (Figures 1 and 2). The piping was approximately 1 ft under the slab at the rear of the 1187 Solano unit and was apparently surrounded by a few inches of backfill material. In 2001, a new sewer was installed for use by the tenant at 1183 Solano. This sewer was subsequently abandoned in November 2012 and is no longer used. Installation of a new sewer for 1185 and 1187 Solano is currently underway. A video inspection of the original sanitary sewer was conducted in February 15, 2013 and indicated that the piping is cast-iron and appears to be in very good condition,</p>	None	NA	NA

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	<p>with no observed cracks, low points, or ponded water that could increase the potential for leakage. Unions were observed at approximately five foot or greater intervals.</p> <p>An abandoned sewer line was discovered about 6 ft south of, and at a slightly shallower depth than, the primary sanitary sewer in the 1185 and 1187 units. The second line ran at an angle of approximately 45 degrees to the 1187 Solano western wall and ended about 3 ft under the wall beneath 1185 Solano, based on observations by the excavation contractor. A tee was observed in the primary sewer line a few feet away, which may have previously connected to this second sewer line.</p>			
<b>Geology and Hydrogeology</b>				
Regional	<p>The site lies at an elevation of approximately 60 feet above mean sea level on the relatively flat-lying area east of San Francisco Bay (Figure 1). This area is generally referred to as the East Bay Plain, and is underlain by Pleistocene to Holocene alluvial fan deposits interfingering westward with estuarine deposits, and which lie atop older bedrock of the Mesozoic Franciscan Complex. Albany Hill, a bedrock outcrop, lies approximately ½ mile northwest of the Site. The site is located at distal edge of the alluvial fans that border the eastern edge of the San Francisco Basin, a deep Tertiary marine to nonmarine depocenter (Figuers, 1998). Cross sections by Figuers indicate that the Tertiary deposits beneath the site are generally less than 100 feet thick. The Hayward Fault, a major active regional fault of the San Andreas fault system, lies 1.25 miles east of the site.</p>	None	NA	NA

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Local Geology	The near-surface geology described below is based on logs of soil borings beneath the Site and several neighboring properties, and visual inspection of excavations made at the Site during interim corrective actions. The maximum depth of exploration of the soil borings was 35 feet. Beneath the layer of subslab baserock described above, subsurface soil consists primarily of silty to sandy clay to the total depth of exploration. However, a thin (0.5 to 1 foot) layer of silty gravel was encountered at a depth of approximately 30 to 31 feet in all of the deep borings at the site. Site geology is also shown on cross section A-A' (Figure 20).	None - Soil logged to 35 ft bgs and ND for soil and groundwater.	NA	NA
Local Hydrogeology	<p>Groundwater has generally been encountered between 12 to 19 ft bgs during drilling of soil borings at the site, and groundwater entered the remedial excavation in 1187 Solano at a depth of approximately 9 to 10 feet bgs. Stabilized depth to groundwater in shallow monitoring wells has ranged from approximately 8.5 to 13.2 ft. Four shallow wells have been installed at the site with screen intervals within the range of 9' to 15' bgs (Figure 7). Well yields are very low, indicating very low hydraulic conductivities consistent with the high clay content of shallow soils at the site. The wells have yet to be surveyed so the groundwater gradient is unknown, although it is likely westward to southwestward parallel to surface water flow. Given the low permeability soil types present at the site, and the generally low groundwater gradients in the general area of the site, groundwater velocities are expected to be very low.</p> <p>No apparent discrete confining layers or significant aquifers were encountered in borings drilled in the upper 35 feet of soil, although the thin silty gravel layer at approximately 30 feet bgs is probably a preferential flow pathway. Groundwater was observed to rise to approximately 26 feet in borings that penetrated the silty gravel layer, suggesting semi-confined or confined conditions.</p>	<b>Data Gap 1:</b> Insufficient data on shallow groundwater gradient	<b>Plan 1:</b> Survey wells and monitor water levels and COC concentrations until plume stable.	Accurate groundwater elevation measurements will provide gradient information. Future sampling will provide plume stability and seasonal information

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Surface Water	Based on the Codornices Creek Watershed Map distributed by the Oakland Museum, the two creeks closest to the site are Middle Creek, which lies three blocks (approximately 1,500 feet) north of the site and Marin Creek, which lies one block (approximately 1,200 feet) south of the site. Both of the creeks run primarily in underground culverts, though a short section of Middle Creek northeast of the site is mapped as running on the surface. Both creeks flow westwards towards San Pablo Bay.	None	NA	NA
<b>Contaminant Source and Release Information</b>				
Source/ Release Information	Dry cleaning operations at the site started in 1986, and use of PCE as a dry cleaning solvent apparently ceased in 2004 after conversion of cleaning equipment to use so-called "hydrocarbon" cleaners which consist of isoalkanes or isoparaffins and do not contain chlorinated hydrocarbons such as PCE. This history brackets the release age to the 18-year period between 1986 and 2004. During investigation and remediation of the site the maximum levels of contamination were found beneath the location of the dry cleaning machine, indicating that this was the primary release point.	None	NA	NA
Chemicals of Concern	The primary chemical of concern (COC) at the site is PCE. The secondary COCs are the potential toxic degradation products of PCE, which include trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (cis-1,2-DCE), 1,1-dichloroethene (1,1-DCE), and vinyl chloride. The COCs detected in soil, groundwater and/or soil vapor at concentrations exceeding commercial ESLs have been PCE, TCE and cis-1,2-DCE, with PCE exceedences at least an order of magnitude over those for TCE and cis-1,2-DCE in most samples. BTEX and other compounds previously detected in subslab gas, soil, or groundwater do not appear to be COCs following soil excavation.	None	NA	NA
Scope	Subsurface assessment was performed in 2004 and (Avalon, 2004 and 2005). The assessment included soil gas sampling from 5 ft depth in four temporary probes, soil sampling from three 5-ft borings and five 30-ft borings, and groundwater sampling from approximately 30 ft depth within the five deeper borings. The results	None	NA	NA



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	<p>were presented in the Soil Gas Investigation and Health Risk Assessment dated June 8, 2006 (Avalon, 2006).</p> <p>Additional subsurface assessment was performed by Pangea in 2013 to evaluate site conditions prior to site improvements by the future tenant, and to help facilitate future case closure with unrestricted land use (and without a deed restriction). The additional assessment included soil sampling from 50+ borings; groundwater sampling within four monitoring wells, 11 borings and 3 excavation locations; and subslab soil gas sampling from 26 probes.</p>			
Soil	<p>A summary of soil sampling data prior to remediation is shown on Figure 9. Soil sampling data are tabulated in Table 1. The maximum levels of soil contamination were located immediately beneath the former location of the dry cleaning machine (near boring B-7), indicating that leaks or spills at this location, which most likely leached downwards through cracks in the concrete slab, were the most likely source of releases to the underlying soil.</p> <p>PCE may have also breached the concrete floor or the southern sanitary sewer piping near the former washing equipment (near boring B-3). To a presumed lesser extent, PCE may have migrated along preferential pathways/conduits under the floor in vapor phase, or in aqueous phase aided by reported extensive water flooding at the 1187 Solano unit. Potential preferential pathways include the sanitary sewer, sanitary sewer backfill material, and subslab baserock, as well as the underground electrical conduit exiting near the rear of 1185 Solano and subsequent electrical conduit/backfill extending under specialty chairs in the dental office in 1183 Solano.</p> <p>PCE concentrations in soil exceeding the commercial ESLs (for direct contact and drinking water impacts) was limited to the northern part of 1187 Solano at depths less than 11.5 ft, prior to excavation. The lack of impacts beneath this depth, even immediately beneath the release location, is a significant observation. Since this depth is fairly close to the depth of the capillary fringe, it indicates that dense non-aqueous phase liquid</p>	None	NA	NA

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<b>City:</b>	Albany	<b>Regulator:</b>		Dilan Roe
<b>SCM Element/ Sub-Element</b>	<b>Description</b>	<b>Data Gap No. and Description</b>	<b>Proposed Investigation</b>	<b>Rationale</b>
	<p>(DNAPL) leaching downwards from the release point was of insufficient thickness to overcome soil capillary pressures and displace groundwater in the capillary fringe to impact soils beneath this level. Therefore, the DNAPL apparently spread laterally away from the release point at the capillary fringe, rather than penetrating into deeper soils. This observation is consistent with the predominantly silty clay soil type at the site, which generally requires DNAPL thicknesses of tens of feet to overcome capillary forces. The very low levels of soil contamination below 11.5 ft are likely due to gradual diffusion of dissolved contaminants through groundwater.</p> <p>During excavation beneath 1185 Solano, PID screening of site soils showed that the highest levels of residual contamination were present adjacent to the sanitary sewer line and within the thin layer of baserock immediately underlying the concrete slab. This observation, combined with the soil impact observations discussed in the preceding paragraph suggest that DNAPL seeping through the slab migrated laterally along two horizons. First, DNAPL seeped downward through the vadose zone beneath the source and encountered the capillary fringe, whereupon it flowed laterally due to insufficient pressure to overcome capillary pressure at the capillary fringe. Upon saturating vadose zone soil immediately beneath the source, it also seeped laterally through the baserock lying above the relatively dry silty clay native soil. Since the upper section of soil was unsaturated, the DNAPL also seeped downwards into the upper portion of the site soil from the baserock layer over a relatively broad area.</p>			
Groundwater	A summary of groundwater grab sampling data is shown on Figure 6. Groundwater sampling data are tabulated in Table 2. Note that all data on the figure were collected prior to remediation except for EX-E GW, which was collected from groundwater that collected into the remedial excavation. PCE concentrations in grab groundwater exceeding the commercial ESL for the vapor intrusion pathway were present beneath 1183, 1185 and 1187 Solano, and beyond the	None	See below	NA

<b>Site Address:</b>	1187 Solano Ave	<b>ACEH Case No.</b>	RO0002857	
<b>City:</b>	Albany	<b>Regulator:</b>	Dilan Roe	
<b>SCM Element/ Sub-Element</b>	<b>Description</b>	<b>Data Gap No. and Description</b>	<b>Proposed Investigation</b>	<b>Rationale</b>
	northwest corner of 1183 Solano. (Post-remediation groundwater is below ESLs as shown on Figure 7).			
Soil and Subslab Gas	A summary of pre-remediation soil gas and subslab gas sampling data is shown on Figures 5 and Figure10, respectively. Soil gas and subslab gas sampling data are tabulated in Table 3. Prior to remediation, PCE concentrations substantially exceeded the commercial and/or residential ESLs for vapor intrusion in all samples collected (except for SG-1 located in the parking lot north of the building and a crawl space gas probe within 1191 Solano). The lateral extent of soil gas impact was not defined at that time, though subsequent sampling has delineated the extent of PCE in subslab gas.	See below	See below	NA
<b>Remediation Activities</b>				
Soil	Soil remediation (excavation of over 500 tons) was performed under most of the former dry cleaning unit at 1187 Solano and also underneath the adjacent units at 1185 and 1191 Solano. All identified soil with COC concentrations exceeding residential ESLs for direct contact or drinking water impacts was removed and disposed offsite. The excavation cavity was primarily backfilled with controlled density fill (CDF). Excavation was conducted in two stages. Figure 12 shows the geometry of the initial excavation stage and the concentrations of PCE detected in confirmation samples collected following excavation. Following this excavation, additional soil and soil gas samples were collected that showed elevated soil gas concentrations beneath much of the northern part of 1185 Solano (and one soil sample above residential ESLs). Therefore, an additional stage of excavation was conducted in this area to remove very shallow soils that were suspected to have become contaminated by the former washing equipment area, by lateral flow of contaminants beneath the unit through subslab baserock and along sanitary sewer backfill. Figure 17 shows the geometry of the final excavation stage and the concentrations of PCE detected in confirmation samples collected following that excavation. Figure 18 shows the final geometry of both excavations.	None	See below	NA

<b>Site Address:</b>	1187 Solano Ave	<b>ACEH Case No.</b>	RO0002857	
<b>City:</b>	Albany	<b>Regulator:</b>	Dilan Roe	
<b>SCM Element/ Sub-Element</b>	<b>Description</b>	<b>Data Gap No. and Description</b>	<b>Proposed Investigation</b>	<b>Rationale</b>
Groundwater	Groundwater seeped into the excavation pit during the initial excavation stage. A grab sample collected from this groundwater contained 750 µg/L PCE, slightly greater than the commercial ESL for vapor intrusion. The groundwater was pumped out of the pit and disposed of offsite, and contaminated soil in equilibrium with the groundwater was also excavated.	See below	See below	NA
Soil and Subslab Gas	<p>To mitigate potential intrusion of PCE vapors, extensive soil excavation was performed, and a passive subslab venting system was installed beneath most of 1185 and 1187 Solano. The passive subslab venting system includes a gravel layer, slotted piping, a 10 mil plastic overlying layer, two 4" diameter riser pipes to the passive turbine roof fan. The future slab will provide further mitigation. Additional slotted piping was installed to allow passive or active venting of subslab vapor beneath all units (1183, 1185, 1187 and 1191 Solano. The layout of the passive and additional venting piping is shown on Figures 22 and 23. A cross-section schematically illustrating construction details is shown on Figure 21. Several five-day tests were performed on a temporary venting system, which was replaced during excavation activities.</p> <p>In addition, one soil vapor extraction (SVE) well was installed beneath the restroom area at the north end of 1185 Solano. This area was not accessible to excavation and it is possible that undetected soil contamination associated with migration along the sanitary sewer line still remains in this area, so the SVE well was installed as a precautionary measure in case additional soil vapor remediation is merited in this area.</p>	See below	See below	NA
<b>Post-Remediation Investigation</b>				
Scope	<p>Following completion of the remedial excavation, excavation confirmation wall and floor samples were collected to delineate the extent of residual soil contamination.</p> <p>A shallow groundwater well (MW-4) was installed immediately downgradient of the excavation.</p> <p>Four subslab vapor probes have also been installed within the gravel</p>	None	NA	NA

<b>Site Address:</b>	1187 Solano Ave	<b>ACEH Case No.</b>		RO0002857
<b>City:</b>	Albany	<b>Regulator:</b>		Dilan Roe
<b>SCM Element/ Sub-Element</b>	<b>Description</b>	<b>Data Gap No. and Description</b>	<b>Proposed Investigation</b>	<b>Rationale</b>
	backfill of passive subslab venting system to facilitate monitoring of subslab gas concentrations. Subslab gas probes located outside the remedial excavation area have been sampled. Testing of the additional passive/active venting piping can be performed for additional evaluation of subslab gas.			
Soil	Excavation confirmation samples were collected from the floors and walls of the remedial excavations. As shown on Figures 12 and 17, and tabulated on Table 1, all confirmation sample COC concentrations were less than both residential and commercial ESLs.	None	NA	NA
Groundwater	<p>Four groundwater monitoring wells were installed to further delineate the extent of PCE in shallow groundwater, to allow collection of periodic groundwater data, and to estimate the groundwater flow direction. As shown on Figure 7, data from these wells has provided additional delineation of source area impact and the downgradient extent of PCE in shallow groundwater. Detected PCE concentrations in groundwater wells are lower than those in nearby grab groundwater samples. For example, 200 µg/L in source area well MW-1 is lower than 820 µg/L in nearby grab sample from B-22. The PCE concentration of 110 µg/L in source area well MW-4 suggests that the PCE source contributing to the nearby higher grab sample results (750 µg/L at EX-E-GW and 620 µg/L at B-18) has been significantly removed by site excavation.</p> <p>The PCE concentrations in shallow groundwater exceed the final ESLs protective of drinking water (5 µg/L), but since site water is not used as a drinking water resource, this ESL is not applicable to the subject site. Given the fine-grain soil, the applicable ESL for groundwater is the ESL protective of vapor intrusion into indoor air of 640 µg/L for commercial use (63 µg/L for residential use). The predominantly shallow clayey soil and the controlled density fill (CDF) backfill overlying the PCE impact should effectively mitigate upward vapor migration to sufficiently safeguard indoor air quality. PCE concentrations in groundwater monitoring wells (maximum of 200 µg/L) is below the applicable ESL for commercial site use.</p>	<p><b>Data Gap 2.</b> Groundwater plume stability unknown.</p> <p><b>Data Gap 3.</b> Confirmation that BTEX and naphthalene no COCs in groundwater.</p>	<p><b>Plan 2:</b> Future sampling of monitoring wells.</p> <p><b>Plan 3:</b> Analyze samples for full list VOCs by EPA Method 8260, to confirm lack of BTEX and naphthalene concern. Future analysis by EPA Method 8010 to control cost.</p>	Additional sampling to establish plume stability per Low Threat Solvent Site Closure Tool. Confirm COCs in groundwater.

<b>Site Address:</b>	1187 Solano Ave	<b>ACEH Case No.</b>	RO0002857	
<b>City:</b>	Albany	<b>Regulator:</b>	Dilan Roe	
<b>SCM Element/ Sub-Element</b>	<b>Description</b>	<b>Data Gap No. and Description</b>	<b>Proposed Investigation</b>	<b>Rationale</b>
Subslab Gas	Subslab gas was resampled in select probes following completion of the remedial excavations and passive subslab venting system installation. As shown on Figure 26, all subslab gas concentrations are below commercial ESLs (and 10x residential ESLs). Residual PCE concentrations below commercial ESLs are primarily located beneath 1183 Solano along the electrical conduit preferential, and beneath 1191 Solano along the sanitary sewer preferential pathway.	<b>Data Gap 4:</b> Stabilized subslab gas concentrations are unknown	<b>Plan 4:</b> Conduct additional sampling in late winter 2013 or early spring 2014, and subsequently in late summer 2014.  Short testing from vent piping will evaluate the potential benefit of contingent active or passive ventilation of vents installed under 1183 and 1191 Solano.	Conduct sampling same time as indoor air sampling to correlate with indoor air trends (see Data Gap 5 below).
Indoor Air	Indoor air concentration data for each of the units sampled and for an ambient air sample collected from a rooftop at (1181 Solano) approximately 40 ft upwind (northwest) of the closest sample at 1183 Solano and approximately 70 ft upwind of the sample at 1187 Solano (the prevailing wind was from the north or northwest during sampling). Results are shown on Figure 27 and tabulated in Table 4. All COC concentrations were lower than commercial ESLs in the sampled units and at negligible levels in the ambient air sample. Concentrations of PCE in 1183 and 1187 Solano did slightly exceed the residential ESL in the 8-hr work day sample, and the 24-hr sample in 1183 Solano was slightly more than double the residential ESL. The higher level for the 24-hr 1183 Solano sample is likely due to the fact that the HVAC system, which produces a slight positive pressure, was shut down for the period following the work day, thus allowing increased intrusion rates during the period that it was not occupied. The 24-hr sample in 1191 Solano was comparable to the 8-hr sample.	<b>Data Gap 5:</b> Longer term post-remediation and seasonal indoor air concentration trends are not known.	<b>Plan 5:</b> Conduct additional sampling in late winter 2013 or early spring 2014, and subsequently in late summer 2014.	Seasonal sampling as described is recommended under Step 9 of the DTSC Final Vapor Intrusion Guidance.



<b>Site Address:</b>	1187 Solano Ave	<b>ACEH Case No.</b>	RO0002857	
<b>City:</b>	Albany	<b>Regulator:</b>	Dilan Roe	
<b>SCM Element/ Sub-Element</b>	<b>Description</b>	<b>Data Gap No. and Description</b>	<b>Proposed Investigation</b>	<b>Rationale</b>
<b>Risk Pathways</b>				
Prior Risk Evaluation	<p>Prior to the remediation activities conducted by Pangea in 2013, Avalon, Inc. prepared a risk assessment (Avalon, 2006) indicating that the risk posed by the identified contaminants at the site was within acceptable levels for commercial site use and recommended no further action for the site. In a letter dated July 5, 2006, the Alameda County Environmental Health (ACEH) concurred with the report findings and requested a closure request for commercial land use with a draft deed restriction limiting future land use. The ACEH provides oversight for this SLIC case file number RO0002857. The ACEH required additional action to allow case closure with unrestricted land use and avoid a deed restriction.</p> <p>Pangea's review of the Avalon risk assessment has indicated that the risk assessment calculations were based on the assumption that contaminants were located beneath several feet of clean overburden. That assumption was not warranted based on the observed site conditions and location of the contaminant release point. Therefore, the results of that study were not valid, meriting the completed interim remediation to mitigate potential human health risks.</p>	None	NA	NA
Risk Pathway Summary	<p>Based on the characterization data provided under the Pre- and Post-Remediation Investigation SCM Elements above, the following risk pathways are considered to be potentially complete for the Site:</p> <p><b>Soil:</b></p> <ul style="list-style-type: none"> <li>• Vapor intrusion to indoor air</li> <li>• Migration of contaminants to groundwater through leaching and vapor flow.</li> <li>• Direct exposure to construction workers or to potential future residents and biota.</li> <li>• Gross contamination concerns (primarily odors)</li> </ul> <p>Direct exposure for other human receptors or biota is not considered a concern for the current land use (commercial) because soil</p>	See below	See below	NA

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<b>SCM Element/ Sub-Element</b>	<b>Description</b>	<b>Data Gap No. and Description</b>	<b>Proposed Investigation</b>	<b>Rationale</b>
	<p>contamination is restricted to soil beneath the building slab and therefore is inaccessible to those receptors. Also, unrestricted use of the property (i.e. residential conversion) could be deemed acceptable since (1) soil impact exceeding residential ESLs has been removed, and (2) residual subslab and groundwater impact does not represent a significant risk to future residents, since such future development would likely not occur for many years when residual PCE will have further attenuated and building construction (e.g., slab) would provide additional mitigation of potential risks.</p> <p><b>Groundwater:</b></p> <ul style="list-style-type: none"> <li>• Vapor intrusion to indoor air</li> <li>• Ingestion of groundwater impacting wells, sumps or basements at nearby properties</li> <li>• Impacts to aquatic biota in surface water bodies</li> </ul> <p>Groundwater gross contamination or impacts to commercial use are not considered a concern at this site because maximum concentrations of all COCs were below ESL ceiling values both prior to and following remediation.</p> <p>The potential risk pathways identified above are addressed in the CSM Sub-Elements below.</p>			
Soil	<p>As shown on Figure 18, Table 1, and Table 5 (Attached SCM Risk Summary for PCE), excavation confirmation sampling conducted by Pangea indicates that all soil containing COCs at concentrations greater than residential or commercial ESLs for direct contact or impacts to drinking water sources has been excavated from the site, so no potential risks associated with soil contamination are present for site workers, groundwater quality, or potential future residents or biota.</p> <p>The vapor intrusion pathway is discussed below under the soil gas and indoor air SCM sub-elements.</p>	None	NA	NA

Groundwater	<p>The primary risk pathway for groundwater is the vapor intrusion pathway. As shown on Figure 7, Table 2, and Table 5 (Attached SCM Risk Summary for PCE), COC concentrations in shallow (approximately 9 to 15 ft) groundwater beneath the site are less than commercial ESLs for indoor air impacts with the exception of a grab sample from boring B-22 at the northwest corner of 1183 Solano and grab sample EX-E GW from within the remedial excavation (Figure 6). Both of these samples only slightly exceed the commercial ESLs. Grab sample EX-E-GW is no longer considered representative of site conditions because the excavation deepened and widened to remove contaminated soil in equilibrium with the groundwater at this location. A subsequent sample collected from nearby monitoring well MW-4 had substantially lower concentrations. Representative groundwater conditions from monitoring wells are shown on Figure 7. In addition, the sample from B-22 is located near subslab probes that show that subslab COC concentrations are substantially below commercial vapor intrusion ESLs so no impacts are likely. This is expected since site soils are less permeable than the default soil type that the groundwater ESLs are based on.</p> <p>As noted in the East Bay Plain Beneficial Use Evaluation Report (Water Board, 1999), the Site lies within the Berkeley/Albany Groundwater Management Zone part of Zone B, which identifies areas where groundwater is unlikely to be used as a drinking water resource. In addition, shallow groundwater lies in very low permeability soils that are highly unlikely to be able to yield sufficient water to constitute a potential drinking water resource as defined in State Water Resources Control Board Resolution 88-63. Therefore, risks to groundwater beneficial uses are likely to be non-existent. However, it is possible that sumps, basements or wells are present in the downgradient areas of the plume and that accidental ingestion of groundwater could potentially occur within any area where groundwater concentrations exceed ESLs for drinking water.</p> <p>The nearest surface water bodies are located more than 1,000 feet crossgradient of the site, so it is very unlikely that any impacts to aquatic biota exist.</p>	<p><b>See Data Gap 2</b> for determination of groundwater flow direction and plume stability.</p> <p><b>Data Gap 5:</b> Sensitive receptor survey within 250 ft of site in cross-gradient and down-gradient direction.</p>	<p><b>See Plan 2 above.</b></p> <p><b>Plan 5:</b> Conduct a door-to-door survey to identify any water wells or other sensitive receptors (e.g., basements or other subgrade development) within approximately 250 ft of the site in the crossgradient and downgradient directions. If receptors identified, consider additional grab groundwater sampling or subslab gas sampling near receptor.</p>	<p>Additional effort due to nearby residences. The residential ESL for vapor intrusion is substantially lower than the commercial ESL. Subslab/soil gas sampling is a more reliable indicator of vapor intrusion impacts than groundwater sampling.</p>
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	No COCs were detected in the 30-ft deep water-bearing zone in any of the five grab samples collected beneath and adjacent to the site. And lack of soil contamination below 15 ft depth in the source area or elsewhere suggests no potential for future impacts to this zone.			
Subslab and Soil Vapor	As shown on Figure 26, Table 3, and Table 5 (Attached SCM Risk Summary for PCE), sampling immediately following remediation shows concentrations of all COCs are lower than commercial ESLs.	<b>See Data Gaps 4 and 5 above.</b>	<b>See Data Gaps 4 and 5 above.</b>	
Indoor Air	As shown on Figure 27, Table 4, and Table 5(Attached SCM Risk Summary for PCE), sampling immediately following remediation shows concentrations of all COCs are lower than commercial ESLs, so no significant risks to current workers are present. Potential risks for hypothetical future residents at the site are present, although concentrations and associated risks are anticipated to drop because contaminant sources have been removed and passive subslab venting will provide additional attenuation of residual COCs.	<b>Data Gap 6:</b> Longer term post-remediation and seasonal indoor air concentrations not determined.	<b>Plan 6:</b> Conduct additional indoor air (and subslab gas monitoring) to determine if additional mitigation (e.g., active venting and/or vapor barrier) merited. See Data Gaps 4 and 5.	

**Table 5 - Cleanup Levels and Goals** – Former Albany 1-Hr Cleaners, 1187 Solano Avenue, Albany, California

Media	Tetrachloroethene (PCE)			
	Current Maximum	Cleanup Goal	Cleanup Level	Current Estimated Risk and Comments
<b>Soil</b>	<b>0.31</b> mg/kg (GPA-4@10' and SW-EX-4@4')	<b>0.55</b> mg/kg (Residential Final ESL for Drinking Water Resource)	<b>0.55</b> mg/kg (Same as Goal) <b>(Met Goal: Residential and Commercial)</b>	<b>Risk &lt;1 x 10<sup>-6</sup> Residential and Commercial</b>  All soil excavated to below <b>RESIDENTIAL</b> screening level (ESL).
<b>Groundwater (Shallow, about 10')</b>	<b>200</b> ug/L (Well MW-1) <b>820</b> ug/L (Grab B-22)	<b>640</b> ug/L (Commercial ESL protective of indoor air)  <b>Alternate Goal: 63</b> ug/L (Residential ESL protective of indoor air)	<b>640</b> ug/L (Same as Goal) <b>(Met Goal: Commercial)</b>  <b>Alternate Level: 630</b> ug/L (10x Residential ESL protective - indoor air) <b>(Met Proposed Cleanup Level for Residential Use)</b>  <i>(Superceded by Subslab Gas and Indoor Air)</i>	<b>Risk &lt;1 x 10<sup>-6</sup> Commercial</b>  Also Met Risk <10 x 10 <sup>-6</sup> Residential  Well data below commercial ESL protective of indoor air. Plume delineated to cleanup goal by site wells and grab data. Clayey site soil will limit upward migration of PCE vapor from groundwater. Expect attenuation now that source removed. Once plume deemed delineated and stable, subslab gas is the primary driver for mitigation and case closure.
<b>Groundwater (Deeper, about 30')</b>	<1 ug/L	5 ug/L	5 ug/L <b>(Met Goal)</b>	No impact detected in deeper groundwater (about 30 ft bgs).
<b>Subslab Gas</b> <i>(Primary Cleanup Level)</i>	<b>940</b> ug/m <sup>3</sup> (1185+1187 Solano @SG-1185N) <b>1,200</b> ug/m <sup>3</sup> (1183 Solano @SS-17) <b>1,800</b> ug/m <sup>3</sup> (1191 Solano @SSPO-4)	<b>2,100</b> ug/m <sup>3</sup> (Commercial ESL)  <b>Alternate Goal: 210</b> ug/m <sup>3</sup> (Residential ESL)	<b>2,100</b> ug/m <sup>3</sup> (Same as Goal, and 10x Residential Goal) <b>(Met Goal: Commercial)</b> <b>(Met Level: Residential)</b>	<b>Risk &lt;1 x 10<sup>-6</sup> Commercial</b>  Also Met Risk <10 x 10 <sup>-6</sup> Residential  All subslab gas concentrations are below Commercial Goal (ESL). Passive subslab venting system is mitigation measure for additional safeguard for protection of indoor air.
<b>Indoor Air</b>	<b>0.85</b> ug/m <sup>3</sup> 1187 Solano 8 hr  <b>1.1</b> ug/m <sup>3</sup> 1183 Solano 24 hr  <b>0.40</b> ug/m <sup>3</sup> 1191 Solano 8 hr	<b>2.1</b> ug/m <sup>3</sup> (Commercial ESL)  <b>Alternate Goal: 0.41</b> ug/m <sup>3</sup> (Residential ESL)	<b>2.1</b> ug/m <sup>3</sup> (Same as Goal) <b>(Met Goal: Commercial)</b>  <b>Alternate Level 1: 4.1</b> ug/m <sup>3</sup> (10 x Residential ESL) <b>(Met Proposed Cleanup Level for Residential Use)</b>	<b>Risk &lt;1 x 10<sup>-6</sup> Commercial (All Units)</b>  <u>1191 Solano: Risk is below 1 x 10<sup>-6</sup> Residential Goal.</u>  <u>1185 and 1187 Solano: Risk expected to meet Residential goal of 1 x 10<sup>-6</sup> upon slab installation.</u> Passive subslab venting system adds safeguard.  <u>1183 Solano: Risk slightly above 1 x 10<sup>-6</sup> for residential use. Current risk of 10 x 10<sup>-6</sup> is acceptable for residential use.</u> Expect risk reduction and attenuation now that extensive source removal complete.

Notes and abbreviations:

Cleanup Level represents target concentration for remedial efforts, while Cleanup Goal represents long-term target concentration following natural attenuation of residual impact.

ESL = Environmental Screening Level Established by the SFBRWQCB, Interim Final - November 2007 (Revised May 2013).

bgs = Below grade surface

**EXPLANATION**

MW-1

Groundwater Monitoring Well

(9-14')

Screen interval, feet bgs

B-21

Boring Location

48

PCE Concentration in Groundwater (µg/L), 2013

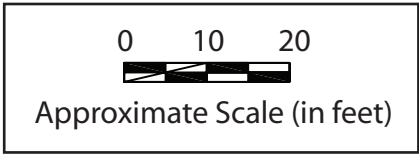
100

PCE Isoconcentration Contour (µg/L)

**Note:** Residual PCE groundwater impact does not pose a significant risk to human health or environment. No PCE detected in first water-bearing unit at 30 ft depth and no known nearby water wells, surface water or other sensitive receptors. Well data shows adequate plume delineation and all concentrations well below RWQCB screening level protective of volatilization to indoor air for commercial site use (640 ug/l). Clayey soil and passive ventilation system further mitigate potential vapor intrusion.



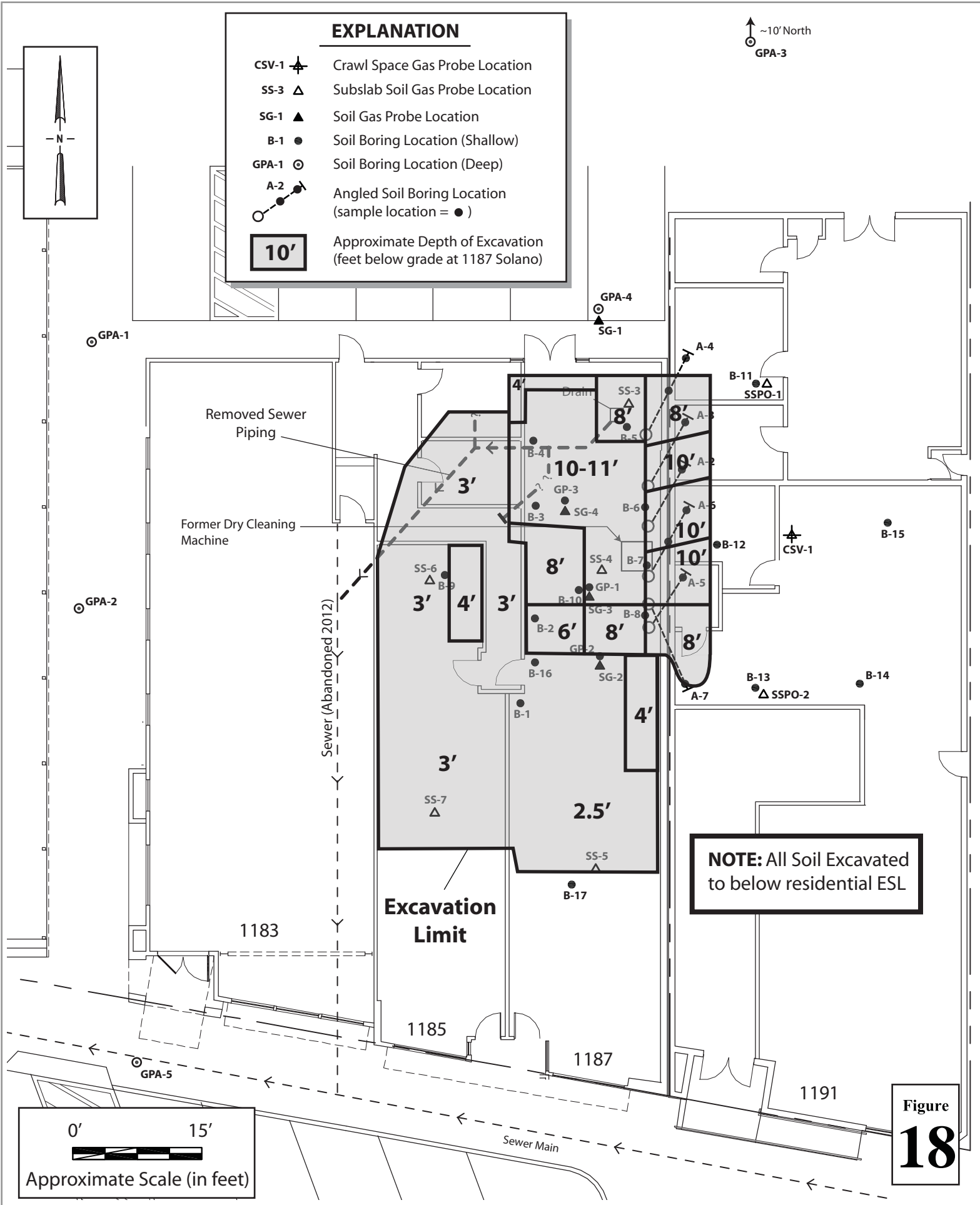
Estimated Groundwater Flow Direction

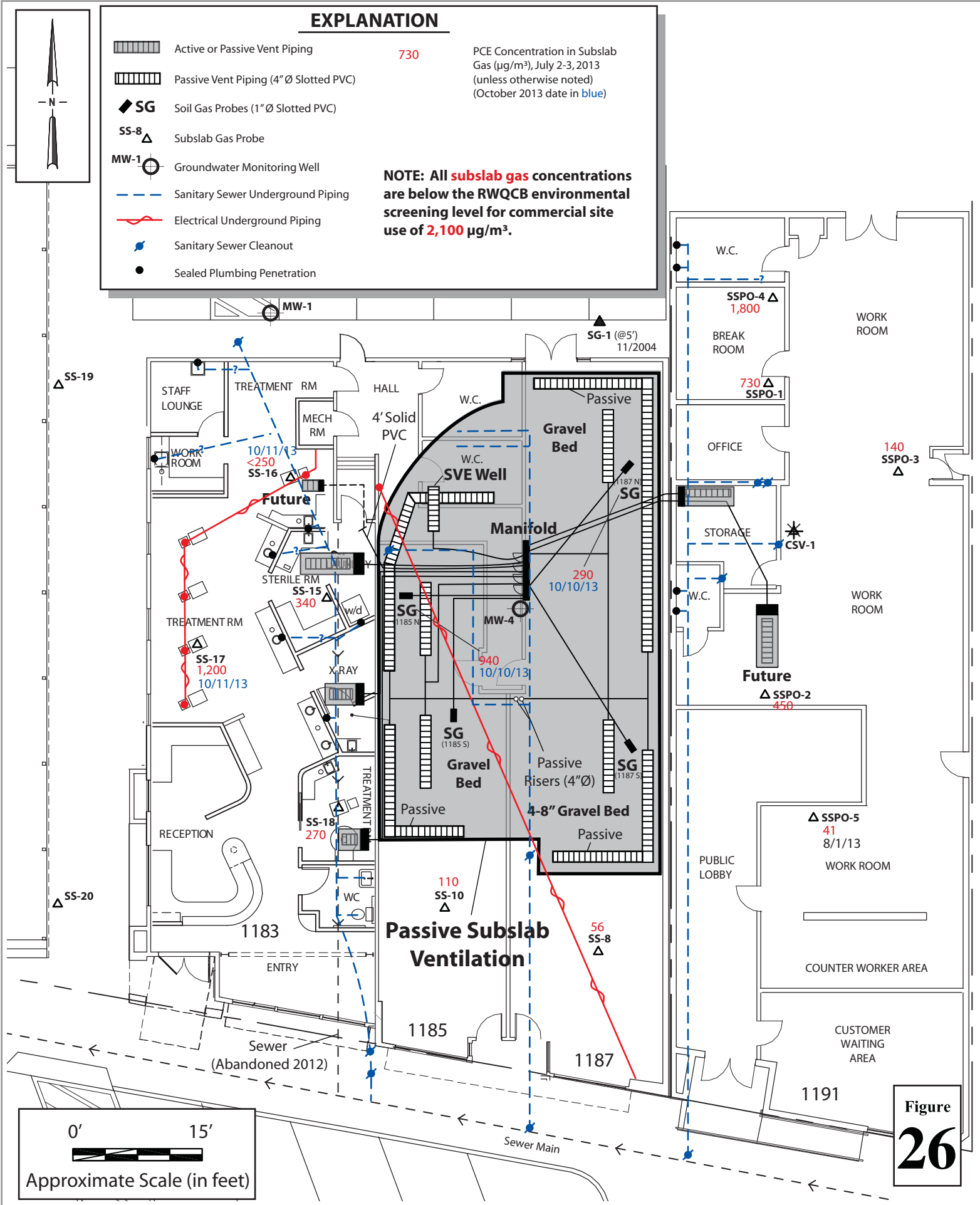


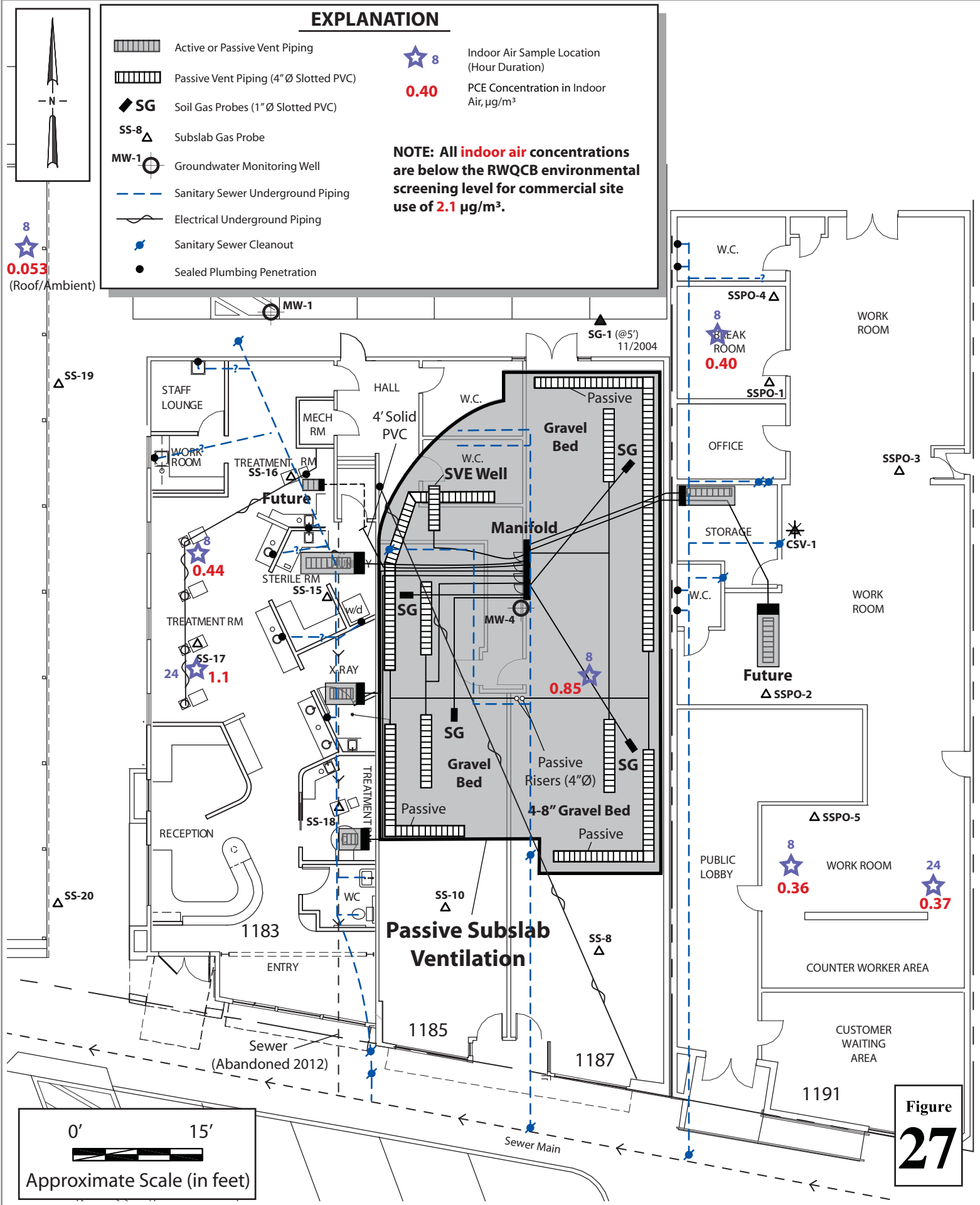
Figure

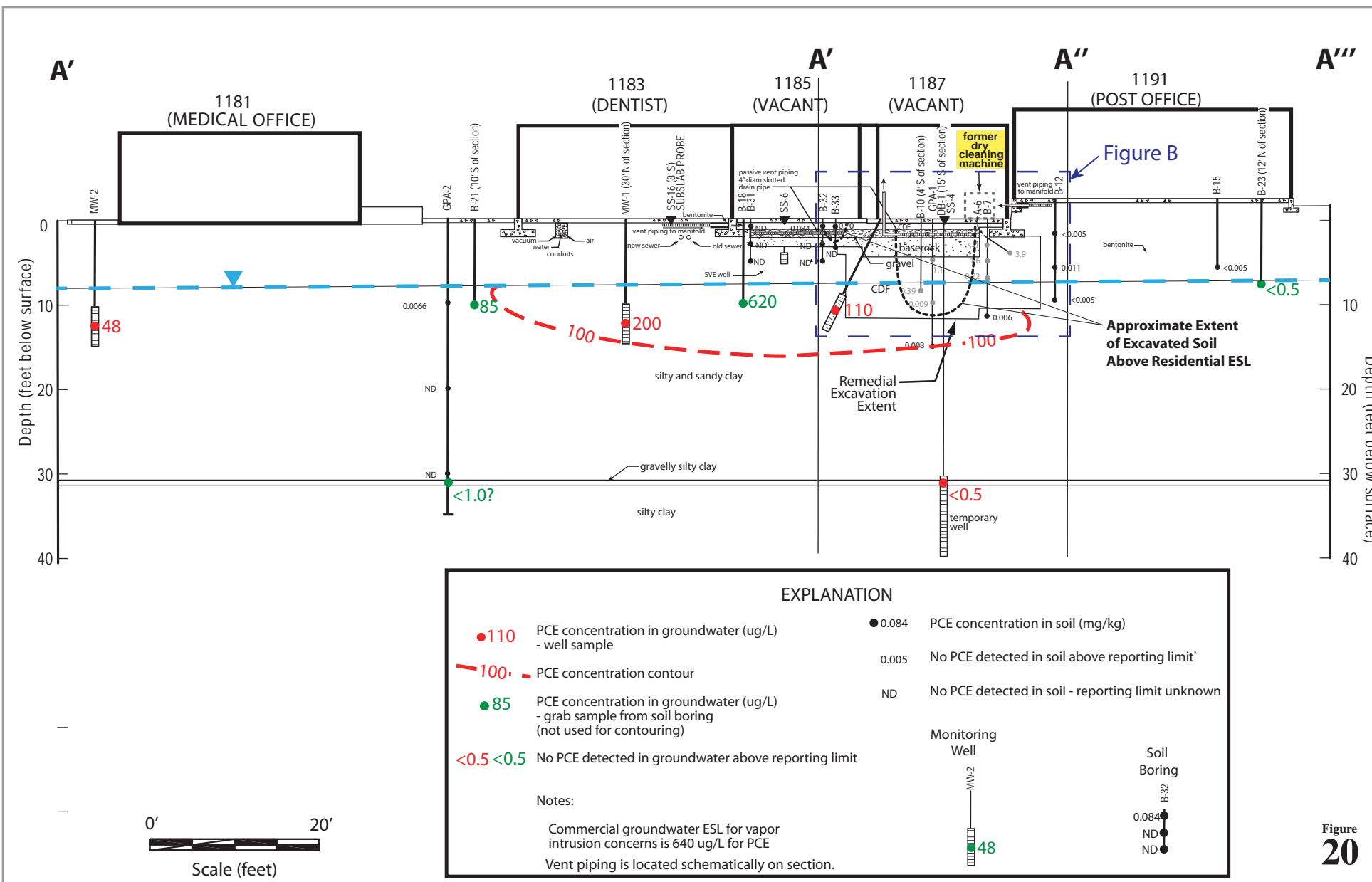
7











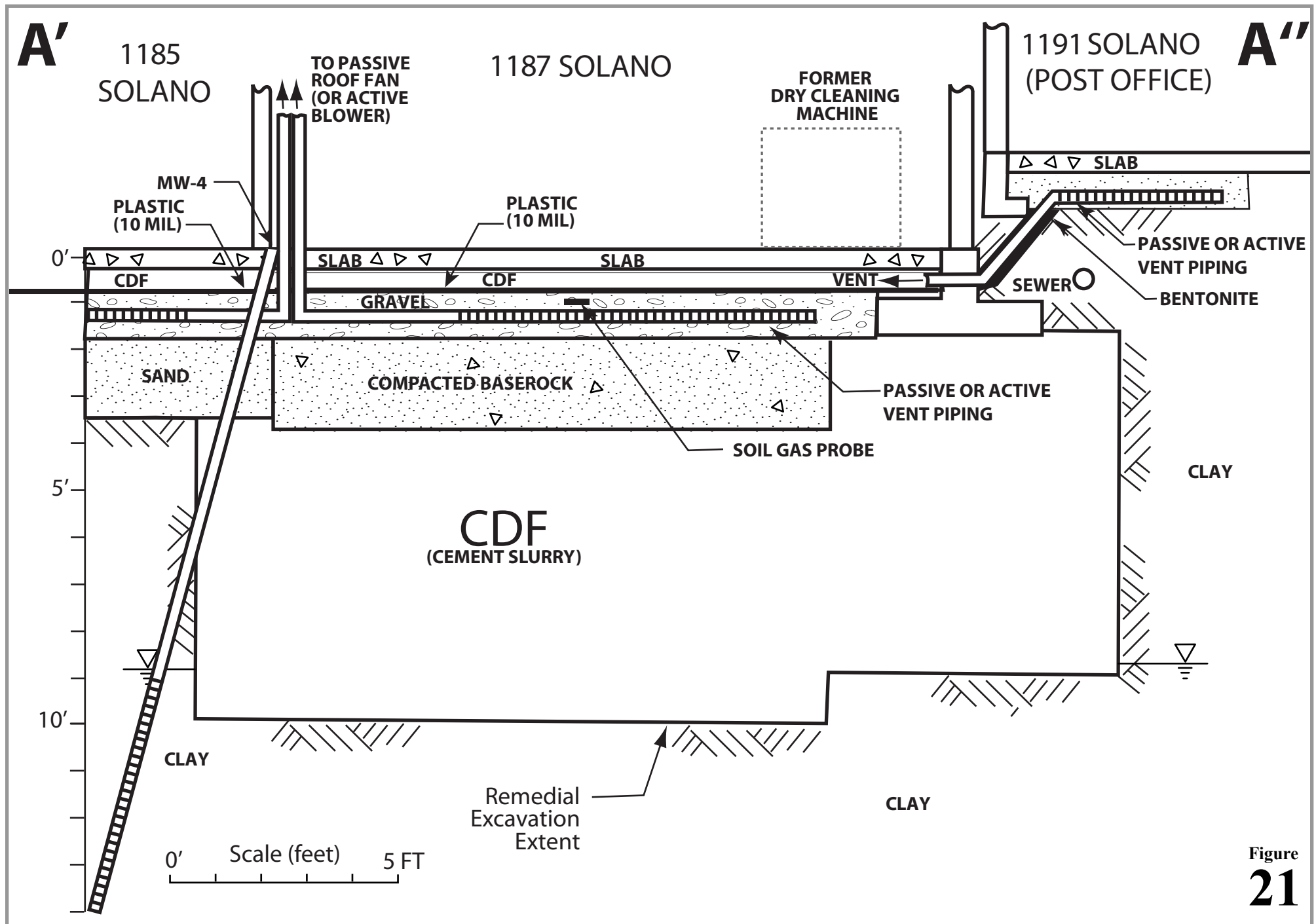


Figure  
**21**

## **APPENDIX K**

### Laboratory Analytical Reports





## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Reported: 01/15/13
	Client P.O.:	Date Completed: 01/15/13

**WorkOrder: 1301234**

January 15, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **20** analyzed samples from your project: **Kershaw**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

**, INC. RUSH**

**Fax: (925) 252-9269**

## TURN AROUND TIME

RUSH

24 HR

48 HR

72 HR

5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

**Sampler Signature:**

### Comments

TPH/g/BTEX/MTBE (8015C/8021B)
TPH as Diesel (8015) w/ Silica Gel Cleanup
Total Petroleum Oil & Grease (5520 E&F/B&F)
Total Petroleum Hydrocarbons (418.1)
EPA 601 / 8010 / 8021
BTEX ONLY (EPA 602 / 8020)
EPA 608 / 8081
EPA 608 / 8082 PCB's ONLY
EPA 8140 / 8141
EPA 8150 / 8151
EPA 524.2 / 624 / 8260
EPA 525 / 625 / 8270
PAH's / PNA's by EPA 625 / 8270 / 8310
CAM-17 Metals (6010 / 6020)
LUFT 5 Metals (6010 / 6020)
Lead (200.8 / 200.9 / 6010)
Five fuel oxygenates by EPA Method 8260

**Filter  
Samples  
for Metals  
analysis:  
Yes / No**

SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED			
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other
B-1-3.5		1/10	920	1	SSE	X					X			
B-1-5.5			930											
B-2-4			950											
B-2-5.5			1010											
B-3-3.5			1030											
B-3-5.5			1040											
B-4-3.5			1115											
B-4-5.5			1120											
B-5-3.5			1220											
B-5-5.5			1230											
B-8-3.5			1420											
B-8-5.5			1435											
B-7-3.5			1500											
B-7-5.5			1520											

ICE/t<sup>2</sup>

**GOOD CONDITION**

### HEAD SPACE ABSENT

## DECHLORINATED IN LAB

### APPROPRIATE CONTAINERS

**PRESERVED IN LAB**

COMMENTS:

	VOAS	O&G	METALS	OTHER
PRESERVATION			pH<2	

Relinquished By:

Date: \_\_\_\_\_

Time:

Received By:

Relinquished By:

Date: \_\_\_\_\_

Time:

Received By:

Relinquished By:

Date:

Time:

Received By:





**Fax: (925) 252-9269**

**Sampler Signature:**

EDF Required? Coelt (Normal) No Write On (DW) No

**Filter Samples for Metals analysis: Yes / No**

Relinquished By: 	Date: 11/10/13	Time: 2:00	Received By: 
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/r					COMMENTS:
GOOD CONDITION					
HEAD SPACE ABSENT					
DECHLORINATED IN LAB					
APPROPRIATE CONTAINERS					
PRESERVED IN LAB					
	VOAS	O&G	METALS	OTHER	
PRESERVATION			pH<2		



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1301234

ClientCode: PEO

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☒ EQulS ☒ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: Kershaw

Bill to:

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

Requested TAT:

1 day

**Date Received:** 01/10/2013

**Date Printed:** 01/10/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1301234-001	B-1-3.5	Soil	1/10/2013 9:20	<input type="checkbox"/>	A											
1301234-002	B-1-5.5	Soil	1/10/2013 9:30	<input type="checkbox"/>	A											
1301234-003	B-2-4	Soil	1/10/2013 9:50	<input type="checkbox"/>	A											
1301234-004	B-2-5.5	Soil	1/10/2013 10:10	<input type="checkbox"/>	A											
1301234-005	B-3-3.5	Soil	1/10/2013 10:30	<input type="checkbox"/>	A											
1301234-006	B-3-5.5	Soil	1/10/2013 10:40	<input type="checkbox"/>	A											
1301234-007	B-4-3.5	Soil	1/10/2013 11:15	<input type="checkbox"/>	A											
1301234-008	B-4-5.5	Soil	1/10/2013 11:20	<input type="checkbox"/>	A											
1301234-009	B-5-3.5	Soil	1/10/2013 12:20	<input type="checkbox"/>	A											
1301234-010	B-5-5.5	Soil	1/10/2013 12:30	<input type="checkbox"/>	A											
1301234-011	B-8-3.5	Soil	1/10/2013 14:20	<input type="checkbox"/>	A											
1301234-012	B-8-5.5	Soil	1/10/2013 14:35	<input type="checkbox"/>	A											
1301234-013	B-7-3.5	Soil	1/10/2013 15:00	<input type="checkbox"/>	A											
1301234-014	B-7-5.5	Soil	1/10/2013 15:20	<input type="checkbox"/>	A											

Test Legend:

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

Comments: 24hr/72hr

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1301234

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdela Fuente@pa

cc:

PO:

ProjectNo: Kershaw

## Bill to:

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

Requested TAT:

1 day

Date Received: 01/10/2013

Date Printed: 01/10/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1301234-015	B-7-7.5	Soil	1/10/2013 15:45	<input type="checkbox"/>	A											
1301234-016	B-6-3.5	Soil	1/10/2013 16:00	<input type="checkbox"/>	A											
1301234-017	B-6-5.5	Soil	1/10/2013 16:10	<input type="checkbox"/>	A											
1301234-018	B-6-7.5	Soil	1/10/2013 16:40	<input type="checkbox"/>	A											
1301234-019	B-9-3	Soil	1/10/2013 17:35	<input type="checkbox"/>	A											
1301234-020	B-10-6	Soil	1/10/2013 18:40	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

Comments: 24hr/72hr

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **1/10/2013 8:00:53 PM**

Project Name: **Kershaw**

Login Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1301234**

Matrix: Soil

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 3.2°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted: 01/10/13
	Client P.O.:	Date Analyzed: 01/10/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-002A						
Client ID	B-1-5.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.034	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	0.0051	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	96	%SS2:	102
%SS3:	79		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted: 01/10/13
	Client P.O.:	Date Analyzed: 01/10/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-004A						
Client ID	B-2-5.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	0.010	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.19	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	0.025	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	93	%SS2:	105
%SS3:	85		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-006A						
Client ID	B-3-5.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.020	4.0	0.005	Bromoform	ND<0.020	4.0	0.005
Bromomethane	ND<0.020	4.0	0.005	Carbon Tetrachloride	ND<0.020	4.0	0.005
Chlorobenzene	ND<0.020	4.0	0.005	Chloroethane	ND<0.020	4.0	0.005
Chloroform	ND<0.020	4.0	0.005	Chloromethane	ND<0.020	4.0	0.005
Dibromochloromethane	ND<0.020	4.0	0.005	1,2-Dibromoethane (EDB)	ND<0.016	4.0	0.004
1,2-Dichlorobenzene	ND<0.020	4.0	0.005	1,3-Dichlorobenzene	ND<0.020	4.0	0.005
1,4-Dichlorobenzene	ND<0.020	4.0	0.005	Dichlorodifluoromethane	ND<0.020	4.0	0.005
1,1-Dichloroethane	ND<0.020	4.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.016	4.0	0.004
1,1-Dichloroethene	ND<0.020	4.0	0.005	cis-1,2-Dichloroethene	ND<0.020	4.0	0.005
trans-1,2-Dichloroethene	ND<0.020	4.0	0.005	1,2-Dichloropropane	ND<0.020	4.0	0.005
cis-1,3-Dichloropropene	ND<0.020	4.0	0.005	trans-1,3-Dichloropropene	ND<0.020	4.0	0.005
Freon 113	ND<0.40	4.0	0.1	Methylene chloride	ND<0.020	4.0	0.005
1,1,1,2-Tetrachloroethane	ND<0.020	4.0	0.005	1,1,2,2-Tetrachloroethane	ND<0.020	4.0	0.005
Tetrachloroethene	0.32	4.0	0.005	1,1,1-Trichloroethane	ND<0.020	4.0	0.005
1,1,2-Trichloroethane	ND<0.020	4.0	0.005	Trichloroethene	ND<0.020	4.0	0.005
Trichlorofluoromethane	ND<0.020	4.0	0.005	Vinyl Chloride	ND<0.020	4.0	0.005

**Surrogate Recoveries (%)**

%SS1:	96	%SS2:	100
%SS3:	99		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted: 01/10/13
	Client P.O.:	Date Analyzed: 01/10/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-008A						
Client ID	B-4-5.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.11	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	94	%SS2:	101
%SS3:	87		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-010A						
Client ID	B-5-5.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.033	6.7	0.005	Bromoform	ND<0.033	6.7	0.005
Bromomethane	ND<0.033	6.7	0.005	Carbon Tetrachloride	ND<0.033	6.7	0.005
Chlorobenzene	ND<0.033	6.7	0.005	Chloroethane	ND<0.033	6.7	0.005
Chloroform	ND<0.033	6.7	0.005	Chloromethane	ND<0.033	6.7	0.005
Dibromochloromethane	ND<0.033	6.7	0.005	1,2-Dibromoethane (EDB)	ND<0.027	6.7	0.004
1,2-Dichlorobenzene	ND<0.033	6.7	0.005	1,3-Dichlorobenzene	ND<0.033	6.7	0.005
1,4-Dichlorobenzene	ND<0.033	6.7	0.005	Dichlorodifluoromethane	ND<0.033	6.7	0.005
1,1-Dichloroethane	ND<0.033	6.7	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.027	6.7	0.004
1,1-Dichloroethene	ND<0.033	6.7	0.005	cis-1,2-Dichloroethene	ND<0.033	6.7	0.005
trans-1,2-Dichloroethene	ND<0.033	6.7	0.005	1,2-Dichloropropane	ND<0.033	6.7	0.005
cis-1,3-Dichloropropene	ND<0.033	6.7	0.005	trans-1,3-Dichloropropene	ND<0.033	6.7	0.005
Freon 113	ND<0.67	6.7	0.1	Methylene chloride	ND<0.033	6.7	0.005
1,1,1,2-Tetrachloroethane	ND<0.033	6.7	0.005	1,1,2,2-Tetrachloroethane	ND<0.033	6.7	0.005
Tetrachloroethene	0.42	6.7	0.005	1,1,1-Trichloroethane	ND<0.033	6.7	0.005
1,1,2-Trichloroethane	ND<0.033	6.7	0.005	Trichloroethene	ND<0.033	6.7	0.005
Trichlorofluoromethane	ND<0.033	6.7	0.005	Vinyl Chloride	ND<0.033	6.7	0.005

**Surrogate Recoveries (%)**

%SS1:	99	%SS2:	101
%SS3:	99		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-012A						
Client ID	B-8-5.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.025	5.0	0.005	Bromoform	ND<0.025	5.0	0.005
Bromomethane	ND<0.025	5.0	0.005	Carbon Tetrachloride	ND<0.025	5.0	0.005
Chlorobenzene	ND<0.025	5.0	0.005	Chloroethane	ND<0.025	5.0	0.005
Chloroform	ND<0.025	5.0	0.005	Chloromethane	ND<0.025	5.0	0.005
Dibromochloromethane	ND<0.025	5.0	0.005	1,2-Dibromoethane (EDB)	ND<0.020	5.0	0.004
1,2-Dichlorobenzene	ND<0.025	5.0	0.005	1,3-Dichlorobenzene	ND<0.025	5.0	0.005
1,4-Dichlorobenzene	ND<0.025	5.0	0.005	Dichlorodifluoromethane	ND<0.025	5.0	0.005
1,1-Dichloroethane	ND<0.025	5.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.020	5.0	0.004
1,1-Dichloroethene	ND<0.025	5.0	0.005	cis-1,2-Dichloroethene	ND<0.025	5.0	0.005
trans-1,2-Dichloroethene	ND<0.025	5.0	0.005	1,2-Dichloropropane	ND<0.025	5.0	0.005
cis-1,3-Dichloropropene	ND<0.025	5.0	0.005	trans-1,3-Dichloropropene	ND<0.025	5.0	0.005
Freon 113	ND<0.50	5.0	0.1	Methylene chloride	ND<0.025	5.0	0.005
1,1,1,2-Tetrachloroethane	ND<0.025	5.0	0.005	1,1,2,2-Tetrachloroethane	ND<0.025	5.0	0.005
Tetrachloroethene	0.40	5.0	0.005	1,1,1-Trichloroethane	ND<0.025	5.0	0.005
1,1,2-Trichloroethane	ND<0.025	5.0	0.005	Trichloroethene	ND<0.025	5.0	0.005
Trichlorofluoromethane	ND<0.025	5.0	0.005	Vinyl Chloride	ND<0.025	5.0	0.005

**Surrogate Recoveries (%)**

%SS1:	98	%SS2:	101
%SS3:	102		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-014A						
Client ID	B-7-5.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.10	20	0.005	Bromoform	ND<0.10	20	0.005
Bromomethane	ND<0.10	20	0.005	Carbon Tetrachloride	ND<0.10	20	0.005
Chlorobenzene	ND<0.10	20	0.005	Chloroethane	ND<0.10	20	0.005
Chloroform	ND<0.10	20	0.005	Chloromethane	ND<0.10	20	0.005
Dibromochloromethane	ND<0.10	20	0.005	1,2-Dibromoethane (EDB)	ND<0.080	20	0.004
1,2-Dichlorobenzene	ND<0.10	20	0.005	1,3-Dichlorobenzene	ND<0.10	20	0.005
1,4-Dichlorobenzene	ND<0.10	20	0.005	Dichlorodifluoromethane	ND<0.10	20	0.005
1,1-Dichloroethane	ND<0.10	20	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.080	20	0.004
1,1-Dichloroethene	ND<0.10	20	0.005	cis-1,2-Dichloroethene	ND<0.10	20	0.005
trans-1,2-Dichloroethene	ND<0.10	20	0.005	1,2-Dichloropropane	ND<0.10	20	0.005
cis-1,3-Dichloropropene	ND<0.10	20	0.005	trans-1,3-Dichloropropene	ND<0.10	20	0.005
Freon 113	ND<2.0	20	0.1	Methylene chloride	ND<0.10	20	0.005
1,1,1,2-Tetrachloroethane	ND<0.10	20	0.005	1,1,2,2-Tetrachloroethane	ND<0.10	20	0.005
Tetrachloroethene	1.6	20	0.005	1,1,1-Trichloroethane	ND<0.10	20	0.005
1,1,2-Trichloroethane	ND<0.10	20	0.005	Trichloroethene	ND<0.10	20	0.005
Trichlorofluoromethane	ND<0.10	20	0.005	Vinyl Chloride	ND<0.10	20	0.005

**Surrogate Recoveries (%)**

%SS1:	103	%SS2:	92
%SS3:	86		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted: 01/10/13
	Client P.O.:	Date Analyzed: 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-017A						
Client ID	B-6-5.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.025	5.0	0.005	Bromoform	ND<0.025	5.0	0.005
Bromomethane	ND<0.025	5.0	0.005	Carbon Tetrachloride	ND<0.025	5.0	0.005
Chlorobenzene	ND<0.025	5.0	0.005	Chloroethane	ND<0.025	5.0	0.005
Chloroform	ND<0.025	5.0	0.005	Chloromethane	ND<0.025	5.0	0.005
Dibromochloromethane	ND<0.025	5.0	0.005	1,2-Dibromoethane (EDB)	ND<0.020	5.0	0.004
1,2-Dichlorobenzene	ND<0.025	5.0	0.005	1,3-Dichlorobenzene	ND<0.025	5.0	0.005
1,4-Dichlorobenzene	ND<0.025	5.0	0.005	Dichlorodifluoromethane	ND<0.025	5.0	0.005
1,1-Dichloroethane	ND<0.025	5.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.020	5.0	0.004
1,1-Dichloroethene	ND<0.025	5.0	0.005	cis-1,2-Dichloroethene	ND<0.025	5.0	0.005
trans-1,2-Dichloroethene	ND<0.025	5.0	0.005	1,2-Dichloropropane	ND<0.025	5.0	0.005
cis-1,3-Dichloropropene	ND<0.025	5.0	0.005	trans-1,3-Dichloropropene	ND<0.025	5.0	0.005
Freon 113	ND<0.50	5.0	0.1	Methylene chloride	ND<0.025	5.0	0.005
1,1,1,2-Tetrachloroethane	ND<0.025	5.0	0.005	1,1,2,2-Tetrachloroethane	ND<0.025	5.0	0.005
Tetrachloroethene	0.39	5.0	0.005	1,1,1-Trichloroethane	ND<0.025	5.0	0.005
1,1,2-Trichloroethane	ND<0.025	5.0	0.005	Trichloroethene	ND<0.025	5.0	0.005
Trichlorofluoromethane	ND<0.025	5.0	0.005	Vinyl Chloride	ND<0.025	5.0	0.005

**Surrogate Recoveries (%)**

%SS1:	103	%SS2:	92
%SS3:	87		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-019A						
Client ID	B-9-3						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.086	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	95	%SS2:	103
%SS3:	86		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-020A						
Client ID	B-10-6						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.033	6.7	0.005	Bromoform	ND<0.033	6.7	0.005
Bromomethane	ND<0.033	6.7	0.005	Carbon Tetrachloride	ND<0.033	6.7	0.005
Chlorobenzene	ND<0.033	6.7	0.005	Chloroethane	ND<0.033	6.7	0.005
Chloroform	ND<0.033	6.7	0.005	Chloromethane	ND<0.033	6.7	0.005
Dibromochloromethane	ND<0.033	6.7	0.005	1,2-Dibromoethane (EDB)	ND<0.027	6.7	0.004
1,2-Dichlorobenzene	ND<0.033	6.7	0.005	1,3-Dichlorobenzene	ND<0.033	6.7	0.005
1,4-Dichlorobenzene	ND<0.033	6.7	0.005	Dichlorodifluoromethane	ND<0.033	6.7	0.005
1,1-Dichloroethane	ND<0.033	6.7	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.027	6.7	0.004
1,1-Dichloroethene	ND<0.033	6.7	0.005	cis-1,2-Dichloroethene	ND<0.033	6.7	0.005
trans-1,2-Dichloroethene	ND<0.033	6.7	0.005	1,2-Dichloropropane	ND<0.033	6.7	0.005
cis-1,3-Dichloropropene	ND<0.033	6.7	0.005	trans-1,3-Dichloropropene	ND<0.033	6.7	0.005
Freon 113	ND<0.67	6.7	0.1	Methylene chloride	ND<0.033	6.7	0.005
1,1,1,2-Tetrachloroethane	ND<0.033	6.7	0.005	1,1,2,2-Tetrachloroethane	ND<0.033	6.7	0.005
Tetrachloroethene	0.39	6.7	0.005	1,1,1-Trichloroethane	ND<0.033	6.7	0.005
1,1,2-Trichloroethane	ND<0.033	6.7	0.005	Trichloroethene	ND<0.033	6.7	0.005
Trichlorofluoromethane	ND<0.033	6.7	0.005	Vinyl Chloride	ND<0.033	6.7	0.005

**Surrogate Recoveries (%)**

%SS1:	103	%SS2:	93
%SS3:	85		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-001A						
Client ID	B-1-3.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.011	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	96	%SS2:	109
%SS3:	110		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-003A						
Client ID	B-2-4						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	0.022	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.12	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	0.046	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	97	%SS2:	105
%SS3:	81		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-005A						
Client ID	B-3-3.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.025	5.0	0.005	Bromoform	ND<0.025	5.0	0.005
Bromomethane	ND<0.025	5.0	0.005	Carbon Tetrachloride	ND<0.025	5.0	0.005
Chlorobenzene	ND<0.025	5.0	0.005	Chloroethane	ND<0.025	5.0	0.005
Chloroform	ND<0.025	5.0	0.005	Chloromethane	ND<0.025	5.0	0.005
Dibromochloromethane	ND<0.025	5.0	0.005	1,2-Dibromoethane (EDB)	ND<0.020	5.0	0.004
1,2-Dichlorobenzene	ND<0.025	5.0	0.005	1,3-Dichlorobenzene	ND<0.025	5.0	0.005
1,4-Dichlorobenzene	ND<0.025	5.0	0.005	Dichlorodifluoromethane	ND<0.025	5.0	0.005
1,1-Dichloroethane	ND<0.025	5.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.020	5.0	0.004
1,1-Dichloroethene	ND<0.025	5.0	0.005	cis-1,2-Dichloroethene	ND<0.025	5.0	0.005
trans-1,2-Dichloroethene	ND<0.025	5.0	0.005	1,2-Dichloropropane	ND<0.025	5.0	0.005
cis-1,3-Dichloropropene	ND<0.025	5.0	0.005	trans-1,3-Dichloropropene	ND<0.025	5.0	0.005
Freon 113	ND<0.50	5.0	0.1	Methylene chloride	ND<0.025	5.0	0.005
1,1,1,2-Tetrachloroethane	ND<0.025	5.0	0.005	1,1,2,2-Tetrachloroethane	ND<0.025	5.0	0.005
Tetrachloroethene	0.53	5.0	0.005	1,1,1-Trichloroethane	ND<0.025	5.0	0.005
1,1,2-Trichloroethane	ND<0.025	5.0	0.005	Trichloroethene	ND<0.025	5.0	0.005
Trichlorofluoromethane	ND<0.025	5.0	0.005	Vinyl Chloride	ND<0.025	5.0	0.005

**Surrogate Recoveries (%)**

%SS1:	99	%SS2:	99
%SS3:	99		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-007A						
Client ID	B-4-3.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.020	4.0	0.005	Bromoform	ND<0.020	4.0	0.005
Bromomethane	ND<0.020	4.0	0.005	Carbon Tetrachloride	ND<0.020	4.0	0.005
Chlorobenzene	ND<0.020	4.0	0.005	Chloroethane	ND<0.020	4.0	0.005
Chloroform	ND<0.020	4.0	0.005	Chloromethane	ND<0.020	4.0	0.005
Dibromochloromethane	ND<0.020	4.0	0.005	1,2-Dibromoethane (EDB)	ND<0.016	4.0	0.004
1,2-Dichlorobenzene	ND<0.020	4.0	0.005	1,3-Dichlorobenzene	ND<0.020	4.0	0.005
1,4-Dichlorobenzene	ND<0.020	4.0	0.005	Dichlorodifluoromethane	ND<0.020	4.0	0.005
1,1-Dichloroethane	ND<0.020	4.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.016	4.0	0.004
1,1-Dichloroethene	ND<0.020	4.0	0.005	cis-1,2-Dichloroethene	ND<0.020	4.0	0.005
trans-1,2-Dichloroethene	ND<0.020	4.0	0.005	1,2-Dichloropropane	ND<0.020	4.0	0.005
cis-1,3-Dichloropropene	ND<0.020	4.0	0.005	trans-1,3-Dichloropropene	ND<0.020	4.0	0.005
Freon 113	ND<0.40	4.0	0.1	Methylene chloride	ND<0.020	4.0	0.005
1,1,1,2-Tetrachloroethane	ND<0.020	4.0	0.005	1,1,2,2-Tetrachloroethane	ND<0.020	4.0	0.005
Tetrachloroethene	0.32	4.0	0.005	1,1,1-Trichloroethane	ND<0.020	4.0	0.005
1,1,2-Trichloroethane	ND<0.020	4.0	0.005	Trichloroethene	ND<0.020	4.0	0.005
Trichlorofluoromethane	ND<0.020	4.0	0.005	Vinyl Chloride	ND<0.020	4.0	0.005

**Surrogate Recoveries (%)**

%SS1:	103	%SS2:	93
%SS3:	86		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-009A						
Client ID	B-5-3.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.050	10	0.005	Bromoform	ND<0.050	10	0.005
Bromomethane	ND<0.050	10	0.005	Carbon Tetrachloride	ND<0.050	10	0.005
Chlorobenzene	ND<0.050	10	0.005	Chloroethane	ND<0.050	10	0.005
Chloroform	ND<0.050	10	0.005	Chloromethane	ND<0.050	10	0.005
Dibromochloromethane	ND<0.050	10	0.005	1,2-Dibromoethane (EDB)	ND<0.040	10	0.004
1,2-Dichlorobenzene	ND<0.050	10	0.005	1,3-Dichlorobenzene	ND<0.050	10	0.005
1,4-Dichlorobenzene	ND<0.050	10	0.005	Dichlorodifluoromethane	ND<0.050	10	0.005
1,1-Dichloroethane	ND<0.050	10	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.040	10	0.004
1,1-Dichloroethene	ND<0.050	10	0.005	cis-1,2-Dichloroethene	ND<0.050	10	0.005
trans-1,2-Dichloroethene	ND<0.050	10	0.005	1,2-Dichloropropane	ND<0.050	10	0.005
cis-1,3-Dichloropropene	ND<0.050	10	0.005	trans-1,3-Dichloropropene	ND<0.050	10	0.005
Freon 113	ND<1.0	10	0.1	Methylene chloride	ND<0.050	10	0.005
1,1,1,2-Tetrachloroethane	ND<0.050	10	0.005	1,1,2,2-Tetrachloroethane	ND<0.050	10	0.005
Tetrachloroethene	0.78	10	0.005	1,1,1-Trichloroethane	ND<0.050	10	0.005
1,1,2-Trichloroethane	ND<0.050	10	0.005	Trichloroethene	ND<0.050	10	0.005
Trichlorofluoromethane	ND<0.050	10	0.005	Vinyl Chloride	ND<0.050	10	0.005

**Surrogate Recoveries (%)**

%SS1:	99	%SS2:	99
%SS3:	98		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted: 01/10/13
	Client P.O.:	Date Analyzed: 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-011A						
Client ID	B-8-3.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.10	20	0.005	Bromoform	ND<0.10	20	0.005
Bromomethane	ND<0.10	20	0.005	Carbon Tetrachloride	ND<0.10	20	0.005
Chlorobenzene	ND<0.10	20	0.005	Chloroethane	ND<0.10	20	0.005
Chloroform	ND<0.10	20	0.005	Chloromethane	ND<0.10	20	0.005
Dibromochloromethane	ND<0.10	20	0.005	1,2-Dibromoethane (EDB)	ND<0.080	20	0.004
1,2-Dichlorobenzene	ND<0.10	20	0.005	1,3-Dichlorobenzene	ND<0.10	20	0.005
1,4-Dichlorobenzene	ND<0.10	20	0.005	Dichlorodifluoromethane	ND<0.10	20	0.005
1,1-Dichloroethane	ND<0.10	20	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.080	20	0.004
1,1-Dichloroethene	ND<0.10	20	0.005	cis-1,2-Dichloroethene	ND<0.10	20	0.005
trans-1,2-Dichloroethene	ND<0.10	20	0.005	1,2-Dichloropropane	ND<0.10	20	0.005
cis-1,3-Dichloropropene	ND<0.10	20	0.005	trans-1,3-Dichloropropene	ND<0.10	20	0.005
Freon 113	ND<2.0	20	0.1	Methylene chloride	ND<0.10	20	0.005
1,1,1,2-Tetrachloroethane	ND<0.10	20	0.005	1,1,2,2-Tetrachloroethane	ND<0.10	20	0.005
Tetrachloroethene	1.6	20	0.005	1,1,1-Trichloroethane	ND<0.10	20	0.005
1,1,2-Trichloroethane	ND<0.10	20	0.005	Trichloroethene	ND<0.10	20	0.005
Trichlorofluoromethane	ND<0.10	20	0.005	Vinyl Chloride	ND<0.10	20	0.005

**Surrogate Recoveries (%)**

%SS1:	99	%SS2:	99
%SS3:	98		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted: 01/10/13
	Client P.O.:	Date Analyzed: 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-013A						
Client ID	B-7-3.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.20	40	0.005	Bromoform	ND<0.20	40	0.005
Bromomethane	ND<0.20	40	0.005	Carbon Tetrachloride	ND<0.20	40	0.005
Chlorobenzene	ND<0.20	40	0.005	Chloroethane	ND<0.20	40	0.005
Chloroform	ND<0.20	40	0.005	Chloromethane	ND<0.20	40	0.005
Dibromochloromethane	ND<0.20	40	0.005	1,2-Dibromoethane (EDB)	ND<0.16	40	0.004
1,2-Dichlorobenzene	ND<0.20	40	0.005	1,3-Dichlorobenzene	ND<0.20	40	0.005
1,4-Dichlorobenzene	ND<0.20	40	0.005	Dichlorodifluoromethane	ND<0.20	40	0.005
1,1-Dichloroethane	ND<0.20	40	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.16	40	0.004
1,1-Dichloroethene	ND<0.20	40	0.005	cis-1,2-Dichloroethene	ND<0.20	40	0.005
trans-1,2-Dichloroethene	ND<0.20	40	0.005	1,2-Dichloropropane	ND<0.20	40	0.005
cis-1,3-Dichloropropene	ND<0.20	40	0.005	trans-1,3-Dichloropropene	ND<0.20	40	0.005
Freon 113	ND<4.0	40	0.1	Methylene chloride	ND<0.20	40	0.005
1,1,1,2-Tetrachloroethane	ND<0.20	40	0.005	1,1,2,2-Tetrachloroethane	ND<0.20	40	0.005
Tetrachloroethene	5.0	40	0.005	1,1,1-Trichloroethane	ND<0.20	40	0.005
1,1,2-Trichloroethane	ND<0.20	40	0.005	Trichloroethene	ND<0.20	40	0.005
Trichlorofluoromethane	ND<0.20	40	0.005	Vinyl Chloride	ND<0.20	40	0.005

**Surrogate Recoveries (%)**

%SS1:	105	%SS2:	91
%SS3:	87		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-015A						
Client ID	B-7-7.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.10	20	0.005	Bromoform	ND<0.10	20	0.005
Bromomethane	ND<0.10	20	0.005	Carbon Tetrachloride	ND<0.10	20	0.005
Chlorobenzene	ND<0.10	20	0.005	Chloroethane	ND<0.10	20	0.005
Chloroform	ND<0.10	20	0.005	Chloromethane	ND<0.10	20	0.005
Dibromochloromethane	ND<0.10	20	0.005	1,2-Dibromoethane (EDB)	ND<0.080	20	0.004
1,2-Dichlorobenzene	ND<0.10	20	0.005	1,3-Dichlorobenzene	ND<0.10	20	0.005
1,4-Dichlorobenzene	ND<0.10	20	0.005	Dichlorodifluoromethane	ND<0.10	20	0.005
1,1-Dichloroethane	ND<0.10	20	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.080	20	0.004
1,1-Dichloroethene	ND<0.10	20	0.005	cis-1,2-Dichloroethene	ND<0.10	20	0.005
trans-1,2-Dichloroethene	ND<0.10	20	0.005	1,2-Dichloropropane	ND<0.10	20	0.005
cis-1,3-Dichloropropene	ND<0.10	20	0.005	trans-1,3-Dichloropropene	ND<0.10	20	0.005
Freon 113	ND<2.0	20	0.1	Methylene chloride	ND<0.10	20	0.005
1,1,1,2-Tetrachloroethane	ND<0.10	20	0.005	1,1,2,2-Tetrachloroethane	ND<0.10	20	0.005
Tetrachloroethene	0.72	20	0.005	1,1,1-Trichloroethane	ND<0.10	20	0.005
1,1,2-Trichloroethane	ND<0.10	20	0.005	Trichloroethene	ND<0.10	20	0.005
Trichlorofluoromethane	ND<0.10	20	0.005	Vinyl Chloride	ND<0.10	20	0.005

**Surrogate Recoveries (%)**

%SS1:	102	%SS2:	91
%SS3:	86		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-016A						
Client ID	B-6-3.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.10	20	0.005	Bromoform	ND<0.10	20	0.005
Bromomethane	ND<0.10	20	0.005	Carbon Tetrachloride	ND<0.10	20	0.005
Chlorobenzene	ND<0.10	20	0.005	Chloroethane	ND<0.10	20	0.005
Chloroform	ND<0.10	20	0.005	Chloromethane	ND<0.10	20	0.005
Dibromochloromethane	ND<0.10	20	0.005	1,2-Dibromoethane (EDB)	ND<0.080	20	0.004
1,2-Dichlorobenzene	ND<0.10	20	0.005	1,3-Dichlorobenzene	ND<0.10	20	0.005
1,4-Dichlorobenzene	ND<0.10	20	0.005	Dichlorodifluoromethane	ND<0.10	20	0.005
1,1-Dichloroethane	ND<0.10	20	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.080	20	0.004
1,1-Dichloroethene	ND<0.10	20	0.005	cis-1,2-Dichloroethene	ND<0.10	20	0.005
trans-1,2-Dichloroethene	ND<0.10	20	0.005	1,2-Dichloropropane	ND<0.10	20	0.005
cis-1,3-Dichloropropene	ND<0.10	20	0.005	trans-1,3-Dichloropropene	ND<0.10	20	0.005
Freon 113	ND<2.0	20	0.1	Methylene chloride	ND<0.10	20	0.005
1,1,1,2-Tetrachloroethane	ND<0.10	20	0.005	1,1,2,2-Tetrachloroethane	ND<0.10	20	0.005
Tetrachloroethene	0.91	20	0.005	1,1,1-Trichloroethane	ND<0.10	20	0.005
1,1,2-Trichloroethane	ND<0.10	20	0.005	Trichloroethene	ND<0.10	20	0.005
Trichlorofluoromethane	ND<0.10	20	0.005	Vinyl Chloride	ND<0.10	20	0.005

**Surrogate Recoveries (%)**

%SS1:	102	%SS2:	92
%SS3:	86		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Kershaw	Date Sampled: 01/10/13
		Date Received: 01/10/13
	Client Contact: Morgan Gillies	Date Extracted 01/10/13
	Client P.O.:	Date Analyzed 01/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301234

Lab ID	1301234-018A						
Client ID	B-6-7.5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.20	40	0.005	Bromoform	ND<0.20	40	0.005
Bromomethane	ND<0.20	40	0.005	Carbon Tetrachloride	ND<0.20	40	0.005
Chlorobenzene	ND<0.20	40	0.005	Chloroethane	ND<0.20	40	0.005
Chloroform	ND<0.20	40	0.005	Chloromethane	ND<0.20	40	0.005
Dibromochloromethane	ND<0.20	40	0.005	1,2-Dibromoethane (EDB)	ND<0.16	40	0.004
1,2-Dichlorobenzene	ND<0.20	40	0.005	1,3-Dichlorobenzene	ND<0.20	40	0.005
1,4-Dichlorobenzene	ND<0.20	40	0.005	Dichlorodifluoromethane	ND<0.20	40	0.005
1,1-Dichloroethane	ND<0.20	40	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.16	40	0.004
1,1-Dichloroethene	ND<0.20	40	0.005	cis-1,2-Dichloroethene	ND<0.20	40	0.005
trans-1,2-Dichloroethene	ND<0.20	40	0.005	1,2-Dichloropropane	ND<0.20	40	0.005
cis-1,3-Dichloropropene	ND<0.20	40	0.005	trans-1,3-Dichloropropene	ND<0.20	40	0.005
Freon 113	ND<4.0	40	0.1	Methylene chloride	ND<0.20	40	0.005
1,1,1,2-Tetrachloroethane	ND<0.20	40	0.005	1,1,2,2-Tetrachloroethane	ND<0.20	40	0.005
Tetrachloroethene	1.5	40	0.005	1,1,1-Trichloroethane	ND<0.20	40	0.005
1,1,2-Trichloroethane	ND<0.20	40	0.005	Trichloroethene	ND<0.20	40	0.005
Trichlorofluoromethane	ND<0.20	40	0.005	Vinyl Chloride	ND<0.20	40	0.005

**Surrogate Recoveries (%)**

%SS1:	103	%SS2:	91
%SS3:	84		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 73759

WorkOrder: 1301234

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1301095-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	97.4	93.4	4.17	93.1	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	97.5	94.4	3.26	93.5	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	93.8	89.7	4.47	88.8	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	96	92.6	3.60	93.7	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	99	94.2	4.95	96.4	60 - 116	30	70 - 130
%SS1:	96	0.12	99	98	1.38	99	70 - 130	30	70 - 130
%SS2:	102	0.12	113	111	1.73	113	70 - 130	30	70 - 130
%SS3:	97	0.012	114	114	0	115	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 73759 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1301234-001A	01/10/13 9:20 AM	01/10/13	01/11/13 11:25 AM	1301234-002A	01/10/13 9:30 AM	01/10/13	01/10/13 9:38 PM
1301234-003A	01/10/13 9:50 AM	01/10/13	01/11/13 5:14 AM	1301234-004A	01/10/13 10:10 AM	01/10/13	01/10/13 10:18 PM
1301234-005A	01/10/13 10:30 AM	01/10/13	01/11/13 12:05 PM	1301234-006A	01/10/13 10:40 AM	01/10/13	01/11/13 9:22 AM
1301234-007A	01/10/13 11:15 AM	01/10/13	01/11/13 12:28 PM	1301234-008A	01/10/13 11:20 AM	01/10/13	01/10/13 11:41 PM
1301234-009A	01/10/13 12:20 PM	01/10/13	01/11/13 12:44 PM	1301234-010A	01/10/13 12:30 PM	01/10/13	01/11/13 10:03 AM
1301234-011A	01/10/13 2:20 PM	01/10/13	01/11/13 1:24 PM	1301234-012A	01/10/13 2:35 PM	01/10/13	01/11/13 10:43 AM
1301234-013A	01/10/13 3:00 PM	01/10/13	01/11/13 1:11 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 73891

WorkOrder: 1301234

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1301234-020A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND<0.033	0.050	82.5	84.6	2.45	87.2	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND<0.027	0.050	87.4	90.4	3.30	94.6	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND<0.027	0.050	73.1	76.3	4.21	77	48 - 115	30	70 - 130
1,1-Dichloroethene	ND<0.033	0.050	87.4	90.6	3.66	96.4	46 - 111	30	70 - 130
Trichloroethene	ND<0.033	0.050	87.2	88.9	1.98	87.4	60 - 116	30	70 - 130
%SS1:	103	0.12	108	109	0.853	108	70 - 130	30	70 - 130
%SS2:	93	0.12	107	109	1.22	108	70 - 130	30	70 - 130
%SS3:	85	0.012	112	111	1.36	110	70 - 130	30	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 73891 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1301234-014A	01/10/13 3:20 PM	01/10/13	01/11/13 11:47 AM	1301234-015A	01/10/13 3:45 PM	01/10/13	01/11/13 1:57 PM
1301234-016A	01/10/13 4:00 PM	01/10/13	01/11/13 2:38 PM	1301234-017A	01/10/13 4:10 PM	01/10/13	01/11/13 10:23 AM
1301234-018A	01/10/13 4:40 PM	01/10/13	01/11/13 3:20 PM	1301234-019A	01/10/13 5:35 PM	01/10/13	01/11/13 3:08 AM
1301234-020A	01/10/13 6:40 PM	01/10/13	01/11/13 11:05 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/16/13-01/17/13
		Date Received: 01/17/13
	Client Contact: Morgan Gillies	Date Reported: 01/22/13
	Client P.O.:	Date Completed: 01/22/13

**WorkOrder: 1301397**

January 22, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **8** analyzed samples from your project: **Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*





# McCAMPBELL ANALYTICAL INC.

1534 WILLOW PASS ROAD / PITTSBURG, CA 94565-1701

Website: [www.mccampbell.com](http://www.mccampbell.com) / Email: [main@mccampbell.com](mailto:main@mccampbell.com)

Telephone: (877) 252-9262 / Fax: (925) 252-9269

# RUSH

1301397

BRL

## CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required? Coelt (Normal)

No Write On (DW) No

Lab Use Only

Report To: Montana Gillies Bill To: Pantera

Company: Pantera Enviro Sues

1710 Franklin St Suite 200

OAKLAND

E-Mail:

Tele: ( )

Fax: ( )

Project #: Project Name: Solano Group

Project Location: 1187 Solano Ave ALBANY CA

Sampler Signature: [Signature]

Helium Shroud SN#:

Other:

Notes: 72hr TNT and 35-PO-1, 35-PO-2  
CSU + BRL

Field Sample ID (Location)	Collection		Canister SN#	Manifold / Sampler Kit SN#	Analysis Requested	Indoor Air	Soil Gas	Canister Pressure/Vacuum			
	Date	Time						Initial	Final	Receipt	Final (psi)
<u>SS-PO-1</u>	<u>1/10/13</u>	<u>1530</u>	<u>6169</u>	<u>845</u>	<u>TO-15</u>		<u>X</u>	<u>30</u>	<u>4.5</u>		
<u>SS-PO-2</u>	<u>↓</u>	<u>1601</u>	<u>7509</u>	<u>664</u>	<u>↓</u>		<u>↓</u>	<u>30</u>	<u>4</u>		
<u>SS-3</u>	<u>1/17/13</u>	<u>1006</u>	<u>6302</u>	<u>6302</u>	<u>TO-15 He</u>		<u>X</u>	<u>-30</u>	<u>-5</u>		
<u>SS-4</u>		<u>1034</u>	<u>7519</u>	<u>666</u>	<u>↓</u>		<u>↓</u>	<u>-29</u>	<u>-3</u>		
<u>SS-5</u>		<u>1105</u>	<u>6164</u>	<u>763</u>	<u>↓</u>		<u>↓</u>	<u>-30</u>	<u>-4</u>		
<u>SS-6</u>		<u>1136</u>	<u>6423</u>	<u>678</u>	<u>↓</u>		<u>↓</u>	<u>-30</u>	<u>-4</u>		
<u>SS-7</u>		<u>1254</u>	<u>7526</u>	<u>1226</u>	<u>↓</u>		<u>↓</u>	<u>-30</u>	<u>-4</u>		
<u>CSV-1</u>	<u>↓</u>	<u>1416</u>	<u>7514</u>	<u>1228</u>	<u>↓</u>		<u>↓</u>	<u>-30</u>	<u>-4</u>		

Relinquished By: [Signature]

Date:

Time:

Received By: [Signature]

Temp (°C):

Work Order #:

Relinquished By:

Date:

Time:

Received By:

Equipment

Condition:

Relinquished By:

Date:

Time:

Received By:

Shipped Via:





# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1301397

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdela Fuente@pa

cc:

PO:

ProjectNo: Solano Group

## Bill to:

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

Requested TAT:

3 days

Date Received: 01/17/2013

Date Printed: 01/17/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1301397-001	SS-PO-1	Soil Gas	1/16/2013 15:30	<input type="checkbox"/>	A											
1301397-002	SS-PO-2	Soil Gas	1/16/2013 16:01	<input type="checkbox"/>	A											
1301397-003	SS-3	Soil Gas	1/17/2013 10:06	<input type="checkbox"/>		A										
1301397-004	SS-4	Soil Gas	1/17/2013 10:34	<input type="checkbox"/>	A											
1301397-005	SS-5	Soil Gas	1/17/2013 11:05	<input type="checkbox"/>	A											
1301397-006	SS-6	Soil Gas	1/17/2013 11:36	<input type="checkbox"/>	A											
1301397-007	SS-7	Soil Gas	1/17/2013 12:54	<input type="checkbox"/>		A										
1301397-008	CSU-1	Soil Gas	1/17/2013 14:16	<input type="checkbox"/>	A											

## Test Legend:

1	TO15_SOIL(MG/M3)	2	TO15_SOIL(UG/M3)	3		4		5	
6		7		8		9		10	
11		12							

The following SampleIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A contain testgroup.

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **1/17/2013 5:04:49 PM**

Project Name: **Solano Group**

Login Reviewed by: **Jena Alfaro**

WorkOrder N°: **1301397**

Matrix: Soil Gas

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:



**McC Campbell Analytical, Inc.**  
*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
<http://www.mcccampbell.com> / E-mail: [main@mcccampbell.com](mailto:main@mcccampbell.com)

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/16/13
		Date Received: 01/17/13
	Client Contact: Morgan Gillies	Date Reported: 01/22/13
	Client P.O.:	Date Completed: 01/22/13

**Work Order: 1301397**

January 22, 2013

#### CASE NARRATIVE REGARDING TO-15 ANALYSIS

All summa canisters are EVACUATED 5 days after the reporting of the results. Please call or email if a longer retention time is required.

In an effort to attain the lowest reporting limits possible for the majority of the TO-15 target list, high level compounds may be analyzed using EPA Method 8260B.

Polymer (Tedlar) bags are not recommended for TO15 samples. The disadvantages are listed in Appendix B of the DTSC Advisory of April 2012.



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/17/13
		Date Received: 01/17/13
	Client Contact: Morgan Gillies	Date Extracted: 01/22/13
	Client P.O.:	Date Analyzed: 01/22/13

## Helium\*

Extraction method: ASTM D 1946-90

Analytical methods: ASTM D 1946-90

Work Order: 1301397


[illegible]

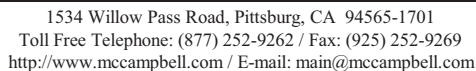
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	SoilGas	psia	psia	0.005	%

\* vapor samples are reported in %.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor

 <b>McC Campbell Analytical, Inc.</b> <i>"When Quality Counts"</i>		1534 Willow Pass Road, Pittsburg, CA 94565-1701 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269 http://www.mccampbell.com / E-mail: main@mccampbell.com				
Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612		Client Project ID: Solano Group		Date Sampled: 01/17/13		
				Date Received: 01/17/13		
		Client Contact: Morgan Gillies		Date Extracted: 01/18/13-01/22/13		
		Client P.O.:		Date Analyzed: 01/18/13-01/22/13		
<b>Volatile Organics by P&amp;T and GC/MS in <math>\mu\text{g}/\text{m}^3</math>*</b> Extraction Method: SW5030B      Analytical Method: SW8260B      Work Order: 1301397						
Lab ID	1301397-004A	1301397-005A	1301397-006A	1301397-007A	Reporting Limit for DF = 1 and Pressure Ratio (Final/Initial) = 2	
Client ID	SS-4	SS-5	SS-6	SS-7		
Matrix	Soil Gas	Soil Gas	Soil Gas	Soil Gas		
Initial Pressure (psia)	13.48	13.91	13.78	13.58		
Final Pressure (psia)	26.86	27.75	27.46	27.06		
DF	67	10	10	2	Soil Gas	W
<b>Compound</b>	<b>Concentration</b>				$\mu\text{g}/\text{m}^3$	ug/L
Tetrachloroethene	770,000	190,000	120,000	54,000	500	NA
Trichloroethene	60,000	6300	9100	1600	500	NA
<b>Surrogate Recoveries (%)</b>						
%SS1:	100	120	121	121		
<b>Comments</b>						
*soil vapor samples are reported in $\mu\text{g}/\text{m}^3$ .  ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.  # surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.  %SS = Percent Recovery of Surrogate Standard DF = Dilution Factor						







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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/16/13-01/17/13
		Date Received: 01/17/13
	Client Contact: Morgan Gillies	Date Extracted: 01/18/13
	Client P.O.:	Date Analyzed: 01/18/13

**Leak Check Compound\***

Extraction method: TO15

Analytical methods: TO15

Work Order: 1301397

Lab ID	Client ID	Matrix	Initial Pressure	Final Pressure	Isopropyl Alcohol	DF	% SS	Comments
001A	SS-PO-1	Soil Gas	13.86	27.62	ND	1	N/A	
002A	SS-PO-2	Soil Gas	13.25	26.42	ND	1	N/A	
004A	SS-4	Soil Gas	13.64	27.19	ND	4	N/A	
005A	SS-5	Soil Gas	13.91	27.75	ND	1	N/A	
006A	SS-6	Soil Gas	13.78	27.46	ND	1	N/A	
008A	CSU-1	Soil Gas	13.62	27.14	ND	1	N/A	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	SoilGas	psia	psia	50	µg/m³

\* leak check compound is reported in µg/m³.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

The (liquid) Leak Check reference is:

DTSC, Advisory-Active Soil Gas Investigations, April 2012, page 17, section 4.2.2.1:

"The laboratory reports should quantify and annotate all detections of the leak check compound at the reporting limit of the target analytes."

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: Solano Group

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 01/16/13

Date Received: 01/17/13

Date Extracted: 01/17/13-01/18/13

Date Analyzed: 01/17/13-01/18/13

**Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$ \*\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1301397

Lab ID	1301397-001A	Initial Pressure (psia)	13.86
Client ID	SS-PO-1	Final Pressure (psia)	27.62
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	18	1.0	8.1	trans-1,2-Dichloroethene	90	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	1100	4.0	14	Tetrahydrofuran	8.1	1.0	6.0
Toluene	ND	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	110	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	9.1	1.0	5.2
Xylenes, Total	ND	1.0	27				

**Surrogate Recoveries (%)**

%SS1:	127	%SS2:	110
%SS3:	103		

Comments:

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: Solano Group

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 01/16/13

Date Received: 01/17/13

Date Extracted: 01/17/13-01/18/13

Date Analyzed: 01/17/13-01/18/13

**Volatile Organic Compounds in µg/m<sup>3</sup>\*\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1301397

Lab ID	1301397-002A	Initial Pressure (psia)	13.25
Client ID	SS-PO-2	Final Pressure (psia)	26.42
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	28	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	210	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	760	4.0	14	Tetrahydrofuran	14	1.0	6.0
Toluene	ND	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	35	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

**Surrogate Recoveries (%)**

%SS1:	126	%SS2:	110
%SS3:	104		

Comments:

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: Solano Group

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 01/17/13

Date Received: 01/17/13

Date Extracted: 01/18/13

Date Analyzed: 01/18/13

**Volatile Organic Compounds in µg/m<sup>3</sup>\*\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1301397

Lab ID	1301397-003A	Initial Pressure (psia)	13.48
Client ID	SS-3	Final Pressure (psia)	26.86
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	23	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	590	1.0	8.1	trans-1,2-Dichloroethene	92	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrahydrofuran	ND	1.0	6.0	Toluene	ND	1.0	7.7
1,2,4-Trichlorobenzene	ND	1.0	15	1,1,1-Trichloroethane	ND	1.0	11
1,1,2-Trichloroethane	ND	1.0	11	Trichloroethene	2600	4.0	11
Trichlorofluoromethane	ND	1.0	11	1,2,4-Trimethylbenzene	ND	1.0	10
1,3,5-Trimethylbenzene	ND	1.0	10	Vinyl Acetate	ND	1.0	180
Vinyl Chloride	ND	1.0	5.2	Xylenes, Total	ND	1.0	27

**Surrogate Recoveries (%)**

%SS1:	123	%SS2:	111
%SS3:	106		

Comments:

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: Solano Group

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 01/17/13

Date Received: 01/17/13

Date Extracted: 01/18/13

Date Analyzed: 01/18/13

**Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$ \*\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1301397

Lab ID	1301397-004A	Initial Pressure (psia)	13.64
Client ID	SS-4	Final Pressure (psia)	27.19
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND<480	4.0	120	Acrylonitrile	ND<18	4.0	4.4
tert-Amyl methyl ether (TAME)	ND<34	4.0	8.5	Benzene	28	4.0	6.5
Benzyl chloride	ND<44	4.0	11	Bromodichloromethane	ND<56	4.0	14
Bromoform	ND<84	4.0	21	Bromomethane	ND<32	4.0	7.9
1,3-Butadiene	ND<18	4.0	4.5	2-Butanone (MEK)	ND<600	4.0	150
t-Butyl alcohol (TBA)	ND<250	4.0	62	Carbon Disulfide	ND<25	4.0	6.3
Carbon Tetrachloride	ND<52	4.0	13	Chlorobenzene	ND<38	4.0	9.4
Chloroethane	ND<22	4.0	5.4	Chloroform	80	4.0	9.9
Chloromethane	ND<17	4.0	4.2	Cyclohexane	ND<720	4.0	180
Dibromochloromethane	ND<68	4.0	17	1,2-Dibromo-3-chloropropane	ND<80	4.0	20
1,2-Dibromoethane (EDB)	ND<64	4.0	16	1,2-Dichlorobenzene	ND<48	4.0	12
1,3-Dichlorobenzene	ND<48	4.0	12	1,4-Dichlorobenzene	ND<48	4.0	12
Dichlorodifluoromethane	ND<40	4.0	10	1,1-Dichloroethane	ND<33	4.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND<33	4.0	8.2	1,1-Dichloroethene	49	4.0	8.1
cis-1,2-Dichloroethene	2200	4.0	8.1	trans-1,2-Dichloroethene	1000	4.0	8.1
1,2-Dichloropropane	ND<38	4.0	9.4	cis-1,3-Dichloropropene	ND<37	4.0	9.2
trans-1,3-Dichloropropene	ND<37	4.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND<56	4.0	14
Diisopropyl ether (DIPE)	ND<34	4.0	8.5	1,4-Dioxane	ND<29	4.0	7.3
Ethanol	ND<380	4.0	96	Ethyl acetate	ND<76	4.0	19
Ethyl tert-butyl ether (ETBE)	ND<34	4.0	8.5	Ethylbenzene	ND<35	4.0	8.8
4-Ethyltoluene	ND<40	4.0	10	Freon 113	ND<64	4.0	16
Heptane	ND<840	4.0	210	Hexachlorobutadiene	ND<88	4.0	22
Hexane	ND<720	4.0	180	2-Hexanone	ND<840	4.0	210
4-Methyl-2-pentanone (MIBK)	ND<33	4.0	8.3	Methyl-t-butyl ether (MTBE)	ND<29	4.0	7.3
Methylene chloride	ND<28	4.0	7.1	Naphthalene	ND<44	4.0	11
Propene	ND<350	4.0	88	Styrene	ND<34	4.0	8.6
1,1,1,2-Tetrachloroethane	ND<56	4.0	14	1,1,2,2-Tetrachloroethane	ND<56	4.0	14
Tetrahydrofuran	ND<24	4.0	6.0	Toluene	ND<31	4.0	7.7
1,2,4-Trichlorobenzene	ND<60	4.0	15	1,1,1-Trichloroethane	ND<44	4.0	11
1,1,2-Trichloroethane	ND<44	4.0	11	Trichlorofluoromethane	ND<44	4.0	11
1,2,4-Trimethylbenzene	ND<40	4.0	10	1,3,5-Trimethylbenzene	ND<40	4.0	10
Vinyl Acetate	ND<720	4.0	180	Vinyl Chloride	ND<21	4.0	5.2
Xylenes, Total	ND<110	4.0	27				

**Surrogate Recoveries (%)**

%SS1:	126	%SS2:	108
%SS3:	109		

Comments:

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: Solano Group

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 01/17/13

Date Received: 01/17/13

Date Extracted: 01/18/13

Date Analyzed: 01/18/13

**Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$ \*\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1301397

Lab ID	1301397-005A	Initial Pressure (psia)	13.91
Client ID	SS-5	Final Pressure (psia)	27.75
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	81	1.0	8.1	trans-1,2-Dichloroethene	56	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrahydrofuran	ND	1.0	6.0	Toluene	ND	1.0	7.7
1,2,4-Trichlorobenzene	ND	1.0	15	1,1,1-Trichloroethane	ND	1.0	11
1,1,2-Trichloroethane	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

**Surrogate Recoveries (%)**

%SS1:	124	%SS2:	110
%SS3:	109		

Comments:

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor





Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: Solano Group

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 01/17/13

Date Received: 01/17/13

Date Extracted: 01/18/13

Date Analyzed: 01/18/13

**Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$ \*\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1301397

Lab ID	1301397-006A	Initial Pressure (psia)	13.78
Client ID	SS-6	Final Pressure (psia)	27.46
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	7.2	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	13	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	270	1.0	8.1	trans-1,2-Dichloroethene	71	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrahydrofuran	ND	1.0	6.0	Toluene	ND	1.0	7.7
1,2,4-Trichlorobenzene	ND	1.0	15	1,1,1-Trichloroethane	ND	1.0	11
1,1,2-Trichloroethane	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

**Surrogate Recoveries (%)**

%SS1:	127	%SS2:	110
%SS3:	109		

Comments:

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: Solano Group

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 01/17/13

Date Received: 01/17/13

Date Extracted: 01/18/13

Date Analyzed: 01/18/13

**Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$ \*\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1301397

Lab ID	1301397-007A	Initial Pressure (psia)	13.58
Client ID	SS-7	Final Pressure (psia)	27.06
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	22	1.0	8.1	trans-1,2-Dichloroethene	29	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	32	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrahydrofuran	7.2	1.0	6.0	Toluene	ND	1.0	7.7
1,2,4-Trichlorobenzene	ND	1.0	15	1,1,1-Trichloroethane	ND	1.0	11
1,1,2-Trichloroethane	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

**Surrogate Recoveries (%)**

%SS1:	128	%SS2:	111
%SS3:	108		

Comments:

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: Solano Group

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 01/17/13

Date Received: 01/17/13

Date Extracted: 01/18/13

Date Analyzed: 01/18/13

**Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$**

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1301397

Lab ID	1301397-008A	Initial Pressure (psia)	13.62
Client ID	CSU-1	Final Pressure (psia)	27.14
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	160	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	290	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	ND	1.0	14	Tetrahydrofuran	ND	1.0	6.0
Toluene	19	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

**Surrogate Recoveries (%)**

%SS1:	117	%SS2:	109
%SS3:	104		

Comments:

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



## QC SUMMARY REPORT FOR ASTM D 1946-90

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 74142

WorkOrder: 1301397

EPA Method: ASTM D 1946-90

Extraction: ASTM D 1946-90

Spiked Sample ID: N/A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	%	%	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Helium	N/A	0.010	N/A	N/A	N/A	99.3	N/A	N/A	60 - 140

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

### BATCH 74142 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1301397-003A	01/17/13 10:06 AM	01/22/13	01/22/13 11:05 AM	1301397-007A	01/17/13 12:54 PM	01/22/13	01/22/13 11:18 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification 1644

 QA/QC Officer



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soilgas

QC Matrix: Water

BatchID: 74140

WorkOrder: 1301397

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
tert-Amyl methyl ether (TAME)	N/A	10	N/A	N/A	N/A	124	N/A	N/A	70 - 130
Benzene	N/A	10	N/A	N/A	N/A	110	N/A	N/A	70 - 130
t-Butyl alcohol (TBA)	N/A	40	N/A	N/A	N/A	126	N/A	N/A	70 - 130
Chlorobenzene	N/A	10	N/A	N/A	N/A	105	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	N/A	10	N/A	N/A	N/A	118	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	N/A	10	N/A	N/A	N/A	119	N/A	N/A	70 - 130
1,1-Dichloroethene	N/A	10	N/A	N/A	N/A	105	N/A	N/A	70 - 130
Diisopropyl ether (DIPE)	N/A	10	N/A	N/A	N/A	119	N/A	N/A	70 - 130
Ethyl tert-butyl ether (ETBE)	N/A	10	N/A	N/A	N/A	128	N/A	N/A	70 - 130
Methyl-t-butyl ether (MTBE)	N/A	10	N/A	N/A	N/A	130	N/A	N/A	70 - 130
Toluene	N/A	10	N/A	N/A	N/A	102	N/A	N/A	70 - 130
Trichloroethene	N/A	10	N/A	N/A	N/A	106	N/A	N/A	70 - 130
%SS1:	N/A	25	N/A	N/A	N/A	118	N/A	N/A	70 - 130
%SS2:	N/A	25	N/A	N/A	N/A	105	N/A	N/A	70 - 130
%SS3:	N/A	2.5	N/A	N/A	N/A	111	N/A	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 74140 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1301397-003A	01/17/13 10:06 AM	01/18/13	01/18/13 7:26 PM	1301397-004A	01/17/13 10:34 AM	01/22/13	01/22/13 10:42 AM
1301397-005A	01/17/13 11:05 AM	01/18/13	01/18/13 8:43 PM	1301397-006A	01/17/13 11:36 AM	01/18/13	01/18/13 3:22 PM
1301397-007A	01/17/13 12:54 PM	01/18/13	01/18/13 9:21 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 74095

WorkOrder: 1301397

EPA Method: TO15		Extraction: TO15					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Acrylonitrile	N/A	25	N/A	N/A	N/A	90.6	N/A	N/A	60 - 140
tert-Amyl methyl ether (TAME)	N/A	25	N/A	N/A	N/A	108	N/A	N/A	60 - 140
Benzene	N/A	25	N/A	N/A	N/A	108	N/A	N/A	60 - 140
Benzyl chloride	N/A	25	N/A	N/A	N/A	102	N/A	N/A	60 - 140
Bromodichloromethane	N/A	25	N/A	N/A	N/A	122	N/A	N/A	60 - 140
Bromoform	N/A	25	N/A	N/A	N/A	117	N/A	N/A	60 - 140
t-Butyl alcohol (TBA)	N/A	25	N/A	N/A	N/A	89.3	N/A	N/A	60 - 140
Carbon Disulfide	N/A	25	N/A	N/A	N/A	102	N/A	N/A	60 - 140
Carbon Tetrachloride	N/A	25	N/A	N/A	N/A	122	N/A	N/A	60 - 140
Chlorobenzene	N/A	25	N/A	N/A	N/A	107	N/A	N/A	60 - 140
Chloroethane	N/A	25	N/A	N/A	N/A	138	N/A	N/A	60 - 140
Chloroform	N/A	25	N/A	N/A	N/A	114	N/A	N/A	60 - 140
Chloromethane	N/A	25	N/A	N/A	N/A	99.3	N/A	N/A	60 - 140
Dibromochloromethane	N/A	25	N/A	N/A	N/A	123	N/A	N/A	60 - 140
1,2-Dibromo-3-chloropropane	N/A	25	N/A	N/A	N/A	128	N/A	N/A	60 - 140
1,2-Dibromoethane (EDB)	N/A	25	N/A	N/A	N/A	109	N/A	N/A	60 - 140
1,2-Dichlorobenzene	N/A	25	N/A	N/A	N/A	101	N/A	N/A	60 - 140
1,3-Dichlorobenzene	N/A	25	N/A	N/A	N/A	101	N/A	N/A	60 - 140
1,4-Dichlorobenzene	N/A	25	N/A	N/A	N/A	86.7	N/A	N/A	60 - 140
Dichlorodifluoromethane	N/A	25	N/A	N/A	N/A	104	N/A	N/A	60 - 140
1,1-Dichloroethane	N/A	25	N/A	N/A	N/A	114	N/A	N/A	60 - 140
1,2-Dichloroethane (1,2-DCA)	N/A	25	N/A	N/A	N/A	123	N/A	N/A	60 - 140
1,1-Dichloroethene	N/A	25	N/A	N/A	N/A	103	N/A	N/A	60 - 140
cis-1,2-Dichloroethene	N/A	25	N/A	N/A	N/A	110	N/A	N/A	60 - 140
trans-1,2-Dichloroethene	N/A	25	N/A	N/A	N/A	110	N/A	N/A	60 - 140
1,2-Dichloropropane	N/A	25	N/A	N/A	N/A	115	N/A	N/A	60 - 140
cis-1,3-Dichloropropene	N/A	25	N/A	N/A	N/A	112	N/A	N/A	60 - 140
trans-1,3-Dichloropropene	N/A	25	N/A	N/A	N/A	118	N/A	N/A	60 - 140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	N/A	25	N/A	N/A	N/A	94.2	N/A	N/A	60 - 140
Diisopropyl ether (DIPE)	N/A	25	N/A	N/A	N/A	126	N/A	N/A	60 - 140
1,4-Dioxane	N/A	25	N/A	N/A	N/A	105	N/A	N/A	60 - 140

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.





## QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 74095

WorkOrder: 1301397

EPA Method: TO15		Extraction: TO15				Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Ethyl acetate	N/A	25	N/A	N/A	N/A	119	N/A	N/A	60 - 140
Ethyl tert-butyl ether (ETBE)	N/A	25	N/A	N/A	N/A	115	N/A	N/A	60 - 140
Ethylbenzene	N/A	25	N/A	N/A	N/A	98.7	N/A	N/A	60 - 140
Freon 113	N/A	25	N/A	N/A	N/A	82.1	N/A	N/A	60 - 140
Hexachlorobutadiene	N/A	25	N/A	N/A	N/A	91.3	N/A	N/A	60 - 140
4-Methyl-2-pentanone (MIBK)	N/A	25	N/A	N/A	N/A	122	N/A	N/A	60 - 140
Methyl-t-butyl ether (MTBE)	N/A	25	N/A	N/A	N/A	111	N/A	N/A	60 - 140
Methylene chloride	N/A	25	N/A	N/A	N/A	78.7	N/A	N/A	60 - 140
Naphthalene	N/A	25	N/A	N/A	N/A	114	N/A	N/A	60 - 140
Styrene	N/A	25	N/A	N/A	N/A	103	N/A	N/A	60 - 140
1,1,1,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	114	N/A	N/A	60 - 140
1,1,2,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	111	N/A	N/A	60 - 140
Tetrachloroethene	N/A	25	N/A	N/A	N/A	101	N/A	N/A	60 - 140
Tetrahydrofuran	N/A	25	N/A	N/A	N/A	98.4	N/A	N/A	60 - 140
Toluene	N/A	25	N/A	N/A	N/A	107	N/A	N/A	60 - 140
1,2,4-Trichlorobenzene	N/A	25	N/A	N/A	N/A	95.4	N/A	N/A	60 - 140
1,1,1-Trichloroethane	N/A	25	N/A	N/A	N/A	118	N/A	N/A	60 - 140
1,1,2-Trichloroethane	N/A	25	N/A	N/A	N/A	111	N/A	N/A	60 - 140
Trichloroethene	N/A	25	N/A	N/A	N/A	108	N/A	N/A	60 - 140
1,2,4-Trimethylbenzene	N/A	25	N/A	N/A	N/A	106	N/A	N/A	60 - 140
1,3,5-Trimethylbenzene	N/A	25	N/A	N/A	N/A	107	N/A	N/A	60 - 140
Vinyl Chloride	N/A	25	N/A	N/A	N/A	85.7	N/A	N/A	60 - 140
%SS1:	N/A	500	N/A	N/A	N/A	109	N/A	N/A	60 - 140
%SS2:	N/A	500	N/A	N/A	N/A	109	N/A	N/A	60 - 140
%SS3:	N/A	500	N/A	N/A	N/A	104	N/A	N/A	60 - 140
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 74095

WorkOrder: 1301397

EPA Method: TO15		Extraction: TO15				Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS

### BATCH 74095 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1301397-001A	01/16/13 3:30 PM	01/17/13	01/17/13 8:26 PM	1301397-001A	01/16/13 3:30 PM	01/18/13	01/18/13 12:29 AM
1301397-001A	01/16/13 3:30 PM	01/18/13	01/18/13 12:29 AM	1301397-002A	01/16/13 4:01 PM	01/17/13	01/17/13 9:05 PM
1301397-002A	01/16/13 4:01 PM	01/18/13	01/18/13 1:10 AM	1301397-002A	01/16/13 4:01 PM	01/18/13	01/18/13 1:10 AM
1301397-003A	01/17/13 10:06 AM	01/18/13	01/18/13 8:12 PM	1301397-003A	01/17/13 10:06 AM	01/18/13	01/18/13 9:33 PM
1301397-004A	01/17/13 10:34 AM	01/18/13	01/18/13 8:52 PM	1301397-004A	01/17/13 10:34 AM	01/18/13	01/18/13 8:52 PM
1301397-005A	01/17/13 11:05 AM	01/18/13	01/18/13 1:51 AM	1301397-005A	01/17/13 11:05 AM	01/18/13	01/18/13 1:51 AM
1301397-006A	01/17/13 11:36 AM	01/18/13	01/18/13 2:31 AM	1301397-006A	01/17/13 11:36 AM	01/18/13	01/18/13 2:31 AM
1301397-007A	01/17/13 12:54 PM	01/18/13	01/18/13 3:12 AM	1301397-008A	01/17/13 2:16 PM	01/18/13	01/18/13 1:30 PM
1301397-008A	01/17/13 2:16 PM	01/18/13	01/18/13 1:30 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Reported: 01/22/13
	Client P.O.:	Date Completed: 01/22/13

**WorkOrder: 1301454**

January 23, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **8** analyzed samples from your project: **Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*





pg. 2 of 3

<b>McCAMPBELL ANALYTICAL, INC.</b> 1534 Willow Pass Road Pittsburg, CA 94565 Website: <a href="http://www.mccampbell.com">www.mccampbell.com</a> Email: <a href="mailto:main@mccampbell.com">main@mccampbell.com</a> Telephone: (925) 252-9262 Fax: (925) 252-9269					<b>CHAIN OF CUSTODY RECORD</b> <b>TURN AROUND TIME</b> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> RUSH    24 HR    48 HR    72 HR    5 DAY EDF Required? Coelt (Normal)    No    Write On (DW)    No																																								
Report To: Morgan Gillies    Bill To: Pangea Company: Pangea Environmental Services, Inc. 1710 Franklin Street, Suite 200, Oakland, CA 94612 E-Mail: <a href="mailto:mgillies@pangeaenv.com">mgillies@pangeaenv.com</a> Tele: (510) 836-3702    Fax: (510) 836-3709 Project #: <del>123456789</del> Project Name: <del>K2 Builders</del> <i>Solano Group</i> Project Location: <del>2000 &amp; 3020 Ellis St. San Francisco</del> <i>187 Solano Ave, Albany</i> Sampler Signature: _____					<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="10">Analysis Request</th> <th>Other</th> <th>Comments</th> </tr> <tr> <td>TPH/BTEX/MTBE (8015Cm/8021B)</td> <td>TPHd (8015Cm) w/ Silica Gel Cleanup</td> <td>Total Petroleum Oil &amp; Grease (5520 E&amp;F/B&amp;F)</td> <td>Total Petroleum Hydrocarbons (418.1)</td> <td>EPA 601/8010/8021</td> <td>BTEX ONLY (EPA 602/8020)</td> <td>EPA 608/8081</td> <td>EPA 608/8082 PCB's ONLY</td> <td>EPA 8140/8141</td> <td>EPA 8150/8151</td> <td>EPA 524.2/624/8260</td> <td>EPA 525/625/8270</td> <td>PAH's / PNA's by EPA 625/8270/8310</td> <td>CAM-17 Metals (6010/6020)</td> <td>LUFT 5 Metals (6010/6020)</td> <td>Lead (6010)</td> <td>Five fuel oxygenates by EPA Method 8260</td> <td></td> <td>Filter Samples for Metals analysis: Yes / No</td> </tr> </table>										Analysis Request										Other	Comments	TPH/BTEX/MTBE (8015Cm/8021B)	TPHd (8015Cm) w/ Silica Gel Cleanup	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010/8021	BTEX ONLY (EPA 602/8020)	EPA 608/8081	EPA 608/8082 PCB's ONLY	EPA 8140/8141	EPA 8150/8151	EPA 524.2/624/8260	EPA 525/625/8270	PAH's / PNA's by EPA 625/8270/8310	CAM-17 Metals (6010/6020)	LUFT 5 Metals (6010/6020)	Lead (6010)	Five fuel oxygenates by EPA Method 8260		Filter Samples for Metals analysis: Yes / No
Analysis Request										Other	Comments																																		
TPH/BTEX/MTBE (8015Cm/8021B)	TPHd (8015Cm) w/ Silica Gel Cleanup	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010/8021	BTEX ONLY (EPA 602/8020)	EPA 608/8081	EPA 608/8082 PCB's ONLY	EPA 8140/8141	EPA 8150/8151	EPA 524.2/624/8260	EPA 525/625/8270	PAH's / PNA's by EPA 625/8270/8310	CAM-17 Metals (6010/6020)	LUFT 5 Metals (6010/6020)	Lead (6010)	Five fuel oxygenates by EPA Method 8260		Filter Samples for Metals analysis: Yes / No																											
SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED																																		
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other																															
B-15-12		1/18	1430	1	Acid	X					X								HOLD																										
B-15-16			1440																HOLD																										
B-12-4			1500																																										
B-12-8			1525																																										
B-12-12			1520																HOLD																										
B-12-16			1530																HOLD																										
B-11-4			1600																HOLD																										
B-11-8			1610																HOLD																										
B-11-12			1620																HOLD																										
B-11-15.5			1640																HOLD																										
B-7-8			1730																HOLD																										
B-7-12			1735																HOLD																										
B-7-15			1740																HOLD																										
B-6-8			1800																HOLD																										
Relinquished By:		Date:	Time:	Received By:		ICE/T° <u>5.4</u> GOOD CONDITION _____ HEAD SPACE ABSENT _____ DECHLORINATED IN LAB _____ APPROPRIATE CONTAINERS _____ PRESERVED IN LAB _____ VOAS    O&G    METALS    OTHER PRESERVATION _____ pH <2 _____																																							
Relinquished By:		Date:	Time:	Received By:																																									
Relinquished By:		Date:	Time:	Received By:																																									




Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
Telephone: (925) 252-9262 Fax: (925) 252-9269

## CHAIN OF CUSTODY RECORD

## TURN AROUND TIME

	RUSH	24 HR	48 HR	72 HR	5 DAY
EDF Required? Coelt (Normal)	No	Write On (DW)	No		

<b>Report To:</b> Morgan Gillies	<b>Bill To:</b> Pangea
<b>Company:</b> Pangea Environmental Services, Inc.	
1710 Franklin Street, Suite 200, Oakland, CA 94612	
	<b>E-Mail:</b> mgillies@pangeaenv.com
<b>Tele:</b> (510) 836-3702	<b>Fax:</b> (510) 836-3709
<b>Project #:</b>	<b>Project Name:</b> Kershaw
<b>Project Location:</b> 1187 Solano Ave, Albany	
<b>Sampler Signature:</b> 	

### Analysis Request

## Other

### Comments

[illegible]

Relinquished By:

Date: \_\_\_\_\_

Time:

Received By:

ICE/C° 5,4

COMMENTS:

Relinquished By:

Date: \_\_\_\_\_

Time:

Received By:

GOOD CONDITION \_\_\_\_\_  
HEAD SPACE ABSENT \_\_\_\_\_  
DECHLORINATED IN LAB \_\_\_\_\_  
APPROPRIATE CONTAINERS \_\_\_\_\_  
PRESERVED IN LAB \_\_\_\_\_

	VOAS	O&G	METALS	OTHER
PRESERVATION			pH<2	





# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1301454

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa

cc:

PO:

ProjectNo: Solano Group

## Bill to:

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

Requested TAT:

2 days

**Date Received:** 01/18/2013**Date Printed:** 01/18/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1301454-003	B-13-8	Soil	1/18/2013 11:15	<input type="checkbox"/>	A											
1301454-009	B-14-8	Soil	1/18/2013 12:10	<input type="checkbox"/>	A											
1301454-014	B-15-8	Soil	1/18/2013 14:25	<input type="checkbox"/>	A											
1301454-017	B-12-4	Soil	1/18/2013 15:00	<input type="checkbox"/>	A											
1301454-018	B-12-8	Soil	1/18/2013 15:25	<input type="checkbox"/>	A											
1301454-022	B-11-8	Soil	1/18/2013 16:10	<input type="checkbox"/>	A											
1301454-026	B-7-12	Soil	1/18/2013 17:35	<input type="checkbox"/>	A											
1301454-029	B-6-12	Soil	1/18/2013 18:10	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **1/18/2013 8:25:19 PM**

Project Name: **Solano Group**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1301454**

Matrix: Soil

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 5.4°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Extracted 01/18/13
	Client P.O.:	Date Analyzed 01/19/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301454

Lab ID	1301454-003A						
Client ID	B-13-8						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.0051	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	114	%SS2:	113
%SS3:	102		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Extracted 01/18/13
	Client P.O.:	Date Analyzed 01/19/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301454

Lab ID	1301454-009A						
Client ID	B-14-8						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	114	%SS2:	118
%SS3:	103		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Extracted 01/18/13
	Client P.O.:	Date Analyzed 01/19/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301454

Lab ID	1301454-014A						
Client ID	B-15-8						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	117	%SS2:	117
%SS3:	99		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Extracted 01/18/13
	Client P.O.:	Date Analyzed 01/19/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301454

Lab ID	1301454-017A						
Client ID	B-12-4						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	114	%SS2:	116
%SS3:	100		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Extracted 01/18/13
	Client P.O.:	Date Analyzed 01/19/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301454

Lab ID	1301454-018A						
Client ID	B-12-8						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.011	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	114	%SS2:	115
%SS3:	101		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Extracted 01/18/13
	Client P.O.:	Date Analyzed 01/19/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301454

Lab ID	1301454-022A						
Client ID	B-11-8						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	119	%SS2:	117
%SS3:	100		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Extracted 01/18/13
	Client P.O.:	Date Analyzed 01/19/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301454

Lab ID	1301454-026A						
Client ID	B-7-12						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.0061	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	113	%SS2:	114
%SS3:	102		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Extracted 01/18/13
	Client P.O.:	Date Analyzed 01/19/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301454

Lab ID	1301454-029A						
Client ID	B-6-12						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.0062	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	113	%SS2:	116
%SS3:	101		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 74024

WorkOrder: 1301454

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1301358-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	95.5	89.6	6.41	101	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	75.6	74.9	0.947	82.4	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	84.6	70.6	18.1	78.3	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	76.4	75.9	0.673	81.9	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	79.3	75.4	5.01	87	60 - 116	30	70 - 130
%SS1:	94	0.12	96	85	12.3	99	70 - 130	30	70 - 130
%SS2:	107	0.12	107	107	0	107	70 - 130	30	70 - 130
%SS3:	101	0.012	100	95	5.09	98	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 74024 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1301454-003A	01/18/13 11:15 AM	01/18/13	01/19/13 8:14 PM	1301454-009A	01/18/13 12:10 PM	01/18/13	01/19/13 8:55 PM
1301454-014A	01/18/13 2:25 PM	01/18/13	01/19/13 9:37 PM	1301454-017A	01/18/13 3:00 PM	01/18/13	01/19/13 6:53 PM
1301454-018A	01/18/13 3:25 PM	01/18/13	01/19/13 4:50 PM	1301454-022A	01/18/13 4:10 PM	01/18/13	01/19/13 6:12 PM
1301454-026A	01/18/13 5:35 PM	01/18/13	01/19/13 5:31 PM	1301454-029A	01/18/13 6:10 PM	01/18/13	01/19/13 7:34 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Reported: 01/22/13
	Client P.O.:	Date Completed: 02/11/13

**WorkOrder: 1301454 A**

February 11, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*







**McCAMPBELL ANALYTICAL, INC.**

1534 Willow Pass Road  
Pittsburg, CA 94565

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)

**Telephone: (925) 252-9262**

**Fax:** (925) 252-9269

### CHAIN OF CUSTODY RECORD

## TURN AROUND TIME

☐ RUSH    ☐ 24 HR    ☒ 48 HR    ☐ 72 HR    ☐ 5 DAY

EDF Required?	Coelt (Normal)	No	Write On (DW)	No
---------------	----------------	----	---------------	----

Report To: Morgan Gillies

Bill To: Pangea

**Company:** Pangea Environmental Services, Inc.

1710 Franklin Street, Suite 200, Oakland, CA 94612

E-Mail: [mgillies@pangeaenv.com](mailto:mgillies@pangeaenv.com)

Tele: (510) 836-3702

Fax: (510) 836-3709

Project #: ~~100-10000~~Project Name: ~~K2 Builders~~ *Schaefer*

Project Location: ~~2000 S. 2020 Ellis St., San Francisco~~ 187 Solano Ave. Albany

**Sampler Signature:**

### Analysis Request

**Other**

### Comments

**Filter  
Samples  
for Metals  
analysis:  
Yes / No**

TPHQ/BTEX/MTBE (80/15C m/80/21B)

TPHd (8015Cm) w/ Silica Gel Cleanup)

Total Petroleum Oil &amp; Grease (5520 E&amp;F/B&amp;F)

Total Petroleum Hydrocarbons (418.1)

EPA 601 (8010) 8021

BTEX ONLY (EPA 602 / 8020)

EPA 608 / 8081

EPA 608 / 8082 PCB's ONLY

EPA 8140 / 8141

EPA 8150 / 8151

EPA 524.2 / 624 / 8260

EPA 525 / 625 / 8270

PAH's / PNA's by EPA 625 / 8270 / 8310

CAM-17 Metals (6010 / 6020)

LUFTHANSA METALS (6010 / 6020)

Lead (6010)

Five fuel oxygenates by EPA Method 8260

[illegible]

ICE/T 3,4 COMMENTS: added 2/6/13 48hr  
GOOD CONDITION \_\_\_\_\_  
HEAD SPACE ABSENT \_\_\_\_\_  
DECHLORINATED IN LAB \_\_\_\_\_  
APPROPRIATE CONTAINERS \_\_\_\_\_ PRESERVED IN LAB \_\_\_\_\_  
VOAS O&G METALS OTHER  
PRESERVATION \_\_\_\_\_ pH <2 \_\_\_\_\_



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1301454 **A**

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☐ Fax☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**

Morgan Gillies  
 Pangea Environmental Svcs., Inc.  
 1710 Franklin Street, Ste. 200  
 Oakland, CA 94612  
 (510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdela Fuente@pa  
 cc:  
 PO:  
 ProjectNo: Solano Group

**Bill to:**

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

**Requested TAT:****2 days****Date Received: 01/18/2013****Date Add-On: 02/08/2013****Date Printed: 02/08/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1301454-004	B-13-12	Soil	1/18/2013 11:25	<input type="checkbox"/>	A											
1301454-019	B-12-12	Soil	1/18/2013 15:20	<input type="checkbox"/>	A											
1301454-023	B-11-12	Soil	1/18/2013 16:20	<input type="checkbox"/>	A											

**Test Legend:**

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez
**Comments:** 8010 added to 004,019,023 2/8/13 48hr. Ok'ed by Morgan to run samples pass their holding time.

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Extracted 02/08/13
	Client P.O.:	Date Analyzed 02/08/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301454

Lab ID	1301454-004A						
Client ID	B-13-12						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	110	%SS2:	102
%SS3:	110		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Extracted 02/08/13
	Client P.O.:	Date Analyzed 02/08/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301454

Lab ID	1301454-019A						
Client ID	B-12-12						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	111	%SS2:	105
%SS3:	111		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 01/18/13
		Date Received: 01/18/13
	Client Contact: Morgan Gillies	Date Extracted 02/08/13
	Client P.O.:	Date Analyzed 02/08/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1301454

Lab ID	1301454-023A						
Client ID	B-11-12						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	110	%SS2:	102
%SS3:	110		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 74524

WorkOrder: 1301454

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1302119-026A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	83.2	88.8	6.54	91.9	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	79.8	83.4	4.36	81.3	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	86.5	92.9	7.10	95.2	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	81.5	86.5	5.94	85.2	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	93	100	7.33	102	60 - 116	30	70 - 130
%SS1:	103	0.12	112	112	0	110	70 - 130	30	70 - 130
%SS2:	109	0.12	107	104	2.52	102	70 - 130	30	70 - 130
%SS3:	105	0.012	83	83	0	81	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 74524 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1301454-004A	01/18/13 11:25 AM	02/08/13	02/08/13 4:39 PM	1301454-019A	01/18/13 3:20 PM	02/08/13	02/08/13 5:20 PM
1301454-023A	01/18/13 4:20 PM	02/08/13	02/08/13 6:01 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Kershaw	Date Sampled: 02/01/13
		Date Received: 02/01/13
	Client Contact: Morgan Gillies	Date Reported: 02/05/13
	Client P.O.:	Date Completed: 02/05/13

**WorkOrder: 1302013**

February 05, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the 6 analyzed samples from your project: **#1435.002; Kershaw,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

# McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Road  
Pittsburg, CA 94565

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)

Telephone: (925) 252-9262

Fax: (925) 252-9269

**RUSH**

## CHAIN OF CUSTODY RECORD

TURN AROUND TIME

☐ RUSH ☐ 24 HR ☒ 48 HR ☐ 72 HR ☐ 5 DAY

EDF Required? Coelt (Normal) ☒ No Write On (DW) No

Report To: Morgan Gillies Bill To: Pangea  
Company: Pangea Environmental Services, Inc.  
1710 Franklin Street, Suite 200, Oakland, CA 94612  
E-Mail: [mgillies@pangeaenv.com](mailto:mgillies@pangeaenv.com)  
Tele: (510) 836-3702 Fax: (510) 836-3709  
Project #: 1435002 Project Name: Kershaw  
Project Location: 1187 Solano Ave, Albany  
Sampler Signature: *[Signature]*

SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Analysis Request	Other	Comments
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other			
A-1-4		3/1	915	1	25	X					X						HOLD
A-2-6			1015														HOLD
A-4-6			1025												X		
A-3-5			1030														HOLD
A-3-6			1035														HOLD
A-5-4			1040														HOLD
A-5-6			1045														HOLD
A-6-6			1115												X		
A-6-10			1130												X		
A-5-8			1150												X		HOLD
A-5-13			1240												X		
A-2-11			1350												X		
A-3-11			1410												X		

Relinquished By: *[Signature]* Date: 2/1/13 Time: 155 Received By: *[Signature]*  
Relinquished By: Date: Time: Received By:  
Relinquished By: Date: Time: Received By:

ICE# 2.6 COMMENTS:  
GOOD CONDITION  
HEAD SPACE ABSENT  
DECHLORINATED IN LAB  
APPROPRIATE CONTAINERS  
PRESERVED IN LAB  
VOAS O&G METALS OTHER  
PRESERVATION pH<2



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1302013

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Kershaw

## Bill to:

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

## Requested TAT:

2 days

**Date Received:** 02/01/2013**Date Printed:** 02/01/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1302013-003	A-4-6	Soil	2/1/2013 10:25	<input type="checkbox"/>	A											
1302013-008	A-6-6	Soil	2/1/2013 11:15	<input type="checkbox"/>	A											
1302013-009	A-6-10	Soil	2/1/2013 11:30	<input type="checkbox"/>	A											
1302013-011	A-5-13	Soil	2/1/2013 12:40	<input type="checkbox"/>	A											
1302013-012	A-2-11	Soil	2/1/2013 13:50	<input type="checkbox"/>	A											
1302013-013	A-3-11	Soil	2/1/2013 14:10	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **2/1/2013 3:56:39 PM**

Project Name: **#1435.002; Kershaw**

Login Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1302013**

Matrix: Soil

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 2.6°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Kershaw	Date Sampled: 02/01/13
		Date Received: 02/01/13
	Client Contact: Morgan Gillies	Date Extracted 02/01/13
	Client P.O.:	Date Analyzed 02/01/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302013

Lab ID	1302013-003A						
Client ID	A-4-6						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.032	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	0.013	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	107	%SS2:	101
%SS3:	78		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Kershaw	Date Sampled: 02/01/13
		Date Received: 02/01/13
	Client Contact: Morgan Gillies	Date Extracted 02/01/13
	Client P.O.:	Date Analyzed 02/04/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302013

Lab ID	1302013-008A						
Client ID	A-6-6						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.50	100	0.005	Bromoform	ND<0.50	100	0.005
Bromomethane	ND<0.50	100	0.005	Carbon Tetrachloride	ND<0.50	100	0.005
Chlorobenzene	ND<0.50	100	0.005	Chloroethane	ND<0.50	100	0.005
Chloroform	ND<0.50	100	0.005	Chloromethane	ND<0.50	100	0.005
Dibromochloromethane	ND<0.50	100	0.005	1,2-Dibromoethane (EDB)	ND<0.40	100	0.004
1,2-Dichlorobenzene	ND<0.50	100	0.005	1,3-Dichlorobenzene	ND<0.50	100	0.005
1,4-Dichlorobenzene	ND<0.50	100	0.005	Dichlorodifluoromethane	ND<0.50	100	0.005
1,1-Dichloroethane	ND<0.50	100	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.40	100	0.004
1,1-Dichloroethene	ND<0.50	100	0.005	cis-1,2-Dichloroethene	ND<0.50	100	0.005
trans-1,2-Dichloroethene	ND<0.50	100	0.005	1,2-Dichloropropane	ND<0.50	100	0.005
cis-1,3-Dichloropropene	ND<0.50	100	0.005	trans-1,3-Dichloropropene	ND<0.50	100	0.005
Freon 113	ND<10	100	0.1	Methylene chloride	ND<0.50	100	0.005
1,1,1,2-Tetrachloroethane	ND<0.50	100	0.005	1,1,2,2-Tetrachloroethane	ND<0.50	100	0.005
Tetrachloroethene	7.9	100	0.005	1,1,1-Trichloroethane	ND<0.50	100	0.005
1,1,2-Trichloroethane	ND<0.50	100	0.005	Trichloroethene	ND<0.50	100	0.005
Trichlorofluoromethane	ND<0.50	100	0.005	Vinyl Chloride	ND<0.50	100	0.005

**Surrogate Recoveries (%)**

%SS1:	111	%SS2:	94
%SS3:	79		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Kershaw	Date Sampled: 02/01/13
		Date Received: 02/01/13
	Client Contact: Morgan Gillies	Date Extracted 02/01/13
	Client P.O.:	Date Analyzed 02/04/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302013

Lab ID	1302013-009A						
Client ID	A-6-10						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.20	40	0.005	Bromoform	ND<0.20	40	0.005
Bromomethane	ND<0.20	40	0.005	Carbon Tetrachloride	ND<0.20	40	0.005
Chlorobenzene	ND<0.20	40	0.005	Chloroethane	ND<0.20	40	0.005
Chloroform	ND<0.20	40	0.005	Chloromethane	ND<0.20	40	0.005
Dibromochloromethane	ND<0.20	40	0.005	1,2-Dibromoethane (EDB)	ND<0.16	40	0.004
1,2-Dichlorobenzene	ND<0.20	40	0.005	1,3-Dichlorobenzene	ND<0.20	40	0.005
1,4-Dichlorobenzene	ND<0.20	40	0.005	Dichlorodifluoromethane	ND<0.20	40	0.005
1,1-Dichloroethane	ND<0.20	40	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.16	40	0.004
1,1-Dichloroethene	ND<0.20	40	0.005	cis-1,2-Dichloroethene	ND<0.20	40	0.005
trans-1,2-Dichloroethene	ND<0.20	40	0.005	1,2-Dichloropropane	ND<0.20	40	0.005
cis-1,3-Dichloropropene	ND<0.20	40	0.005	trans-1,3-Dichloropropene	ND<0.20	40	0.005
Freon 113	ND<4.0	40	0.1	Methylene chloride	ND<0.20	40	0.005
1,1,1,2-Tetrachloroethane	ND<0.20	40	0.005	1,1,2,2-Tetrachloroethane	ND<0.20	40	0.005
Tetrachloroethene	3.9	40	0.005	1,1,1-Trichloroethane	ND<0.20	40	0.005
1,1,2-Trichloroethane	ND<0.20	40	0.005	Trichloroethene	ND<0.20	40	0.005
Trichlorofluoromethane	ND<0.20	40	0.005	Vinyl Chloride	ND<0.20	40	0.005

**Surrogate Recoveries (%)**

%SS1:	109	%SS2:	95
%SS3:	78		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Kershaw	Date Sampled: 02/01/13
		Date Received: 02/01/13
	Client Contact: Morgan Gillies	Date Extracted 02/01/13
	Client P.O.:	Date Analyzed 02/04/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302013

Lab ID	1302013-011A						
Client ID	A-5-13						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.050	10	0.005	Bromoform	ND<0.050	10	0.005
Bromomethane	ND<0.050	10	0.005	Carbon Tetrachloride	ND<0.050	10	0.005
Chlorobenzene	ND<0.050	10	0.005	Chloroethane	ND<0.050	10	0.005
Chloroform	ND<0.050	10	0.005	Chloromethane	ND<0.050	10	0.005
Dibromochloromethane	ND<0.050	10	0.005	1,2-Dibromoethane (EDB)	ND<0.040	10	0.004
1,2-Dichlorobenzene	ND<0.050	10	0.005	1,3-Dichlorobenzene	ND<0.050	10	0.005
1,4-Dichlorobenzene	ND<0.050	10	0.005	Dichlorodifluoromethane	ND<0.050	10	0.005
1,1-Dichloroethane	ND<0.050	10	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.040	10	0.004
1,1-Dichloroethene	ND<0.050	10	0.005	cis-1,2-Dichloroethene	ND<0.050	10	0.005
trans-1,2-Dichloroethene	ND<0.050	10	0.005	1,2-Dichloropropane	ND<0.050	10	0.005
cis-1,3-Dichloropropene	ND<0.050	10	0.005	trans-1,3-Dichloropropene	ND<0.050	10	0.005
Freon 113	ND<1.0	10	0.1	Methylene chloride	ND<0.050	10	0.005
1,1,1,2-Tetrachloroethane	ND<0.050	10	0.005	1,1,2,2-Tetrachloroethane	ND<0.050	10	0.005
Tetrachloroethene	1.3	10	0.005	1,1,1-Trichloroethane	ND<0.050	10	0.005
1,1,2-Trichloroethane	ND<0.050	10	0.005	Trichloroethene	ND<0.050	10	0.005
Trichlorofluoromethane	ND<0.050	10	0.005	Vinyl Chloride	ND<0.050	10	0.005

### Surrogate Recoveries (%)

%SS1:	112	%SS2:	100
%SS3:	75		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Kershaw	Date Sampled: 02/01/13
		Date Received: 02/01/13
	Client Contact: Morgan Gillies	Date Extracted 02/01/13
	Client P.O.:	Date Analyzed 02/04/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302013

Lab ID	1302013-012A						
Client ID	A-2-11						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.10	20	0.005	Bromoform	ND<0.10	20	0.005
Bromomethane	ND<0.10	20	0.005	Carbon Tetrachloride	ND<0.10	20	0.005
Chlorobenzene	ND<0.10	20	0.005	Chloroethane	ND<0.10	20	0.005
Chloroform	ND<0.10	20	0.005	Chloromethane	ND<0.10	20	0.005
Dibromochloromethane	ND<0.10	20	0.005	1,2-Dibromoethane (EDB)	ND<0.080	20	0.004
1,2-Dichlorobenzene	ND<0.10	20	0.005	1,3-Dichlorobenzene	ND<0.10	20	0.005
1,4-Dichlorobenzene	ND<0.10	20	0.005	Dichlorodifluoromethane	ND<0.10	20	0.005
1,1-Dichloroethane	ND<0.10	20	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.080	20	0.004
1,1-Dichloroethene	ND<0.10	20	0.005	cis-1,2-Dichloroethene	ND<0.10	20	0.005
trans-1,2-Dichloroethene	ND<0.10	20	0.005	1,2-Dichloropropane	ND<0.10	20	0.005
cis-1,3-Dichloropropene	ND<0.10	20	0.005	trans-1,3-Dichloropropene	ND<0.10	20	0.005
Freon 113	ND<2.0	20	0.1	Methylene chloride	ND<0.10	20	0.005
1,1,1,2-Tetrachloroethane	ND<0.10	20	0.005	1,1,2,2-Tetrachloroethane	ND<0.10	20	0.005
Tetrachloroethene	1.5	20	0.005	1,1,1-Trichloroethane	ND<0.10	20	0.005
1,1,2-Trichloroethane	ND<0.10	20	0.005	Trichloroethene	ND<0.10	20	0.005
Trichlorofluoromethane	ND<0.10	20	0.005	Vinyl Chloride	ND<0.10	20	0.005

**Surrogate Recoveries (%)**

%SS1:	110	%SS2:	95
%SS3:	78		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Kershaw	Date Sampled: 02/01/13
		Date Received: 02/01/13
	Client Contact: Morgan Gillies	Date Extracted 02/01/13
	Client P.O.:	Date Analyzed 02/04/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302013

Lab ID	1302013-013A						
Client ID	A-3-11						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.20	40	0.005	Bromoform	ND<0.20	40	0.005
Bromomethane	ND<0.20	40	0.005	Carbon Tetrachloride	ND<0.20	40	0.005
Chlorobenzene	ND<0.20	40	0.005	Chloroethane	ND<0.20	40	0.005
Chloroform	ND<0.20	40	0.005	Chloromethane	ND<0.20	40	0.005
Dibromochloromethane	ND<0.20	40	0.005	1,2-Dibromoethane (EDB)	ND<0.16	40	0.004
1,2-Dichlorobenzene	ND<0.20	40	0.005	1,3-Dichlorobenzene	ND<0.20	40	0.005
1,4-Dichlorobenzene	ND<0.20	40	0.005	Dichlorodifluoromethane	ND<0.20	40	0.005
1,1-Dichloroethane	ND<0.20	40	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.16	40	0.004
1,1-Dichloroethene	ND<0.20	40	0.005	cis-1,2-Dichloroethene	ND<0.20	40	0.005
trans-1,2-Dichloroethene	ND<0.20	40	0.005	1,2-Dichloropropane	ND<0.20	40	0.005
cis-1,3-Dichloropropene	ND<0.20	40	0.005	trans-1,3-Dichloropropene	ND<0.20	40	0.005
Freon 113	ND<4.0	40	0.1	Methylene chloride	ND<0.20	40	0.005
1,1,1,2-Tetrachloroethane	ND<0.20	40	0.005	1,1,2,2-Tetrachloroethane	ND<0.20	40	0.005
Tetrachloroethene	0.66	40	0.005	1,1,1-Trichloroethane	ND<0.20	40	0.005
1,1,2-Trichloroethane	ND<0.20	40	0.005	Trichloroethene	ND<0.20	40	0.005
Trichlorofluoromethane	ND<0.20	40	0.005	Vinyl Chloride	ND<0.20	40	0.005

### Surrogate Recoveries (%)

%SS1:	111	%SS2:	97
%SS3:	74		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 74416

WorkOrder: 1302013

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1301757-038A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	87.8	89.9	2.31	96.4	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	89.2	90.3	1.20	94.3	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	82.2	88.4	7.23	92.2	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	78.9	79.2	0.443	90.3	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	84.8	87.5	3.09	96.2	60 - 116	30	70 - 130
%SS1:	108	0.12	107	108	0.908	107	70 - 130	30	70 - 130
%SS2:	122	0.12	125	124	0.367	126	70 - 130	30	70 - 130
%SS3:	112	0.012	113	111	1.30	114	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 74416 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1302013-003A	02/01/13 10:25 AM	02/01/13	02/01/13 9:47 PM	1302013-008A	02/01/13 11:15 AM	02/01/13	02/04/13 3:14 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.





## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 74433

WorkOrder: 1302013

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1302013-013A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND<0.20	0.050	88.7	85.6	3.56	94	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND<0.16	0.050	87.5	84.7	3.36	93.7	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND<0.16	0.050	84.2	82.6	1.98	85.7	48 - 115	30	70 - 130
1,1-Dichloroethene	ND<0.20	0.050	81.1	78.8	2.92	86.8	46 - 111	30	70 - 130
Trichloroethene	ND<0.20	0.050	106	99.1	6.51	92.1	60 - 116	30	70 - 130
%SS1:	111	0.12	107	107	0	105	70 - 130	30	70 - 130
%SS2:	97	0.12	121	122	1.13	126	70 - 130	30	70 - 130
%SS3:	74	0.012	112	114	1.71	115	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 74433 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1302013-009A	02/01/13 11:30 AM	02/01/13	02/04/13 3:57 PM	1302013-011A	02/01/13 12:40 PM	02/01/13	02/04/13 4:40 PM
1302013-012A	02/01/13 1:50 PM	02/01/13	02/04/13 6:05 PM	1302013-013A	02/01/13 2:10 PM	02/01/13	02/04/13 5:24 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1187 Solano	Date Sampled: 02/08/13
		Date Received: 02/11/13
	Client Contact: Bob Clark-Riddell	Date Reported: 02/12/13
	Client P.O.:	Date Completed: 02/12/13

**WorkOrder: 1302244**

February 13, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the 2 analyzed samples from your project: **#1187 Solano**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*



McCampbell Analytical, Inc.

1534 Willow Pass Rd. / Pittsburg, Ca. 94565-1701  
www.mccampbell.com / main@mccampbell.com  
Telephone: (877) 252-9262 / Fax: (925) 252-9269

1302244

## CHAIN OF CUSTODY RECORD

**TURN AROUND TIME:** RUSH ☐ 24 HR ☐ 48 HR ☒ 72 HR ☐ 5 DAY ☐ 10 DAY ☐

GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuls ☐Effluent Sample Requiring "J" flag ☐ UST Clean Up Fund Project ☐; Claim #\_\_\_\_\_Report To: [bridgell@pangeaenv.com](mailto:bridgell@pangeaenv.com) Bill To:

Company: DANGER Environmental

1710 Franklin St

Oakland, CA

Tele: (510) 435-8664

E-Mail: [bradell@parzenv.com](mailto:bradell@parzenv.com)

Fax: ( )

Project #:

Project Name: 1187 Solano

Project Location: 1187 Solano

Purchase Order# 1187 Solano

Sampler Signature: Bob Kelly

### Analysis Request

[illegible]

**\*\*MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.**

Relinquished By:	Date:	Time:	Received By:
------------------	-------	-------	--------------

ICE/4.0

**COMMENTS:**

2/11/13	13/5	
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GOOD CONDITION \_\_\_\_\_  
HEAD SPACE ABSENT \_\_\_\_\_  
DECHLORINATED IN LAB \_\_\_\_\_  
APPROPRIATE CONTAINERS \_\_\_\_\_  
PRESERVED IN LAB \_\_\_\_\_

Relinquished By:	Date:	Time:	Received By:
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	VOAS	O&G	METALS	OTHER	HAZARDOUS:
PRESERVATION	pH<2				



## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1302244

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com

cc:

PO:

ProjectNo: #1187 Solano

## Bill to:

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

Requested TAT:

2 days

**Date Received:** 02/11/2013**Date Printed:** 02/11/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1302244-001	A-4-9	Soil	2/8/2013 13:15	<input type="checkbox"/>	A											
1302244-002	A-7-0	Soil	2/8/2013 13:15	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **2/11/2013 4:16:20 PM**

Project Name: **#1187 Solano**

Login Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1302244**

Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 4.6°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1187 Solano	Date Sampled: 02/08/13
		Date Received: 02/11/13
	Client Contact: Bob Clark-Riddell	Date Extracted 02/11/13
	Client P.O.:	Date Analyzed 02/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302244

Lab ID	1302244-001A						
Client ID	A-4-9						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.011	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	0.0050	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	104	%SS2:	114
%SS3:	115		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1187 Solano	Date Sampled: 02/08/13
		Date Received: 02/11/13
	Client Contact: Bob Clark-Riddell	Date Extracted 02/11/13
	Client P.O.:	Date Analyzed 02/12/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302244

Lab ID	1302244-002A						
Client ID	A-7-9						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.010	2.0	0.005	Bromoform	ND<0.010	2.0	0.005
Bromomethane	ND<0.010	2.0	0.005	Carbon Tetrachloride	ND<0.010	2.0	0.005
Chlorobenzene	ND<0.010	2.0	0.005	Chloroethane	ND<0.010	2.0	0.005
Chloroform	ND<0.010	2.0	0.005	Chloromethane	ND<0.010	2.0	0.005
Dibromochloromethane	ND<0.010	2.0	0.005	1,2-Dibromoethane (EDB)	ND<0.0080	2.0	0.004
1,2-Dichlorobenzene	ND<0.010	2.0	0.005	1,3-Dichlorobenzene	ND<0.010	2.0	0.005
1,4-Dichlorobenzene	ND<0.010	2.0	0.005	Dichlorodifluoromethane	ND<0.010	2.0	0.005
1,1-Dichloroethane	ND<0.010	2.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.0080	2.0	0.004
1,1-Dichloroethene	ND<0.010	2.0	0.005	cis-1,2-Dichloroethene	ND<0.010	2.0	0.005
trans-1,2-Dichloroethene	ND<0.010	2.0	0.005	1,2-Dichloropropane	ND<0.010	2.0	0.005
cis-1,3-Dichloropropene	ND<0.010	2.0	0.005	trans-1,3-Dichloropropene	ND<0.010	2.0	0.005
Freon 113	ND<0.20	2.0	0.1	Methylene chloride	ND<0.010	2.0	0.005
1,1,1,2-Tetrachloroethane	ND<0.010	2.0	0.005	1,1,2,2-Tetrachloroethane	ND<0.010	2.0	0.005
Tetrachloroethene	0.23	2.0	0.005	1,1,1-Trichloroethane	ND<0.010	2.0	0.005
1,1,2-Trichloroethane	ND<0.010	2.0	0.005	Trichloroethene	ND<0.010	2.0	0.005
Trichlorofluoromethane	ND<0.010	2.0	0.005	Vinyl Chloride	ND<0.010	2.0	0.005

**Surrogate Recoveries (%)**

%SS1:	108	%SS2:	113
%SS3:	111		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 74524

WorkOrder: 1302244

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1302119-026A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	83.2	88.8	6.54	91.9	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	79.8	83.4	4.36	81.3	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	86.5	92.9	7.10	95.2	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	81.5	86.5	5.94	85.2	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	93	100	7.33	102	60 - 116	30	70 - 130
%SS1:	103	0.12	112	112	0	110	70 - 130	30	70 - 130
%SS2:	109	0.12	107	104	2.52	102	70 - 130	30	70 - 130
%SS3:	105	0.012	83	83	0	81	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 74524 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1302244-001A	02/08/13 1:15 PM	02/11/13	02/11/13 11:07 PM	1302244-002A	02/08/13 1:15 PM	02/11/13	02/12/13 12:13 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 02/15/13
		Date Received: 02/19/13
	Client Contact: Morgan Gillies	Date Reported: 02/21/13
	Client P.O.:	Date Completed: 02/20/13

**WorkOrder: 1302476**

February 26, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#1435.002; Solano Group,**
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***

1302476

**Fax: (925) 252-9269**

## RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required?	Coelt (Normal)	No	Write On (DW)	No
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**Sampler Signature:**

**Filter  
Samples  
for Metals  
analysis:  
Yes / No**

Page 2 of 6



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1302476

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group**Bill to:**Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612**Requested TAT:****3 days****Date Received: 02/19/2013****Date Printed: 02/19/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1302476-001	EX-SE-5	Soil	2/15/2013 11:30	<input type="checkbox"/>	A											

**Test Legend:**

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Zoraida Cortez****Comments:**NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **2/19/2013 4:04:56 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1302476** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 5.4°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 02/15/13
	Client Contact: Morgan Gillies	Date Received: 02/19/13
	Client P.O.:	Date Extracted: 02/19/13
		Date Analyzed: 02/20/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302476

Lab ID	1302476-001A
Client ID	EX-SE-5
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.012	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	97	%SS2:	110
%SS3:	109		

Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 74810

WorkOrder: 1302476

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1302440-001A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	83.6	82.9	0.773	90.4	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	85.7	86	0.351	93.1	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	83.4	83.3	0.144	89	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	82	81.6	0.516	91.7	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	83.4	82	1.65	88.9	60 - 116	30	70 - 130
%SS1:	98	0.12	106	108	2.28	107	70 - 130	30	70 - 130
%SS2:	110	0.12	109	109	0	109	70 - 130	30	70 - 130
%SS3:	112	0.012	109	110	1.02	107	70 - 130	30	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 74810 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1302476-001A	02/15/13 11:30 AM	02/19/13	02/20/13 12:43 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 02/18/13
		Date Received: 02/19/13
	Client Contact: Morgan Gillies	Date Reported: 02/21/13
	Client P.O.:	Date Completed: 02/21/13

**WorkOrder: 1302475**

February 26, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***





## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1302475

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

2 days

Date Received: 02/19/2013

Date Printed: 02/19/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1302475-001	EX-SE2-6	Soil	2/18/2013 14:00	<input type="checkbox"/>	A											
1302475-002	EX-E-7	Soil	2/18/2013 15:00	<input type="checkbox"/>	A											
1302475-003	EX-SE	Water	2/18/2013 14:15	<input type="checkbox"/>		A										

## Test Legend:

1	8010BMS_S	2	8010BMS_W	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **2/19/2013 4:00:40 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1302475**

Matrix: Soil/Water

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 5.4°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 02/18/13
	Client Contact: Morgan Gillies	Date Received: 02/19/13
	Client P.O.:	Date Extracted: 02/19/13
		Date Analyzed: 02/20/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302475

Lab ID	1302475-001A
Client ID	EX-SE2-6
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	95	%SS2:	110
%SS3:	102		

Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 02/18/13
	Client Contact: Morgan Gillies	Date Received: 02/19/13
	Client P.O.:	Date Extracted: 02/19/13
		Date Analyzed: 02/20/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302475

Lab ID	1302475-002A
Client ID	EX-E-7
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.055	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	104	%SS2:	108
%SS3:	108		

Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 02/18/13
	Client Contact: Morgan Gillies	Date Received: 02/19/13
	Client P.O.:	Date Extracted: 02/20/13
		Date Analyzed: 02/20/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302475

Lab ID	1302475-003A
Client ID	EX-SE
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<2.5	5.0	0.5	Bromoform	ND<2.5	5.0	0.5
Bromomethane	ND<2.5	5.0	0.5	Carbon Tetrachloride	ND<2.5	5.0	0.5
Chlorobenzene	ND<2.5	5.0	0.5	Chloroethane	ND<2.5	5.0	0.5
Chloroform	ND<2.5	5.0	0.5	Chloromethane	ND<2.5	5.0	0.5
Dibromochloromethane	ND<2.5	5.0	0.5	1,2-Dibromoethane (EDB)	ND<2.5	5.0	0.5
1,2-Dichlorobenzene	ND<2.5	5.0	0.5	1,3-Dichlorobenzene	ND<2.5	5.0	0.5
1,4-Dichlorobenzene	ND<2.5	5.0	0.5	Dichlorodifluoromethane	ND<2.5	5.0	0.5
1,1-Dichloroethane	ND<2.5	5.0	0.5	1,2-Dichloroethane (1,2-DCA)	ND<2.5	5.0	0.5
1,1-Dichloroethene	ND<2.5	5.0	0.5	cis-1,2-Dichloroethene	ND<2.5	5.0	0.5
trans-1,2-Dichloroethene	ND<2.5	5.0	0.5	1,2-Dichloropropane	ND<2.5	5.0	0.5
cis-1,3-Dichloropropene	ND<2.5	5.0	0.5	trans-1,3-Dichloropropene	ND<2.5	5.0	0.5
Freon 113	ND<50	5.0	10	Methylene chloride	ND<2.5	5.0	0.5
1,1,1,2-Tetrachloroethane	ND<2.5	5.0	0.5	1,1,2,2-Tetrachloroethane	ND<2.5	5.0	0.5
Tetrachloroethene	93	5.0	0.5	1,1,1-Trichloroethane	ND<2.5	5.0	0.5
1,1,2-Trichloroethane	ND<2.5	5.0	0.5	Trichloroethene	ND<2.5	5.0	0.5
Trichlorofluoromethane	ND<2.5	5.0	0.5	Vinyl Chloride	ND<2.5	5.0	0.5

**Surrogate Recoveries (%)**

%SS1:	112	%SS2:	106
%SS3:	103		

Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 74810

WorkOrder: 1302475

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1302440-001A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	83.6	82.9	0.773	90.4	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	85.7	86	0.351	93.1	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	83.4	83.3	0.144	89	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	82	81.6	0.516	91.7	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	83.4	82	1.65	88.9	60 - 116	30	70 - 130
%SS1:	98	0.12	106	108	2.28	107	70 - 130	30	70 - 130
%SS2:	110	0.12	109	109	0	109	70 - 130	30	70 - 130
%SS3:	112	0.012	109	110	1.02	107	70 - 130	30	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 74810 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1302475-001A	02/18/13 2:00 PM	02/19/13	02/20/13 11:20 AM	1302475-002A	02/18/13 3:00 PM	02/19/13	02/20/13 12:02 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 74866

WorkOrder: 1302475

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1302449-023A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	78	78.8	0.979	95.8	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	82.2	84.3	2.51	106	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	79.2	78.5	0.813	97.5	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	83.4	81.7	2.00	97.5	70 - 130	20	70 - 130
Trichloroethene	ND	10	81	81.3	0.408	95.2	70 - 130	20	70 - 130
%SS1:	103	25	109	107	1.65	108	70 - 130	20	70 - 130
%SS2:	105	25	103	104	0.661	105	70 - 130	20	70 - 130
%SS3:	100	2.5	97	102	4.89	106	70 - 130	20	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 74866 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1302475-003A	02/18/13 2:15 PM	02/20/13	02/20/13 1:09 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 02/22/13
		Date Received: 02/22/13
	Client Contact: Morgan Gillies	Date Reported: 02/25/13
	Client P.O.:	Date Completed: 02/25/13

**WorkOrder: 1302670**

February 27, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#1435.002; Solano Group,**
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***



Page 2 of 6



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1302670

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

1 day

**Date Received:** 02/22/2013**Date Printed:** 02/22/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1302670-001	EX-N-8	Soil	2/22/2013 12:15	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

Comments: 24hr Rush

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **2/22/2013 5:17:45 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Maria Venegas**

WorkOrder N°: **1302670** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 6.4°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 02/22/13
	Client Contact: Morgan Gillies	Date Received: 02/22/13
	Client P.O.:	Date Extracted: 02/22/13
		Date Analyzed: 02/23/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302670

Lab ID	1302670-001A
Client ID	EX-N-8
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	105	%SS2:	106
%SS3:	97		

Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 74989

WorkOrder: 1302670

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1302670-001A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	86.5	87.1	0.763	90.9	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	77.4	77.4	0	83.6	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	78.2	77.7	0.680	82.4	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	86	82.8	3.79	93	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	87.1	84.7	2.84	92.9	60 - 116	30	70 - 130
%SS1:	105	0.12	106	106	0	107	70 - 130	30	70 - 130
%SS2:	106	0.12	109	109	0	110	70 - 130	30	70 - 130
%SS3:	97	0.012	102	104	1.24	100	70 - 130	30	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 74989 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1302670-001A	02/22/13 12:15 PM	02/22/13	02/23/13 2:09 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 02/25/13
		Date Received: 02/26/13
	Client Contact: Morgan Gillies	Date Reported: 02/28/13
	Client P.O.:	Date Completed: 02/28/13

**WorkOrder: 1302733**

February 28, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the 2 analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*







# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1302733

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

2 days

**Date Received:** 02/26/2013**Date Printed:** 02/26/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1302733-001	EX-E-GW	Water	2/25/2013 15:30	<input type="checkbox"/>	A											
1302733-002	EX-N-GW	Water	2/25/2013 15:40	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_W	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **2/26/2013 5:31:22 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1302733** Matrix: Water

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 4°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



**McC Campbell Analytical, Inc.**

*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
http://www.mcccampbell.com / E-mail: main@mcccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 02/25/13
	Client Contact: Morgan Gillies	Date Received: 02/26/13
	Client P.O.:	Date Extracted: 02/26/13-02/27/13
		Date Analyzed: 02/26/13-02/27/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1302733

Lab ID	1302733-001A	1302733-002A			Reporting Limit for DF = 1	
Client ID	EX-E-GW	EX-N-GW				
Matrix	W	W			S	W
DF	50	1				
Compound	Concentration				µg/kg	µg/L
Bromodichloromethane	ND<25	ND			NA	0.5
Bromoform	ND<25	ND			NA	0.5
Bromomethane	ND<25	ND			NA	0.5
Carbon Tetrachloride	ND<25	ND			NA	0.5
Chlorobenzene	ND<25	ND			NA	0.5
Chloroethane	ND<25	ND			NA	0.5
Chloroform	ND<25	ND			NA	0.5
Chloromethane	ND<25	ND			NA	0.5
Dibromochloromethane	ND<25	ND			NA	0.5
1,2-Dibromoethane (EDB)	ND<25	ND			NA	0.5
1,2-Dichlorobenzene	ND<25	ND			NA	0.5
1,3-Dichlorobenzene	ND<25	ND			NA	0.5
1,4-Dichlorobenzene	ND<25	ND			NA	0.5
Dichlorodifluoromethane	ND<25	ND			NA	0.5
1,1-Dichloroethane	ND<25	ND			NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<25	ND			NA	0.5
1,1-Dichloroethene	ND<25	ND			NA	0.5
cis-1,2-Dichloroethene	ND<25	0.71			NA	0.5
trans-1,2-Dichloroethene	ND<25	ND			NA	0.5
1,2-Dichloropropane	ND<25	ND			NA	0.5
cis-1,3-Dichloropropene	ND<25	ND			NA	0.5
trans-1,3-Dichloropropene	ND<25	ND			NA	0.5
Freon 113	ND<500	ND			NA	10
Methylene chloride	ND<25	ND			NA	0.5
1,1,1,2-Tetrachloroethane	ND<25	ND			NA	0.5
1,1,1,2,2-Tetrachloroethane	ND<25	ND			NA	0.5
Tetrachloroethene	750	8.3			NA	0.5
1,1,1-Trichloroethane	ND<25	ND			NA	0.5
1,1,2-Trichloroethane	ND<25	ND			NA	0.5
Trichloroethene	ND<25	1.4			NA	0.5
Trichlorofluoromethane	ND<25	ND			NA	0.5
Vinyl Chloride	ND<25	ND			NA	0.5

### Surrogate Recoveries (%)

%SS1:	104	102		
%SS2:	104	96		
%SS3:	94	93		
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 75079

WorkOrder: 1302733

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1302614-004B**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	81.8	79	3.40	95.9	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	98.1	96.3	1.87	106	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	94.4	95.1	0.812	104	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	92.1	92.5	0.463	107	70 - 130	20	70 - 130
Trichloroethene	ND	10	88.4	87.4	1.05	103	70 - 130	20	70 - 130
%SS1:	103	25	102	103	0.686	101	70 - 130	20	70 - 130
%SS2:	97	25	99	95	3.43	99	70 - 130	20	70 - 130
%SS3:	94	2.5	89	91	1.76	91	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 75079 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1302733-001A	02/25/13 3:30 PM	02/27/13	02/27/13 3:02 PM	1302733-002A	02/25/13 3:40 PM	02/26/13	02/26/13 10:03 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/05/13
		Date Received: 03/06/13
	Client Contact: Morgan Gillies	Date Reported: 03/11/13
	Client P.O.:	Date Completed: 03/08/13

**WorkOrder: 1303130**

March 12, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*







# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1303130

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: mgillies@pangeaenv.com; tdela Fuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group**Bill to:**Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612**Requested TAT:****5 days****Date Received: 03/06/2013****Date Printed: 03/06/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1303130-001	EX-F1-11	Soil	3/5/2013 16:30	<input type="checkbox"/>	A											
1303130-002	EX-F2-7	Soil	3/5/2013 16:40	<input type="checkbox"/>	A											
1303130-003	SW-1-4	Soil	3/5/2013 16:50	<input type="checkbox"/>	A											

**Test Legend:**

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Jena Alfaro****Comments:**NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **3/6/2013 5:04:09 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Jena Alfaro**

WorkOrder N°: **1303130** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 2.8°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/05/13
		Date Received: 03/06/13
	Client Contact: Morgan Gillies	Date Extracted 03/06/13
	Client P.O.:	Date Analyzed 03/07/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303130

Lab ID	1303130-001A						
Client ID	EX-F1-11						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.083	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	93	%SS2:	109
%SS3:	116		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/05/13
	Client Contact: Morgan Gillies	Date Received: 03/06/13
	Client P.O.:	Date Extracted 03/06/13
		Date Analyzed 03/07/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303130

Lab ID	1303130-002A						
Client ID	EX-F2-7						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.025	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	87	%SS2:	110
%SS3:	105		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/05/13
	Client Contact: Morgan Gillies	Date Received: 03/06/13
	Client P.O.:	Date Extracted 03/06/13
		Date Analyzed 03/07/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303130

Lab ID	1303130-003A						
Client ID	SW-1-4						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.021	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	94	%SS2:	109
%SS3:	118		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 75211

WorkOrder: 1303130

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1303061-001A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	84.1	84.9	0.883	85.7	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	102	101	0.984	107	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	85.7	81.8	4.69	87.2	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	78.1	66.9	15.4	80	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	91.1	86.8	4.79	88.3	60 - 116	30	70 - 130
%SS1:	92	0.12	92	86	7.50	90	70 - 130	30	70 - 130
%SS2:	117	0.12	116	110	4.76	113	70 - 130	30	70 - 130
%SS3:	103	0.012	102	105	2.93	104	70 - 130	30	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 75211 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303130-001A	03/05/13 4:30 PM	03/06/13	03/07/13 10:18 PM	1303130-002A	03/05/13 4:40 PM	03/06/13	03/07/13 12:39 PM
1303130-003A	03/05/13 4:50 PM	03/06/13	03/07/13 11:00 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/06/13
		Date Received: 03/06/13
	Client Contact: Morgan Gillies	Date Reported: 03/07/13
	Client P.O.:	Date Completed: 03/07/13

**WorkOrder: 1303129**

March 07, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the 2 analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

Page 2 of 7



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1303129

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

1 day

**Date Received:** 03/06/2013**Date Printed:** 03/06/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1303129-001	EX-F3-6	Soil	3/6/2013 10:20	<input type="checkbox"/>	A											
1303129-002	EX-F4-6	Soil	3/6/2013 10:30	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **3/6/2013 4:53:40 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Jena Alfaro**

WorkOrder N°: **1303129** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 2.8°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/06/13
	Client Contact: Morgan Gillies	Date Received: 03/06/13
	Client P.O.:	Date Extracted 03/06/13
		Date Analyzed 03/07/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303129

Lab ID	1303129-001A						
Client ID	EX-F3-6						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.025	5.0	0.005	Bromoform	ND<0.025	5.0	0.005
Bromomethane	ND<0.025	5.0	0.005	Carbon Tetrachloride	ND<0.025	5.0	0.005
Chlorobenzene	ND<0.025	5.0	0.005	Chloroethane	ND<0.025	5.0	0.005
Chloroform	ND<0.025	5.0	0.005	Chloromethane	ND<0.025	5.0	0.005
Dibromochloromethane	ND<0.025	5.0	0.005	1,2-Dibromoethane (EDB)	ND<0.020	5.0	0.004
1,2-Dichlorobenzene	ND<0.025	5.0	0.005	1,3-Dichlorobenzene	ND<0.025	5.0	0.005
1,4-Dichlorobenzene	ND<0.025	5.0	0.005	Dichlorodifluoromethane	ND<0.025	5.0	0.005
1,1-Dichloroethane	ND<0.025	5.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.020	5.0	0.004
1,1-Dichloroethene	ND<0.025	5.0	0.005	cis-1,2-Dichloroethene	ND<0.025	5.0	0.005
trans-1,2-Dichloroethene	ND<0.025	5.0	0.005	1,2-Dichloropropane	ND<0.025	5.0	0.005
cis-1,3-Dichloropropene	ND<0.025	5.0	0.005	trans-1,3-Dichloropropene	ND<0.025	5.0	0.005
Freon 113	ND<0.50	5.0	0.1	Methylene chloride	ND<0.025	5.0	0.005
1,1,1,2-Tetrachloroethane	ND<0.025	5.0	0.005	1,1,2,2-Tetrachloroethane	ND<0.025	5.0	0.005
Tetrachloroethene	0.57	5.0	0.005	1,1,1-Trichloroethane	ND<0.025	5.0	0.005
1,1,2-Trichloroethane	ND<0.025	5.0	0.005	Trichloroethene	ND<0.025	5.0	0.005
Trichlorofluoromethane	ND<0.025	5.0	0.005	Vinyl Chloride	ND<0.025	5.0	0.005

### Surrogate Recoveries (%)

%SS1:	100	%SS2:	101
%SS3:	96		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/06/13
	Client Contact: Morgan Gillies	Date Received: 03/06/13
	Client P.O.:	Date Extracted 03/06/13
		Date Analyzed 03/06/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303129

Lab ID	1303129-002A						
Client ID	EX-F4-6						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	0.0069	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.20	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	0.021	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	96	%SS2:	105
%SS3:	94		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 75211

WorkOrder: 1303129

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1303061-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	84.1	84.9	0.883	85.7	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	102	101	0.984	107	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	85.7	81.8	4.69	87.2	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	78.1	66.9	15.4	80	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	91.1	86.8	4.79	88.3	60 - 116	30	70 - 130
%SS1:	92	0.12	92	86	7.50	90	70 - 130	30	70 - 130
%SS2:	117	0.12	116	110	4.76	113	70 - 130	30	70 - 130
%SS3:	103	0.012	102	105	2.93	104	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 75211 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303129-001A	03/06/13 10:20 AM	03/06/13	03/07/13 7:12 AM	1303129-002A	03/06/13 10:30 AM	03/06/13	03/06/13 10:50 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/07/13
		Date Received: 03/08/13
	Client Contact: Morgan Gillies	Date Reported: 03/13/13
	Client P.O.:	Date Completed: 03/13/13

**WorkOrder: 1303216**

March 13, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **2** analyzed samples from your project: **#1435.002; Solano Group,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

1303216

## CHAIN OF CUSTODY RECORD

## TURN AROUND TIME

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RUSH	24 HR	48 HR	72 HR	5 DAY

**Fax: (925) 252-9269**

EDF Required?	Coelt (Normal)	No	Write On (DW)	No
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Bill To: Pangea

E-Mail: [mgillies@pangeaenv.com](mailto:mgillies@pangeaenv.com)

**Tele: (510) 836-3702**

**Fax: (510) 836-3709**

Project #: 1435.002

**Project Name:** Solano Group

**Project Location:** 1187 Solano Ave, Albany

**Sampler Signature:**

[illegible]TPH<sub>0</sub>/BTEx (8015Cm/8021B)

Five fuel oxygenates (8260B)

VOCs by EPA Method 8010 GC/MS no. 120

Relinquished By:	Date:	Time:	Received By:
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Relinquished By: 	Date: 	Time: 	Received By: 
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Relinquished By:	Date:	Time:	Received By:
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ICE/t° 5.64

**GOOD CONDITION**

### HEAD SPACE ABSENT

## DECHLORINATED IN LAB

### APPROPRIATE CONTAINERS

APPROPRIATELY CON-  
PRESERVED IN LAB

**COMMENTS:**

	VOAS	O&G	METALS	OTHER
PRESERVATION			pH<2	



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1303216

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group**Bill to:**Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612**Requested TAT:****3 days****Date Received: 03/08/2013****Date Printed: 03/08/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1303216-001	EX-F5-9	Soil	3/7/2013 16:40	<input type="checkbox"/>	A	A										
1303216-002	EX-F6-12	Soil	3/7/2013 16:50	<input type="checkbox"/>	A											

**Test Legend:**

1	8010BMS_S
6	
11	

2	PREDF REPORT
7	
12	

3	
8	

4	
9	

5	
10	

**Prepared by: Melissa Valles****Comments:**NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **3/8/2013 5:02:22 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Melissa Valles**

WorkOrder N°: **1303216** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 5.6°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/07/13
		Date Received: 03/08/13
	Client Contact: Morgan Gillies	Date Extracted 03/08/13
	Client P.O.:	Date Analyzed 03/09/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303216

Lab ID	1303216-001A						
Client ID	EX-F5-9						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.0077	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	94	%SS2:	107
%SS3:	119		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/07/13
		Date Received: 03/08/13
	Client Contact: Morgan Gillies	Date Extracted 03/08/13
	Client P.O.:	Date Analyzed 03/09/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303216

Lab ID	1303216-002A						
Client ID	EX-F6-12						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.0066	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	94	%SS2:	108
%SS3:	122		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 75263

WorkOrder: 1303216

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1303131-012A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	84.2	83.8	0.442	91.6	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	94.4	96.8	2.58	98.6	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	79.5	84.6	6.24	89	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	77.1	80.4	4.12	88.4	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	84.9	86.5	1.78	92.1	60 - 116	30	70 - 130
%SS1:	89	0.12	87	94	7.85	88	70 - 130	30	70 - 130
%SS2:	113	0.12	109	114	4.48	115	70 - 130	30	70 - 130
%SS3:	107	0.012	105	102	3.02	105	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 75263 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303216-001A	03/07/13 4:40 PM	03/08/13	03/09/13 12:27 AM	1303216-002A	03/07/13 4:50 PM	03/08/13	03/09/13 1:09 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/08/13
		Date Received: 03/09/13
	Client Contact: Morgan Gillies	Date Reported: 03/11/13
	Client P.O.:	Date Completed: 03/11/13

**WorkOrder: 1303249**

March 11, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***

# RUSH

Page 2 of 9



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1303249

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdela Fuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

1 day

**Date Received:** 03/09/2013**Date Printed:** 03/11/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1303249-001	B-16	Water	3/8/2013 15:30	<input type="checkbox"/>		A										
1303249-002	B-17	Water	3/8/2013 15:40	<input type="checkbox"/>		A										
1303249-003	EX-F7-4	Soil	3/8/2013 16:10	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2	8010BMS_W	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

Comments: 24hr.

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.





## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **3/9/2013 12:00:00 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Maria Venegas**

WorkOrder N°: **1303249**

Matrix: Soil/Water

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 5.6°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/08/13
	Client Contact: Morgan Gillies	Date Received: 03/09/13
	Client P.O.:	Date Extracted 03/11/13
		Date Analyzed 03/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303249

Lab ID	1303249-001A						
Client ID	B-16						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<25	50	0.5	Bromoform	ND<25	50	0.5
Bromomethane	ND<25	50	0.5	Carbon Tetrachloride	ND<25	50	0.5
Chlorobenzene	ND<25	50	0.5	Chloroethane	ND<25	50	0.5
Chloroform	ND<25	50	0.5	Chloromethane	ND<25	50	0.5
Dibromochloromethane	ND<25	50	0.5	1,2-Dibromoethane (EDB)	ND<25	50	0.5
1,2-Dichlorobenzene	ND<25	50	0.5	1,3-Dichlorobenzene	ND<25	50	0.5
1,4-Dichlorobenzene	ND<25	50	0.5	Dichlorodifluoromethane	ND<25	50	0.5
1,1-Dichloroethane	ND<25	50	0.5	1,2-Dichloroethane (1,2-DCA)	ND<25	50	0.5
1,1-Dichloroethene	ND<25	50	0.5	cis-1,2-Dichloroethene	ND<25	50	0.5
trans-1,2-Dichloroethene	ND<25	50	0.5	1,2-Dichloropropane	ND<25	50	0.5
cis-1,3-Dichloropropene	ND<25	50	0.5	trans-1,3-Dichloropropene	ND<25	50	0.5
Freon 113	ND<500	50	10	Methylene chloride	ND<25	50	0.5
1,1,1,2-Tetrachloroethane	ND<25	50	0.5	1,1,2,2-Tetrachloroethane	ND<25	50	0.5
Tetrachloroethene	520	50	0.5	1,1,1-Trichloroethane	ND<25	50	0.5
1,1,2-Trichloroethane	ND<25	50	0.5	Trichloroethene	ND<25	50	0.5
Trichlorofluoromethane	ND<25	50	0.5	Vinyl Chloride	ND<25	50	0.5

**Surrogate Recoveries (%)**

%SS1:	95	%SS2:	92
%SS3:	89		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

b1) aqueous sample that contains greater than ~1 vol. % sediment



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/08/13
		Date Received: 03/09/13
	Client Contact: Morgan Gillies	Date Extracted 03/11/13
	Client P.O.:	Date Analyzed 03/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303249

Lab ID	1303249-002A						
Client ID	B-17						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.5	Bromoform	ND	1.0	0.5
Bromomethane	ND	1.0	0.5	Carbon Tetrachloride	ND	1.0	0.5
Chlorobenzene	ND	1.0	0.5	Chloroethane	ND	1.0	0.5
Chloroform	ND	1.0	0.5	Chloromethane	ND	1.0	0.5
Dibromochloromethane	ND	1.0	0.5	1,2-Dibromoethane (EDB)	ND	1.0	0.5
1,2-Dichlorobenzene	ND	1.0	0.5	1,3-Dichlorobenzene	ND	1.0	0.5
1,4-Dichlorobenzene	ND	1.0	0.5	Dichlorodifluoromethane	ND	1.0	0.5
1,1-Dichloroethane	ND	1.0	0.5	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5
1,1-Dichloroethene	ND	1.0	0.5	cis-1,2-Dichloroethene	ND	1.0	0.5
trans-1,2-Dichloroethene	ND	1.0	0.5	1,2-Dichloropropane	ND	1.0	0.5
cis-1,3-Dichloropropene	ND	1.0	0.5	trans-1,3-Dichloropropene	ND	1.0	0.5
Freon 113	ND	1.0	10	Methylene chloride	ND	1.0	0.5
1,1,1,2-Tetrachloroethane	ND	1.0	0.5	1,1,2,2-Tetrachloroethane	ND	1.0	0.5
Tetrachloroethene	25	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	ND	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	Vinyl Chloride	ND	1.0	0.5

**Surrogate Recoveries (%)**

%SS1:	97	%SS2:	91
%SS3:	86		

Comments: b1

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

b1) aqueous sample that contains greater than ~1 vol. % sediment



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/08/13
		Date Received: 03/09/13
	Client Contact: Morgan Gillies	Date Extracted 03/11/13
	Client P.O.:	Date Analyzed 03/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303249

Lab ID	1303249-003A						
Client ID	EX-F7-4						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.15	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	94	%SS2:	111
%SS3:	115		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

b1) aqueous sample that contains greater than ~1 vol. % sediment



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 75338

WorkOrder: 1303249

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	N/A	0.050	N/A	N/A	N/A	92.2	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	N/A	0.050	N/A	N/A	N/A	107	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	N/A	0.050	N/A	N/A	N/A	92	N/A	N/A	70 - 130
1,1-Dichloroethene	N/A	0.050	N/A	N/A	N/A	82.3	N/A	N/A	70 - 130
Trichloroethene	N/A	0.050	N/A	N/A	N/A	92.8	N/A	N/A	70 - 130
%SS1:	N/A	0.12	N/A	N/A	N/A	92	N/A	N/A	70 - 130
%SS2:	N/A	0.12	N/A	N/A	N/A	113	N/A	N/A	70 - 130
%SS3:	N/A	0.012	N/A	N/A	N/A	106	N/A	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 75338 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303249-003A	03/08/13 4:10 PM	03/11/13	03/11/13 12:53 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.
% Recovery = $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ; RPD = $100 * (MS - MSD) / ((MS + MSD) / 2)$ .
MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.
N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.
Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 75374

WorkOrder: 1303249

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	N/A	10	N/A	N/A	N/A	88.4	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	N/A	10	N/A	N/A	N/A	94.2	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	N/A	10	N/A	N/A	N/A	86.5	N/A	N/A	70 - 130
1,1-Dichloroethene	N/A	10	N/A	N/A	N/A	84.5	N/A	N/A	70 - 130
Trichloroethene	N/A	10	N/A	N/A	N/A	97.2	N/A	N/A	70 - 130
%SS1:	N/A	25	N/A	N/A	N/A	98	N/A	N/A	70 - 130
%SS2:	N/A	25	N/A	N/A	N/A	93	N/A	N/A	70 - 130
%SS3:	N/A	2.5	N/A	N/A	N/A	85	N/A	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 75374 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303249-001A	03/08/13 3:30 PM	03/11/13	03/11/13 1:31 PM	1303249-002A	03/08/13 3:40 PM	03/11/13	03/11/13 12:49 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.





## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 1435.002.310; Solano Group	Date Sampled: 03/11/13
		Date Received: 03/11/13
	Client Contact: Morgan Gillies	Date Reported: 03/12/13
	Client P.O.:	Date Completed: 03/12/13

**WorkOrder: 1303308**

March 12, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **2** analyzed samples from your project: **1435.002.310; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

# RUSH

## CHAIN OF CUSTODY RECORD

## TURN AROUND TIME

**Fax: (925) 252-9269**

EDF Required? Coelt (Normal)

**RUSH**

24 HR

48 HR

72 HR

5 DAY

**Write On (DW)**

No

Bill To: Pangea

### Analysis Request

Other

Comments

**Filter Samples for Metals analysis:**  
Yes / No

E-Mail: [mgillies@pangeaenv.com](mailto:mgillies@pangeaenv.com)

**Tele: (510) 836-3702**

Fax: (510) 836-3709

Project #: 1435.002.310

**Project Name:** Solano Group

**Project Location:** 1187 Solano Ave, Albany

**Sampler Signature:**

[illegible]

**CHAIN-OF-CUSTODY RECORD****WorkOrder: 1303308****ClientCode: PEO**☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: mgillies@pangeaenv.com; tdela Fuente@pa  
cc:  
PO:  
ProjectNo: 1435.002.310; Solano Group**Bill to:**Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612**Requested TAT:****1 day*****Date Received:* 03/11/2013*****Date Printed:* 03/12/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1303308-001	SW-2-4	Soil	3/11/2013 15:35	<input type="checkbox"/>	A	A										
1303308-002	SW-3-4	Soil	3/11/2013 15:45	<input type="checkbox"/>	A											

**Test Legend:**

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Jena Alfaro****Comments:**NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **3/11/2013 6:55:32 PM**

Project Name: **1435.002.310; Solano Group**

LogIn Reviewed by: **Jena Alfaro**

WorkOrder N°: **1303308** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 6°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 1435.002.310; Solano Group	Date Sampled: 03/11/13
	Client Contact: Morgan Gillies	Date Received: 03/11/13
	Client P.O.:	Date Extracted 03/11/13
		Date Analyzed 03/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303308

Lab ID	1303308-001A						
Client ID	SW-2-4						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.16	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	95	%SS2:	111
%SS3:	106		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 1435.002.310; Solano Group	Date Sampled: 03/11/13
	Client Contact: Morgan Gillies	Date Received: 03/11/13
	Client P.O.:	Date Extracted 03/11/13
		Date Analyzed 03/11/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303308

Lab ID	1303308-002A						
Client ID	SW-3-4						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.10	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	95	%SS2:	110
%SS3:	114		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 75338

WorkOrder: 1303308

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1303230-010A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	82.3	86.8	5.35	92.2	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	99.4	104	4.41	107	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	86.8	91.1	4.82	92	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	68.5	78.4	13.5	82.3	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	82.1	86.6	5.36	92.8	60 - 116	30	70 - 130
%SS1:	94	0.12	97	97	0	92	70 - 130	30	70 - 130
%SS2:	113	0.12	110	111	0.189	113	70 - 130	30	70 - 130
%SS3:	105	0.012	100	106	6.05	106	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 75338 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303308-001A	03/11/13 3:35 PM	03/11/13	03/11/13 10:05 PM	1303308-002A	03/11/13 3:45 PM	03/11/13	03/11/13 10:47 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/12/13
		Date Received: 03/13/13
	Client Contact: Morgan Gillies	Date Reported: 03/14/13
	Client P.O.:	Date Completed: 03/14/13

**WorkOrder: 1303379**

March 14, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#1435.002; Solano Group,**
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

**Fax: (925) 252-9269**

**CHAIN OF CUSTODY RECORD**

TURN AROUND TIME ☐ ☒ ☐ ☐

EDF Required? Coelt (Normal)

**RUSH**

24 HR

48 HR

72 HR

5 DAY

No Write On (DW) No

**No**

**Write On (DW)**

No

[illegible]



## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1303379

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

1 day

**Date Received:** 03/13/2013**Date Printed:** 03/13/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1303379-001	EX-F3-8	Soil	3/12/2013 16:45	<input type="checkbox"/>	A	A										

## Test Legend:

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **3/13/2013 2:47:26 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1303379** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 2.8°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/12/13
	Client Contact: Morgan Gillies	Date Received: 03/13/13
	Client P.O.:	Date Extracted 03/13/13
		Date Analyzed 03/13/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303379

Lab ID	1303379-001A						
Client ID	EX-F3-8						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.020	4.0	0.005	Bromoform	ND<0.020	4.0	0.005
Bromomethane	ND<0.020	4.0	0.005	Carbon Tetrachloride	ND<0.020	4.0	0.005
Chlorobenzene	ND<0.020	4.0	0.005	Chloroethane	ND<0.020	4.0	0.005
Chloroform	ND<0.020	4.0	0.005	Chloromethane	ND<0.020	4.0	0.005
Dibromochloromethane	ND<0.020	4.0	0.005	1,2-Dibromoethane (EDB)	ND<0.016	4.0	0.004
1,2-Dichlorobenzene	ND<0.020	4.0	0.005	1,3-Dichlorobenzene	ND<0.020	4.0	0.005
1,4-Dichlorobenzene	ND<0.020	4.0	0.005	Dichlorodifluoromethane	ND<0.020	4.0	0.005
1,1-Dichloroethane	ND<0.020	4.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.016	4.0	0.004
1,1-Dichloroethene	ND<0.020	4.0	0.005	cis-1,2-Dichloroethene	ND<0.020	4.0	0.005
trans-1,2-Dichloroethene	ND<0.020	4.0	0.005	1,2-Dichloropropane	ND<0.020	4.0	0.005
cis-1,3-Dichloropropene	ND<0.020	4.0	0.005	trans-1,3-Dichloropropene	ND<0.020	4.0	0.005
Freon 113	ND<0.40	4.0	0.1	Methylene chloride	ND<0.020	4.0	0.005
1,1,1,2-Tetrachloroethane	ND<0.020	4.0	0.005	1,1,2,2-Tetrachloroethane	ND<0.020	4.0	0.005
Tetrachloroethene	0.36	4.0	0.005	1,1,1-Trichloroethane	ND<0.020	4.0	0.005
1,1,2-Trichloroethane	ND<0.020	4.0	0.005	Trichloroethene	ND<0.020	4.0	0.005
Trichlorofluoromethane	ND<0.020	4.0	0.005	Vinyl Chloride	ND<0.020	4.0	0.005

**Surrogate Recoveries (%)**

%SS1:	95	%SS2:	96
%SS3:	74		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 75430

WorkOrder: 1303379

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1303348-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	76.6	76.3	0.396	92.6	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	83	83	0	102	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	83.6	82.1	1.78	97.7	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	64.6	64.7	0.0152	79.6	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	81.6	81.6	0	91.4	60 - 116	30	70 - 130
%SS1:	95	0.12	98	99	1.47	97	70 - 130	30	70 - 130
%SS2:	103	0.12	112	113	0.474	116	70 - 130	30	70 - 130
%SS3:	75	0.012	100	97	3.16	112	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 75430 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303379-001A	03/12/13 4:45 PM	03/13/13	03/13/13 8:05 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.

DHS ELAP Certification 1644

 QA/QC Officer



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/13/13
		Date Received: 03/14/13
	Client Contact: Morgan Gillies	Date Reported: 03/15/13
	Client P.O.:	Date Completed: 03/15/13

**WorkOrder: 1303419**

March 15, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#1435.002; Solano Group,**
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*





# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1303419

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

1 day

**Date Received:** 03/14/2013**Date Printed:** 03/14/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1303419-001	EX-F8-11	Soil	3/13/2013 15:00	<input type="checkbox"/>	A	A										

## Test Legend:

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **3/14/2013 2:47:26 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1303419** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 5.8°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/13/13
	Client Contact: Morgan Gillies	Date Received: 03/14/13
	Client P.O.:	Date Extracted 03/14/13
		Date Analyzed 03/14/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303419

Lab ID	1303419-001A						
Client ID	EX-F8-11						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.059	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	93	%SS2:	101
%SS3:	89		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 75471

WorkOrder: 1303419

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1303385-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND<1	0.050	NR	NR	NR	95.4	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	ND<0.8	0.050	NR	NR	NR	101	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND<0.8	0.050	NR	NR	NR	101	N/A	N/A	70 - 130
1,1-Dichloroethene	ND<1	0.050	NR	NR	NR	81.6	N/A	N/A	70 - 130
Trichloroethene	ND<1	0.050	NR	NR	NR	93	N/A	N/A	70 - 130
%SS1:	99	0.12	NR	NR	NR	97	N/A	N/A	70 - 130
%SS2:	107	0.12	NR	NR	NR	115	N/A	N/A	70 - 130
%SS3:	87	0.012	NR	NR	NR	112	N/A	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 75471 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303419-001A	03/13/13 3:00 PM	03/14/13	03/14/13 9:25 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.02; Solano Group	Date Sampled: 03/14/13
		Date Received: 03/14/13
	Client Contact: Morgan Gillies	Date Reported: 03/15/13
	Client P.O.:	Date Completed: 03/15/13

**WorkOrder: 1303437**

March 15, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **5** analyzed samples from your project: **#1435.02; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

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# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1303437

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc: BRiddell@pangeaenv.com  
PO:  
ProjectNo: #1435.02; Solano Group

## Bill to:

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

## Requested TAT:

1 day

**Date Received:** 03/14/2013**Date Printed:** 03/14/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1303437-001	EX-F9-11	Soil	3/14/2013 17:00	<input type="checkbox"/>	A											
1303437-002	SW-4-5	Soil	3/14/2013 17:10	<input type="checkbox"/>	A											
1303437-003	SW-5-2	Soil	3/14/2013 17:20	<input type="checkbox"/>	A											
1303437-004	SW-6-2	Soil	3/14/2013 17:15	<input type="checkbox"/>	A											
1303437-005	SW-7-5	Soil	3/14/2013 17:25	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **3/14/2013 8:15:30 PM**

Project Name: **#1435.02; Solano Group**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1303437** Matrix: Soil

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 6.4°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.02; Solano Group	Date Sampled: 03/14/13
	Client Contact: Morgan Gillies	Date Received: 03/14/13
	Client P.O.:	Date Extracted 03/14/13
		Date Analyzed 03/15/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303437

Lab ID	1303437-001A						
Client ID	EX-F9-11						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.026	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	95	%SS2:	111
%SS3:	115		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.02; Solano Group	Date Sampled: 03/14/13
	Client Contact: Morgan Gillies	Date Received: 03/14/13
	Client P.O.:	Date Extracted 03/14/13
		Date Analyzed 03/15/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303437

Lab ID	1303437-002A						
Client ID	SW-4-5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.016	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	95	%SS2:	110
%SS3:	113		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.02; Solano Group	Date Sampled: 03/14/13
	Client Contact: Morgan Gillies	Date Received: 03/14/13
	Client P.O.:	Date Extracted 03/14/13
		Date Analyzed 03/15/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303437

Lab ID	1303437-003A						
Client ID	SW-5-2						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.12	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	94	%SS2:	113
%SS3:	118		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.02; Solano Group	Date Sampled: 03/14/13
	Client Contact: Morgan Gillies	Date Received: 03/14/13
	Client P.O.:	Date Extracted 03/14/13
		Date Analyzed 03/15/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303437

Lab ID	1303437-004A						
Client ID	SW-6-2						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.12	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	97	%SS2:	106
%SS3:	97		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.02; Solano Group	Date Sampled: 03/14/13
	Client Contact: Morgan Gillies	Date Received: 03/14/13
	Client P.O.:	Date Extracted 03/14/13
		Date Analyzed 03/15/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303437

Lab ID	1303437-005A						
Client ID	SW-7-5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.047	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	97	%SS2:	107
%SS3:	96		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 75471

WorkOrder: 1303437

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1303385-001A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND<1	0.050	NR	NR	NR	95.4	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	ND<0.8	0.050	NR	NR	NR	101	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND<0.8	0.050	NR	NR	NR	101	N/A	N/A	70 - 130
1,1-Dichloroethene	ND<1	0.050	NR	NR	NR	81.6	N/A	N/A	70 - 130
Trichloroethene	ND<1	0.050	NR	NR	NR	93	N/A	N/A	70 - 130
%SS1:	99	0.12	NR	NR	NR	97	N/A	N/A	70 - 130
%SS2:	107	0.12	NR	NR	NR	115	N/A	N/A	70 - 130
%SS3:	87	0.012	NR	NR	NR	112	N/A	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 75471 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303437-001A	03/14/13 5:00 PM	03/14/13	03/15/13 10:08 AM	1303437-002A	03/14/13 5:10 PM	03/14/13	03/15/13 10:50 AM
1303437-003A	03/14/13 5:20 PM	03/14/13	03/15/13 11:32 AM	1303437-004A	03/14/13 5:15 PM	03/14/13	03/15/13 11:02 AM
1303437-005A	03/14/13 5:25 PM	03/14/13	03/15/13 11:41 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/16/13
		Date Received: 03/18/13
	Client Contact: Morgan Gillies	Date Reported: 03/18/13
	Client P.O.:	Date Completed: 03/18/13

**WorkOrder: 1303476**

March 18, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **4** analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*



130347.6

Fax: (925) 252-9269

**Sampler Signature:**

## TURN AROUND TIME

5 DAY

EDF Required?	Coelt (Normal)	No	Write On (DW)	No
---------------	----------------	----	---------------	----

### Comments

**Filter Samples for Metals analysis:**  
Yes / No

RESULTS MONDAY AFTERNOON  
IF POSSIBLE.



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1303476

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa

cc:

PO:

ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

0 day

**Date Received:** 03/17/2013**Date Printed:** 03/18/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1303476-001	Sewer-1-1	Soil	3/16/2013 11:30	<input type="checkbox"/>	A	A										
1303476-002	Sewer-2-1	Soil	3/16/2013 11:35	<input type="checkbox"/>	A											
1303476-003	SW-8-1	Soil	3/16/2013 13:30	<input type="checkbox"/>	A											
1303476-004	SW-9-1	Soil	3/16/2013 13:35	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

Comments: Samples setup 3/18/13. Same Day Rush

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **3/17/2013 8:14:10 AM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Maria Venegas**

WorkOrder N°: **1303476**

Matrix: Soil

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 6°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/16/13
	Client Contact: Morgan Gillies	Date Received: 03/18/13
	Client P.O.:	Date Extracted 03/18/13
		Date Analyzed 03/18/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303476

Lab ID	1303476-001A						
Client ID	Sewer-1-1						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.34	5.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	96	%SS2:	114
%SS3:	105		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/16/13
		Date Received: 03/18/13
	Client Contact: Morgan Gillies	Date Extracted 03/18/13
	Client P.O.:	Date Analyzed 03/18/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303476

Lab ID	1303476-002A						
Client ID	Sewer-2-1						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.34	4.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	0.013	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	94	%SS2:	97
%SS3:	92		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/16/13
	Client Contact: Morgan Gillies	Date Received: 03/18/13
	Client P.O.:	Date Extracted 03/18/13
		Date Analyzed 03/18/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303476

Lab ID	1303476-003A						
Client ID	SW-8-1						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.12	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	94	%SS2:	97
%SS3:	97		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/16/13
	Client Contact: Morgan Gillies	Date Received: 03/18/13
	Client P.O.:	Date Extracted 03/18/13
		Date Analyzed 03/18/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303476

Lab ID	1303476-004A						
Client ID	SW-9-1						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.096	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	95	%SS2:	114
%SS3:	104		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 75563

WorkOrder: 1303476

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	N/A	0.050	N/A	N/A	N/A	98.5	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	N/A	0.050	N/A	N/A	N/A	89.9	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	N/A	0.050	N/A	N/A	N/A	99.9	N/A	N/A	70 - 130
1,1-Dichloroethene	N/A	0.050	N/A	N/A	N/A	93.4	N/A	N/A	70 - 130
Trichloroethene	N/A	0.050	N/A	N/A	N/A	98.1	N/A	N/A	70 - 130
%SS1:	N/A	0.12	N/A	N/A	N/A	97	N/A	N/A	70 - 130
%SS2:	N/A	0.12	N/A	N/A	N/A	108	N/A	N/A	70 - 130
%SS3:	N/A	0.012	N/A	N/A	N/A	91	N/A	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 75563 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303476-001A	03/16/13 11:30 AM	03/18/13	03/18/13 12:02 PM	1303476-001A	03/16/13 11:30 AM	03/18/13	03/18/13 1:26 PM
1303476-002A	03/16/13 11:35 AM	03/18/13	03/18/13 10:34 AM	1303476-002A	03/16/13 11:35 AM	03/18/13	03/18/13 11:51 AM
1303476-003A	03/16/13 1:30 PM	03/18/13	03/18/13 11:13 AM	1303476-004A	03/16/13 1:35 PM	03/18/13	03/18/13 12:44 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (\text{MS-Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



**McC Campbell Analytical, Inc.**  
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
<http://www.mcccampbell.com> / E-mail: [main@mcccampbell.com](mailto:main@mcccampbell.com)

## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/20/13
		Date Received: 03/20/13
	Client Contact: Morgan Gillies	Date Reported: 03/26/13
	Client P.O.:	Date Completed: 03/22/13

**WorkOrder: 1303576**

March 27, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **5** analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing






McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***

1303576

<b>McCAMPBELL ANALYTICAL, INC.</b> 1534 Willow Pass Road Pittsburg, CA 94565 Website: <a href="http://www.mccampbell.com">www.mccampbell.com</a> Email: <a href="mailto:main@mccampbell.com">main@mccampbell.com</a> Telephone: (925) 252-9262 Fax: (925) 252-9269										<b>CHAIN OF CUSTODY RECORD</b> TURN AROUND TIME <input type="checkbox"/> RUSH <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> 5 DAY EDF Required? <u>Coelt (Normal)</u> No Write On (DW) No															
Report To: Morgan Gillies					Bill To: Pangea					Analysis Request					Other		Comments								
Company: Pangea Environmental Services, Inc.																									
1710 Franklin Street, Suite 200, Oakland, CA 94612																						Filter Samples for Metals analysis: Yes / No			
E-Mail: <a href="mailto:mgillies@pangeaenv.com">mgillies@pangeaenv.com</a>																									
Tele: (510) 836-3702					Fax: (510) 836-3709																				
Project #: 1435.002					Project Name: Solano Group																				
Project Location: 1187 Solano Ave, Albany																									
Sampler Signature: 																									
SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				TPH/g/BTEX (8015C m/8021B)	Five fuel oxygenates (8260B)	VOCs by EPA Method 8010								
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other											
DB-1		3/20/13	1210	3	WAS	X					X	X			X										
B-19-2			1115	1	WAS		X				X				X										
B-19-5			1110	1	WAS		X				X				X										
B-20-2			1045	1	WAS		X				X				X										
B-20-5			1040	1	WAS		X				X				X										
Relinquished By: 										Date: 3/26/13		Time: 1530		Received By: 		COMMENTS: ICE: 6.4 GOOD CONDITION HEAD SPACE ABSENT DECHLORINATED IN LAB APPROPRIATE CONTAINERS PRESERVED IN LAB VOAS O&G METALS OTHER PRESERVATION pH<2									
Relinquished By: 										Date: 3/26/13		Time: 1630		Received By: 											
Relinquished By:										Date:		Time:		Received By:											

Revised Sample ID  
 1  
 11  
 11



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1303576

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

5 days

**Date Received: 03/20/2013****Date Printed: 03/27/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1303576-001	DB-1	Water	3/20/2013 12:10	<input type="checkbox"/>		A	A									
1303576-002	B-19-2	Soil	3/20/2013 11:15	<input type="checkbox"/>	A											
1303576-003	B-19-5	Soil	3/20/2013 11:10	<input type="checkbox"/>	A											
1303576-004	B-20-2	Soil	3/20/2013 10:45	<input type="checkbox"/>	A											
1303576-005	B-20-5	Soil	3/20/2013 10:40	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2	8010BMS_W	3	PREFD REPORT	4		5	
6		7		8		9		10	
11		12							

Prepared by: Ana Venegas

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.





## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **3/20/2013 5:07:52 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Ana Venegas**

WorkOrder N°: **1303576**

Matrix: Soil/Water

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 6.4°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:





**McC Campbell Analytical, Inc.**  
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
http://www.mccampbell.com / E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/20/13
		Date Received: 03/20/13
	Client Contact: Morgan Gillies	Date Extracted 03/21/13
	Client P.O.:	Date Analyzed 03/21/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303576

Lab ID	1303576-001A						
Client ID	DB-1						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.5	Bromoform	ND	1.0	0.5
Bromomethane	ND	1.0	0.5	Carbon Tetrachloride	ND	1.0	0.5
Chlorobenzene	ND	1.0	0.5	Chloroethane	ND	1.0	0.5
Chloroform	ND	1.0	0.5	Chloromethane	ND	1.0	0.5
Dibromochloromethane	ND	1.0	0.5	1,2-Dibromoethane (EDB)	ND	1.0	0.5
1,2-Dichlorobenzene	ND	1.0	0.5	1,3-Dichlorobenzene	ND	1.0	0.5
1,4-Dichlorobenzene	ND	1.0	0.5	Dichlorodifluoromethane	ND	1.0	0.5
1,1-Dichloroethane	ND	1.0	0.5	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5
1,1-Dichloroethene	ND	1.0	0.5	cis-1,2-Dichloroethene	ND	1.0	0.5
trans-1,2-Dichloroethene	ND	1.0	0.5	1,2-Dichloropropane	ND	1.0	0.5
cis-1,3-Dichloropropene	ND	1.0	0.5	trans-1,3-Dichloropropene	ND	1.0	0.5
Freon 113	ND	1.0	10	Methylene chloride	ND	1.0	0.5
1,1,1,2-Tetrachloroethane	ND	1.0	0.5	1,1,2,2-Tetrachloroethane	ND	1.0	0.5
Tetrachloroethene	ND	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	ND	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	Vinyl Chloride	ND	1.0	0.5

**Surrogate Recoveries (%)**

%SS1:	101	%SS2:	101
%SS3:	86		

Comments: b1

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

b1) aqueous sample that contains greater than ~1 vol. % sediment



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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
http://www.mccampbell.com / E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/20/13
	Client Contact: Morgan Gillies	Date Received: 03/20/13
	Client P.O.:	Date Extracted 03/20/13
		Date Analyzed 03/21/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303576

Lab ID	1303576-002A						
Client ID	B-19-2						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	92	%SS2:	106
%SS3:	84		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

b1) aqueous sample that contains greater than ~1 vol. % sediment



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/20/13
	Client Contact: Morgan Gillies	Date Received: 03/20/13
	Client P.O.:	Date Extracted 03/20/13
		Date Analyzed 03/21/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303576

Lab ID	1303576-003A						
Client ID	B-19-5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.013	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	91	%SS2:	104
%SS3:	85		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

b1) aqueous sample that contains greater than ~1 vol. % sediment



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/20/13
	Client Contact: Morgan Gillies	Date Received: 03/20/13
	Client P.O.:	Date Extracted 03/20/13
		Date Analyzed 03/21/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303576

Lab ID	1303576-004A						
Client ID	B-20-2						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.013	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	94	%SS2:	106
%SS3:	87		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

b1) aqueous sample that contains greater than ~1 vol. % sediment



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/20/13
	Client Contact: Morgan Gillies	Date Received: 03/20/13
	Client P.O.:	Date Extracted 03/20/13
		Date Analyzed 03/21/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303576

Lab ID	1303576-005A						
Client ID	B-20-5						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.0085	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	94	%SS2:	108
%SS3:	85		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

b1) aqueous sample that contains greater than ~1 vol. % sediment



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 75676

WorkOrder: 1303576

EPA Method: SW8260B

Extraction: SW5030B

Spiked Sample ID: 1303576-004A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	91.3	91	0.268	98.7	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	97.4	96.6	0.751	104	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	87.4	89.8	2.67	100	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	76.7	78.7	2.56	86.8	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	91.9	92.4	0.533	99.4	60 - 116	30	70 - 130
%SS1:	94	0.12	99	99	0	99	70 - 130	30	70 - 130
%SS2:	106	0.12	116	116	0	115	70 - 130	30	70 - 130
%SS3:	87	0.012	121	121	0	112	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 75676 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303576-002A	03/20/13 11:15 AM	03/20/13	03/21/13 12:55 AM	1303576-003A	03/20/13 11:10 AM	03/20/13	03/21/13 1:36 AM
1303576-004A	03/20/13 10:45 AM	03/20/13	03/21/13 2:17 AM	1303576-005A	03/20/13 10:40 AM	03/20/13	03/21/13 2:58 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.





## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 75745

WorkOrder: 1303576

EPA Method: SW8260B

Extraction: SW5030B

Spiked Sample ID: 1303576-001A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	93	93.4	0.461	93.5	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	92.7	95.2	2.67	89.3	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	99.8	100	0.576	92.6	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	86.2	85	1.46	84.5	70 - 130	20	70 - 130
Trichloroethene	ND	10	88.4	88.5	0.105	90.8	70 - 130	20	70 - 130
%SS1:	101	25	104	104	0	100	70 - 130	20	70 - 130
%SS2:	101	25	101	99	2.01	100	70 - 130	20	70 - 130
%SS3:	86	2.5	88	90	2.20	88	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 75745 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303576-001A	03/20/13 12:10 PM	03/21/13	03/21/13 4:04 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/20/13
		Date Received: 03/21/13
	Client Contact: Morgan Gillies	Date Reported: 03/26/13
	Client P.O.:	Date Completed: 03/25/13

**WorkOrder: 1303603**

March 26, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **#1435.002; Solano Group,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*





# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1303603

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

5 days

*Date Received:* 03/21/2013*Date Printed:* 03/21/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1303603-001	B-18-GW	Water	3/20/2013 18:00	<input type="checkbox"/>	A											
1303603-002	B-19-GW	Water	3/20/2013 18:10	<input type="checkbox"/>	A											
1303603-003	B-20-GW	Water	3/20/2013 18:20	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_W	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **3/21/2013 1:57:47 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Jena Alfaro**

WorkOrder N°: **1303603** Matrix: Water

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 5.2°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/20/13
		Date Received: 03/21/13
	Client Contact: Morgan Gillies	Date Extracted 03/22/13
	Client P.O.:	Date Analyzed 03/22/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303603

Lab ID	1303603-001A						
Client ID	B-18-GW						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<50	100	0.5	Bromoform	ND<50	100	0.5
Bromomethane	ND<50	100	0.5	Carbon Tetrachloride	ND<50	100	0.5
Chlorobenzene	ND<50	100	0.5	Chloroethane	ND<50	100	0.5
Chloroform	ND<50	100	0.5	Chloromethane	ND<50	100	0.5
Dibromochloromethane	ND<50	100	0.5	1,2-Dibromoethane (EDB)	ND<50	100	0.5
1,2-Dichlorobenzene	ND<50	100	0.5	1,3-Dichlorobenzene	ND<50	100	0.5
1,4-Dichlorobenzene	ND<50	100	0.5	Dichlorodifluoromethane	ND<50	100	0.5
1,1-Dichloroethane	ND<50	100	0.5	1,2-Dichloroethane (1,2-DCA)	ND<50	100	0.5
1,1-Dichloroethene	ND<50	100	0.5	cis-1,2-Dichloroethene	ND<50	100	0.5
trans-1,2-Dichloroethene	ND<50	100	0.5	1,2-Dichloropropane	ND<50	100	0.5
cis-1,3-Dichloropropene	ND<50	100	0.5	trans-1,3-Dichloropropene	ND<50	100	0.5
Freon 113	ND<1000	100	10	Methylene chloride	ND<50	100	0.5
1,1,1,2-Tetrachloroethane	ND<50	100	0.5	1,1,2,2-Tetrachloroethane	ND<50	100	0.5
Tetrachloroethene	620	100	0.5	1,1,1-Trichloroethane	ND<50	100	0.5
1,1,2-Trichloroethane	ND<50	100	0.5	Trichloroethene	ND<50	100	0.5
Trichlorofluoromethane	ND<50	100	0.5	Vinyl Chloride	ND<50	100	0.5

**Surrogate Recoveries (%)**

%SS1:	104	%SS2:	98
%SS3:	87		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/20/13
		Date Received: 03/21/13
	Client Contact: Morgan Gillies	Date Extracted 03/22/13
	Client P.O.:	Date Analyzed 03/22/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303603

Lab ID	1303603-002A						
Client ID	B-19-GW						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<50	100	0.5	Bromoform	ND<50	100	0.5
Bromomethane	ND<50	100	0.5	Carbon Tetrachloride	ND<50	100	0.5
Chlorobenzene	ND<50	100	0.5	Chloroethane	ND<50	100	0.5
Chloroform	ND<50	100	0.5	Chloromethane	ND<50	100	0.5
Dibromochloromethane	ND<50	100	0.5	1,2-Dibromoethane (EDB)	ND<50	100	0.5
1,2-Dichlorobenzene	ND<50	100	0.5	1,3-Dichlorobenzene	ND<50	100	0.5
1,4-Dichlorobenzene	ND<50	100	0.5	Dichlorodifluoromethane	ND<50	100	0.5
1,1-Dichloroethane	ND<50	100	0.5	1,2-Dichloroethane (1,2-DCA)	ND<50	100	0.5
1,1-Dichloroethene	ND<50	100	0.5	cis-1,2-Dichloroethene	ND<50	100	0.5
trans-1,2-Dichloroethene	ND<50	100	0.5	1,2-Dichloropropane	ND<50	100	0.5
cis-1,3-Dichloropropene	ND<50	100	0.5	trans-1,3-Dichloropropene	ND<50	100	0.5
Freon 113	ND<1000	100	10	Methylene chloride	ND<50	100	0.5
1,1,1,2-Tetrachloroethane	ND<50	100	0.5	1,1,2,2-Tetrachloroethane	ND<50	100	0.5
Tetrachloroethene	440	100	0.5	1,1,1-Trichloroethane	ND<50	100	0.5
1,1,2-Trichloroethane	ND<50	100	0.5	Trichloroethene	ND<50	100	0.5
Trichlorofluoromethane	ND<50	100	0.5	Vinyl Chloride	ND<50	100	0.5

**Surrogate Recoveries (%)**

%SS1:	103	%SS2:	99
%SS3:	84		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 03/20/13
		Date Received: 03/21/13
	Client Contact: Morgan Gillies	Date Extracted 03/23/13
	Client P.O.:	Date Analyzed 03/23/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1303603

Lab ID	1303603-003A						
Client ID	B-20-GW						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<5.0	10	0.5	Bromoform	ND<5.0	10	0.5
Bromomethane	ND<5.0	10	0.5	Carbon Tetrachloride	ND<5.0	10	0.5
Chlorobenzene	ND<5.0	10	0.5	Chloroethane	ND<5.0	10	0.5
Chloroform	ND<5.0	10	0.5	Chloromethane	ND<5.0	10	0.5
Dibromochloromethane	ND<5.0	10	0.5	1,2-Dibromoethane (EDB)	ND<5.0	10	0.5
1,2-Dichlorobenzene	ND<5.0	10	0.5	1,3-Dichlorobenzene	ND<5.0	10	0.5
1,4-Dichlorobenzene	ND<5.0	10	0.5	Dichlorodifluoromethane	ND<5.0	10	0.5
1,1-Dichloroethane	ND<5.0	10	0.5	1,2-Dichloroethane (1,2-DCA)	ND<5.0	10	0.5
1,1-Dichloroethene	ND<5.0	10	0.5	cis-1,2-Dichloroethene	ND<5.0	10	0.5
trans-1,2-Dichloroethene	ND<5.0	10	0.5	1,2-Dichloropropane	ND<5.0	10	0.5
cis-1,3-Dichloropropene	ND<5.0	10	0.5	trans-1,3-Dichloropropene	ND<5.0	10	0.5
Freon 113	ND<100	10	10	Methylene chloride	ND<5.0	10	0.5
1,1,1,2-Tetrachloroethane	ND<5.0	10	0.5	1,1,2,2-Tetrachloroethane	ND<5.0	10	0.5
Tetrachloroethene	190	10	0.5	1,1,1-Trichloroethane	ND<5.0	10	0.5
1,1,2-Trichloroethane	ND<5.0	10	0.5	Trichloroethene	7.0	10	0.5
Trichlorofluoromethane	ND<5.0	10	0.5	Vinyl Chloride	ND<5.0	10	0.5

**Surrogate Recoveries (%)**

%SS1:	105	%SS2:	98
%SS3:	84		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 75800

WorkOrder: 1303603

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1303622-004A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	94.2	96.4	2.31	98.2	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	96.6	103	6.65	93.7	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	105	109	3.16	92.2	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	86.9	90.7	4.23	87.7	70 - 130	20	70 - 130
Trichloroethene	ND	10	91.1	93.3	2.38	94.2	70 - 130	20	70 - 130
%SS1:	104	25	107	105	1.58	100	70 - 130	20	70 - 130
%SS2:	100	25	100	102	1.85	100	70 - 130	20	70 - 130
%SS3:	86	2.5	89	90	0.406	92	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 75800 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1303603-001A	03/20/13 6:00 PM	03/22/13	03/22/13 10:45 PM	1303603-002A	03/20/13 6:10 PM	03/22/13	03/22/13 11:23 PM
1303603-003A	03/20/13 6:20 PM	03/23/13	03/23/13 12:01 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano	Date Sampled: 04/08/13
		Date Received: 04/08/13
	Client Contact: Morgan Gillies	Date Reported: 04/09/13
	Client P.O.:	Date Completed: 04/09/13

**WorkOrder: 1304247**

April 11, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **Solano**,
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

1304247

Fax: (925) 252-9269

**RUSSIA**

EDF Required? Coelt (Normal)	No	Write On (DW)	No
------------------------------	----	---------------	----

**Sampler Signature:** 

**Filter Samples for Metals analysis:**  
Yes / No

ICE	
HCL	
HNO <sub>3</sub>	
Other	

Lead (200.8 / 200.9 / 6010)

Received By:

Page 2 of 7



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1304247

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: Solano

## Bill to:

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

Requested TAT:

3 days

*Date Received:* 04/08/2013*Date Printed:* 04/08/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1304247-001	INF	Air	4/8/2013 12:10	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_A	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.





## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **4/8/2013 2:58:46 PM**

Project Name: **Solano**

Login Reviewed by: **Maria Venegas**

WorkOrder N°: **1304247**

Matrix: Air

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:



# McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
http://www.mccampbell.com / E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano	Date Sampled: 04/08/13
		Date Received: 04/08/13
	Client Contact: Morgan Gillies	Date Extracted: 04/08/13
	Client P.O.:	Date Analyzed: 04/08/13

## Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304247

Lab ID	1304247-001A				Reporting Limit for DF =1	
Client ID	INF					
Matrix	A				S	A
DF	1					

Compound	Concentration				µg/kg	µg/L
Bromodichloromethane	ND				NA	0.25
Bromoform	ND				NA	0.25
Bromomethane	ND				NA	0.25
Carbon Tetrachloride	ND				NA	0.25
Chlorobenzene	ND				NA	0.25
Chloroethane	ND				NA	0.25
Chloroform	ND				NA	0.25
Chloromethane	ND				NA	0.25
Dibromochloromethane	ND				NA	0.25
1,2-Dibromoethane (EDB)	ND				NA	0.5
1,2-Dichlorobenzene	ND				NA	0.25
1,3-Dichlorobenzene	ND				NA	0.25
1,4-Dichlorobenzene	ND				NA	0.25
Dichlorodifluoromethane	ND				NA	0.25
1,1-Dichloroethane	ND				NA	0.25
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.25
1,1-Dichloroethene	ND				NA	0.25
cis-1,2-Dichloroethene	ND				NA	0.25
trans-1,2-Dichloroethene	ND				NA	0.25
1,2-Dichloropropane	ND				NA	0.25
cis-1,3-Dichloropropene	ND				NA	0.25
trans-1,3-Dichloropropene	ND				NA	0.25
Freon 113	ND				NA	0.5
Methylene chloride	ND				NA	0.25
1,1,1,2-Tetrachloroethane	ND				NA	0.5
1,1,1,2,2-Tetrachloroethane	ND				NA	0.25
Tetrachloroethene	5.0				NA	0.25
1,1,1-Trichloroethane	ND				NA	0.25
1,1,2-Trichloroethane	ND				NA	0.25
Trichloroethene	0.51				NA	0.25
Trichlorofluoromethane	ND				NA	0.25
Vinyl Chloride	ND				NA	0.25

### Surrogate Recoveries (%)

%SS1:	108			
%SS2:	109			
%SS3:	83			
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



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http://www.mccampbell.com / E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano	Date Sampled: 04/08/13
		Date Received: 04/08/13
	Client Contact: Morgan Gillies	Date Extracted: 04/08/13
	Client P.O.:	Date Analyzed: 04/08/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304247

Lab ID	1304247-001A				Reporting Limit for DF =1	
Client ID	INF					
Matrix	A				S	A
DF	1					

Compound	Concentration				µg/kg	µL/L
Bromodichloromethane	ND				NA	0.036
Bromoform	ND				NA	0.024
Bromomethane	ND				NA	0.063
Carbon Tetrachloride	ND				NA	0.039
Chlorobenzene	ND				NA	0.053
Chloroethane	ND				NA	0.093
Chloroform	ND				NA	0.05
Chloromethane	ND				NA	0.12
Dibromochloromethane	ND				NA	0.029
1,2-Dibromoethane (EDB)	ND				NA	0.064
1,2-Dichlorobenzene	ND				NA	0.041
1,3-Dichlorobenzene	ND				NA	0.041
1,4-Dichlorobenzene	ND				NA	0.041
Dichlorodifluoromethane	ND				NA	0.05
1,1-Dichloroethane	ND				NA	0.061
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.061
1,1-Dichloroethene	ND				NA	0.062
cis-1,2-Dichloroethene	ND				NA	0.062
trans-1,2-Dichloroethene	ND				NA	0.062
1,2-Dichloropropane	ND				NA	0.053
cis-1,3-Dichloropropene	ND				NA	0.054
trans-1,3-Dichloropropene	ND				NA	0.054
Freon 113	ND				NA	0.064
Methylene chloride	ND				NA	0.071
1,1,1,2-Tetrachloroethane	ND				NA	0.036
1,1,1,2,2-Tetrachloroethane	ND				NA	0.036
Tetrachloroethene	0.73				NA	0.036
1,1,1-Trichloroethane	ND				NA	0.045
1,1,2-Trichloroethane	ND				NA	0.045
Trichloroethene	0.093				NA	0.046
Trichlorofluoromethane	ND				NA	0.044
Vinyl Chloride	ND				NA	0.096

### Surrogate Recoveries (%)

%SS1:	108			
%SS2:	109			
%SS3:	83			
Comments				

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe, and air in µL/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

*AR*



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 76258

WorkOrder: 1304247

EPA Method: SW8260B

Extraction: SW5030B

Spiked Sample ID: 1304222-004A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	89.1	88.5	0.668	101	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	98	98.5	0.509	104	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	101	101	0	103	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	79.3	80.8	1.83	88.1	70 - 130	20	70 - 130
Trichloroethene	ND	10	80.4	82.8	2.90	94.6	70 - 130	20	70 - 130
%SS1:	113	25	113	111	1.84	111	70 - 130	20	70 - 130
%SS2:	107	25	106	105	0.889	102	70 - 130	20	70 - 130
%SS3:	93	2.5	96	94	2.26	95	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 76258 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1304247-001A	04/08/13 12:10 PM	04/08/13	04/08/13 3:37 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 1187 Solano	Date Sampled: 04/10/13
		Date Received: 04/10/13
	Client Contact: Bob Clark-Riddell	Date Reported: 04/11/13
	Client P.O.:	Date Completed: 04/11/13

**WorkOrder: 1304307**

April 12, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the **2** analyzed samples from your project: **1187 Solano**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*



## CHAIN OF CUSTODY RECORD

**RUSH**  
TURN AROUND TIME

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☒ 72 HR ☐ 5 DAY ☐

GeoTracker EDF  PDF  EDD  EQUIS  10 DAY 

UST Clean Up Fund Project ☐ Claim #

Report To: BOB CLARK-RIDDER Bill To: JANGER BOB

Company: RANGER

E-Mail: [bridgell@fangrenv.com](mailto:bridgell@fangrenv.com)

Tele: (510) 435-8664

Fax: ( )

Project #: \_\_\_\_\_ Project Name: 1187 Solano

**Project Location:**

Sampler Signature: Robert A. Hill

**Lab Use Only**

### Pressurized By

Date \_\_\_\_\_

### Pressurization Gas

N2

He

**Notes:**

Field Sample ID  
(Location)

Collection

Canister SN#

Sampler Kit SN#

Date	Time
------	------

### Analysis Requested

Indoor  
Air

Soil Gas

### Canister Pressure/Vacuum

Initial	Final	Receipt	Final (psi)
---------	-------	---------	-------------

INF	4/14/13	12:00	<del>1</del> BAGS
INF-PO	"	1:00	1 BAG

8010  
↓

Relinquished By: 	Date: _____	Time: _____	Received By: _____
--	-------------	-------------	--------------------

Relinquished By: 	Date: 	Time: 	Received By: 
--	---	---	--

Relinquished By:	Date:	Time:	Received By:
------------------	-------	-------	--------------

Temp (°C): \_\_\_\_\_ Work Order #: \_\_\_\_\_

Condition: \_\_\_\_\_

Custody Seals Intact?:	Yes	No	None
------------------------	-----	----	------

Shipped Via:





## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1304307

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com

cc:

PO:

ProjectNo: 1187 Solano

## Bill to:

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

Requested TAT:

3 days

**Date Received:** 04/10/2013**Date Printed:** 04/10/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1304307-001	INF	Air	4/10/2013 12:00	<input type="checkbox"/>	A	A										
1304307-002	INF-PO	Air	4/10/2013 13:00	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_A	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **4/10/2013 3:06:13 PM**

Project Name: **1187 Solano**

Login Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1304307**

Matrix: Air

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 1187 Solano	Date Sampled: 04/10/13
		Date Received: 04/10/13
	Client Contact: Bob Clark-Riddell	Date Extracted: 04/10/13
	Client P.O.:	Date Analyzed: 04/10/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304307

Lab ID	1304307-001A	1304307-002A			Reporting Limit for DF =1	
Client ID	INF	INF-PO				
Matrix	A	A			S	A
DF	1	1				
Compound	Concentration				µg/kg	µg/L
Bromodichloromethane	ND	ND			NA	0.25
Bromoform	ND	ND			NA	0.25
Bromomethane	ND	ND			NA	0.25
Carbon Tetrachloride	ND	ND			NA	0.25
Chlorobenzene	ND	ND			NA	0.25
Chloroethane	ND	ND			NA	0.25
Chloroform	ND	ND			NA	0.25
Chloromethane	ND	ND			NA	0.25
Dibromochloromethane	ND	ND			NA	0.25
1,2-Dibromoethane (EDB)	ND	ND			NA	0.5
1,2-Dichlorobenzene	ND	ND			NA	0.25
1,3-Dichlorobenzene	ND	ND			NA	0.25
1,4-Dichlorobenzene	ND	ND			NA	0.25
Dichlorodifluoromethane	ND	ND			NA	0.25
1,1-Dichloroethane	ND	ND			NA	0.25
1,2-Dichloroethane (1,2-DCA)	ND	ND			NA	0.25
1,1-Dichloroethene	ND	ND			NA	0.25
cis-1,2-Dichloroethene	ND	ND			NA	0.25
trans-1,2-Dichloroethene	ND	ND			NA	0.25
1,2-Dichloropropane	ND	ND			NA	0.25
cis-1,3-Dichloropropene	ND	ND			NA	0.25
trans-1,3-Dichloropropene	ND	ND			NA	0.25
Freon 113	ND	ND			NA	0.5
Methylene chloride	ND	ND			NA	0.25
1,1,1,2-Tetrachloroethane	ND	ND			NA	0.5
1,1,1,2,2-Tetrachloroethane	ND	ND			NA	0.25
Tetrachloroethene	4.4	0.70			NA	0.25
1,1,1-Trichloroethane	ND	ND			NA	0.25
1,1,2-Trichloroethane	ND	ND			NA	0.25
Trichloroethene	0.29	ND			NA	0.25
Trichlorofluoromethane	ND	ND			NA	0.25
Vinyl Chloride	ND	ND			NA	0.25

**Surrogate Recoveries (%)**

%SS1:	100	107		
%SS2:	106	108		
%SS3:	93	90		
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



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http://www.mcccampbell.com / E-mail: main@mcccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 1187 Solano	Date Sampled: 04/10/13
		Date Received: 04/10/13
	Client Contact: Bob Clark-Riddell	Date Extracted: 04/10/13
	Client P.O.:	Date Analyzed: 04/10/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304307

Lab ID	1304307-001A	1304307-002A			Reporting Limit for DF =1	
Client ID	INF	INF-PO				
Matrix	A	A			S	A
DF	1	1				
Compound	Concentration				µg/kg	µL/L
Bromodichloromethane	ND	ND			NA	0.036
Bromoform	ND	ND			NA	0.024
Bromomethane	ND	ND			NA	0.063
Carbon Tetrachloride	ND	ND			NA	0.039
Chlorobenzene	ND	ND			NA	0.053
Chloroethane	ND	ND			NA	0.093
Chloroform	ND	ND			NA	0.05
Chloromethane	ND	ND			NA	0.12
Dibromochloromethane	ND	ND			NA	0.029
1,2-Dibromoethane (EDB)	ND	ND			NA	0.064
1,2-Dichlorobenzene	ND	ND			NA	0.041
1,3-Dichlorobenzene	ND	ND			NA	0.041
1,4-Dichlorobenzene	ND	ND			NA	0.041
Dichlorodifluoromethane	ND	ND			NA	0.05
1,1-Dichloroethane	ND	ND			NA	0.061
1,2-Dichloroethane (1,2-DCA)	ND	ND			NA	0.061
1,1-Dichloroethene	ND	ND			NA	0.062
cis-1,2-Dichloroethene	ND	ND			NA	0.062
trans-1,2-Dichloroethene	ND	ND			NA	0.062
1,2-Dichloropropane	ND	ND			NA	0.053
cis-1,3-Dichloropropene	ND	ND			NA	0.054
trans-1,3-Dichloropropene	ND	ND			NA	0.054
Freon 113	ND	ND			NA	0.064
Methylene chloride	ND	ND			NA	0.071
1,1,1,2-Tetrachloroethane	ND	ND			NA	0.036
1,1,1,2,2-Tetrachloroethane	ND	ND			NA	0.036
Tetrachloroethene	0.64	0.10			NA	0.036
1,1,1-Trichloroethane	ND	ND			NA	0.045
1,1,2-Trichloroethane	ND	ND			NA	0.045
Trichloroethene	0.052	ND			NA	0.046
Trichlorofluoromethane	ND	ND			NA	0.044
Vinyl Chloride	ND	ND			NA	0.096

### Surrogate Recoveries (%)

%SS1:	100	107		
%SS2:	106	108		
%SS3:	93	90		
Comments				

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe, and air in µL/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 76327

WorkOrder: 1304307

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	N/A	20	N/A	N/A	N/A	103	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	N/A	20	N/A	N/A	N/A	110	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	N/A	20	N/A	N/A	N/A	105	N/A	N/A	70 - 130
1,1-Dichloroethene	N/A	20	N/A	N/A	N/A	93.1	N/A	N/A	70 - 130
Trichloroethene	N/A	20	N/A	N/A	N/A	114	N/A	N/A	70 - 130
%SS1:	N/A	25	N/A	N/A	N/A	108	N/A	N/A	70 - 130
%SS2:	N/A	25	N/A	N/A	N/A	107	N/A	N/A	70 - 130
%SS3:	N/A	2.5	N/A	N/A	N/A	91	N/A	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 76327 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1304307-001A	04/10/13 12:00 PM	04/10/13	04/10/13 4:08 PM	1304307-001A	04/10/13 12:00 PM	04/10/13	04/10/13 4:08 PM
1304307-002A	04/10/13 1:00 PM	04/10/13	04/10/13 4:51 PM	1304307-002A	04/10/13 1:00 PM	04/10/13	04/10/13 4:51 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/15/13
		Date Received: 04/15/13
	Client Contact: Morgan Gillies	Date Reported: 04/17/13
	Client P.O.:	Date Completed: 04/16/13

**WorkOrder: 1304466**

April 19, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#1435.002; Solano Group,**
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*





**CHAIN-OF-CUSTODY RECORD****WorkOrder: 1304466****ClientCode: PEO**☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group**Bill to:**Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612**Requested TAT:****5 days*****Date Received:* 04/15/2013*****Date Printed:* 04/15/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1304466-001	INF-PO	Air	4/15/2013 13:00	<input type="checkbox"/>	A											

**Test Legend:**

1	8010BMS_A	2		3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Zoraida Cortez****Comments:**NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **4/15/2013 6:28:27 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1304466**

Matrix: Air

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:



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http://www.mccampbell.com / E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/15/13
	Client Contact: Morgan Gillies	Date Received: 04/15/13
	Client P.O.:	Date Extracted: 04/15/13
		Date Analyzed: 04/15/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304466

Lab ID	1304466-001A				Reporting Limit for DF =1	
Client ID	INF-PO					
Matrix	A				S	A
DF	1					
Compound	Concentration				µg/kg	µg/L
Bromodichloromethane	ND				NA	0.25
Bromoform	ND				NA	0.25
Bromomethane	ND				NA	0.25
Carbon Tetrachloride	ND				NA	0.25
Chlorobenzene	ND				NA	0.25
Chloroethane	ND				NA	0.25
Chloroform	ND				NA	0.25
Chloromethane	ND				NA	0.25
Dibromochloromethane	ND				NA	0.25
1,2-Dibromoethane (EDB)	ND				NA	0.5
1,2-Dichlorobenzene	ND				NA	0.25
1,3-Dichlorobenzene	ND				NA	0.25
1,4-Dichlorobenzene	ND				NA	0.25
Dichlorodifluoromethane	ND				NA	0.25
1,1-Dichloroethane	ND				NA	0.25
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.25
1,1-Dichloroethene	ND				NA	0.25
cis-1,2-Dichloroethene	ND				NA	0.25
trans-1,2-Dichloroethene	ND				NA	0.25
1,2-Dichloropropane	ND				NA	0.25
cis-1,3-Dichloropropene	ND				NA	0.25
trans-1,3-Dichloropropene	ND				NA	0.25
Freon 113	ND				NA	0.5
Methylene chloride	ND				NA	0.25
1,1,1,2-Tetrachloroethane	ND				NA	0.5
1,1,1,2,2-Tetrachloroethane	ND				NA	0.25
Tetrachloroethene	0.37				NA	0.25
1,1,1-Trichloroethane	ND				NA	0.25
1,1,2-Trichloroethane	ND				NA	0.25
Trichloroethene	ND				NA	0.25
Trichlorofluoromethane	ND				NA	0.25
Vinyl Chloride	ND				NA	0.25

**Surrogate Recoveries (%)**

%SS1:	110			
%SS2:	107			
%SS3:	100			
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/15/13
	Client Contact: Morgan Gillies	Date Received: 04/15/13
	Client P.O.:	Date Extracted: 04/15/13
		Date Analyzed: 04/15/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304466

Lab ID	1304466-001A				Reporting Limit for DF =1	
Client ID	INF-PO					
Matrix	A				S	A
DF	1					

Compound	Concentration				µg/kg	µL/L
Bromodichloromethane	ND				NA	0.036
Bromoform	ND				NA	0.024
Bromomethane	ND				NA	0.063
Carbon Tetrachloride	ND				NA	0.039
Chlorobenzene	ND				NA	0.053
Chloroethane	ND				NA	0.093
Chloroform	ND				NA	0.05
Chloromethane	ND				NA	0.12
Dibromochloromethane	ND				NA	0.029
1,2-Dibromoethane (EDB)	ND				NA	0.064
1,2-Dichlorobenzene	ND				NA	0.041
1,3-Dichlorobenzene	ND				NA	0.041
1,4-Dichlorobenzene	ND				NA	0.041
Dichlorodifluoromethane	ND				NA	0.05
1,1-Dichloroethane	ND				NA	0.061
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.061
1,1-Dichloroethene	ND				NA	0.062
cis-1,2-Dichloroethene	ND				NA	0.062
trans-1,2-Dichloroethene	ND				NA	0.062
1,2-Dichloropropane	ND				NA	0.053
cis-1,3-Dichloropropene	ND				NA	0.054
trans-1,3-Dichloropropene	ND				NA	0.054
Freon 113	ND				NA	0.064
Methylene chloride	ND				NA	0.071
1,1,1,2-Tetrachloroethane	ND				NA	0.036
1,1,1,2,2-Tetrachloroethane	ND				NA	0.036
Tetrachloroethene	0.053				NA	0.036
1,1,1-Trichloroethane	ND				NA	0.045
1,1,2-Trichloroethane	ND				NA	0.045
Trichloroethene	ND				NA	0.046
Trichlorofluoromethane	ND				NA	0.044
Vinyl Chloride	ND				NA	0.096

### Surrogate Recoveries (%)

%SS1:	110			
%SS2:	107			
%SS3:	100			
Comments				

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe, and air in µL/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 76431

WorkOrder: 1304466

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1304391-003A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	98.9	98.5	0.408	107	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	105	107	2.20	113	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	95.8	95.2	0.717	99.9	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	87.4	90.7	3.67	95.8	70 - 130	20	70 - 130
Trichloroethene	ND	10	101	99.2	1.38	110	70 - 130	20	70 - 130
%SS1:	109	25	108	109	0.753	105	70 - 130	20	70 - 130
%SS2:	107	25	107	106	0.582	108	70 - 130	20	70 - 130
%SS3:	93	2.5	90	89	1.09	93	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 76431 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1304466-001A	04/15/13 1:00 PM	04/15/13	04/15/13 8:05 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.





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## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002,320; Solano Group	Date Sampled: 04/19/13
		Date Received: 04/19/13
	Client Contact: Morgan Gillies	Date Reported: 04/24/13
	Client P.O.:	Date Completed: 04/22/13

**WorkOrder: 1304618**

April 25, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#1435.002,320; Solano Group**,
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
Telephone: (925) 252-9262 Fax: (925) 252-9269

## CHAIN OF CUSTODY RECORD

## TURN AROUND TIME

☐ ☐ ☐ ☐ ☒  
RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Report To: Morgan Gillies	Bill To: Pangea
Company: Pangea Environmental Services, Inc.	
1710 Franklin Street, Suite 200, Oakland, CA 94612	<i>biddell</i>
	E-Mail: <a href="mailto:mgillies@pangeaenv.com">mgillies@pangeaenv.com</a>
Tele: (510) 836-3702 <i>435-8664</i>	Fax: (510) 836-3709
Project #: 1435.002, <i>320</i>	Project Name: Solano Group
Project Location: 1187 Solano Ave, Albany	
Sampler Signature: <i>[Signature]</i>	

### Analysis Request

Other


### Comments

Filter Samples for Metals analysis: Yes / No

[illegible]

TPH<sub>g</sub>/BTEX (8015Cm/3021B)  
Five fuel oxygenates (8260B)  
VOCs by EPA Method 8010

Relinquished By:	Date:	Time:
<i>Robert L. Bell</i>	<i>4/19/13</i>	<i>6:45</i>

Received By: 

Relinquished By: 	Date: 9/19/13	Time: 1929
--	---------------	------------

Received By: 

Relinquished By:	Date:	Time:
------------------	-------	-------

Received By: \_\_\_\_\_

ICE/c° \_\_\_\_\_  
GOOD CONDITION \_\_\_\_\_  
HEAD SPACE ABSENT \_\_\_\_\_  
DECHLORINATED IN LAB \_\_\_\_\_  
APPROPRIATE CONTAINERS \_\_\_\_\_  
PRESERVED IN LAB \_\_\_\_\_

**COMMENTS:**

\* PLEASE RUN < 24 HRS. \*

	VOAS	O&G	METALS	OTHER
PRESERVATION			pH<2	



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1304618

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002,320; Solano Group**Bill to:**Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612**Requested TAT:****5 days****Date Received: 04/19/2013****Date Printed: 04/20/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1304618-001	INF	Air	4/19/2013 14:00	<input type="checkbox"/>	A	A										

**Test Legend:**

1	8010BMS_A	2	8010BMS_PPMV	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Jena Alfaro****Comments:**NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **4/19/2013 7:46:08 PM**

Project Name: **#1435.002,320; Solano Group**

LogIn Reviewed by: **Jena Alfaro**

WorkOrder N°: **1304618**

Matrix: Air

Carrier: David Valles (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002,320; Solano Group	Date Sampled: 04/19/13
	Client Contact: Morgan Gillies	Date Received: 04/19/13
	Client P.O.:	Date Extracted: 04/22/13
		Date Analyzed: 04/22/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304618

Lab ID	1304618-001A				Reporting Limit for DF =1	
Client ID	INF					
Matrix	A					
DF	1				S	A
Compound	Concentration				µg/kg	µg/L
Bromodichloromethane	ND				NA	0.25
Bromoform	ND				NA	0.25
Bromomethane	ND				NA	0.25
Carbon Tetrachloride	ND				NA	0.25
Chlorobenzene	ND				NA	0.25
Chloroethane	ND				NA	0.25
Chloroform	ND				NA	0.25
Chloromethane	ND				NA	0.25
Dibromochloromethane	ND				NA	0.25
1,2-Dibromoethane (EDB)	ND				NA	0.5
1,2-Dichlorobenzene	ND				NA	0.25
1,3-Dichlorobenzene	ND				NA	0.25
1,4-Dichlorobenzene	ND				NA	0.25
Dichlorodifluoromethane	ND				NA	0.25
1,1-Dichloroethane	ND				NA	0.25
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.25
1,1-Dichloroethene	ND				NA	0.25
cis-1,2-Dichloroethene	ND				NA	0.25
trans-1,2-Dichloroethene	ND				NA	0.25
1,2-Dichloropropane	ND				NA	0.25
cis-1,3-Dichloropropene	ND				NA	0.25
trans-1,3-Dichloropropene	ND				NA	0.25
Freon 113	ND				NA	0.5
Methylene chloride	ND				NA	0.25
1,1,1,2-Tetrachloroethane	ND				NA	0.5
1,1,2,2-Tetrachloroethane	ND				NA	0.25
Tetrachloroethene	1.6				NA	0.25
1,1,1-Trichloroethane	ND				NA	0.25
1,1,2-Trichloroethane	ND				NA	0.25
Trichloroethene	ND				NA	0.25
Trichlorofluoromethane	ND				NA	0.25
Vinyl Chloride	ND				NA	0.25

### Surrogate Recoveries (%)

%SS1:	105				
%SS2:	101				
%SS3:	91				
Comments					

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

*AR*



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002,320; Solano Group	Date Sampled: 04/19/13
	Client Contact: Morgan Gillies	Date Received: 04/19/13
	Client P.O.:	Date Extracted: 04/22/13
		Date Analyzed: 04/22/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304618

Lab ID	1304618-001A				Reporting Limit for DF = 1	
Client ID	INF					
Matrix	A				S	A
DF	1					
Compound	Concentration				µg/kg	µL/L
Bromodichloromethane	ND				NA	0.036
Bromoform	ND				NA	0.024
Bromomethane	ND				NA	0.063
Carbon Tetrachloride	ND				NA	0.039
Chlorobenzene	ND				NA	0.053
Chloroethane	ND				NA	0.093
Chloroform	ND				NA	0.05
Chloromethane	ND				NA	0.12
Dibromochloromethane	ND				NA	0.029
1,2-Dibromoethane (EDB)	ND				NA	0.064
1,2-Dichlorobenzene	ND				NA	0.041
1,3-Dichlorobenzene	ND				NA	0.041
1,4-Dichlorobenzene	ND				NA	0.041
Dichlorodifluoromethane	ND				NA	0.05
1,1-Dichloroethane	ND				NA	0.061
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.061
1,1-Dichloroethene	ND				NA	0.062
cis-1,2-Dichloroethene	ND				NA	0.062
trans-1,2-Dichloroethene	ND				NA	0.062
1,2-Dichloropropane	ND				NA	0.053
cis-1,3-Dichloropropene	ND				NA	0.054
trans-1,3-Dichloropropene	ND				NA	0.054
Freon 113	ND				NA	0.064
Methylene chloride	ND				NA	0.071
1,1,1,2-Tetrachloroethane	ND				NA	0.036
1,1,1,2,2-Tetrachloroethane	ND				NA	0.036
Tetrachloroethene	0.23				NA	0.036
1,1,1-Trichloroethane	ND				NA	0.045
1,1,2-Trichloroethane	ND				NA	0.045
Trichloroethene	ND				NA	0.046
Trichlorofluoromethane	ND				NA	0.044
Vinyl Chloride	ND				NA	0.096

**Surrogate Recoveries (%)**

%SS1:	105			
%SS2:	101			
%SS3:	91			
Comments				

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe, and air in µL/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 76561

WorkOrder: 1304618

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1304592-011B**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	93.6	94	0.444	103	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	108	108	0	110	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	95.4	95.5	0.0542	97	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	81.4	81.8	0.435	88.9	70 - 130	20	70 - 130
Trichloroethene	ND	10	93	92.3	0.796	105	70 - 130	20	70 - 130
%SS1:	110	25	111	112	0.856	102	70 - 130	20	70 - 130
%SS2:	108	25	108	107	0.654	109	70 - 130	20	70 - 130
%SS3:	92	2.5	89	89	0	93	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 76561 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1304618-001A	04/19/13 2:00 PM	04/22/13	04/22/13 11:03 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/25/13
		Date Received: 04/25/13
	Client Contact: Morgan Gillies	Date Reported: 05/01/13
	Client P.O.:	Date Completed: 05/01/13

**WorkOrder: 1304802**

May 01, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **14** analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

1304802

**McCAMPBELL ANALYTICAL, INC.**1534 Willow Pass Road  
Pittsburg, CA 94565Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)

Telephone: (925) 252-9262

Fax: (925) 252-9269

Report To: Morgan Gillies

Bill To: Pangea

Company: Pangea Environmental Services, Inc.

1710 Franklin Street, Suite 200, Oakland, CA 94612

E-Mail: [mgillies@pangeaenv.com](mailto:mgillies@pangeaenv.com)

Tele: (510) 836-3702

Fax: (510) 836-3709

Project #: 1435.002

Project Name: Solano Group

Project Location: 1187 Solano Ave, Albany

Sampler Signature: *[Signature]***CHAIN OF CUSTODY RECORD**

TURN AROUND TIME



RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required? Coelt (Normal)

No

Write On (DW)

No

Analysis Request

Other

Comments

SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED			
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other
B-22-5		4/25	1045	1	SS 31cc	X					X			
B-21-5			945	↓	↓	X					X			
B-30-5			1215	↓	↓	X					X			
B-24-4.5			1415	↓	↓	X					X			
B-22			1130	3	WAB	X					X	X		
B-21			1015	↓	↓	X					X	X		
B-30			1255	↓	↓	X					X	X		
SSPD-1			1411	1	Talbor		X							
SS-7			1350	↓	↓									
SS-10			1355	↓	↓									
SS-6			1348	↓	↓									
SSPD-2			1413	↓	↓		X							
SS-9			1402	↓	↓		X							
B-24			1605	3	WAB	X					X	X		

TPH/BTEX (8015Cm/8021B)

Five fuel oxygenates (8260B)

VOCs by EPA Method 8010

Filter Samples for Metals analysis: Yes / No

Relinquished By: *[Signature]*

Date: 4/25

Time: 1616

Received By: *[Signature]*Relinquished By: *[Signature]*

Date: 4/28

Time: 1630

Received By: *[Signature]*

Relinquished By:

Date:

Time:

Received By:

ICE/PC *102*

GOOD CONDITION

HEAD SPACE ABSENT

DECHLORINATED IN LAB

APPROPRIATE CONTAINERS

PRESERVED IN LAB

COMMENTS:

VOAS O&G METALS OTHER  
PRESERVATION pH<2



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1304802

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQUIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
 Pangea Environmental Svcs., Inc.  
 1710 Franklin Street, Ste. 200  
 Oakland, CA 94612  
 (510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa

cc:

PO:

ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

5 days

Date Received: 04/25/2013

Date Printed: 04/26/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1304802-001	B-22-5	Soil	4/25/2013 10:45	<input type="checkbox"/>		A		A								
1304802-002	B-21-5	Soil	4/25/2013 9:45	<input type="checkbox"/>		A										
1304802-003	B-30-5	Soil	4/25/2013 12:15	<input type="checkbox"/>		A										
1304802-004	B-24-4.5	Soil	4/25/2013 14:15	<input type="checkbox"/>		A										
1304802-005	B-22	Water	4/25/2013 11:30	<input type="checkbox"/>			A									
1304802-006	B-21	Water	4/25/2013 10:15	<input type="checkbox"/>			A									
1304802-007	B-30	Water	4/25/2013 12:55	<input type="checkbox"/>			A									
1304802-008	SSPO-1	Air	4/25/2013 14:11	<input type="checkbox"/>	A											
1304802-009	SS-7	Air	4/25/2013 13:50	<input type="checkbox"/>	A											
1304802-010	SS-10	Air	4/25/2013 13:55	<input type="checkbox"/>	A											
1304802-011	SS-6	Air	4/25/2013 13:48	<input type="checkbox"/>	A											
1304802-012	SSPO-2	Air	4/25/2013 14:13	<input type="checkbox"/>	A											
1304802-013	SS-9	Air	4/25/2013 14:02	<input type="checkbox"/>	A											
1304802-014	B-24	Water	4/25/2013 16:05	<input type="checkbox"/>			A									

## Test Legend:

1	8010BMS_A	2	8010BMS_S	3	8010BMS_W	4	PREFD REPORT	5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **4/25/2013 6:36:00 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Maria Venegas**

WorkOrder N°: **1304802**

Matrix: Air/Soil/Water

Carrier: David Valles (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 1.2°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



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http://www.mcccampbell.com / E-mail: main@mcccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/25/13
	Client Contact: Morgan Gillies	Date Received: 04/25/13
	Client P.O.:	Date Extracted: 04/26/13
		Date Analyzed: 04/26/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304802

Lab ID	1304802-008A	1304802-009A	1304802-010A	1304802-011A	Reporting Limit for DF =1	
Client ID	SSPO-1	SS-7	SS-10	SS-6		
Matrix	A	A	A	A	S	A
DF	1	1	1	4		
Compound	Concentration				µg/kg	µg/L
Bromodichloromethane	ND	ND	ND	ND<1.0	NA	0.25
Bromoform	ND	ND	ND	ND<1.0	NA	0.25
Bromomethane	ND	ND	ND	ND<1.0	NA	0.25
Carbon Tetrachloride	ND	ND	ND	ND<1.0	NA	0.25
Chlorobenzene	ND	ND	ND	ND<1.0	NA	0.25
Chloroethane	ND	ND	ND	ND<1.0	NA	0.25
Chloroform	ND	ND	ND	ND<1.0	NA	0.25
Chloromethane	ND	ND	ND	ND<1.0	NA	0.25
Dibromochloromethane	ND	ND	ND	ND<1.0	NA	0.25
1,2-Dibromoethane (EDB)	ND	ND	ND	ND<2.0	NA	0.5
1,2-Dichlorobenzene	ND	ND	ND	ND<1.0	NA	0.25
1,3-Dichlorobenzene	ND	ND	ND	ND<1.0	NA	0.25
1,4-Dichlorobenzene	ND	ND	ND	ND<1.0	NA	0.25
Dichlorodifluoromethane	ND	ND	ND	ND<1.0	NA	0.25
1,1-Dichloroethane	ND	ND	ND	ND<1.0	NA	0.25
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND<1.0	NA	0.25
1,1-Dichloroethene	ND	ND	ND	ND<1.0	NA	0.25
cis-1,2-Dichloroethene	ND	ND	ND	ND<1.0	NA	0.25
trans-1,2-Dichloroethene	ND	ND	ND	ND<1.0	NA	0.25
1,2-Dichloropropane	ND	ND	ND	ND<1.0	NA	0.25
cis-1,3-Dichloropropene	ND	ND	ND	ND<1.0	NA	0.25
trans-1,3-Dichloropropene	ND	ND	ND	ND<1.0	NA	0.25
Freon 113	ND	ND	ND	ND<2.0	NA	0.5
Methylene chloride	ND	ND	ND	ND<1.0	NA	0.25
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND<2.0	NA	0.5
1,1,1,2,2-Tetrachloroethane	ND	ND	ND	ND<1.0	NA	0.25
Tetrachloroethene	0.86	2.0	ND	40	NA	0.25
1,1,1-Trichloroethane	ND	ND	ND	ND<1.0	NA	0.25
1,1,2-Trichloroethane	ND	ND	ND	ND<1.0	NA	0.25
Trichloroethene	ND	ND	ND	10	NA	0.25
Trichlorofluoromethane	ND	ND	ND	ND<1.0	NA	0.25
Vinyl Chloride	ND	ND	ND	ND<1.0	NA	0.25

### Surrogate Recoveries (%)

%SS1:	107	107	105	108
%SS2:	99	99	99	98
%SS3:	98	96	95	107
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

*AR*





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http://www.mccampbell.com / E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/25/13
	Client Contact: Morgan Gillies	Date Received: 04/25/13
	Client P.O.:	Date Extracted: 04/26/13
		Date Analyzed: 04/26/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304802

Lab ID	1304802-012A	1304802-013A			Reporting Limit for DF =1	
Client ID	SSPO-2	SS-9				
Matrix	A	A			S	A
DF	1	1				
Compound	Concentration				µg/kg	µg/L
Bromodichloromethane	ND	ND			NA	0.25
Bromoform	ND	ND			NA	0.25
Bromomethane	ND	ND			NA	0.25
Carbon Tetrachloride	ND	ND			NA	0.25
Chlorobenzene	ND	ND			NA	0.25
Chloroethane	ND	ND			NA	0.25
Chloroform	ND	ND			NA	0.25
Chloromethane	ND	ND			NA	0.25
Dibromochloromethane	ND	ND			NA	0.25
1,2-Dibromoethane (EDB)	ND	ND			NA	0.5
1,2-Dichlorobenzene	ND	ND			NA	0.25
1,3-Dichlorobenzene	ND	ND			NA	0.25
1,4-Dichlorobenzene	ND	ND			NA	0.25
Dichlorodifluoromethane	ND	ND			NA	0.25
1,1-Dichloroethane	ND	ND			NA	0.25
1,2-Dichloroethane (1,2-DCA)	ND	ND			NA	0.25
1,1-Dichloroethene	ND	ND			NA	0.25
cis-1,2-Dichloroethene	ND	ND			NA	0.25
trans-1,2-Dichloroethene	ND	ND			NA	0.25
1,2-Dichloropropane	ND	ND			NA	0.25
cis-1,3-Dichloropropene	ND	ND			NA	0.25
trans-1,3-Dichloropropene	ND	ND			NA	0.25
Freon 113	ND	ND			NA	0.5
Methylene chloride	ND	ND			NA	0.25
1,1,1,2-Tetrachloroethane	ND	ND			NA	0.5
1,1,1,2,2-Tetrachloroethane	ND	ND			NA	0.25
Tetrachloroethene	ND	ND			NA	0.25
1,1,1-Trichloroethane	ND	ND			NA	0.25
1,1,2-Trichloroethane	ND	ND			NA	0.25
Trichloroethene	ND	ND			NA	0.25
Trichlorofluoromethane	ND	ND			NA	0.25
Vinyl Chloride	ND	ND			NA	0.25

### Surrogate Recoveries (%)

%SS1:	107	106		
%SS2:	99	99		
%SS3:	91	90		
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

*AR*



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/25/13
	Client Contact: Morgan Gillies	Date Received: 04/25/13
	Client P.O.:	Date Extracted: 04/26/13
		Date Analyzed: 04/26/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304802

Lab ID	1304802-008A	1304802-009A	1304802-010A	1304802-011A	Reporting Limit for DF =1	
Client ID	SSPO-1	SS-7	SS-10	SS-6		
Matrix	A	A	A	A	S	A
DF	1	1	1	4		

Compound	Concentration				µg/kg	µL/L
Bromodichloromethane	ND	ND	ND	ND<0.14	NA	0.036
Bromoform	ND	ND	ND	ND<0.096	NA	0.024
Bromomethane	ND	ND	ND	ND<0.25	NA	0.063
Carbon Tetrachloride	ND	ND	ND	ND<0.16	NA	0.039
Chlorobenzene	ND	ND	ND	ND<0.21	NA	0.053
Chloroethane	ND	ND	ND	ND<0.37	NA	0.093
Chloroform	ND	ND	ND	ND<0.20	NA	0.05
Chloromethane	ND	ND	ND	ND<0.48	NA	0.12
Dibromochloromethane	ND	ND	ND	ND<0.12	NA	0.029
1,2-Dibromoethane (EDB)	ND	ND	ND	ND<0.26	NA	0.064
1,2-Dichlorobenzene	ND	ND	ND	ND<0.16	NA	0.041
1,3-Dichlorobenzene	ND	ND	ND	ND<0.16	NA	0.041
1,4-Dichlorobenzene	ND	ND	ND	ND<0.16	NA	0.041
Dichlorodifluoromethane	ND	ND	ND	ND<0.20	NA	0.05
1,1-Dichloroethane	ND	ND	ND	ND<0.24	NA	0.061
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND<0.24	NA	0.061
1,1-Dichloroethene	ND	ND	ND	ND<0.25	NA	0.062
cis-1,2-Dichloroethene	ND	ND	ND	ND<0.25	NA	0.062
trans-1,2-Dichloroethene	ND	ND	ND	ND<0.25	NA	0.062
1,2-Dichloropropane	ND	ND	ND	ND<0.21	NA	0.053
cis-1,3-Dichloropropene	ND	ND	ND	ND<0.22	NA	0.054
trans-1,3-Dichloropropene	ND	ND	ND	ND<0.22	NA	0.054
Freon 113	ND	ND	ND	ND<0.26	NA	0.064
Methylene chloride	ND	ND	ND	ND<0.28	NA	0.071
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND<0.14	NA	0.036
1,1,1,2,2-Tetrachloroethane	ND	ND	ND	ND<0.14	NA	0.036
Tetrachloroethene	0.12	0.30	ND	5.8	NA	0.036
1,1,1-Trichloroethane	ND	ND	ND	ND<0.18	NA	0.045
1,1,2-Trichloroethane	ND	ND	ND	ND<0.18	NA	0.045
Trichloroethene	ND	ND	ND	1.8	NA	0.046
Trichlorofluoromethane	ND	ND	ND	ND<0.18	NA	0.044
Vinyl Chloride	ND	ND	ND	ND<0.38	NA	0.096

### Surrogate Recoveries (%)

%SS1:	107	107	105	108
%SS2:	99	99	99	98
%SS3:	98	96	95	107
Comments				

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe, and air in µL/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



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	Client Contact: Morgan Gillies	Date Received: 04/25/13
	Client P.O.:	Date Extracted: 04/26/13
		Date Analyzed: 04/26/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304802

Lab ID	1304802-012A	1304802-013A			Reporting Limit for DF =1	
Client ID	SSPO-2	SS-9				
Matrix	A	A			S	A
DF	1	1				

Compound	Concentration				µg/kg	µL/L
Bromodichloromethane	ND	ND			NA	0.036
Bromoform	ND	ND			NA	0.024
Bromomethane	ND	ND			NA	0.063
Carbon Tetrachloride	ND	ND			NA	0.039
Chlorobenzene	ND	ND			NA	0.053
Chloroethane	ND	ND			NA	0.093
Chloroform	ND	ND			NA	0.05
Chloromethane	ND	ND			NA	0.12
Dibromochloromethane	ND	ND			NA	0.029
1,2-Dibromoethane (EDB)	ND	ND			NA	0.064
1,2-Dichlorobenzene	ND	ND			NA	0.041
1,3-Dichlorobenzene	ND	ND			NA	0.041
1,4-Dichlorobenzene	ND	ND			NA	0.041
Dichlorodifluoromethane	ND	ND			NA	0.05
1,1-Dichloroethane	ND	ND			NA	0.061
1,2-Dichloroethane (1,2-DCA)	ND	ND			NA	0.061
1,1-Dichloroethene	ND	ND			NA	0.062
cis-1,2-Dichloroethene	ND	ND			NA	0.062
trans-1,2-Dichloroethene	ND	ND			NA	0.062
1,2-Dichloropropane	ND	ND			NA	0.053
cis-1,3-Dichloropropene	ND	ND			NA	0.054
trans-1,3-Dichloropropene	ND	ND			NA	0.054
Freon 113	ND	ND			NA	0.064
Methylene chloride	ND	ND			NA	0.071
1,1,1,2-Tetrachloroethane	ND	ND			NA	0.036
1,1,1,2,2-Tetrachloroethane	ND	ND			NA	0.036
Tetrachloroethene	ND	ND			NA	0.036
1,1,1-Trichloroethane	ND	ND			NA	0.045
1,1,2-Trichloroethane	ND	ND			NA	0.045
Trichloroethene	ND	ND			NA	0.046
Trichlorofluoromethane	ND	ND			NA	0.044
Vinyl Chloride	ND	ND			NA	0.096

### Surrogate Recoveries (%)

%SS1:	107	106		
%SS2:	99	99		
%SS3:	91	90		
Comments				

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe, and air in µL/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



**McC Campbell Analytical, Inc.**

*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
http://www.mcccampbell.com / E-mail: main@mcccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/25/13
	Client Contact: Morgan Gillies	Date Received: 04/25/13
	Client P.O.:	Date Extracted: 04/26/13
		Date Analyzed: 04/27/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304802

Lab ID	1304802-001A	1304802-002A	1304802-003A	1304802-004A	Reporting Limit for DF =1	
Client ID	B-22-5	B-21-5	B-30-5	B-24-4.5		
Matrix	S	S	S	S	S	W
DF	1	1	1	1		

Compound	Concentration				mg/kg	µg/L
Bromodichloromethane	ND	ND	ND	ND	0.005	NA
Bromoform	ND	ND	ND	ND	0.005	NA
Bromomethane	ND	ND	ND	ND	0.005	NA
Carbon Tetrachloride	ND	ND	ND	ND	0.005	NA
Chlorobenzene	ND	ND	ND	ND	0.005	NA
Chloroethane	ND	ND	ND	ND	0.005	NA
Chloroform	ND	ND	ND	ND	0.005	NA
Chloromethane	ND	ND	ND	ND	0.005	NA
Dibromochloromethane	ND	ND	ND	ND	0.005	NA
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	0.004	NA
1,2-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
1,3-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
1,4-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
Dichlorodifluoromethane	ND	ND	ND	ND	0.005	NA
1,1-Dichloroethane	ND	ND	ND	ND	0.005	NA
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND	0.004	NA
1,1-Dichloroethene	ND	ND	ND	ND	0.005	NA
cis-1,2-Dichloroethene	ND	ND	ND	ND	0.005	NA
trans-1,2-Dichloroethene	ND	ND	ND	ND	0.005	NA
1,2-Dichloropropane	ND	ND	ND	ND	0.005	NA
cis-1,3-Dichloropropene	ND	ND	ND	ND	0.005	NA
trans-1,3-Dichloropropene	ND	ND	ND	ND	0.005	NA
Freon 113	ND	ND	ND	ND	0.1	NA
Methylene chloride	ND	ND	ND	ND	0.005	NA
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	0.005	NA
1,1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	0.005	NA
Tetrachloroethene	ND	ND	ND	ND	0.005	NA
1,1,1-Trichloroethane	ND	ND	ND	ND	0.005	NA
1,1,2-Trichloroethane	ND	ND	ND	ND	0.005	NA
Trichloroethene	ND	ND	ND	ND	0.005	NA
Trichlorofluoromethane	ND	ND	ND	ND	0.005	NA
Vinyl Chloride	ND	ND	ND	ND	0.005	NA

**Surrogate Recoveries (%)**

%SS1:	105	106	106	104
%SS2:	115	115	113	115
%SS3:	113	109	111	111
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



# McC Campbell Analytical, Inc.

"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
http://www.mcccampbell.com / E-mail: main@mcccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/25/13
	Client Contact: Morgan Gillies	Date Received: 04/25/13
	Client P.O.:	Date Extracted: 04/30/13-05/01/13
		Date Analyzed: 04/30/13-05/01/13

## Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304802

Lab ID	1304802-005A	1304802-006A	1304802-007A	1304802-014A	Reporting Limit for DF =1	
Client ID	B-22	B-21	B-30	B-24		
Matrix	W	W	W	W	S	W
DF	100	5	20	1		
Compound	Concentration				µg/kg	µg/L
Bromodichloromethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
Bromoform	ND<50	ND<2.5	ND<10	ND	NA	0.5
Bromomethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
Carbon Tetrachloride	ND<50	ND<2.5	ND<10	ND	NA	0.5
Chlorobenzene	ND<50	ND<2.5	ND<10	ND	NA	0.5
Chloroethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
Chloroform	ND<50	ND<2.5	ND<10	ND	NA	0.5
Chloromethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
Dibromochloromethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
1,2-Dibromoethane (EDB)	ND<50	ND<2.5	ND<10	ND	NA	0.5
1,2-Dichlorobenzene	ND<50	ND<2.5	ND<10	ND	NA	0.5
1,3-Dichlorobenzene	ND<50	ND<2.5	ND<10	ND	NA	0.5
1,4-Dichlorobenzene	ND<50	ND<2.5	ND<10	ND	NA	0.5
Dichlorodifluoromethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
1,1-Dichloroethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<50	ND<2.5	ND<10	ND	NA	0.5
1,1-Dichloroethene	ND<50	ND<2.5	ND<10	ND	NA	0.5
cis-1,2-Dichloroethene	ND<50	ND<2.5	ND<10	ND	NA	0.5
trans-1,2-Dichloroethene	ND<50	ND<2.5	ND<10	ND	NA	0.5
1,2-Dichloropropane	ND<50	ND<2.5	ND<10	ND	NA	0.5
cis-1,3-Dichloropropene	ND<50	ND<2.5	ND<10	ND	NA	0.5
trans-1,3-Dichloropropene	ND<50	ND<2.5	ND<10	ND	NA	0.5
Freon 113	ND<1000	ND<50	ND<200	ND	NA	10
Methylene chloride	ND<50	ND<2.5	ND<10	ND	NA	0.5
1,1,1,2-Tetrachloroethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
1,1,1,2,2-Tetrachloroethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
Tetrachloroethene	820	85	290	ND	NA	0.5
1,1,1-Trichloroethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
1,1,2-Trichloroethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
Trichloroethene	ND<50	ND<2.5	ND<10	ND	NA	0.5
Trichlorofluoromethane	ND<50	ND<2.5	ND<10	ND	NA	0.5
Vinyl Chloride	ND<50	ND<2.5	ND<10	ND	NA	0.5

### Surrogate Recoveries (%)

%SS1:	111	116	118	110
%SS2:	105	103	105	94
%SS3:	94	95	92	111
Comments	b1	b1	b1	b1

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.

b1) aqueous sample that contains greater than ~1 vol. % sediment



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 76777

WorkOrder: 1304802

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1304829-002B**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	85.7	89.5	4.33	89.3	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	100	103	2.99	95.3	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	102	105	2.71	101	70 - 130	20	70 - 130
1,1-Dichloroethene	0.84	10	84.9	91.3	6.63	92.7	70 - 130	20	70 - 130
Trichloroethene	11	10	81.7	88.4	3.35	96.5	70 - 130	20	70 - 130
%SS1:	109	25	109	109	0	109	70 - 130	20	70 - 130
%SS2:	97	25	96	96	0	97	70 - 130	20	70 - 130
%SS3:	96	2.5	94	95	0.250	93	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 76777 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1304802-008A	04/25/13 2:11 PM	04/26/13	04/26/13 2:28 PM	1304802-009A	04/25/13 1:50 PM	04/26/13	04/26/13 3:11 PM
1304802-010A	04/25/13 1:55 PM	04/26/13	04/26/13 3:54 PM	1304802-011A	04/25/13 1:48 PM	04/26/13	04/26/13 11:12 PM
1304802-012A	04/25/13 2:13 PM	04/26/13	04/26/13 5:20 PM	1304802-013A	04/25/13 2:02 PM	04/26/13	04/26/13 6:03 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.





## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 76802

WorkOrder: 1304802

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1304856-002B**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	90.2	88.5	1.86	90.8	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	106	104	1.81	96.4	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	101	99.9	0.700	99.2	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	96.8	96	0.811	93	70 - 130	20	70 - 130
Trichloroethene	ND	10	98.8	96.7	2.10	97.2	70 - 130	20	70 - 130
%SS1:	111	25	112	111	1.01	108	70 - 130	20	70 - 130
%SS2:	97	25	96	95	1.08	96	70 - 130	20	70 - 130
%SS3:	104	2.5	109	105	4.08	103	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 76802 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1304802-005A	04/25/13 11:30 AM	05/01/13	05/01/13 6:48 AM	1304802-006A	04/25/13 10:15 AM	05/01/13	05/01/13 12:37 AM
1304802-007A	04/25/13 12:55 PM	05/01/13	05/01/13 1:18 AM	1304802-014A	04/25/13 4:05 PM	04/30/13	04/30/13 1:20 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 76660

WorkOrder: 1304802

EPA Method: SW8260B

Extraction: SW5030B

Spiked Sample ID: 1304721-001A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND<0.02	0.050	NR	NR	NR	101	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	ND<0.016	0.050	NR	NR	NR	107	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND<0.016	0.050	NR	NR	NR	83.5	N/A	N/A	70 - 130
1,1-Dichloroethene	ND<0.02	0.050	NR	NR	NR	90.9	N/A	N/A	70 - 130
Trichloroethene	ND<0.02	0.050	NR	NR	NR	107	N/A	N/A	70 - 130
%SS1:	92	0.12	NR	NR	NR	103	N/A	N/A	70 - 130
%SS2:	125	0.12	NR	NR	NR	118	N/A	N/A	70 - 130
%SS3:	93	0.012	NR	NR	NR	116	N/A	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 76660 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1304802-001A	04/25/13 10:45 AM	04/26/13	04/27/13 4:14 PM	1304802-002A	04/25/13 9:45 AM	04/26/13	04/27/13 4:53 PM
1304802-003A	04/25/13 12:15 PM	04/26/13	04/27/13 5:32 PM	1304802-004A	04/25/13 2:15 PM	04/26/13	04/27/13 6:11 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



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## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/25/13
		Date Received: 04/26/13
	Client Contact: Morgan Gillies	Date Reported: 04/29/13
	Client P.O.:	Date Completed: 04/29/13

**WorkOrder: 1304832**

April 29, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the 13 analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

# RUSH

1304832

**McCAMPBELL ANALYTICAL, INC.**

1534 Willow Pass Road

Pittsburg, CA 94565

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)

Telephone: (925) 252-9262

Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**

TURN AROUND TIME



RUSH

24 HR

48 HR

72 HR

5 DAY

EDF Required? Coelt (Normal) No

Write On (DW) No

No

Report To: Morgan Gillies

Bill To: Pangea

Company: Pangea Environmental Services, Inc.

1710 Franklin Street, Suite 200, Oakland, CA 94612

E-Mail: [mgillies@pangeaenv.com](mailto:mgillies@pangeaenv.com)

Tele: (510) 836-3702

Fax: (510) 836-3709

Project #: 1435.002

Project Name: Solano Group

Project Location: 1187 Solano Ave, Albany

Sampler Signature: **Analysis Request**

Other

Comments


Filter  
Samples  
for Metals  
analysis:  
Yes / No

TPH/BTEX (8015CM/8021B)

Five fuel oxygenates (8260B)

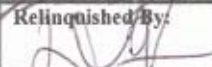
VOCs by EPA Method 8010

SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED			
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other
B-23		4/25	1715	3	W/B	X					X	X		
B-23-4.5			1630	1	SS Stems		X				X			
B-23-8.5			1645				X				X			
B-26-2.5			1750				X				X			
B-26-5			1800				X				X			
B-29-2.5			1805				X				X			
B-29-5			1810				X				X			
B-28-2.5			1820				X				X			
B-27-3			1825				X				X			
B-28-5			1830				X				X			
B-27-5			1835				X				X			
B-25-2.5			1840				X				X			
B-25-5			1845				X				X			

Relinquished By: 


Date:

Time:

Received By: Relinquished By: 

Date:

Time:

Received By: 

Relinquished By:

Date:

Time:

Received By:

ICE/H<sub>2</sub>O

GOOD CONDITION

HEAD SPACE ABSENT

DECHLORINATED IN LAB

APPROPRIATE CONTAINERS

PRESERVED IN LAB

COMMENTS:

VOAS O&G METALS OTHER  
PRESERVATION pH<2



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1304832

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQUIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa

cc:

PO:

ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

3 days

Date Received: 04/26/2013

Date Printed: 04/26/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1304832-001	B-23	Water	4/25/2013 17:15	<input type="checkbox"/>		A	A									
1304832-002	B-23-4.5	Soil	4/25/2013 16:30	<input type="checkbox"/>	A											
1304832-003	B-23-8.5	Soil	4/25/2013 16:45	<input type="checkbox"/>	A											
1304832-004	B-26-2.5	Soil	4/25/2013 17:50	<input type="checkbox"/>	A											
1304832-005	B-26-5	Soil	4/25/2013 18:00	<input type="checkbox"/>	A											
1304832-006	B-29-2.5	Soil	4/25/2013 18:05	<input type="checkbox"/>	A											
1304832-007	B-29-5	Soil	4/25/2013 18:10	<input type="checkbox"/>	A											
1304832-008	B-28-2.5	Soil	4/25/2013 18:20	<input type="checkbox"/>	A											
1304832-009	B-27-3	Soil	4/25/2013 18:25	<input type="checkbox"/>	A											
1304832-010	B-28-5	Soil	4/25/2013 18:30	<input type="checkbox"/>	A											
1304832-011	B-27-5	Soil	4/25/2013 18:35	<input type="checkbox"/>	A											
1304832-012	B-25-2.5	Soil	4/25/2013 18:40	<input type="checkbox"/>	A											
1304832-013	B-25-5	Soil	4/25/2013 18:45	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2	8010BMS_W	3	PREFDF REPORT	4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **4/26/2013 7:01:37 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1304832**

Matrix: Soil/Water

Carrier: David Valles (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 4.4°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:





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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/25/13
	Client Contact: Morgan Gillies	Date Received: 04/26/13
	Client P.O.:	Date Extracted: 04/26/13
		Date Analyzed: 04/27/13

## Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304832

Lab ID	1304832-002A	1304832-003A	1304832-004A	1304832-005A	Reporting Limit for DF = 1	
Client ID	B-23-4.5	B-23-8.5	B-26-2.5	B-26-5		
Matrix	S	S	S	S	S	W
DF	1	1	1	1		
Compound	Concentration				mg/kg	µg/L
Bromodichloromethane	ND	ND	ND	ND	0.005	NA
Bromoform	ND	ND	ND	ND	0.005	NA
Bromomethane	ND	ND	ND	ND	0.005	NA
Carbon Tetrachloride	ND	ND	ND	ND	0.005	NA
Chlorobenzene	ND	ND	ND	ND	0.005	NA
Chloroethane	ND	ND	ND	ND	0.005	NA
Chloroform	ND	ND	ND	ND	0.005	NA
Chloromethane	ND	ND	ND	ND	0.005	NA
Dibromochloromethane	ND	ND	ND	ND	0.005	NA
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	0.004	NA
1,2-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
1,3-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
1,4-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
Dichlorodifluoromethane	ND	ND	ND	ND	0.005	NA
1,1-Dichloroethane	ND	ND	ND	ND	0.005	NA
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND	0.004	NA
1,1-Dichloroethene	ND	ND	ND	ND	0.005	NA
cis-1,2-Dichloroethene	ND	ND	ND	ND	0.005	NA
trans-1,2-Dichloroethene	ND	ND	ND	ND	0.005	NA
1,2-Dichloropropane	ND	ND	ND	ND	0.005	NA
cis-1,3-Dichloropropene	ND	ND	ND	ND	0.005	NA
trans-1,3-Dichloropropene	ND	ND	ND	ND	0.005	NA
Freon 113	ND	ND	ND	ND	0.1	NA
Methylene chloride	ND	ND	ND	ND	0.005	NA
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	0.005	NA
1,1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	0.005	NA
Tetrachloroethene	ND	ND	0.018	0.0050	0.005	NA
1,1,1-Trichloroethane	ND	ND	ND	ND	0.005	NA
1,1,2-Trichloroethane	ND	ND	ND	ND	0.005	NA
Trichloroethene	ND	ND	ND	ND	0.005	NA
Trichlorofluoromethane	ND	ND	ND	ND	0.005	NA
Vinyl Chloride	ND	ND	ND	ND	0.005	NA

### Surrogate Recoveries (%)

%SS1:	104	105	105	105	
%SS2:	116	115	114	114	
%SS3:	113	112	110	110	
Comments					

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/25/13
	Client Contact: Morgan Gillies	Date Received: 04/26/13
	Client P.O.:	Date Extracted: 04/26/13
		Date Analyzed: 04/27/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304832

Lab ID	1304832-006A	1304832-007A	1304832-008A	1304832-009A	Reporting Limit for DF =1	
Client ID	B-29-2.5	B-29-5	B-28-2.5	B-27-3		
Matrix	S	S	S	S	S	W
DF	1	1	1	1		
Compound	Concentration				mg/kg	µg/L
Bromodichloromethane	ND	ND	ND	ND	0.005	NA
Bromoform	ND	ND	ND	ND	0.005	NA
Bromomethane	ND	ND	ND	ND	0.005	NA
Carbon Tetrachloride	ND	ND	ND	ND	0.005	NA
Chlorobenzene	ND	ND	ND	ND	0.005	NA
Chloroethane	ND	ND	ND	ND	0.005	NA
Chloroform	ND	ND	ND	ND	0.005	NA
Chloromethane	ND	ND	ND	ND	0.005	NA
Dibromochloromethane	ND	ND	ND	ND	0.005	NA
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	0.004	NA
1,2-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
1,3-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
1,4-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
Dichlorodifluoromethane	ND	ND	ND	ND	0.005	NA
1,1-Dichloroethane	ND	ND	ND	ND	0.005	NA
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND	0.004	NA
1,1-Dichloroethene	ND	ND	ND	ND	0.005	NA
cis-1,2-Dichloroethene	ND	ND	ND	ND	0.005	NA
trans-1,2-Dichloroethene	ND	ND	ND	ND	0.005	NA
1,2-Dichloropropane	ND	ND	ND	ND	0.005	NA
cis-1,3-Dichloropropene	ND	ND	ND	ND	0.005	NA
trans-1,3-Dichloropropene	ND	ND	ND	ND	0.005	NA
Freon 113	ND	ND	ND	ND	0.1	NA
Methylene chloride	ND	ND	ND	ND	0.005	NA
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	0.005	NA
1,1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	0.005	NA
Tetrachloroethene	ND	ND	ND	ND	0.005	NA
1,1,1-Trichloroethane	ND	ND	ND	ND	0.005	NA
1,1,2-Trichloroethane	ND	ND	ND	ND	0.005	NA
Trichloroethene	ND	ND	ND	ND	0.005	NA
Trichlorofluoromethane	ND	ND	ND	ND	0.005	NA
Vinyl Chloride	ND	ND	ND	ND	0.005	NA

### Surrogate Recoveries (%)

%SS1:	107	102	103	101
%SS2:	108	105	105	104
%SS3:	103	113	107	108
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/25/13
	Client Contact: Morgan Gillies	Date Received: 04/26/13
	Client P.O.:	Date Extracted: 04/26/13
		Date Analyzed: 04/27/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304832

Lab ID	1304832-010A	1304832-011A	1304832-012A	1304832-013A	Reporting Limit for DF =1	
Client ID	B-28-5	B-27-5	B-25-2.5	B-25-5		
Matrix	S	S	S	S	S	W
DF	1	1	1	1		
Compound	Concentration				mg/kg	µg/L
Bromodichloromethane	ND	ND	ND	ND	0.005	NA
Bromoform	ND	ND	ND	ND	0.005	NA
Bromomethane	ND	ND	ND	ND	0.005	NA
Carbon Tetrachloride	ND	ND	ND	ND	0.005	NA
Chlorobenzene	ND	ND	ND	ND	0.005	NA
Chloroethane	ND	ND	ND	ND	0.005	NA
Chloroform	ND	ND	ND	ND	0.005	NA
Chloromethane	ND	ND	ND	ND	0.005	NA
Dibromochloromethane	ND	ND	ND	ND	0.005	NA
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	0.004	NA
1,2-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
1,3-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
1,4-Dichlorobenzene	ND	ND	ND	ND	0.005	NA
Dichlorodifluoromethane	ND	ND	ND	ND	0.005	NA
1,1-Dichloroethane	ND	ND	ND	ND	0.005	NA
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND	0.004	NA
1,1-Dichloroethene	ND	ND	ND	ND	0.005	NA
cis-1,2-Dichloroethene	ND	ND	ND	ND	0.005	NA
trans-1,2-Dichloroethene	ND	ND	ND	ND	0.005	NA
1,2-Dichloropropane	ND	ND	ND	ND	0.005	NA
cis-1,3-Dichloropropene	ND	ND	ND	ND	0.005	NA
trans-1,3-Dichloropropene	ND	ND	ND	ND	0.005	NA
Freon 113	ND	ND	ND	ND	0.1	NA
Methylene chloride	ND	ND	ND	ND	0.005	NA
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	0.005	NA
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	0.005	NA
Tetrachloroethene	ND	ND	0.0071	0.0066	0.005	NA
1,1,1-Trichloroethane	ND	ND	ND	ND	0.005	NA
1,1,2-Trichloroethane	ND	ND	ND	ND	0.005	NA
Trichloroethene	ND	ND	ND	ND	0.005	NA
Trichlorofluoromethane	ND	ND	ND	ND	0.005	NA
Vinyl Chloride	ND	ND	ND	ND	0.005	NA

### Surrogate Recoveries (%)

%SS1:	102	103	103	101	
%SS2:	105	103	105	105	
%SS3:	108	113	109	106	
Comments					

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 04/25/13
	Client Contact: Morgan Gillies	Date Received: 04/26/13
	Client P.O.:	Date Extracted: 04/27/13
		Date Analyzed: 04/27/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1304832

Lab ID	1304832-001A				Reporting Limit for DF =1	
Client ID	B-23					
Matrix	W				S	W
DF	1					
Compound	Concentration				µg/kg	µg/L
Bromodichloromethane	ND				NA	0.5
Bromoform	ND				NA	0.5
Bromomethane	ND				NA	0.5
Carbon Tetrachloride	ND				NA	0.5
Chlorobenzene	ND				NA	0.5
Chloroethane	ND				NA	0.5
Chloroform	ND				NA	0.5
Chloromethane	ND				NA	0.5
Dibromochloromethane	ND				NA	0.5
1,2-Dibromoethane (EDB)	ND				NA	0.5
1,2-Dichlorobenzene	ND				NA	0.5
1,3-Dichlorobenzene	ND				NA	0.5
1,4-Dichlorobenzene	ND				NA	0.5
Dichlorodifluoromethane	ND				NA	0.5
1,1-Dichloroethane	ND				NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.5
1,1-Dichloroethene	ND				NA	0.5
cis-1,2-Dichloroethene	ND				NA	0.5
trans-1,2-Dichloroethene	ND				NA	0.5
1,2-Dichloropropane	ND				NA	0.5
cis-1,3-Dichloropropene	ND				NA	0.5
trans-1,3-Dichloropropene	ND				NA	0.5
Freon 113	ND				NA	10
Methylene chloride	ND				NA	0.5
1,1,1,2-Tetrachloroethane	ND				NA	0.5
1,1,2,2-Tetrachloroethane	ND				NA	0.5
Tetrachloroethene	ND				NA	0.5
1,1,1-Trichloroethane	ND				NA	0.5
1,1,2-Trichloroethane	ND				NA	0.5
Trichloroethene	ND				NA	0.5
Trichlorofluoromethane	ND				NA	0.5
Vinyl Chloride	ND				NA	0.5

**Surrogate Recoveries (%)**

%SS1:	107			
%SS2:	98			
%SS3:	95			
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 76752

WorkOrder: 1304832

EPA Method: SW8260B

Extraction: SW5030B

Spiked Sample ID: 1304506-019A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	86.1	83.8	2.78	104	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	96.6	95.7	0.971	112	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	81.9	83.9	2.44	90.7	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	78.4	78	0.480	90.9	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	101	100	0.169	110	60 - 116	30	70 - 130
%SS1:	108	0.12	105	106	0.583	105	70 - 130	30	70 - 130
%SS2:	122	0.12	115	116	0.905	115	70 - 130	30	70 - 130
%SS3:	119	0.012	118	117	0.155	114	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 76752 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1304832-002A	04/25/13 4:30 PM	04/26/13	04/27/13 12:58 PM	1304832-003A	04/25/13 4:45 PM	04/26/13	04/27/13 1:37 PM
1304832-004A	04/25/13 5:50 PM	04/26/13	04/27/13 2:16 PM	1304832-005A	04/25/13 6:00 PM	04/26/13	04/27/13 2:55 PM
1304832-006A	04/25/13 6:05 PM	04/26/13	04/27/13 3:35 PM	1304832-007A	04/25/13 6:10 PM	04/26/13	04/27/13 2:02 AM
1304832-008A	04/25/13 6:20 PM	04/26/13	04/27/13 2:44 AM	1304832-009A	04/25/13 6:25 PM	04/26/13	04/27/13 3:27 AM
1304832-010A	04/25/13 6:30 PM	04/26/13	04/27/13 4:09 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 76767

WorkOrder: 1304832

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1304832-013A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	87.4	91.8	4.96	99.6	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	92.6	97.1	4.70	106	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	74.3	78.7	5.73	84.1	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	73	78.4	7.24	85.5	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	92	96.6	4.89	105	60 - 116	30	70 - 130
%SS1:	101	0.12	105	104	0.818	104	70 - 130	30	70 - 130
%SS2:	105	0.12	114	114	0	115	70 - 130	30	70 - 130
%SS3:	106	0.012	110	108	1.52	110	70 - 130	30	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 76767 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1304832-011A	04/25/13 6:35 PM	04/26/13	04/27/13 4:52 AM	1304832-012A	04/25/13 6:40 PM	04/26/13	04/27/13 5:34 AM
1304832-013A	04/25/13 6:45 PM	04/26/13	04/27/13 6:17 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.





## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 76777

WorkOrder: 1304832

EPA Method: SW8260B

Extraction: SW5030B

Spiked Sample ID: 1304829-002B

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	85.7	89.5	4.33	89.3	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	100	103	2.99	95.3	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	102	105	2.71	101	70 - 130	20	70 - 130
1,1-Dichloroethene	0.84	10	84.9	91.3	6.63	92.7	70 - 130	20	70 - 130
Trichloroethene	11	10	81.7	88.4	3.35	96.5	70 - 130	20	70 - 130
%SS1:	109	25	109	109	0	109	70 - 130	20	70 - 130
%SS2:	97	25	96	96	0	97	70 - 130	20	70 - 130
%SS3:	96	2.5	94	95	0.250	93	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 76777 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1304832-001A	04/25/13 5:15 PM	04/27/13	04/27/13 1:19 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 1187 Solano	Date Sampled: 05/13/13
		Date Received: 05/13/13
	Client Contact: Bob Clark-Riddell	Date Reported: 05/14/13
	Client P.O.:	Date Completed: 05/15/13

**WorkOrder: 1305393**

May 15, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **1187 Solano**,
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*





# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1305393

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com

cc:

PO:

ProjectNo: 1187 Solano

**Bill to:**Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612**Requested TAT:****2 days****Date Received: 05/13/2013****Date Printed: 05/13/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1305393-001	INF-V-1185N	Air	5/13/2013 11:00	<input type="checkbox"/>	A	A										

**Test Legend:**

1	8010BMS_A	2	8010BMS_PPMV	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Jena Alfaro****Comments:**NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **5/13/2013 3:10:44 PM**

Project Name: **1187 Solano**

LogIn Reviewed by: **Jena Alfaro**

WorkOrder N°: **1305393**

Matrix: Air

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:





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http://www.mccampbell.com / E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 1187 Solano	Date Sampled: 05/13/13
		Date Received: 05/13/13
	Client Contact: Bob Clark-Riddell	Date Extracted: 05/13/13
	Client P.O.:	Date Analyzed: 05/13/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1305393

Lab ID	1305393-001A				Reporting Limit for DF =1	
Client ID	INF-V-1185N					
Matrix	A				S	A
DF	1					

Compound	Concentration				µg/kg	µg/L
Bromodichloromethane	ND				NA	0.25
Bromoform	ND				NA	0.25
Bromomethane	ND				NA	0.25
Carbon Tetrachloride	ND				NA	0.25
Chlorobenzene	ND				NA	0.25
Chloroethane	ND				NA	0.25
Chloroform	ND				NA	0.25
Chloromethane	ND				NA	0.25
Dibromochloromethane	ND				NA	0.25
1,2-Dibromoethane (EDB)	ND				NA	0.5
1,2-Dichlorobenzene	ND				NA	0.25
1,3-Dichlorobenzene	ND				NA	0.25
1,4-Dichlorobenzene	ND				NA	0.25
Dichlorodifluoromethane	ND				NA	0.25
1,1-Dichloroethane	ND				NA	0.25
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.25
1,1-Dichloroethene	ND				NA	0.25
cis-1,2-Dichloroethene	ND				NA	0.25
trans-1,2-Dichloroethene	ND				NA	0.25
1,2-Dichloropropane	ND				NA	0.25
cis-1,3-Dichloropropene	ND				NA	0.25
trans-1,3-Dichloropropene	ND				NA	0.25
Freon 113	ND				NA	0.5
Methylene chloride	ND				NA	0.25
1,1,1,2-Tetrachloroethane	ND				NA	0.5
1,1,1,2,2-Tetrachloroethane	ND				NA	0.25
Tetrachloroethene	1.3				NA	0.25
1,1,1-Trichloroethane	ND				NA	0.25
1,1,2-Trichloroethane	ND				NA	0.25
Trichloroethene	ND				NA	0.25
Trichlorofluoromethane	ND				NA	0.25
Vinyl Chloride	ND				NA	0.25

**Surrogate Recoveries (%)**

%SS1:	115			
%SS2:	107			
%SS3:	105			
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 1187 Solano	Date Sampled: 05/13/13
		Date Received: 05/13/13
	Client Contact: Bob Clark-Riddell	Date Extracted: 05/13/13
	Client P.O.:	Date Analyzed: 05/13/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1305393

Lab ID	1305393-001A				Reporting Limit for DF =1	
Client ID	INF-V-1185N					
Matrix	A				S	A
DF	1					
Compound	Concentration				µg/kg	µL/L
Bromodichloromethane	ND				NA	0.036
Bromoform	ND				NA	0.024
Bromomethane	ND				NA	0.063
Carbon Tetrachloride	ND				NA	0.039
Chlorobenzene	ND				NA	0.053
Chloroethane	ND				NA	0.093
Chloroform	ND				NA	0.05
Chloromethane	ND				NA	0.12
Dibromochloromethane	ND				NA	0.029
1,2-Dibromoethane (EDB)	ND				NA	0.064
1,2-Dichlorobenzene	ND				NA	0.041
1,3-Dichlorobenzene	ND				NA	0.041
1,4-Dichlorobenzene	ND				NA	0.041
Dichlorodifluoromethane	ND				NA	0.05
1,1-Dichloroethane	ND				NA	0.061
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.061
1,1-Dichloroethene	ND				NA	0.062
cis-1,2-Dichloroethene	ND				NA	0.062
trans-1,2-Dichloroethene	ND				NA	0.062
1,2-Dichloropropane	ND				NA	0.053
cis-1,3-Dichloropropene	ND				NA	0.054
trans-1,3-Dichloropropene	ND				NA	0.054
Freon 113	ND				NA	0.064
Methylene chloride	ND				NA	0.071
1,1,1,2-Tetrachloroethane	ND				NA	0.036
1,1,1,2,2-Tetrachloroethane	ND				NA	0.036
Tetrachloroethene	0.19				NA	0.036
1,1,1-Trichloroethane	ND				NA	0.045
1,1,2-Trichloroethane	ND				NA	0.045
Trichloroethene	ND				NA	0.046
Trichlorofluoromethane	ND				NA	0.044
Vinyl Chloride	ND				NA	0.096

### Surrogate Recoveries (%)

%SS1:	115			
%SS2:	107			
%SS3:	105			
Comments				

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe, and air in µL/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 77315

WorkOrder: 1305393

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	N/A	10	N/A	N/A	N/A	106	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	N/A	10	N/A	N/A	N/A	109	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	N/A	10	N/A	N/A	N/A	108	N/A	N/A	70 - 130
1,1-Dichloroethene	N/A	10	N/A	N/A	N/A	118	N/A	N/A	70 - 130
Trichloroethene	N/A	10	N/A	N/A	N/A	106	N/A	N/A	70 - 130
%SS1:	N/A	25	N/A	N/A	N/A	116	N/A	N/A	70 - 130
%SS2:	N/A	25	N/A	N/A	N/A	108	N/A	N/A	70 - 130
%SS3:	N/A	2.5	N/A	N/A	N/A	116	N/A	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 77315 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305393-001A	05/13/13 11:00 AM	05/13/13	05/13/13 3:53 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 05/17/13
		Date Received: 05/17/13
	Client Contact: Morgan Gillies	Date Reported: 05/20/13
	Client P.O.:	Date Completed: 05/20/13

**WorkOrder: 1305548**

May 20, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **Solano Group**,
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

**Fax: (925) 252-9269**

**Sampler Signature:**

☐ ☐ ☒ ☐ ☐  
RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required?	Coelt (Normal)	No	Write On (DW)	No
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Page 2 of 7



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1305548

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdela Fuente@pa  
cc:  
PO:  
ProjectNo: Solano Group

## Bill to:

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

Requested TAT:

2 days

**Date Received: 05/17/2013****Date Printed: 05/17/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1305548-001	SS-6	Air	5/17/2013 11:20	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_PPMV	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **5/17/2013 2:57:23 PM**

Project Name: **Solano Group**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1305548**

Matrix: Air

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:





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http://www.mccampbell.com / E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 05/17/13
		Date Received: 05/17/13
	Client Contact: Morgan Gillies	Date Extracted: 05/17/13
	Client P.O.:	Date Analyzed: 05/17/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1305548

Lab ID	1305548-001A				Reporting Limit for DF =1	
Client ID	SS-6					
Matrix	A				S	A
DF	1					
<b>Compound</b>	<b>Concentration</b>				µg/kg	µg/L
Bromodichloromethane	ND				NA	0.25
Bromoform	ND				NA	0.25
Bromomethane	ND				NA	0.25
Carbon Tetrachloride	ND				NA	0.25
Chlorobenzene	ND				NA	0.25
Chloroethane	ND				NA	0.25
Chloroform	ND				NA	0.25
Chloromethane	ND				NA	0.25
Dibromochloromethane	ND				NA	0.25
1,2-Dibromoethane (EDB)	ND				NA	0.5
1,2-Dichlorobenzene	ND				NA	0.25
1,3-Dichlorobenzene	ND				NA	0.25
1,4-Dichlorobenzene	ND				NA	0.25
Dichlorodifluoromethane	ND				NA	0.25
1,1-Dichloroethane	ND				NA	0.25
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.25
1,1-Dichloroethene	ND				NA	0.25
cis-1,2-Dichloroethene	ND				NA	0.25
trans-1,2-Dichloroethene	ND				NA	0.25
1,2-Dichloropropane	ND				NA	0.25
cis-1,3-Dichloropropene	ND				NA	0.25
trans-1,3-Dichloropropene	ND				NA	0.25
Freon 113	ND				NA	0.5
Methylene chloride	ND				NA	0.25
1,1,1,2-Tetrachloroethane	ND				NA	0.5
1,1,1,2,2-Tetrachloroethane	ND				NA	0.25
Tetrachloroethene	19				NA	0.25
1,1,1-Trichloroethane	ND				NA	0.25
1,1,2-Trichloroethane	ND				NA	0.25
Trichloroethene	3.8				NA	0.25
Trichlorofluoromethane	ND				NA	0.25
Vinyl Chloride	ND				NA	0.25

**Surrogate Recoveries (%)**

%SS1:	112			
%SS2:	108			
%SS3:	82			
Comments				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



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http://www.mccampbell.com / E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano Group	Date Sampled: 05/17/13
		Date Received: 05/17/13
	Client Contact: Morgan Gillies	Date Extracted: 05/17/13
	Client P.O.:	Date Analyzed: 05/17/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1305548

Lab ID	1305548-001A				Reporting Limit for DF =1	
Client ID	SS-6					
Matrix	A				S	A
DF	1					

Compound	Concentration				µg/kg	µL/L
Bromodichloromethane	ND				NA	0.036
Bromoform	ND				NA	0.024
Bromomethane	ND				NA	0.063
Carbon Tetrachloride	ND				NA	0.039
Chlorobenzene	ND				NA	0.053
Chloroethane	ND				NA	0.093
Chloroform	ND				NA	0.05
Chloromethane	ND				NA	0.12
Dibromochloromethane	ND				NA	0.029
1,2-Dibromoethane (EDB)	ND				NA	0.064
1,2-Dichlorobenzene	ND				NA	0.041
1,3-Dichlorobenzene	ND				NA	0.041
1,4-Dichlorobenzene	ND				NA	0.041
Dichlorodifluoromethane	ND				NA	0.05
1,1-Dichloroethane	ND				NA	0.061
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.061
1,1-Dichloroethene	ND				NA	0.062
cis-1,2-Dichloroethene	ND				NA	0.062
trans-1,2-Dichloroethene	ND				NA	0.062
1,2-Dichloropropane	ND				NA	0.053
cis-1,3-Dichloropropene	ND				NA	0.054
trans-1,3-Dichloropropene	ND				NA	0.054
Freon 113	ND				NA	0.064
Methylene chloride	ND				NA	0.071
1,1,1,2-Tetrachloroethane	ND				NA	0.036
1,1,1,2,2-Tetrachloroethane	ND				NA	0.036
Tetrachloroethene	2.8				NA	0.036
1,1,1-Trichloroethane	ND				NA	0.045
1,1,2-Trichloroethane	ND				NA	0.045
Trichloroethene	0.69				NA	0.046
Trichlorofluoromethane	ND				NA	0.044
Vinyl Chloride	ND				NA	0.096

### Surrogate Recoveries (%)

%SS1:	112			
%SS2:	108			
%SS3:	82			
Comments				

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe, and air in µL/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 77446

WorkOrder: 1305548

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1305521-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	82.1	87.1	5.98	97	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	91.4	97.8	6.71	102	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	91.9	98.7	7.06	111	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	75.8	80.1	5.42	88.2	70 - 130	20	70 - 130
Trichloroethene	ND	10	87	94.9	8.60	105	70 - 130	20	70 - 130
%SS1:	108	25	109	112	2.24	113	70 - 130	20	70 - 130
%SS2:	104	25	105	104	0.866	108	70 - 130	20	70 - 130
%SS3:	79	2.5	87	87	0	87	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 77446 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305548-001A	05/17/13 11:20 AM	05/17/13	05/17/13 4:35 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



**McC Campbell Analytical, Inc.**  
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
<http://www.mcccampbell.com> / E-mail: [main@mcccampbell.com](mailto:main@mcccampbell.com)

## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 05/22/13
		Date Received: 05/23/13
	Client Contact: Bob Clark-Riddell	Date Reported: 05/28/13
	Client P.O.:	Date Completed: 05/28/13

**WorkOrder: 1305757**

May 29, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#1435.002; Solano Group,**
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***





## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1305757

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

2 days

*Date Received:* 05/23/2013*Date Printed:* 05/23/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1305757-001	MW-2	Water	5/22/2013 15:30	<input type="checkbox"/>	A	A										

## Test Legend:

1	8010BMS_W	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.





## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **5/23/2013 6:41:25 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Jena Alfaro**

WorkOrder N°: **1305757** Matrix: Water

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 1.2°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 05/22/13
	Client Contact: Bob Clark-Riddell	Date Received: 05/23/13
	Client P.O.:	Date Extracted 05/24/13
		Date Analyzed 05/24/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1305757

Lab ID	1305757-001A						
Client ID	MW-2						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<1.2	2.5	0.5	Bromoform	ND<1.2	2.5	0.5
Bromomethane	ND<1.2	2.5	0.5	Carbon Tetrachloride	ND<1.2	2.5	0.5
Chlorobenzene	ND<1.2	2.5	0.5	Chloroethane	ND<1.2	2.5	0.5
Chloroform	ND<1.2	2.5	0.5	Chloromethane	ND<1.2	2.5	0.5
Dibromochloromethane	ND<1.2	2.5	0.5	1,2-Dibromoethane (EDB)	ND<1.2	2.5	0.5
1,2-Dichlorobenzene	ND<1.2	2.5	0.5	1,3-Dichlorobenzene	ND<1.2	2.5	0.5
1,4-Dichlorobenzene	ND<1.2	2.5	0.5	Dichlorodifluoromethane	ND<1.2	2.5	0.5
1,1-Dichloroethane	ND<1.2	2.5	0.5	1,2-Dichloroethane (1,2-DCA)	ND<1.2	2.5	0.5
1,1-Dichloroethene	ND<1.2	2.5	0.5	cis-1,2-Dichloroethene	ND<1.2	2.5	0.5
trans-1,2-Dichloroethene	ND<1.2	2.5	0.5	1,2-Dichloropropane	ND<1.2	2.5	0.5
cis-1,3-Dichloropropene	ND<1.2	2.5	0.5	trans-1,3-Dichloropropene	ND<1.2	2.5	0.5
Freon 113	ND<25	2.5	10	Methylene chloride	ND<1.2	2.5	0.5
1,1,1,2-Tetrachloroethane	ND<1.2	2.5	0.5	1,1,2,2-Tetrachloroethane	ND<1.2	2.5	0.5
Tetrachloroethene	48	2.5	0.5	1,1,1-Trichloroethane	ND<1.2	2.5	0.5
1,1,2-Trichloroethane	ND<1.2	2.5	0.5	Trichloroethene	ND<1.2	2.5	0.5
Trichlorofluoromethane	ND<1.2	2.5	0.5	Vinyl Chloride	ND<1.2	2.5	0.5

**Surrogate Recoveries (%)**

%SS1:	111	%SS2:	111
%SS3:	95		

Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 77633

WorkOrder: 1305757

EPA Method: SW8260B

Extraction: SW5030B

Spiked Sample ID: 1305754-001A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	99.8	104	3.70	103	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	117	116	1.03	104	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	99	98.4	0.587	95.7	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	94.8	100	5.51	97.3	70 - 130	20	70 - 130
Trichloroethene	ND	10	99.8	103	3.39	98.8	70 - 130	20	70 - 130
%SS1:	112	25	113	111	1.86	108	70 - 130	20	70 - 130
%SS2:	111	25	108	109	1.03	111	70 - 130	20	70 - 130
%SS3:	95	2.5	95	95	0	96	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 77633 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305757-001A	05/22/13 3:30 PM	05/24/13	05/24/13 8:56 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 05/24/13
		Date Received: 05/28/13
	Client Contact: Bob Clark-Riddell	Date Reported: 05/31/13
	Client P.O.:	Date Completed: 05/30/13

**WorkOrder: 1305839**

May 31, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#1435.002; Solano Group,**
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*





## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1305839

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

3 days

**Date Received:** 05/28/2013**Date Printed:** 05/28/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1305839-001	A-8-5'	Soil	5/24/2013 15:00	<input type="checkbox"/>	A	A										

## Test Legend:

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.





## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **5/28/2013 3:34:55 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Jena Alfaro**

WorkOrder N°: **1305839** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 3.6°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 05/24/13
	Client Contact: Bob Clark-Riddell	Date Received: 05/28/13
	Client P.O.:	Date Extracted 05/28/13
		Date Analyzed 05/29/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1305839

Lab ID	1305839-001A						
Client ID	A-8-5'						
Matrix	Soil						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.0093	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	103	%SS2:	106
%SS3:	96		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 77754

WorkOrder: 1305839

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1305826-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	87.9	88.7	0.985	86.7	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	87.9	87.1	0.898	93.4	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	75.6	76.6	1.27	106	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	73.4	73.4	0	82.2	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	83.3	84.3	1.20	95.2	60 - 116	30	70 - 130
%SS1:	108	0.12	111	112	0.392	100	70 - 130	30	70 - 130
%SS2:	112	0.12	111	112	0.807	107	70 - 130	30	70 - 130
%SS3:	115	0.012	115	116	1.04	102	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 77754 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305839-001A	05/24/13 3:00 PM	05/28/13	05/29/13 4:01 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 05/24/13
		Date Received: 05/28/13
	Client Contact: Bob Clark-Riddell	Date Reported: 05/30/13
	Client P.O.:	Date Completed: 05/30/13

**WorkOrder: 1305834**

May 30, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#1435.002; Solano Group,**
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*





## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1305834

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

3 days

*Date Received:* 05/28/2013*Date Printed:* 05/28/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1305834-001	MW-3	Water	5/24/2013 14:50	<input type="checkbox"/>	A	A										

## Test Legend:

1	8010BMS_W	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.





## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **5/28/2013 3:12:46 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Jena Alfaro**

WorkOrder N°: **1305834** Matrix: Water

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 3.6°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 05/24/13
	Client Contact: Bob Clark-Riddell	Date Received: 05/28/13
	Client P.O.:	Date Extracted 05/29/13
		Date Analyzed 05/29/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1305834

Lab ID	1305834-001A						
Client ID	MW-3						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<2.5	5.0	0.5	Bromoform	ND<2.5	5.0	0.5
Bromomethane	ND<2.5	5.0	0.5	Carbon Tetrachloride	ND<2.5	5.0	0.5
Chlorobenzene	ND<2.5	5.0	0.5	Chloroethane	ND<2.5	5.0	0.5
Chloroform	ND<2.5	5.0	0.5	Chloromethane	ND<2.5	5.0	0.5
Dibromochloromethane	ND<2.5	5.0	0.5	1,2-Dibromoethane (EDB)	ND<2.5	5.0	0.5
1,2-Dichlorobenzene	ND<2.5	5.0	0.5	1,3-Dichlorobenzene	ND<2.5	5.0	0.5
1,4-Dichlorobenzene	ND<2.5	5.0	0.5	Dichlorodifluoromethane	ND<2.5	5.0	0.5
1,1-Dichloroethane	ND<2.5	5.0	0.5	1,2-Dichloroethane (1,2-DCA)	ND<2.5	5.0	0.5
1,1-Dichloroethene	ND<2.5	5.0	0.5	cis-1,2-Dichloroethene	ND<2.5	5.0	0.5
trans-1,2-Dichloroethene	ND<2.5	5.0	0.5	1,2-Dichloropropane	ND<2.5	5.0	0.5
cis-1,3-Dichloropropene	ND<2.5	5.0	0.5	trans-1,3-Dichloropropene	ND<2.5	5.0	0.5
Freon 113	ND<50	5.0	10	Methylene chloride	ND<2.5	5.0	0.5
1,1,1,2-Tetrachloroethane	ND<2.5	5.0	0.5	1,1,2,2-Tetrachloroethane	ND<2.5	5.0	0.5
Tetrachloroethene	92	5.0	0.5	1,1,1-Trichloroethane	ND<2.5	5.0	0.5
1,1,2-Trichloroethane	ND<2.5	5.0	0.5	Trichloroethene	2.9	5.0	0.5
Trichlorofluoromethane	ND<2.5	5.0	0.5	Vinyl Chloride	ND<2.5	5.0	0.5

**Surrogate Recoveries (%)**

%SS1:	109	%SS2:	109
%SS3:	89		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 77821

WorkOrder: 1305834

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1305841-001A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	20	99	97.6	1.41	102	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	20	109	109	0	107	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	20	96.9	96.1	0.834	93.7	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	20	92.1	92.9	0.848	93.6	70 - 130	20	70 - 130
Trichloroethene	ND	20	96.5	96.9	0.374	98.3	70 - 130	20	70 - 130
%SS1:	109	25	111	113	1.36	108	70 - 130	20	70 - 130
%SS2:	110	25	109	110	0.260	111	70 - 130	20	70 - 130
%SS3:	90	2.5	92	95	3.16	92	70 - 130	20	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 77821 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305834-001A	05/24/13 2:50 PM	05/29/13	05/29/13 10:49 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 1435.002; Solano Group	Date Sampled: 06/10/13
		Date Received: 06/11/13
	Client Contact: Bob Clark-Riddell	Date Reported: 06/13/13
	Client P.O.:	Date Completed: 06/13/13

**WorkOrder: 1306273**

June 13, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **1435.002; Solano Group**,
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing  
McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

Page 2 of 6

# McC Campbell Analytical, Inc.



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 1306273

ClientCode: PEO

☐ WaterTrax

☐ WriteOn

☒ EDF

☐ Excel

☐ EQuIS

☒ Email

☐ HardCopy

☐ ThirdParty

☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: 1435.002; Solano Group

## Bill to:

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

## Requested TAT:

3 days

**Date Received:** 06/11/2013

**Date Printed:** 06/11/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1306273-001	MW-1	Water	6/10/2013 17:00	<input type="checkbox"/>	A	A										

## Test Legend:

1	8010BMS_W	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.





## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **6/11/2013 4:14:39 PM**

Project Name: **1435.002; Solano Group**

Login Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1306273** Matrix: Water

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 7°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: 1435.002; Solano Group	Date Sampled: 06/10/13
	Client Contact: Bob Clark-Riddell	Date Received: 06/11/13
	Client P.O.:	Date Extracted 06/13/13
		Date Analyzed 06/13/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1306273

Lab ID	1306273-001A						
Client ID	MW-1						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<10	20	0.5	Bromoform	ND<10	20	0.5
Bromomethane	ND<10	20	0.5	Carbon Tetrachloride	ND<10	20	0.5
Chlorobenzene	ND<10	20	0.5	Chloroethane	ND<10	20	0.5
Chloroform	ND<10	20	0.5	Chloromethane	ND<10	20	0.5
Dibromochloromethane	ND<10	20	0.5	1,2-Dibromoethane (EDB)	ND<10	20	0.5
1,2-Dichlorobenzene	ND<10	20	0.5	1,3-Dichlorobenzene	ND<10	20	0.5
1,4-Dichlorobenzene	ND<10	20	0.5	Dichlorodifluoromethane	ND<10	20	0.5
1,1-Dichloroethane	ND<10	20	0.5	1,2-Dichloroethane (1,2-DCA)	ND<10	20	0.5
1,1-Dichloroethene	ND<10	20	0.5	cis-1,2-Dichloroethene	ND<10	20	0.5
trans-1,2-Dichloroethene	ND<10	20	0.5	1,2-Dichloropropane	ND<10	20	0.5
cis-1,3-Dichloropropene	ND<10	20	0.5	trans-1,3-Dichloropropene	ND<10	20	0.5
Freon 113	ND<200	20	10	Methylene chloride	ND<10	20	0.5
1,1,1,2-Tetrachloroethane	ND<10	20	0.5	1,1,2,2-Tetrachloroethane	ND<10	20	0.5
Tetrachloroethene	200	20	0.5	1,1,1-Trichloroethane	ND<10	20	0.5
1,1,2-Trichloroethane	ND<10	20	0.5	Trichloroethene	42	20	0.5
Trichlorofluoromethane	ND<10	20	0.5	Vinyl Chloride	ND<10	20	0.5

**Surrogate Recoveries (%)**

%SS1:	104	%SS2:	109
%SS3:	96		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 78258

WorkOrder: 1306273

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1306241-015B		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	96	95.6	0.352	89.7	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	105	104	0.551	87.3	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	93.5	93.7	0.223	87.3	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	92.1	91.8	0.281	89.8	70 - 130	20	70 - 130
Trichloroethene	ND	10	95.4	96.6	1.25	87.1	70 - 130	20	70 - 130
%SS1:	102	25	109	110	0.891	103	70 - 130	20	70 - 130
%SS2:	107	25	108	104	2.88	110	70 - 130	20	70 - 130
%SS3:	92	2.5	92	93	1.32	96	70 - 130	20	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 78258 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1306273-001A	06/10/13 5:00 PM	06/13/13	06/13/13 12:19 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



**McC Campbell Analytical, Inc.**  
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
<http://www.mcccampbell.com> / E-mail: [main@mcccampbell.com](mailto:main@mcccampbell.com)

## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
		Date Received: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Reported: 07/10/13
	Client P.O.:	Date Completed: 07/10/13

**WorkOrder: 1307071**

July 11, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the **18** analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***

1307071

# McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Road  
Pittsburg, CA 94565

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
Telephone: (925) 252-9262 Fax: (925) 252-9269

## CHAIN OF CUSTODY RECORD

TURN AROUND TIME

☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? Coelt (Normal)

No Write On (DW) No

Report To: Bob Clark-Riddell Bill To: Pangea  
Company: Pangea Environmental Services, Inc.  
1710 Franklin Street, Suite 200, Oakland, CA 94612  
E-Mail: [briddell@pangeaenv.com](mailto:briddell@pangeaenv.com)  
Tele: (510) 435-8664 Fax: (510) 836-3709  
Project #: 1435.002 Project Name: Solano Group  
Project Location: 1187 Solano Ave, Albany  
Sampler Signature: *[Signature]*

SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				TPH/g/BTEX (8015Cm/8021B)	Five fuel oxygenates (8260B)	VOCs by EPA Method 8010	VOCs by EPA Method 8260	Analysis Request	Other	Comments		
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other									
B-31-1	B-31	7/2/13	1100	1	T	X					X					X					Filter Samples for Metals analysis: Yes / No		
B-31-3	↓		1108													X							
B-31-5	↓		1112													X							
B-32-1	B-32		1220													X							
B-32-3	↓		1228													X							
B-32-5	↓		1236													X							
B-33-3	B-33		1302													X							
B-33-5	↓		1311													X							
B-34-1	B-34		1000													X							
B-34-3	↓		1010													X							
B-34-5	↓		1021													X							
B-33-1	B-33		1255													X							
A-9-3	A-9		0937													X							
A-9-6	↓		1007													X							
Relinquished By: <i>[Signature]</i>		Date: 7/2/13	Time: 1740	Received By: <i>[Signature]</i>		ICE/r/s															COMMENTS:		
Relinquished By:		Date:	Time:	Received By:		GOOD CONDITION																	
						HEAD SPACE ABSENT																	
						DECHLORINATED IN LAB																	
						APPROPRIATE CONTAINERS																	
						PRESERVED IN LAB																	
Relinquished By:		Date:	Time:	Received By:		VOAS O&G METALS OTHER																	
						PRESERVATION pH<2															1/2		



1534 Willow Pass Road  
Pittsburg, CA 94565  
Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
Telephone: (925) 252-9262 Fax: (925) 252-9269

## TURN AROUND TIME

EDF Required? Coelt (Normal)

**RUSH**

24 HR

48 HU

72 HR

5 DAY

No

**Write On (DW)**

No

Page 3 of 25



# McC Campbell Analytical, Inc.



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

Page 1 of 2

WorkOrder: 1307071

ClientCode: PEO

☐ WaterTrax

☐ WriteOn

☒ EDF

☐ Excel

☐ EQUIS

☒ Email

☐ HardCopy

☐ ThirdParty

☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com

cc:

PO:

ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

5 days

**Date Received:** 07/02/2013

**Date Printed:** 07/02/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1307071-001	B-31-1	Soil	7/2/2013 11:00	<input type="checkbox"/>	A	A										
1307071-002	B-31-3	Soil	7/2/2013 11:08	<input type="checkbox"/>	A											
1307071-003	B-31-5	Soil	7/2/2013 11:12	<input type="checkbox"/>	A											
1307071-004	B-32-1	Soil	7/2/2013 12:20	<input type="checkbox"/>	A											
1307071-005	B-32-3	Soil	7/2/2013 12:28	<input type="checkbox"/>	A											
1307071-006	B-32-5	Soil	7/2/2013 12:36	<input type="checkbox"/>	A											
1307071-007	B-33-3	Soil	7/2/2013 13:02	<input type="checkbox"/>	A											
1307071-009	B-34-1	Soil	7/2/2013 10:00	<input type="checkbox"/>	A											
1307071-010	B-34-3	Soil	7/2/2013 10:10	<input type="checkbox"/>	A											
1307071-011	B-34-5	Soil	7/2/2013 10:21	<input type="checkbox"/>	A											
1307071-012	B-33-1	Soil	7/2/2013 12:55	<input type="checkbox"/>	A											
1307071-013	A-9-3	Soil	7/2/2013 9:37	<input type="checkbox"/>	A											
1307071-015	A-9-9	Soil	7/2/2013 11:00	<input type="checkbox"/>	A											
1307071-016	A-9-12	Soil	7/2/2013 12:23	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S
6	
11	

2	PREDF REPORT
7	
12	

3	
8	

4	
9	

5	
10	

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1307071

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

5 days

*Date Received:* 07/02/2013*Date Printed:* 07/02/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1307071-017	A-10-3	Soil	7/2/2013 10:45	<input type="checkbox"/>	A											
1307071-018	A-10-6.5	Soil	7/2/2013 11:27	<input type="checkbox"/>	A											
1307071-020	A-10-12	Soil	7/2/2013 13:52	<input type="checkbox"/>	A											
1307071-022	A-11-3	Soil	7/2/2013 13:45	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **7/2/2013 6:21:43 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Jena Alfaro**

WorkOrder N°: **1307071**

Matrix: Soil

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 5.8°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/02/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-001A
Client ID	B-31-1
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	95	%SS2:	108
%SS3:	89		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/02/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-002A
Client ID	B-31-3
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	94	%SS2:	109
%SS3:	85		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/02/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-003A
Client ID	B-31-5
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	93	%SS2:	106
%SS3:	87		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/02/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-004A
Client ID	B-32-1
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.084	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	91	%SS2:	110
%SS3:	84		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/03/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-005A
Client ID	B-32-3
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	89	%SS2:	109
%SS3:	82		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/04/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-006A
Client ID	B-32-5
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	90	%SS2:	108
%SS3:	76		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/03/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-007A
Client ID	B-33-3
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	88	%SS2:	108
%SS3:	76		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/03/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-009A
Client ID	B-34-1
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.011	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	87	%SS2:	106
%SS3:	75		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/03/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-010A
Client ID	B-34-3
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	88	%SS2:	107
%SS3:	75		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/03/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-011A
Client ID	B-34-5
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	90	%SS2:	105
%SS3:	74		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/03/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-012A
Client ID	B-33-1
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND<0.050	10	0.005	Bromoform	ND<0.050	10	0.005
Bromomethane	ND<0.050	10	0.005	Carbon Tetrachloride	ND<0.050	10	0.005
Chlorobenzene	ND<0.050	10	0.005	Chloroethane	ND<0.050	10	0.005
Chloroform	ND<0.050	10	0.005	Chloromethane	ND<0.050	10	0.005
Dibromochloromethane	ND<0.050	10	0.005	1,2-Dibromoethane (EDB)	ND<0.040	10	0.004
1,2-Dichlorobenzene	ND<0.050	10	0.005	1,3-Dichlorobenzene	ND<0.050	10	0.005
1,4-Dichlorobenzene	ND<0.050	10	0.005	Dichlorodifluoromethane	ND<0.050	10	0.005
1,1-Dichloroethane	ND<0.050	10	0.005	1,2-Dichloroethane (1,2-DCA)	ND<0.040	10	0.004
1,1-Dichloroethene	ND<0.050	10	0.005	cis-1,2-Dichloroethene	ND<0.050	10	0.005
trans-1,2-Dichloroethene	ND<0.050	10	0.005	1,2-Dichloropropane	ND<0.050	10	0.005
cis-1,3-Dichloropropene	ND<0.050	10	0.005	trans-1,3-Dichloropropene	ND<0.050	10	0.005
Freon 113	ND<1.0	10	0.1	Methylene chloride	ND<0.050	10	0.005
1,1,1,2-Tetrachloroethane	ND<0.050	10	0.005	1,1,2,2-Tetrachloroethane	ND<0.050	10	0.005
Tetrachloroethene	0.70	10	0.005	1,1,1-Trichloroethane	ND<0.050	10	0.005
1,1,2-Trichloroethane	ND<0.050	10	0.005	Trichloroethene	0.16	10	0.005
Trichlorofluoromethane	ND<0.050	10	0.005	Vinyl Chloride	ND<0.050	10	0.005

### Surrogate Recoveries (%)

%SS1:	99	%SS2:	98
%SS3:	84		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/03/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-013A
Client ID	A-9-3
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.041	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	89	%SS2:	104
%SS3:	73		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/03/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-015A
Client ID	A-9-9
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	90	%SS2:	105
%SS3:	75		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/03/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-016A
Client ID	A-9-12
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	92	%SS2:	104
%SS3:	73		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/03/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-017A
Client ID	A-10-3
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.045	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	93	%SS2:	103
%SS3:	71		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/03/13

**Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-018A
Client ID	A-10-6.5
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.0079	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	94	%SS2:	103
%SS3:	72		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/10/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-020A
Client ID	A-10-12
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	93	%SS2:	87
%SS3:	100		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 07/02/13
	Client Contact: Bob Clark-Riddell	Date Received: 07/02/13
	Client P.O.:	Date Extracted 07/02/13
		Date Analyzed 07/06/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307071

Lab ID	1307071-022A
Client ID	A-11-3
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	98	%SS2:	101
%SS3:	88		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 78971

WorkOrder: 1307071

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1307071-001A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	87.6	84.3	3.84	84.7	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	87.8	85.5	2.72	84.5	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	82	78	4.91	79.6	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	85	79.5	6.68	81.8	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	86.6	82.1	5.29	83.3	60 - 116	30	70 - 130
%SS1:	95	0.12	96	95	1.40	96	70 - 130	30	70 - 130
%SS2:	108	0.12	89	90	0.269	88	70 - 130	30	70 - 130
%SS3:	89	0.012	103	105	1.13	102	70 - 130	30	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 78971 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1307071-001A	07/02/13 11:00 AM	07/02/13	07/02/13 9:45 PM	1307071-002A	07/02/13 11:08 AM	07/02/13	07/02/13 10:24 PM
1307071-003A	07/02/13 11:12 AM	07/02/13	07/02/13 11:03 PM	1307071-004A	07/02/13 12:20 PM	07/02/13	07/02/13 11:42 PM
1307071-005A	07/02/13 12:28 PM	07/02/13	07/03/13 12:21 AM	1307071-006A	07/02/13 12:36 PM	07/02/13	07/04/13
1307071-007A	07/02/13 1:02 PM	07/02/13	07/03/13 1:39 AM	1307071-009A	07/02/13 10:00 AM	07/02/13	07/03/13 2:19 AM
1307071-010A	07/02/13 10:10 AM	07/02/13	07/03/13 2:58 AM	1307071-011A	07/02/13 10:21 AM	07/02/13	07/03/13 3:39 AM
1307071-012A	07/02/13 12:55 PM	07/02/13	07/03/13 1:56 PM	1307071-013A	07/02/13 9:37 AM	07/02/13	07/03/13 4:58 AM
1307071-015A	07/02/13 11:00 AM	07/02/13	07/03/13 5:38 AM	1307071-016A	07/02/13 12:23 PM	07/02/13	07/03/13 4:29 PM
1307071-017A	07/02/13 10:45 AM	07/02/13	07/03/13 5:10 PM	1307071-018A	07/02/13 11:27 AM	07/02/13	07/03/13 5:51 PM
1307071-020A	07/02/13 1:52 PM	07/02/13	07/10/13 4:55 PM	1307071-022A	07/02/13 1:45 PM	07/02/13	07/06/13 6:52 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



# McC Campbell Analytical, Inc.

*"When Quality Counts"*

## Analytical Report

**WorkOrder:** 1307070 **Amended:** 10/15/2013

**Report Created for:** Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Project Contact:** Morgan Gillies  
**Project P.O.:**  
**Project Name:** #1435.002; Solano Group

**Project Received:** 07/02/2013

Analytical Report reviewed & approved for release on 07/08/2013 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*





## Glossary of Terms & Qualifier Definitions

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**WorkOrder:** 1307070

<u>Glossary Abbreviation</u>	<u>Description</u>
95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit
RPD	Relative Percent Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SSPO-1	1307070-001A	Air	07/02/2013 13:55	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 12:24
Bromodichloromethane	ND		0.25	1	07/03/2013 12:24
Bromoform	ND		0.25	1	07/03/2013 12:24
Bromomethane	ND		0.25	1	07/03/2013 12:24
Carbon Tetrachloride	ND		0.25	1	07/03/2013 12:24
Chlorobenzene	ND		0.25	1	07/03/2013 12:24
Chloroethane	ND		0.25	1	07/03/2013 12:24
Chloroform	ND		0.25	1	07/03/2013 12:24
Chloromethane	ND		0.25	1	07/03/2013 12:24
Dibromochloromethane	ND		0.25	1	07/03/2013 12:24
1,2-Dibromoethane (EDB)	ND		0.50	1	07/03/2013 12:24
1,2-Dichlorobenzene	ND		0.25	1	07/03/2013 12:24
1,3-Dichlorobenzene	ND		0.25	1	07/03/2013 12:24
1,4-Dichlorobenzene	ND		0.25	1	07/03/2013 12:24
Dichlorodifluoromethane	ND		0.25	1	07/03/2013 12:24
1,1-Dichloroethane	ND		0.25	1	07/03/2013 12:24
1,2-Dichloroethane (1,2-DCA)	ND		0.25	1	07/03/2013 12:24
1,1-Dichloroethene	ND		0.25	1	07/03/2013 12:24
cis-1,2-Dichloroethene	ND		0.25	1	07/03/2013 12:24
trans-1,2-Dichloroethene	ND		0.25	1	07/03/2013 12:24
1,2-Dichloropropane	ND		0.25	1	07/03/2013 12:24
cis-1,3-Dichloropropene	ND		0.25	1	07/03/2013 12:24
trans-1,3-Dichloropropene	ND		0.25	1	07/03/2013 12:24
Freon 113	ND		0.50	1	07/03/2013 12:24
Ethylbenzene	ND		0.50	1	07/03/2013 12:24
Methylene chloride	ND		0.25	1	07/03/2013 12:24
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/03/2013 12:24
1,1,2,2-Tetrachloroethane	ND		0.25	1	07/03/2013 12:24
Tetrachloroethene	0.73		0.25	1	07/03/2013 12:24
Toluene	ND		0.50	1	07/03/2013 12:24
1,1,1-Trichloroethane	ND		0.25	1	07/03/2013 12:24
1,1,2-Trichloroethane	ND		0.25	1	07/03/2013 12:24
Trichloroethene	ND		0.25	1	07/03/2013 12:24
Trichlorofluoromethane	ND		0.25	1	07/03/2013 12:24
Vinyl Chloride	ND		0.25	1	07/03/2013 12:24
Xylenes	ND		0.50	1	07/03/2013 12:24

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SSPO-1	1307070-001A	Air	07/02/2013 13:55	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	94		70-130		07/03/2013 12:24
Toluene-d8	95		70-130		07/03/2013 12:24
4-BFB	73		70-130		07/03/2013 12:24

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
1185 Hall	1307070-002A	Air	07/02/2013 15:30	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 13:04
Bromodichloromethane	ND		0.25	1	07/03/2013 13:04
Bromoform	ND		0.25	1	07/03/2013 13:04
Bromomethane	ND		0.25	1	07/03/2013 13:04
Carbon Tetrachloride	ND		0.25	1	07/03/2013 13:04
Chlorobenzene	ND		0.25	1	07/03/2013 13:04
Chloroethane	ND		0.25	1	07/03/2013 13:04
Chloroform	ND		0.25	1	07/03/2013 13:04
Chloromethane	ND		0.25	1	07/03/2013 13:04
Dibromochloromethane	ND		0.25	1	07/03/2013 13:04
1,2-Dibromoethane (EDB)	ND		0.50	1	07/03/2013 13:04
1,2-Dichlorobenzene	ND		0.25	1	07/03/2013 13:04
1,3-Dichlorobenzene	ND		0.25	1	07/03/2013 13:04
1,4-Dichlorobenzene	ND		0.25	1	07/03/2013 13:04
Dichlorodifluoromethane	ND		0.25	1	07/03/2013 13:04
1,1-Dichloroethane	ND		0.25	1	07/03/2013 13:04
1,2-Dichloroethane (1,2-DCA)	ND		0.25	1	07/03/2013 13:04
1,1-Dichloroethene	ND		0.25	1	07/03/2013 13:04
cis-1,2-Dichloroethene	ND		0.25	1	07/03/2013 13:04
trans-1,2-Dichloroethene	ND		0.25	1	07/03/2013 13:04
1,2-Dichloropropane	ND		0.25	1	07/03/2013 13:04
cis-1,3-Dichloropropene	ND		0.25	1	07/03/2013 13:04
trans-1,3-Dichloropropene	ND		0.25	1	07/03/2013 13:04
Freon 113	ND		0.50	1	07/03/2013 13:04
Ethylbenzene	ND		0.50	1	07/03/2013 13:04
Methylene chloride	ND		0.25	1	07/03/2013 13:04
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/03/2013 13:04
1,1,2,2-Tetrachloroethane	ND		0.25	1	07/03/2013 13:04
Tetrachloroethene	14		0.25	1	07/03/2013 13:04
Toluene	ND		0.50	1	07/03/2013 13:04
1,1,1-Trichloroethane	ND		0.25	1	07/03/2013 13:04
1,1,2-Trichloroethane	ND		0.25	1	07/03/2013 13:04
Trichloroethene	0.74		0.25	1	07/03/2013 13:04
Trichlorofluoromethane	ND		0.25	1	07/03/2013 13:04
Vinyl Chloride	ND		0.25	1	07/03/2013 13:04
Xylenes	ND		0.50	1	07/03/2013 13:04

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
1185 Hall	1307070-002A	Air	07/02/2013 15:30	GC18	79056

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	96	70-130		07/03/2013 13:04
Toluene-d8	94	70-130		07/03/2013 13:04
4-BFB	71	70-130		07/03/2013 13:04

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
1185 Bath	1307070-003A	Air	07/02/2013 15:00	GC18	79056

Analytes	Result	RL	DF	Date Analyzed
Benzene	ND	0.50	1	07/03/2013 13:45
Bromodichloromethane	ND	0.25	1	07/03/2013 13:45
Bromoform	ND	0.25	1	07/03/2013 13:45
Bromomethane	ND	0.25	1	07/03/2013 13:45
Carbon Tetrachloride	ND	0.25	1	07/03/2013 13:45
Chlorobenzene	ND	0.25	1	07/03/2013 13:45
Chloroethane	ND	0.25	1	07/03/2013 13:45
Chloroform	ND	0.25	1	07/03/2013 13:45
Chloromethane	ND	0.25	1	07/03/2013 13:45
Dibromochloromethane	ND	0.25	1	07/03/2013 13:45
1,2-Dibromoethane (EDB)	ND	0.50	1	07/03/2013 13:45
1,2-Dichlorobenzene	ND	0.25	1	07/03/2013 13:45
1,3-Dichlorobenzene	ND	0.25	1	07/03/2013 13:45
1,4-Dichlorobenzene	ND	0.25	1	07/03/2013 13:45
Dichlorodifluoromethane	ND	0.25	1	07/03/2013 13:45
1,1-Dichloroethane	ND	0.25	1	07/03/2013 13:45
1,2-Dichloroethane (1,2-DCA)	ND	0.25	1	07/03/2013 13:45
1,1-Dichloroethene	ND	0.25	1	07/03/2013 13:45
cis-1,2-Dichloroethene	ND	0.25	1	07/03/2013 13:45
trans-1,2-Dichloroethene	ND	0.25	1	07/03/2013 13:45
1,2-Dichloropropane	ND	0.25	1	07/03/2013 13:45
cis-1,3-Dichloropropene	ND	0.25	1	07/03/2013 13:45
trans-1,3-Dichloropropene	ND	0.25	1	07/03/2013 13:45
Freon 113	ND	0.50	1	07/03/2013 13:45
Ethylbenzene	ND	0.50	1	07/03/2013 13:45
Methylene chloride	ND	0.25	1	07/03/2013 13:45
1,1,1,2-Tetrachloroethane	ND	0.50	1	07/03/2013 13:45
1,1,2,2-Tetrachloroethane	ND	0.25	1	07/03/2013 13:45
Tetrachloroethene	2.7	0.25	1	07/03/2013 13:45
Toluene	ND	0.50	1	07/03/2013 13:45
1,1,1-Trichloroethane	ND	0.25	1	07/03/2013 13:45
1,1,2-Trichloroethane	ND	0.25	1	07/03/2013 13:45
Trichloroethene	ND	0.25	1	07/03/2013 13:45
Trichlorofluoromethane	ND	0.25	1	07/03/2013 13:45
Vinyl Chloride	ND	0.25	1	07/03/2013 13:45
Xylenes	ND	0.50	1	07/03/2013 13:45

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
1185 Bath	1307070-003A	Air	07/02/2013 15:00	GC18	79056

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	95	70-130		07/03/2013 13:45
Toluene-d8	95	70-130		07/03/2013 13:45
4-BFB	70	70-130		07/03/2013 13:45

(Cont.)





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-15	1307070-004A	Air	07/02/2013 13:30	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 11:37
Bromodichloromethane	ND		0.25	1	07/03/2013 11:37
Bromoform	ND		0.25	1	07/03/2013 11:37
Bromomethane	ND		0.25	1	07/03/2013 11:37
Carbon Tetrachloride	ND		0.25	1	07/03/2013 11:37
Chlorobenzene	ND		0.25	1	07/03/2013 11:37
Chloroethane	ND		0.25	1	07/03/2013 11:37
Chloroform	ND		0.25	1	07/03/2013 11:37
Chloromethane	ND		0.25	1	07/03/2013 11:37
Dibromochloromethane	ND		0.25	1	07/03/2013 11:37
1,2-Dibromoethane (EDB)	ND		0.50	1	07/03/2013 11:37
1,2-Dichlorobenzene	ND		0.25	1	07/03/2013 11:37
1,3-Dichlorobenzene	ND		0.25	1	07/03/2013 11:37
1,4-Dichlorobenzene	ND		0.25	1	07/03/2013 11:37
Dichlorodifluoromethane	ND		0.25	1	07/03/2013 11:37
1,1-Dichloroethane	ND		0.25	1	07/03/2013 11:37
1,2-Dichloroethane (1,2-DCA)	ND		0.25	1	07/03/2013 11:37
1,1-Dichloroethene	ND		0.25	1	07/03/2013 11:37
cis-1,2-Dichloroethene	ND		0.25	1	07/03/2013 11:37
trans-1,2-Dichloroethene	ND		0.25	1	07/03/2013 11:37
1,2-Dichloropropane	ND		0.25	1	07/03/2013 11:37
cis-1,3-Dichloropropene	ND		0.25	1	07/03/2013 11:37
trans-1,3-Dichloropropene	ND		0.25	1	07/03/2013 11:37
Freon 113	ND		0.50	1	07/03/2013 11:37
Ethylbenzene	ND		0.50	1	07/03/2013 11:37
Methylene chloride	ND		0.25	1	07/03/2013 11:37
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/03/2013 11:37
1,1,2,2-Tetrachloroethane	ND		0.25	1	07/03/2013 11:37
Tetrachloroethene	0.34		0.25	1	07/03/2013 11:37
Toluene	ND		0.50	1	07/03/2013 11:37
1,1,1-Trichloroethane	ND		0.25	1	07/03/2013 11:37
1,1,2-Trichloroethane	ND		0.25	1	07/03/2013 11:37
Trichloroethene	ND		0.25	1	07/03/2013 11:37
Trichlorofluoromethane	ND		0.25	1	07/03/2013 11:37
Vinyl Chloride	ND		0.25	1	07/03/2013 11:37
Xylenes	ND		0.50	1	07/03/2013 11:37

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-15	1307070-004A	Air	07/02/2013 13:30	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	94		70-130		07/03/2013 11:37
Toluene-d8	95		70-130		07/03/2013 11:37
4-BFB	72		70-130		07/03/2013 11:37

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-7	1307070-005A	Air	07/02/2013 12:45	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 14:25
Bromodichloromethane	ND		0.25	1	07/03/2013 14:25
Bromoform	ND		0.25	1	07/03/2013 14:25
Bromomethane	ND		0.25	1	07/03/2013 14:25
Carbon Tetrachloride	ND		0.25	1	07/03/2013 14:25
Chlorobenzene	ND		0.25	1	07/03/2013 14:25
Chloroethane	ND		0.25	1	07/03/2013 14:25
Chloroform	ND		0.25	1	07/03/2013 14:25
Chloromethane	ND		0.25	1	07/03/2013 14:25
Dibromochloromethane	ND		0.25	1	07/03/2013 14:25
1,2-Dibromoethane (EDB)	ND		0.50	1	07/03/2013 14:25
1,2-Dichlorobenzene	ND		0.25	1	07/03/2013 14:25
1,3-Dichlorobenzene	ND		0.25	1	07/03/2013 14:25
1,4-Dichlorobenzene	ND		0.25	1	07/03/2013 14:25
Dichlorodifluoromethane	ND		0.25	1	07/03/2013 14:25
1,1-Dichloroethane	ND		0.25	1	07/03/2013 14:25
1,2-Dichloroethane (1,2-DCA)	ND		0.25	1	07/03/2013 14:25
1,1-Dichloroethene	ND		0.25	1	07/03/2013 14:25
cis-1,2-Dichloroethene	ND		0.25	1	07/03/2013 14:25
trans-1,2-Dichloroethene	ND		0.25	1	07/03/2013 14:25
1,2-Dichloropropane	ND		0.25	1	07/03/2013 14:25
cis-1,3-Dichloropropene	ND		0.25	1	07/03/2013 14:25
trans-1,3-Dichloropropene	ND		0.25	1	07/03/2013 14:25
Freon 113	ND		0.50	1	07/03/2013 14:25
Ethylbenzene	ND		0.50	1	07/03/2013 14:25
Methylene chloride	ND		0.25	1	07/03/2013 14:25
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/03/2013 14:25
1,1,2,2-Tetrachloroethane	ND		0.25	1	07/03/2013 14:25
Tetrachloroethene	0.68		0.25	1	07/03/2013 14:25
Toluene	ND		0.50	1	07/03/2013 14:25
1,1,1-Trichloroethane	ND		0.25	1	07/03/2013 14:25
1,1,2-Trichloroethane	ND		0.25	1	07/03/2013 14:25
Trichloroethene	ND		0.25	1	07/03/2013 14:25
Trichlorofluoromethane	ND		0.25	1	07/03/2013 14:25
Vinyl Chloride	ND		0.25	1	07/03/2013 14:25
Xylenes	ND		0.50	1	07/03/2013 14:25

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-7	1307070-005A	Air	07/02/2013 12:45	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	96		70-130		07/03/2013 14:25
Toluene-d8	91		70-130		07/03/2013 14:25
4-BFB	85		70-130		07/03/2013 14:25

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-16	1307070-006A	Air	07/02/2013 13:10	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 15:06
Bromodichloromethane	ND		0.25	1	07/03/2013 15:06
Bromoform	ND		0.25	1	07/03/2013 15:06
Bromomethane	ND		0.25	1	07/03/2013 15:06
Carbon Tetrachloride	ND		0.25	1	07/03/2013 15:06
Chlorobenzene	ND		0.25	1	07/03/2013 15:06
Chloroethane	ND		0.25	1	07/03/2013 15:06
Chloroform	ND		0.25	1	07/03/2013 15:06
Chloromethane	ND		0.25	1	07/03/2013 15:06
Dibromochloromethane	ND		0.25	1	07/03/2013 15:06
1,2-Dibromoethane (EDB)	ND		0.50	1	07/03/2013 15:06
1,2-Dichlorobenzene	ND		0.25	1	07/03/2013 15:06
1,3-Dichlorobenzene	ND		0.25	1	07/03/2013 15:06
1,4-Dichlorobenzene	ND		0.25	1	07/03/2013 15:06
Dichlorodifluoromethane	ND		0.25	1	07/03/2013 15:06
1,1-Dichloroethane	ND		0.25	1	07/03/2013 15:06
1,2-Dichloroethane (1,2-DCA)	ND		0.25	1	07/03/2013 15:06
1,1-Dichloroethene	ND		0.25	1	07/03/2013 15:06
cis-1,2-Dichloroethene	ND		0.25	1	07/03/2013 15:06
trans-1,2-Dichloroethene	ND		0.25	1	07/03/2013 15:06
1,2-Dichloropropane	ND		0.25	1	07/03/2013 15:06
cis-1,3-Dichloropropene	ND		0.25	1	07/03/2013 15:06
trans-1,3-Dichloropropene	ND		0.25	1	07/03/2013 15:06
Freon 113	ND		0.50	1	07/03/2013 15:06
Ethylbenzene	ND		0.50	1	07/03/2013 15:06
Methylene chloride	ND		0.25	1	07/03/2013 15:06
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/03/2013 15:06
1,1,2,2-Tetrachloroethane	ND		0.25	1	07/03/2013 15:06
Tetrachloroethene	ND		0.25	1	07/03/2013 15:06
Toluene	ND		0.50	1	07/03/2013 15:06
1,1,1-Trichloroethane	ND		0.25	1	07/03/2013 15:06
1,1,2-Trichloroethane	ND		0.25	1	07/03/2013 15:06
Trichloroethene	ND		0.25	1	07/03/2013 15:06
Trichlorofluoromethane	ND		0.25	1	07/03/2013 15:06
Vinyl Chloride	ND		0.25	1	07/03/2013 15:06
Xylenes	ND		0.50	1	07/03/2013 15:06

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-16	1307070-006A	Air	07/02/2013 13:10	GC18	79056

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	94		70-130	07/03/2013 15:06
Toluene-d8	93		70-130	07/03/2013 15:06
4-BFB	98		70-130	07/03/2013 15:06

(Cont.)





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-14	1307070-007A	Air	07/02/2013 12:15	GC28	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 23:17
Bromodichloromethane	ND		0.25	1	07/03/2013 23:17
Bromoform	ND		0.25	1	07/03/2013 23:17
Bromomethane	ND		0.25	1	07/03/2013 23:17
Carbon Tetrachloride	ND		0.25	1	07/03/2013 23:17
Chlorobenzene	ND		0.25	1	07/03/2013 23:17
Chloroethane	ND		0.25	1	07/03/2013 23:17
Chloroform	ND		0.25	1	07/03/2013 23:17
Chloromethane	ND		0.25	1	07/03/2013 23:17
Dibromochloromethane	ND		0.25	1	07/03/2013 23:17
1,2-Dibromoethane (EDB)	ND		0.50	1	07/03/2013 23:17
1,2-Dichlorobenzene	ND		0.25	1	07/03/2013 23:17
1,3-Dichlorobenzene	ND		0.25	1	07/03/2013 23:17
1,4-Dichlorobenzene	ND		0.25	1	07/03/2013 23:17
Dichlorodifluoromethane	ND		0.25	1	07/03/2013 23:17
1,1-Dichloroethane	ND		0.25	1	07/03/2013 23:17
1,2-Dichloroethane (1,2-DCA)	ND		0.25	1	07/03/2013 23:17
1,1-Dichloroethene	ND		0.25	1	07/03/2013 23:17
cis-1,2-Dichloroethene	ND		0.25	1	07/03/2013 23:17
trans-1,2-Dichloroethene	ND		0.25	1	07/03/2013 23:17
1,2-Dichloropropane	ND		0.25	1	07/03/2013 23:17
cis-1,3-Dichloropropene	ND		0.25	1	07/03/2013 23:17
trans-1,3-Dichloropropene	ND		0.25	1	07/03/2013 23:17
Freon 113	ND		0.50	1	07/03/2013 23:17
Ethylbenzene	ND		0.50	1	07/03/2013 23:17
Methylene chloride	ND		0.25	1	07/03/2013 23:17
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/03/2013 23:17
1,1,2,2-Tetrachloroethane	ND		0.25	1	07/03/2013 23:17
Tetrachloroethene	6.3		0.25	1	07/03/2013 23:17
Toluene	ND		0.50	1	07/03/2013 23:17
1,1,1-Trichloroethane	ND		0.25	1	07/03/2013 23:17
1,1,2-Trichloroethane	ND		0.25	1	07/03/2013 23:17
Trichloroethene	0.31		0.25	1	07/03/2013 23:17
Trichlorofluoromethane	ND		0.25	1	07/03/2013 23:17
Vinyl Chloride	ND		0.25	1	07/03/2013 23:17
Xylenes	ND		0.50	1	07/03/2013 23:17

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-14	1307070-007A	Air	07/02/2013 12:15	GC28	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	103		70-130		07/03/2013 23:17
Toluene-d8	100		70-130		07/03/2013 23:17
4-BFB	95		70-130		07/03/2013 23:17

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-13	1307070-008A	Air	07/02/2013 11:55	GC10	79026
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		1.0	2	07/03/2013 21:18
Bromodichloromethane	ND		0.50	2	07/03/2013 21:18
Bromoform	ND		0.50	2	07/03/2013 21:18
Bromomethane	ND		0.50	2	07/03/2013 21:18
Carbon Tetrachloride	ND		0.50	2	07/03/2013 21:18
Chlorobenzene	ND		0.50	2	07/03/2013 21:18
Chloroethane	ND		0.50	2	07/03/2013 21:18
Chloroform	ND		0.50	2	07/03/2013 21:18
Chloromethane	ND		0.50	2	07/03/2013 21:18
Dibromochloromethane	ND		0.50	2	07/03/2013 21:18
1,2-Dibromoethane (EDB)	ND		1.0	2	07/03/2013 21:18
1,2-Dichlorobenzene	ND		0.50	2	07/03/2013 21:18
1,3-Dichlorobenzene	ND		0.50	2	07/03/2013 21:18
1,4-Dichlorobenzene	ND		0.50	2	07/03/2013 21:18
Dichlorodifluoromethane	ND		0.50	2	07/03/2013 21:18
1,1-Dichloroethane	ND		0.50	2	07/03/2013 21:18
1,2-Dichloroethane (1,2-DCA)	ND		0.50	2	07/03/2013 21:18
1,1-Dichloroethene	ND		0.50	2	07/03/2013 21:18
cis-1,2-Dichloroethene	3.5		0.50	2	07/03/2013 21:18
trans-1,2-Dichloroethene	ND		0.50	2	07/03/2013 21:18
1,2-Dichloropropane	ND		0.50	2	07/03/2013 21:18
cis-1,3-Dichloropropene	ND		0.50	2	07/03/2013 21:18
trans-1,3-Dichloropropene	ND		0.50	2	07/03/2013 21:18
Freon 113	ND		1.0	2	07/03/2013 21:18
Ethylbenzene	ND		1.0	2	07/03/2013 21:18
Methylene chloride	ND		0.50	2	07/03/2013 21:18
1,1,1,2-Tetrachloroethane	ND		1.0	2	07/03/2013 21:18
1,1,2,2-Tetrachloroethane	ND		0.50	2	07/03/2013 21:18
Tetrachloroethene	22		0.50	2	07/03/2013 21:18
Toluene	ND		1.0	2	07/03/2013 21:18
1,1,1-Trichloroethane	ND		0.50	2	07/03/2013 21:18
1,1,2-Trichloroethane	ND		0.50	2	07/03/2013 21:18
Trichloroethene	18		0.50	2	07/03/2013 21:18
Trichlorofluoromethane	ND		0.50	2	07/03/2013 21:18
Vinyl Chloride	ND		0.50	2	07/03/2013 21:18
Xylenes	ND		1.0	2	07/03/2013 21:18

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-13	1307070-008A	Air	07/02/2013 11:55	GC10	79026
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	107		70-130		07/03/2013 21:18
Toluene-d8	98		70-130		07/03/2013 21:18
4-BFB	90		70-130		07/03/2013 21:18

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-6	1307070-009A	Air	07/02/2013 11:45	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 20:49
Bromodichloromethane	ND		0.25	1	07/03/2013 20:49
Bromoform	ND		0.25	1	07/03/2013 20:49
Bromomethane	ND		0.25	1	07/03/2013 20:49
Carbon Tetrachloride	ND		0.25	1	07/03/2013 20:49
Chlorobenzene	ND		0.25	1	07/03/2013 20:49
Chloroethane	ND		0.25	1	07/03/2013 20:49
Chloroform	ND		0.25	1	07/03/2013 20:49
Chloromethane	ND		0.25	1	07/03/2013 20:49
Dibromochloromethane	ND		0.25	1	07/03/2013 20:49
1,2-Dibromoethane (EDB)	ND		0.50	1	07/03/2013 20:49
1,2-Dichlorobenzene	ND		0.25	1	07/03/2013 20:49
1,3-Dichlorobenzene	ND		0.25	1	07/03/2013 20:49
1,4-Dichlorobenzene	ND		0.25	1	07/03/2013 20:49
Dichlorodifluoromethane	ND		0.25	1	07/03/2013 20:49
1,1-Dichloroethane	ND		0.25	1	07/03/2013 20:49
1,2-Dichloroethane (1,2-DCA)	ND		0.25	1	07/03/2013 20:49
1,1-Dichloroethene	ND		0.25	1	07/03/2013 20:49
cis-1,2-Dichloroethene	ND		0.25	1	07/03/2013 20:49
trans-1,2-Dichloroethene	ND		0.25	1	07/03/2013 20:49
1,2-Dichloropropane	ND		0.25	1	07/03/2013 20:49
cis-1,3-Dichloropropene	ND		0.25	1	07/03/2013 20:49
trans-1,3-Dichloropropene	ND		0.25	1	07/03/2013 20:49
Freon 113	ND		0.50	1	07/03/2013 20:49
Ethylbenzene	ND		0.50	1	07/03/2013 20:49
Methylene chloride	ND		0.25	1	07/03/2013 20:49
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/03/2013 20:49
1,1,2,2-Tetrachloroethane	ND		0.25	1	07/03/2013 20:49
Tetrachloroethene	18		0.25	1	07/03/2013 20:49
Toluene	ND		0.50	1	07/03/2013 20:49
1,1,1-Trichloroethane	ND		0.25	1	07/03/2013 20:49
1,1,2-Trichloroethane	ND		0.25	1	07/03/2013 20:49
Trichloroethene	3.1		0.25	1	07/03/2013 20:49
Trichlorofluoromethane	ND		0.25	1	07/03/2013 20:49
Vinyl Chloride	ND		0.25	1	07/03/2013 20:49
Xylenes	ND		0.50	1	07/03/2013 20:49

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-6	1307070-009A	Air	07/02/2013 11:45	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	105		70-130		07/03/2013 20:49
Toluene-d8	98		70-130		07/03/2013 20:49
4-BFB	91		70-130		07/03/2013 20:49

(Cont.)





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-12	1307070-010A	Air	07/02/2013 10:10	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		5.0	10	07/03/2013 22:40
Bromodichloromethane	ND		2.5	10	07/03/2013 22:40
Bromoform	ND		2.5	10	07/03/2013 22:40
Bromomethane	ND		2.5	10	07/03/2013 22:40
Carbon Tetrachloride	ND		2.5	10	07/03/2013 22:40
Chlorobenzene	ND		2.5	10	07/03/2013 22:40
Chloroethane	ND		2.5	10	07/03/2013 22:40
Chloroform	ND		2.5	10	07/03/2013 22:40
Chloromethane	ND		2.5	10	07/03/2013 22:40
Dibromochloromethane	ND		2.5	10	07/03/2013 22:40
1,2-Dibromoethane (EDB)	ND		5.0	10	07/03/2013 22:40
1,2-Dichlorobenzene	ND		2.5	10	07/03/2013 22:40
1,3-Dichlorobenzene	ND		2.5	10	07/03/2013 22:40
1,4-Dichlorobenzene	ND		2.5	10	07/03/2013 22:40
Dichlorodifluoromethane	ND		2.5	10	07/03/2013 22:40
1,1-Dichloroethane	ND		2.5	10	07/03/2013 22:40
1,2-Dichloroethane (1,2-DCA)	ND		2.5	10	07/03/2013 22:40
1,1-Dichloroethene	ND		2.5	10	07/03/2013 22:40
cis-1,2-Dichloroethene	ND		2.5	10	07/03/2013 22:40
trans-1,2-Dichloroethene	ND		2.5	10	07/03/2013 22:40
1,2-Dichloropropane	ND		2.5	10	07/03/2013 22:40
cis-1,3-Dichloropropene	ND		2.5	10	07/03/2013 22:40
trans-1,3-Dichloropropene	ND		2.5	10	07/03/2013 22:40
Freon 113	ND		5.0	10	07/03/2013 22:40
Ethylbenzene	ND		5.0	10	07/03/2013 22:40
Methylene chloride	ND		2.5	10	07/03/2013 22:40
1,1,1,2-Tetrachloroethane	ND		5.0	10	07/03/2013 22:40
1,1,2,2-Tetrachloroethane	ND		2.5	10	07/03/2013 22:40
Tetrachloroethene	120		2.5	10	07/03/2013 22:40
Toluene	ND		5.0	10	07/03/2013 22:40
1,1,1-Trichloroethane	ND		2.5	10	07/03/2013 22:40
1,1,2-Trichloroethane	ND		2.5	10	07/03/2013 22:40
Trichloroethene	15		2.5	10	07/03/2013 22:40
Trichlorofluoromethane	ND		2.5	10	07/03/2013 22:40
Vinyl Chloride	ND		2.5	10	07/03/2013 22:40
Xylenes	ND		5.0	10	07/03/2013 22:40

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-12	1307070-010A	Air	07/02/2013 10:10	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	102		70-130		07/03/2013 22:40
Toluene-d8	99		70-130		07/03/2013 22:40
4-BFB	93		70-130		07/03/2013 22:40

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-11	1307070-011A	Air	07/02/2013 09:40	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 22:03
Bromodichloromethane	ND		0.25	1	07/03/2013 22:03
Bromoform	ND		0.25	1	07/03/2013 22:03
Bromomethane	ND		0.25	1	07/03/2013 22:03
Carbon Tetrachloride	ND		0.25	1	07/03/2013 22:03
Chlorobenzene	ND		0.25	1	07/03/2013 22:03
Chloroethane	ND		0.25	1	07/03/2013 22:03
Chloroform	ND		0.25	1	07/03/2013 22:03
Chloromethane	ND		0.25	1	07/03/2013 22:03
Dibromochloromethane	ND		0.25	1	07/03/2013 22:03
1,2-Dibromoethane (EDB)	ND		0.50	1	07/03/2013 22:03
1,2-Dichlorobenzene	ND		0.25	1	07/03/2013 22:03
1,3-Dichlorobenzene	ND		0.25	1	07/03/2013 22:03
1,4-Dichlorobenzene	ND		0.25	1	07/03/2013 22:03
Dichlorodifluoromethane	ND		0.25	1	07/03/2013 22:03
1,1-Dichloroethane	ND		0.25	1	07/03/2013 22:03
1,2-Dichloroethane (1,2-DCA)	ND		0.25	1	07/03/2013 22:03
1,1-Dichloroethene	ND		0.25	1	07/03/2013 22:03
cis-1,2-Dichloroethene	ND		0.25	1	07/03/2013 22:03
trans-1,2-Dichloroethene	ND		0.25	1	07/03/2013 22:03
1,2-Dichloropropane	ND		0.25	1	07/03/2013 22:03
cis-1,3-Dichloropropene	ND		0.25	1	07/03/2013 22:03
trans-1,3-Dichloropropene	ND		0.25	1	07/03/2013 22:03
Freon 113	ND		0.50	1	07/03/2013 22:03
Ethylbenzene	ND		0.50	1	07/03/2013 22:03
Methylene chloride	ND		0.25	1	07/03/2013 22:03
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/03/2013 22:03
1,1,2,2-Tetrachloroethane	ND		0.25	1	07/03/2013 22:03
Tetrachloroethene	1.5		0.25	1	07/03/2013 22:03
Toluene	ND		0.50	1	07/03/2013 22:03
1,1,1-Trichloroethane	ND		0.25	1	07/03/2013 22:03
1,1,2-Trichloroethane	ND		0.25	1	07/03/2013 22:03
Trichloroethene	ND		0.25	1	07/03/2013 22:03
Trichlorofluoromethane	ND		0.25	1	07/03/2013 22:03
Vinyl Chloride	ND		0.25	1	07/03/2013 22:03
Xylenes	ND		0.50	1	07/03/2013 22:03

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µg/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-11	1307070-011A	Air	07/02/2013 09:40	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	103		70-130		07/03/2013 22:03
Toluene-d8	98		70-130		07/03/2013 22:03
4-BFB	95		70-130		07/03/2013 22:03



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SSPO-1	1307070-001A	Air	07/02/2013 13:55	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 12:24
Bromodichloromethane	ND		0.036	1	07/03/2013 12:24
Bromoform	ND		0.024	1	07/03/2013 12:24
Bromomethane	ND		0.063	1	07/03/2013 12:24
Carbon Tetrachloride	ND		0.039	1	07/03/2013 12:24
Chlorobenzene	ND		0.053	1	07/03/2013 12:24
Chloroethane	ND		0.093	1	07/03/2013 12:24
Chloroform	ND		0.050	1	07/03/2013 12:24
Chloromethane	ND		0.12	1	07/03/2013 12:24
Dibromochloromethane	ND		0.029	1	07/03/2013 12:24
1,2-Dibromoethane (EDB)	ND		0.064	1	07/03/2013 12:24
1,2-Dichlorobenzene	ND		0.041	1	07/03/2013 12:24
1,3-Dichlorobenzene	ND		0.041	1	07/03/2013 12:24
1,4-Dichlorobenzene	ND		0.041	1	07/03/2013 12:24
Dichlorodifluoromethane	ND		0.050	1	07/03/2013 12:24
1,1-Dichloroethane	ND		0.061	1	07/03/2013 12:24
1,2-Dichloroethane (1,2-DCA)	ND		0.061	1	07/03/2013 12:24
1,1-Dichloroethene	ND		0.062	1	07/03/2013 12:24
cis-1,2-Dichloroethene	ND		0.062	1	07/03/2013 12:24
trans-1,2-Dichloroethene	ND		0.062	1	07/03/2013 12:24
1,2-Dichloropropane	ND		0.053	1	07/03/2013 12:24
cis-1,3-Dichloropropene	ND		0.054	1	07/03/2013 12:24
trans-1,3-Dichloropropene	ND		0.054	1	07/03/2013 12:24
Freon 113	ND		0.064	1	07/03/2013 12:24
Ethylbenzene	ND		0.50	1	07/03/2013 12:24
Methylene chloride	ND		0.071	1	07/03/2013 12:24
1,1,1,2-Tetrachloroethane	ND		0.036	1	07/03/2013 12:24
1,1,2,2-Tetrachloroethane	ND		0.036	1	07/03/2013 12:24
Tetrachloroethene	0.11		0.036	1	07/03/2013 12:24
1,1,1-Trichloroethane	ND		0.045	1	07/03/2013 12:24
1,1,2-Trichloroethane	ND		0.045	1	07/03/2013 12:24
Trichloroethene	ND		0.046	1	07/03/2013 12:24
Trichlorofluoromethane	ND		0.044	1	07/03/2013 12:24
Vinyl Chloride	ND		0.096	1	07/03/2013 12:24
Xylenes	ND		0.50	1	07/03/2013 12:24

(Cont.)



**McC Campbell Analytical, Inc.**  
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SSPO-1	1307070-001A	Air	07/02/2013 13:55	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	94		70-130		07/03/2013 12:24
Toluene-d8	95		70-130		07/03/2013 12:24
4-BFB	73		70-130		07/03/2013 12:24

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CDPH ELAP 1644 ♦ NELAP 12283CA

BB

Analyst's Initial

Angela Rydelius, Lab Manager





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
1185 Hall	1307070-002A	Air	07/02/2013 15:30	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 13:04
Bromodichloromethane	ND		0.036	1	07/03/2013 13:04
Bromoform	ND		0.024	1	07/03/2013 13:04
Bromomethane	ND		0.063	1	07/03/2013 13:04
Carbon Tetrachloride	ND		0.039	1	07/03/2013 13:04
Chlorobenzene	ND		0.053	1	07/03/2013 13:04
Chloroethane	ND		0.093	1	07/03/2013 13:04
Chloroform	ND		0.050	1	07/03/2013 13:04
Chloromethane	ND		0.12	1	07/03/2013 13:04
Dibromochloromethane	ND		0.029	1	07/03/2013 13:04
1,2-Dibromoethane (EDB)	ND		0.064	1	07/03/2013 13:04
1,2-Dichlorobenzene	ND		0.041	1	07/03/2013 13:04
1,3-Dichlorobenzene	ND		0.041	1	07/03/2013 13:04
1,4-Dichlorobenzene	ND		0.041	1	07/03/2013 13:04
Dichlorodifluoromethane	ND		0.050	1	07/03/2013 13:04
1,1-Dichloroethane	ND		0.061	1	07/03/2013 13:04
1,2-Dichloroethane (1,2-DCA)	ND		0.061	1	07/03/2013 13:04
1,1-Dichloroethene	ND		0.062	1	07/03/2013 13:04
cis-1,2-Dichloroethene	ND		0.062	1	07/03/2013 13:04
trans-1,2-Dichloroethene	ND		0.062	1	07/03/2013 13:04
1,2-Dichloropropane	ND		0.053	1	07/03/2013 13:04
cis-1,3-Dichloropropene	ND		0.054	1	07/03/2013 13:04
trans-1,3-Dichloropropene	ND		0.054	1	07/03/2013 13:04
Freon 113	ND		0.064	1	07/03/2013 13:04
Ethylbenzene	ND		0.50	1	07/03/2013 13:04
Methylene chloride	ND		0.071	1	07/03/2013 13:04
1,1,1,2-Tetrachloroethane	ND		0.036	1	07/03/2013 13:04
1,1,2,2-Tetrachloroethane	ND		0.036	1	07/03/2013 13:04
Tetrachloroethene	2.0		0.036	1	07/03/2013 13:04
Toluene	ND		0.50	1	07/03/2013 13:04
1,1,1-Trichloroethane	ND		0.045	1	07/03/2013 13:04
1,1,2-Trichloroethane	ND		0.045	1	07/03/2013 13:04
Trichloroethene	0.14		0.046	1	07/03/2013 13:04
Trichlorofluoromethane	ND		0.044	1	07/03/2013 13:04
Vinyl Chloride	ND		0.096	1	07/03/2013 13:04
Xylenes	ND		0.50	1	07/03/2013 13:04

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
1185 Hall	1307070-002A	Air	07/02/2013 15:30	GC18	79056

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	96	70-130		07/03/2013 13:04
Toluene-d8	94	70-130		07/03/2013 13:04
4-BFB	71	70-130		07/03/2013 13:04

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
1185 Bath	1307070-003A	Air	07/02/2013 15:00	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 13:45
Bromodichloromethane	ND		0.036	1	07/03/2013 13:45
Bromoform	ND		0.024	1	07/03/2013 13:45
Bromomethane	ND		0.063	1	07/03/2013 13:45
Carbon Tetrachloride	ND		0.039	1	07/03/2013 13:45
Chlorobenzene	ND		0.053	1	07/03/2013 13:45
Chloroethane	ND		0.093	1	07/03/2013 13:45
Chloroform	ND		0.050	1	07/03/2013 13:45
Chloromethane	ND		0.12	1	07/03/2013 13:45
Dibromochloromethane	ND		0.029	1	07/03/2013 13:45
1,2-Dibromoethane (EDB)	ND		0.064	1	07/03/2013 13:45
1,2-Dichlorobenzene	ND		0.041	1	07/03/2013 13:45
1,3-Dichlorobenzene	ND		0.041	1	07/03/2013 13:45
1,4-Dichlorobenzene	ND		0.041	1	07/03/2013 13:45
Dichlorodifluoromethane	ND		0.050	1	07/03/2013 13:45
1,1-Dichloroethane	ND		0.061	1	07/03/2013 13:45
1,2-Dichloroethane (1,2-DCA)	ND		0.061	1	07/03/2013 13:45
1,1-Dichloroethene	ND		0.062	1	07/03/2013 13:45
cis-1,2-Dichloroethene	ND		0.062	1	07/03/2013 13:45
trans-1,2-Dichloroethene	ND		0.062	1	07/03/2013 13:45
1,2-Dichloropropane	ND		0.053	1	07/03/2013 13:45
cis-1,3-Dichloropropene	ND		0.054	1	07/03/2013 13:45
trans-1,3-Dichloropropene	ND		0.054	1	07/03/2013 13:45
Freon 113	ND		0.064	1	07/03/2013 13:45
Ethylbenzene	ND		0.50	1	07/03/2013 13:45
Methylene chloride	ND		0.071	1	07/03/2013 13:45
1,1,1,2-Tetrachloroethane	ND		0.036	1	07/03/2013 13:45
1,1,2,2-Tetrachloroethane	ND		0.036	1	07/03/2013 13:45
Tetrachloroethene	0.40		0.036	1	07/03/2013 13:45
1,1,1-Trichloroethane	ND		0.045	1	07/03/2013 13:45
1,1,2-Trichloroethane	ND		0.045	1	07/03/2013 13:45
Trichloroethene	ND		0.046	1	07/03/2013 13:45
Trichlorofluoromethane	ND		0.044	1	07/03/2013 13:45
Vinyl Chloride	ND		0.096	1	07/03/2013 13:45
Xylenes	ND		0.50	1	07/03/2013 13:45

(Cont.)



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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
http://www.mcccampbell.com / E-mail: main@mcccampbell.com

## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
1185 Bath	1307070-003A	Air	07/02/2013 15:00	GC18	79056

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	95	70-130		07/03/2013 13:45
Toluene-d8	95	70-130		07/03/2013 13:45
4-BFB	70	70-130		07/03/2013 13:45

(Cont.)

CDPH ELAP 1644 ♦ NELAP 12283CA

BB

Analyst's Initial

Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-15	1307070-004A	Air	07/02/2013 13:30	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 11:37
Bromodichloromethane	ND		0.036	1	07/03/2013 11:37
Bromoform	ND		0.024	1	07/03/2013 11:37
Bromomethane	ND		0.063	1	07/03/2013 11:37
Carbon Tetrachloride	ND		0.039	1	07/03/2013 11:37
Chlorobenzene	ND		0.053	1	07/03/2013 11:37
Chloroethane	ND		0.093	1	07/03/2013 11:37
Chloroform	ND		0.050	1	07/03/2013 11:37
Chloromethane	ND		0.12	1	07/03/2013 11:37
Dibromochloromethane	ND		0.029	1	07/03/2013 11:37
1,2-Dibromoethane (EDB)	ND		0.064	1	07/03/2013 11:37
1,2-Dichlorobenzene	ND		0.041	1	07/03/2013 11:37
1,3-Dichlorobenzene	ND		0.041	1	07/03/2013 11:37
1,4-Dichlorobenzene	ND		0.041	1	07/03/2013 11:37
Dichlorodifluoromethane	ND		0.050	1	07/03/2013 11:37
1,1-Dichloroethane	ND		0.061	1	07/03/2013 11:37
1,2-Dichloroethane (1,2-DCA)	ND		0.061	1	07/03/2013 11:37
1,1-Dichloroethene	ND		0.062	1	07/03/2013 11:37
cis-1,2-Dichloroethene	ND		0.062	1	07/03/2013 11:37
trans-1,2-Dichloroethene	ND		0.062	1	07/03/2013 11:37
1,2-Dichloropropane	ND		0.053	1	07/03/2013 11:37
cis-1,3-Dichloropropene	ND		0.054	1	07/03/2013 11:37
trans-1,3-Dichloropropene	ND		0.054	1	07/03/2013 11:37
Freon 113	ND		0.064	1	07/03/2013 11:37
Ethylbenzene	ND		0.50	1	07/03/2013 11:37
Methylene chloride	ND		0.071	1	07/03/2013 11:37
1,1,1,2-Tetrachloroethane	ND		0.036	1	07/03/2013 11:37
1,1,2,2-Tetrachloroethane	ND		0.036	1	07/03/2013 11:37
Tetrachloroethene	0.049		0.036	1	07/03/2013 11:37
Toluene	ND		0.50	1	07/03/2013 11:37
1,1,1-Trichloroethane	ND		0.045	1	07/03/2013 11:37
1,1,2-Trichloroethane	ND		0.045	1	07/03/2013 11:37
Trichloroethene	ND		0.046	1	07/03/2013 11:37
Trichlorofluoromethane	ND		0.044	1	07/03/2013 11:37
Vinyl Chloride	ND		0.096	1	07/03/2013 11:37
Xylenes	ND		0.50	1	07/03/2013 11:37

(Cont.)



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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
http://www.mcccampbell.com / E-mail: main@mcccampbell.com

## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-15	1307070-004A	Air	07/02/2013 13:30	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	94		70-130		07/03/2013 11:37
Toluene-d8	95		70-130		07/03/2013 11:37
4-BFB	72		70-130		07/03/2013 11:37

(Cont.)

CDPH ELAP 1644 ♦ NELAP 12283CA

BB Analyst's Initial

 Angela Rydelius, Lab Manager





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-7	1307070-005A	Air	07/02/2013 12:45	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 14:25
Bromodichloromethane	ND		0.036	1	07/03/2013 14:25
Bromoform	ND		0.024	1	07/03/2013 14:25
Bromomethane	ND		0.063	1	07/03/2013 14:25
Carbon Tetrachloride	ND		0.039	1	07/03/2013 14:25
Chlorobenzene	ND		0.053	1	07/03/2013 14:25
Chloroethane	ND		0.093	1	07/03/2013 14:25
Chloroform	ND		0.050	1	07/03/2013 14:25
Chloromethane	ND		0.12	1	07/03/2013 14:25
Dibromochloromethane	ND		0.029	1	07/03/2013 14:25
1,2-Dibromoethane (EDB)	ND		0.064	1	07/03/2013 14:25
1,2-Dichlorobenzene	ND		0.041	1	07/03/2013 14:25
1,3-Dichlorobenzene	ND		0.041	1	07/03/2013 14:25
1,4-Dichlorobenzene	ND		0.041	1	07/03/2013 14:25
Dichlorodifluoromethane	ND		0.050	1	07/03/2013 14:25
1,1-Dichloroethane	ND		0.061	1	07/03/2013 14:25
1,2-Dichloroethane (1,2-DCA)	ND		0.061	1	07/03/2013 14:25
1,1-Dichloroethene	ND		0.062	1	07/03/2013 14:25
cis-1,2-Dichloroethene	ND		0.062	1	07/03/2013 14:25
trans-1,2-Dichloroethene	ND		0.062	1	07/03/2013 14:25
1,2-Dichloropropane	ND		0.053	1	07/03/2013 14:25
cis-1,3-Dichloropropene	ND		0.054	1	07/03/2013 14:25
trans-1,3-Dichloropropene	ND		0.054	1	07/03/2013 14:25
Freon 113	ND		0.064	1	07/03/2013 14:25
Ethylbenzene	ND		0.50	1	07/03/2013 14:25
Methylene chloride	ND		0.071	1	07/03/2013 14:25
1,1,1,2-Tetrachloroethane	ND		0.036	1	07/03/2013 14:25
1,1,2,2-Tetrachloroethane	ND		0.036	1	07/03/2013 14:25
Tetrachloroethene	0.099		0.036	1	07/03/2013 14:25
Toluene	ND		0.50	1	07/03/2013 14:25
1,1,1-Trichloroethane	ND		0.045	1	07/03/2013 14:25
1,1,2-Trichloroethane	ND		0.045	1	07/03/2013 14:25
Trichloroethene	ND		0.046	1	07/03/2013 14:25
Trichlorofluoromethane	ND		0.044	1	07/03/2013 14:25
Vinyl Chloride	ND		0.096	1	07/03/2013 14:25
Xylenes	ND		0.50	1	07/03/2013 14:25

(Cont.)



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http://www.mcccampbell.com / E-mail: main@mcccampbell.com

## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-7	1307070-005A	Air	07/02/2013 12:45	GC18	79056

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	96		70-130	07/03/2013 14:25
Toluene-d8	91		70-130	07/03/2013 14:25
4-BFB	85		70-130	07/03/2013 14:25

(Cont.)

CDPH ELAP 1644 ♦ NELAP 12283CA

BB Analyst's Initial

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-16	1307070-006A	Air	07/02/2013 13:10	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 15:06
Bromodichloromethane	ND		0.036	1	07/03/2013 15:06
Bromoform	ND		0.024	1	07/03/2013 15:06
Bromomethane	ND		0.063	1	07/03/2013 15:06
Carbon Tetrachloride	ND		0.039	1	07/03/2013 15:06
Chlorobenzene	ND		0.053	1	07/03/2013 15:06
Chloroethane	ND		0.093	1	07/03/2013 15:06
Chloroform	ND		0.050	1	07/03/2013 15:06
Chloromethane	ND		0.12	1	07/03/2013 15:06
Dibromochloromethane	ND		0.029	1	07/03/2013 15:06
1,2-Dibromoethane (EDB)	ND		0.064	1	07/03/2013 15:06
1,2-Dichlorobenzene	ND		0.041	1	07/03/2013 15:06
1,3-Dichlorobenzene	ND		0.041	1	07/03/2013 15:06
1,4-Dichlorobenzene	ND		0.041	1	07/03/2013 15:06
Dichlorodifluoromethane	ND		0.050	1	07/03/2013 15:06
1,1-Dichloroethane	ND		0.061	1	07/03/2013 15:06
1,2-Dichloroethane (1,2-DCA)	ND		0.061	1	07/03/2013 15:06
1,1-Dichloroethene	ND		0.062	1	07/03/2013 15:06
cis-1,2-Dichloroethene	ND		0.062	1	07/03/2013 15:06
trans-1,2-Dichloroethene	ND		0.062	1	07/03/2013 15:06
1,2-Dichloropropane	ND		0.053	1	07/03/2013 15:06
cis-1,3-Dichloropropene	ND		0.054	1	07/03/2013 15:06
trans-1,3-Dichloropropene	ND		0.054	1	07/03/2013 15:06
Freon 113	ND		0.064	1	07/03/2013 15:06
Ethylbenzene	ND		0.50	1	07/03/2013 15:06
Methylene chloride	ND		0.071	1	07/03/2013 15:06
1,1,1,2-Tetrachloroethane	ND		0.036	1	07/03/2013 15:06
1,1,2,2-Tetrachloroethane	ND		0.036	1	07/03/2013 15:06
Tetrachloroethene	ND		0.036	1	07/03/2013 15:06
Toluene	ND		0.50	1	07/03/2013 15:06
1,1,1-Trichloroethane	ND		0.045	1	07/03/2013 15:06
1,1,2-Trichloroethane	ND		0.045	1	07/03/2013 15:06
Trichloroethene	ND		0.046	1	07/03/2013 15:06
Trichlorofluoromethane	ND		0.044	1	07/03/2013 15:06
Vinyl Chloride	ND		0.096	1	07/03/2013 15:06
Xylenes	ND		0.50	1	07/03/2013 15:06

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-16	1307070-006A	Air	07/02/2013 13:10	GC18	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	94		70-130		07/03/2013 15:06
Toluene-d8	93		70-130		07/03/2013 15:06
4-BFB	98		70-130		07/03/2013 15:06

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-14	1307070-007A	Air	07/02/2013 12:15	GC28	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 23:17
Bromodichloromethane	ND		0.036	1	07/03/2013 23:17
Bromoform	ND		0.024	1	07/03/2013 23:17
Bromomethane	ND		0.063	1	07/03/2013 23:17
Carbon Tetrachloride	ND		0.039	1	07/03/2013 23:17
Chlorobenzene	ND		0.053	1	07/03/2013 23:17
Chloroethane	ND		0.093	1	07/03/2013 23:17
Chloroform	ND		0.050	1	07/03/2013 23:17
Chloromethane	ND		0.12	1	07/03/2013 23:17
Dibromochloromethane	ND		0.029	1	07/03/2013 23:17
1,2-Dibromoethane (EDB)	ND		0.064	1	07/03/2013 23:17
1,2-Dichlorobenzene	ND		0.041	1	07/03/2013 23:17
1,3-Dichlorobenzene	ND		0.041	1	07/03/2013 23:17
1,4-Dichlorobenzene	ND		0.041	1	07/03/2013 23:17
Dichlorodifluoromethane	ND		0.050	1	07/03/2013 23:17
1,1-Dichloroethane	ND		0.061	1	07/03/2013 23:17
1,2-Dichloroethane (1,2-DCA)	ND		0.061	1	07/03/2013 23:17
1,1-Dichloroethene	ND		0.062	1	07/03/2013 23:17
cis-1,2-Dichloroethene	ND		0.062	1	07/03/2013 23:17
trans-1,2-Dichloroethene	ND		0.062	1	07/03/2013 23:17
1,2-Dichloropropane	ND		0.053	1	07/03/2013 23:17
cis-1,3-Dichloropropene	ND		0.054	1	07/03/2013 23:17
trans-1,3-Dichloropropene	ND		0.054	1	07/03/2013 23:17
Freon 113	ND		0.064	1	07/03/2013 23:17
Ethylbenzene	ND		0.50	1	07/03/2013 23:17
Methylene chloride	ND		0.071	1	07/03/2013 23:17
1,1,1,2-Tetrachloroethane	ND		0.036	1	07/03/2013 23:17
1,1,2,2-Tetrachloroethane	ND		0.036	1	07/03/2013 23:17
Tetrachloroethene	0.92		0.036	1	07/03/2013 23:17
Toluene	ND		0.50	1	07/03/2013 23:17
1,1,1-Trichloroethane	ND		0.045	1	07/03/2013 23:17
1,1,2-Trichloroethane	ND		0.045	1	07/03/2013 23:17
Trichloroethene	0.057		0.046	1	07/03/2013 23:17
Trichlorofluoromethane	ND		0.044	1	07/03/2013 23:17
Vinyl Chloride	ND		0.096	1	07/03/2013 23:17
Xylenes	ND		0.50	1	07/03/2013 23:17

(Cont.)



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http://www.mcccampbell.com / E-mail: main@mcccampbell.com

## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-14	1307070-007A	Air	07/02/2013 12:15	GC28	79056
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	103		70-130		07/03/2013 23:17
Toluene-d8	100		70-130		07/03/2013 23:17
4-BFB	95		70-130		07/03/2013 23:17

(Cont.)

CDPH ELAP 1644 ♦ NELAP 12283CA

BB

Analyst's Initial

Angela Rydelius, Lab Manager





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-13	1307070-008A	Air	07/02/2013 11:55	GC10	79026
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		1.0	2	07/03/2013 21:18
Bromodichloromethane	ND		0.072	2	07/03/2013 21:18
Bromoform	ND		0.048	2	07/03/2013 21:18
Bromomethane	ND		0.13	2	07/03/2013 21:18
Carbon Tetrachloride	ND		0.078	2	07/03/2013 21:18
Chlorobenzene	ND		0.11	2	07/03/2013 21:18
Chloroethane	ND		0.19	2	07/03/2013 21:18
Chloroform	ND		0.10	2	07/03/2013 21:18
Chloromethane	ND		0.24	2	07/03/2013 21:18
Dibromochloromethane	ND		0.058	2	07/03/2013 21:18
1,2-Dibromoethane (EDB)	ND		0.13	2	07/03/2013 21:18
1,2-Dichlorobenzene	ND		0.082	2	07/03/2013 21:18
1,3-Dichlorobenzene	ND		0.082	2	07/03/2013 21:18
1,4-Dichlorobenzene	ND		0.082	2	07/03/2013 21:18
Dichlorodifluoromethane	ND		0.10	2	07/03/2013 21:18
1,1-Dichloroethane	ND		0.12	2	07/03/2013 21:18
1,2-Dichloroethane (1,2-DCA)	ND		0.12	2	07/03/2013 21:18
1,1-Dichloroethene	ND		0.12	2	07/03/2013 21:18
cis-1,2-Dichloroethene	0.86		0.12	2	07/03/2013 21:18
trans-1,2-Dichloroethene	ND		0.12	2	07/03/2013 21:18
1,2-Dichloropropane	ND		0.11	2	07/03/2013 21:18
cis-1,3-Dichloropropene	ND		0.11	2	07/03/2013 21:18
trans-1,3-Dichloropropene	ND		0.11	2	07/03/2013 21:18
Freon 113	ND		0.13	2	07/03/2013 21:18
Ethylbenzene	ND		1.0	2	07/03/2013 21:18
Methylene chloride	ND		0.14	2	07/03/2013 21:18
1,1,1,2-Tetrachloroethane	ND		0.072	2	07/03/2013 21:18
1,1,2,2-Tetrachloroethane	ND		0.072	2	07/03/2013 21:18
Tetrachloroethene	3.2		0.072	2	07/03/2013 21:18
Toluene	ND		1.0	2	07/03/2013 21:18
1,1,1-Trichloroethane	ND		0.090	2	07/03/2013 21:18
1,1,2-Trichloroethane	ND		0.090	2	07/03/2013 21:18
Trichloroethene	3.2		0.092	2	07/03/2013 21:18
Trichlorofluoromethane	ND		0.088	2	07/03/2013 21:18
Vinyl Chloride	ND		0.19	2	07/03/2013 21:18
Xylenes	ND		1.0	2	07/03/2013 21:18

(Cont.)



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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-13	1307070-008A	Air	07/02/2013 11:55	GC10	79026
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	107		70-130		07/03/2013 21:18
Toluene-d8	98		70-130		07/03/2013 21:18
4-BFB	90		70-130		07/03/2013 21:18

(Cont.)

CDPH ELAP 1644 ♦ NELAP 12283CA

BB Analyst's Initial

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-6	1307070-009A	Air	07/02/2013 11:45	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 20:49
Bromodichloromethane	ND		0.036	1	07/03/2013 20:49
Bromoform	ND		0.024	1	07/03/2013 20:49
Bromomethane	ND		0.063	1	07/03/2013 20:49
Carbon Tetrachloride	ND		0.039	1	07/03/2013 20:49
Chlorobenzene	ND		0.053	1	07/03/2013 20:49
Chloroethane	ND		0.093	1	07/03/2013 20:49
Chloroform	ND		0.050	1	07/03/2013 20:49
Chloromethane	ND		0.12	1	07/03/2013 20:49
Dibromochloromethane	ND		0.029	1	07/03/2013 20:49
1,2-Dibromoethane (EDB)	ND		0.064	1	07/03/2013 20:49
1,2-Dichlorobenzene	ND		0.041	1	07/03/2013 20:49
1,3-Dichlorobenzene	ND		0.041	1	07/03/2013 20:49
1,4-Dichlorobenzene	ND		0.041	1	07/03/2013 20:49
Dichlorodifluoromethane	ND		0.050	1	07/03/2013 20:49
1,1-Dichloroethane	ND		0.061	1	07/03/2013 20:49
1,2-Dichloroethane (1,2-DCA)	ND		0.061	1	07/03/2013 20:49
1,1-Dichloroethene	ND		0.062	1	07/03/2013 20:49
cis-1,2-Dichloroethene	ND		0.062	1	07/03/2013 20:49
trans-1,2-Dichloroethene	ND		0.062	1	07/03/2013 20:49
1,2-Dichloropropane	ND		0.053	1	07/03/2013 20:49
cis-1,3-Dichloropropene	ND		0.054	1	07/03/2013 20:49
trans-1,3-Dichloropropene	ND		0.054	1	07/03/2013 20:49
Freon 113	ND		0.064	1	07/03/2013 20:49
Ethylbenzene	ND		0.50	1	07/03/2013 20:49
Methylene chloride	ND		0.071	1	07/03/2013 20:49
1,1,1,2-Tetrachloroethane	ND		0.036	1	07/03/2013 20:49
1,1,2,2-Tetrachloroethane	ND		0.036	1	07/03/2013 20:49
Tetrachloroethene	2.7		0.036	1	07/03/2013 20:49
Toluene	ND		0.50	1	07/03/2013 20:49
1,1,1-Trichloroethane	ND		0.045	1	07/03/2013 20:49
1,1,2-Trichloroethane	ND		0.045	1	07/03/2013 20:49
Trichloroethene	0.57		0.046	1	07/03/2013 20:49
Trichlorofluoromethane	ND		0.044	1	07/03/2013 20:49
Vinyl Chloride	ND		0.096	1	07/03/2013 20:49
Xylenes	ND		0.50	1	07/03/2013 20:49

(Cont.)



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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-6	1307070-009A	Air	07/02/2013 11:45	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	105		70-130		07/03/2013 20:49
Toluene-d8	98		70-130		07/03/2013 20:49
4-BFB	91		70-130		07/03/2013 20:49

(Cont.)

CDPH ELAP 1644 ♦ NELAP 12283CA

BB Analyst's Initial

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-12	1307070-010A	Air	07/02/2013 10:10	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		5.0	10	07/03/2013 22:40
Bromodichloromethane	ND		0.36	10	07/03/2013 22:40
Bromoform	ND		0.24	10	07/03/2013 22:40
Bromomethane	ND		0.63	10	07/03/2013 22:40
Carbon Tetrachloride	ND		0.39	10	07/03/2013 22:40
Chlorobenzene	ND		0.53	10	07/03/2013 22:40
Chloroethane	ND		0.93	10	07/03/2013 22:40
Chloroform	ND		0.50	10	07/03/2013 22:40
Chloromethane	ND		1.2	10	07/03/2013 22:40
Dibromochloromethane	ND		0.29	10	07/03/2013 22:40
1,2-Dibromoethane (EDB)	ND		0.64	10	07/03/2013 22:40
1,2-Dichlorobenzene	ND		0.41	10	07/03/2013 22:40
1,3-Dichlorobenzene	ND		0.41	10	07/03/2013 22:40
1,4-Dichlorobenzene	ND		0.41	10	07/03/2013 22:40
Dichlorodifluoromethane	ND		0.50	10	07/03/2013 22:40
1,1-Dichloroethane	ND		0.61	10	07/03/2013 22:40
1,2-Dichloroethane (1,2-DCA)	ND		0.61	10	07/03/2013 22:40
1,1-Dichloroethene	ND		0.62	10	07/03/2013 22:40
cis-1,2-Dichloroethene	ND		0.62	10	07/03/2013 22:40
trans-1,2-Dichloroethene	ND		0.62	10	07/03/2013 22:40
1,2-Dichloropropane	ND		0.53	10	07/03/2013 22:40
cis-1,3-Dichloropropene	ND		0.54	10	07/03/2013 22:40
trans-1,3-Dichloropropene	ND		0.54	10	07/03/2013 22:40
Freon 113	ND		0.64	10	07/03/2013 22:40
Ethylbenzene	ND		5.0	10	07/03/2013 22:40
Methylene chloride	ND		0.71	10	07/03/2013 22:40
1,1,1,2-Tetrachloroethane	ND		0.36	10	07/03/2013 22:40
1,1,2,2-Tetrachloroethane	ND		0.36	10	07/03/2013 22:40
Tetrachloroethene	17		0.36	10	07/03/2013 22:40
Toluene	ND		5.0	10	07/03/2013 22:40
1,1,1-Trichloroethane	ND		0.45	10	07/03/2013 22:40
1,1,2-Trichloroethane	ND		0.45	10	07/03/2013 22:40
Trichloroethene	2.8		0.46	10	07/03/2013 22:40
Trichlorofluoromethane	ND		0.44	10	07/03/2013 22:40
Vinyl Chloride	ND		0.96	10	07/03/2013 22:40
Xylenes	ND		5.0	10	07/03/2013 22:40

(Cont.)



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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-12	1307070-010A	Air	07/02/2013 10:10	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	102		70-130		07/03/2013 22:40
Toluene-d8	99		70-130		07/03/2013 22:40
4-BFB	93		70-130		07/03/2013 22:40

(Cont.)

CDPH ELAP 1644 ♦ NELAP 12283CA

BB Analyst's Initial

 Angela Rydelius, Lab Manager





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1307070

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 7/2/13 18:05

**Analytical Method:** SW8260B

**Date Prepared:** 7/3/13

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-11	1307070-011A	Air	07/02/2013 09:40	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		0.50	1	07/03/2013 22:03
Bromodichloromethane	ND		0.036	1	07/03/2013 22:03
Bromoform	ND		0.024	1	07/03/2013 22:03
Bromomethane	ND		0.063	1	07/03/2013 22:03
Carbon Tetrachloride	ND		0.039	1	07/03/2013 22:03
Chlorobenzene	ND		0.053	1	07/03/2013 22:03
Chloroethane	ND		0.093	1	07/03/2013 22:03
Chloroform	ND		0.050	1	07/03/2013 22:03
Chloromethane	ND		0.12	1	07/03/2013 22:03
Dibromochloromethane	ND		0.029	1	07/03/2013 22:03
1,2-Dibromoethane (EDB)	ND		0.064	1	07/03/2013 22:03
1,2-Dichlorobenzene	ND		0.041	1	07/03/2013 22:03
1,3-Dichlorobenzene	ND		0.041	1	07/03/2013 22:03
1,4-Dichlorobenzene	ND		0.041	1	07/03/2013 22:03
Dichlorodifluoromethane	ND		0.050	1	07/03/2013 22:03
1,1-Dichloroethane	ND		0.061	1	07/03/2013 22:03
1,2-Dichloroethane (1,2-DCA)	ND		0.061	1	07/03/2013 22:03
1,1-Dichloroethene	ND		0.062	1	07/03/2013 22:03
cis-1,2-Dichloroethene	ND		0.062	1	07/03/2013 22:03
trans-1,2-Dichloroethene	ND		0.062	1	07/03/2013 22:03
1,2-Dichloropropane	ND		0.053	1	07/03/2013 22:03
cis-1,3-Dichloropropene	ND		0.054	1	07/03/2013 22:03
trans-1,3-Dichloropropene	ND		0.054	1	07/03/2013 22:03
Freon 113	ND		0.064	1	07/03/2013 22:03
Ethylbenzene	ND		0.50	1	07/03/2013 22:03
Methylene chloride	ND		0.071	1	07/03/2013 22:03
1,1,1,2-Tetrachloroethane	ND		0.036	1	07/03/2013 22:03
1,1,2,2-Tetrachloroethane	ND		0.036	1	07/03/2013 22:03
Tetrachloroethene	0.22		0.036	1	07/03/2013 22:03
Toluene	ND		0.50	1	07/03/2013 22:03
1,1,1-Trichloroethane	ND		0.045	1	07/03/2013 22:03
1,1,2-Trichloroethane	ND		0.045	1	07/03/2013 22:03
Trichloroethene	ND		0.046	1	07/03/2013 22:03
Trichlorofluoromethane	ND		0.044	1	07/03/2013 22:03
Vinyl Chloride	ND		0.096	1	07/03/2013 22:03
Xylenes	ND		0.50	1	07/03/2013 22:03

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 7/2/13 18:05

**Date Prepared:** 7/3/13

**WorkOrder:** 1307070

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-11	1307070-011A	Air	07/02/2013 09:40	GC28	79058
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	103		70-130		07/03/2013 22:03
Toluene-d8	98		70-130		07/03/2013 22:03
4-BFB	95		70-130		07/03/2013 22:03



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 79026

WorkOrder: 1307070

EPA Method: SW8260B

Extraction: SW5030B

Spiked Sample ID: 1307072-001A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	10	102	90.9	11.7	91	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	102	105	2.56	89.8	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	92	84.2	8.82	89.5	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	98.7	92.7	6.27	87.6	70 - 130	20	70 - 130
Trichloroethene	ND	10	104	96.1	7.49	90.4	70 - 130	20	70 - 130
%SS1:	102	25	102	104	2.39	97	70 - 130	20	70 - 130
%SS2:	94	25	98	103	5.51	95	70 - 130	20	70 - 130
%SS3:	78	2.5	87	102	16.6	89	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 79026 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1307070-008A	07/02/13 11:55 AM	07/03/13	07/03/13 9:18 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 79056

WorkOrder: 1307070

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	N/A	10	N/A	N/A	N/A	87	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	N/A	10	N/A	N/A	N/A	92.5	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	N/A	10	N/A	N/A	N/A	111	N/A	N/A	70 - 130
1,1-Dichloroethene	N/A	10	N/A	N/A	N/A	80.9	N/A	N/A	70 - 130
Trichloroethene	N/A	10	N/A	N/A	N/A	96	N/A	N/A	70 - 130
%SS1:	N/A	25	N/A	N/A	N/A	95	N/A	N/A	70 - 130
%SS2:	N/A	25	N/A	N/A	N/A	93	N/A	N/A	70 - 130
%SS3:	N/A	2.5	N/A	N/A	N/A	70	N/A	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 79056 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1307070-001A	07/02/13 1:55 PM	07/03/13	07/03/13 12:24 PM	1307070-002A	07/02/13 3:30 PM	07/03/13	07/03/13 1:04 PM
1307070-003A	07/02/13 3:00 PM	07/03/13	07/03/13 1:45 PM	1307070-004A	07/02/13 1:30 PM	07/03/13	07/03/13 11:37 AM
1307070-005A	07/02/13 12:45 PM	07/03/13	07/03/13 2:25 PM	1307070-006A	07/02/13 1:10 PM	07/03/13	07/03/13 3:06 PM
1307070-007A	07/02/13 12:15 PM	07/03/13	07/03/13 11:17 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.

*SH*



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 79058

WorkOrder: 1307070

**EPA Method: SW8260B**

**Extraction: SW5030B**

**Spiked Sample ID: 1306632-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	20	95.3	91	4.61	85	70 - 130	30	70 - 130
1,2-Dibromoethane (EDB)	ND	20	114	108	5.93	104	70 - 130	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	20	100	98	2.00	101	70 - 130	30	70 - 130
1,1-Dichloroethene	ND	20	91.3	87.1	4.67	87.4	70 - 130	30	70 - 130
Trichloroethene	ND	20	102	98.4	3.55	97.2	70 - 130	30	70 - 130
%SS1:	106	25	104	103	0.708	106	70 - 130	30	70 - 130
%SS2:	98	25	99	95	4.30	99	70 - 130	30	70 - 130
%SS3:	92	2.5	89	88	0.904	90	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

### BATCH 79058 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1307070-009A	07/02/13 11:45 AM	07/03/13	07/03/13 8:49 PM	1307070-010A	07/02/13 10:10 AM	07/03/13	07/03/13 10:40 PM
1307070-011A	07/02/13 9:40 AM	07/03/13	07/03/13 10:03 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1307070

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

5 days

Date Received: 07/02/2013

Date Printed: 07/02/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1307070-001	SSPO-1	Air	7/2/2013 13:55	<input type="checkbox"/>	A	A	A									
1307070-002	1185 Hall	Air	7/2/2013 15:30	<input type="checkbox"/>	A	A										
1307070-003	1185 Bath	Air	7/2/2013 15:00	<input type="checkbox"/>	A	A										
1307070-004	SS-15	Air	7/2/2013 13:30	<input type="checkbox"/>	A	A										
1307070-005	SS-7	Air	7/2/2013 12:45	<input type="checkbox"/>	A	A										
1307070-006	SS-16	Air	7/2/2013 13:10	<input type="checkbox"/>	A	A										
1307070-007	SS-14	Air	7/2/2013 12:15	<input type="checkbox"/>	A	A										
1307070-008	SS-13	Air	7/2/2013 11:55	<input type="checkbox"/>	A	A										
1307070-009	SS-6	Air	7/2/2013 11:45	<input type="checkbox"/>	A	A										
1307070-010	SS-12	Air	7/2/2013 10:10	<input type="checkbox"/>	A	A										
1307070-011	SS-11	Air	7/2/2013 9:40	<input type="checkbox"/>	A	A										

## Test Legend:

1	8010BMS_A
6	
11	

2	8010BMS_PPMV
7	
12	

3	PREDF REPORT
8	

4	
9	

5	
10	

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.







## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **7/2/2013 6:05:19 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Jena Alfaro**

WorkOrder N°: **1307070**

Matrix: Air

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187 Solano	Date Sampled: 07/03/13
		Date Received: 07/03/13
	Client Contact: Morgan Gillies	Date Reported: 07/11/13
	Client P.O.:	Date Completed: 07/11/13

**WorkOrder: 1307132**

July 11, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **5** analyzed samples from your project: **#1365.002; 1187 Solano**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***



Page 2 of 10



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1307132

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa  
cc:  
PO:  
ProjectNo: #1365.002; 1187 Solano

## Bill to:

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

Requested TAT:

5 days

**Date Received: 07/03/2013****Date Printed: 07/05/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1307132-001	A-13-8	Soil	7/3/2013 13:00	<input type="checkbox"/>	A	A										
1307132-002	A-12-8	Soil	7/3/2013 13:05	<input type="checkbox"/>	A											
1307132-003	A-11-8	Soil	7/3/2013 11:00	<input type="checkbox"/>	A											
1307132-007	A-12-5	Soil	7/3/2013 11:05	<input type="checkbox"/>	A											
1307132-008	A-13-3	Soil	7/3/2013 9:25	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **7/3/2013 9:21:11 PM**

Project Name: **#1365.002; 1187 Solano**

Login Reviewed by: **Jena Alfaro**

WorkOrder N°: **1307132** Matrix: Soil

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 14.2°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187 Solano	Date Sampled: 07/03/13
	Client Contact: Morgan Gillies	Date Received: 07/03/13
	Client P.O.:	Date Extracted 07/03/13
		Date Analyzed 07/08/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307132

Lab ID	1307132-001A
Client ID	A-13-8
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	99	%SS2:	108
%SS3:	97		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187 Solano	Date Sampled: 07/03/13
	Client Contact: Morgan Gillies	Date Received: 07/03/13
	Client P.O.:	Date Extracted 07/03/13
		Date Analyzed 07/10/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307132

Lab ID	1307132-002A
Client ID	A-12-8
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	94	%SS2:	89
%SS3:	106		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187	Date Sampled: 07/03/13
	Solano	Date Received: 07/03/13
	Client Contact: Morgan Gillies	Date Extracted: 07/03/13
	Client P.O.:	Date Analyzed: 07/08/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307132

Lab ID	1307132-003A
Client ID	A-11-8
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	100	%SS2:	109
%SS3:	99		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187 Solano	Date Sampled: 07/03/13
	Client Contact: Morgan Gillies	Date Received: 07/03/13
	Client P.O.:	Date Extracted 07/03/13
		Date Analyzed 07/08/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307132

Lab ID	1307132-007A
Client ID	A-12-5
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	97	%SS2:	108
%SS3:	98		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187 Solano	Date Sampled: 07/03/13
	Client Contact: Morgan Gillies	Date Received: 07/03/13
	Client P.O.:	Date Extracted 07/03/13
		Date Analyzed 07/09/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1307132

Lab ID	1307132-008A
Client ID	A-13-3
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	97	%SS2:	89
%SS3:	106		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 79050

WorkOrder: 1307132

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1307132-001A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	79.4	79.2	0.340	84.8	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	80.3	80.1	0.326	84.8	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	75.3	74.5	1.11	78.7	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	77.4	78.9	1.92	81.7	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	79.8	79.6	0.325	84.1	60 - 116	30	70 - 130
%SS1:	99	0.12	97	96	0.461	94	70 - 130	30	70 - 130
%SS2:	108	0.12	87	88	0.490	88	70 - 130	30	70 - 130
%SS3:	97	0.012	105	101	3.72	99	70 - 130	30	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 79050 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1307132-001A	07/03/13 1:00 PM	07/03/13	07/08/13 11:38 PM	1307132-002A	07/03/13 1:05 PM	07/03/13	07/10/13 10:06 PM
1307132-003A	07/03/13 11:00 AM	07/03/13	07/08/13 9:43 PM	1307132-007A	07/03/13 11:05 AM	07/03/13	07/08/13 10:22 PM
1307132-008A	07/03/13 9:25 AM	07/03/13	07/09/13 8:03 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.





## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187 Solano Ave	Date Sampled: 07/03/13
		Date Received: 07/03/13
	Client Contact: Morgan Gillies	Date Reported: 07/10/13
	Client P.O.:	Date Completed: 07/10/13

**WorkOrder: 1307138**

July 10, 2013

Dear Morgan:

Enclosed within are:

- 1) The results of the **9** analyzed samples from your project: **#1365.002; 1187 Solano Ave,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***

1307138

# McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Road  
Pittsburg, CA 94565

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)

Telephone: (925) 252-9262

Fax: (925) 252-9269

## CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH 24 HR 48 HR 72 HR 5 DAY ☒

EDF Required? Coelt (Normal) No Write On (DW) No

Report To: Morgan Gillies Bill To: Pangea  
Company: Pangea Environmental Services, Inc.  
1710 Franklin Street, Suite 200, Oakland, CA 94612  
E-Mail: [mgillies@pangeaenv.com](mailto:mgillies@pangeaenv.com)  
Tele: (510) 836-3702 Fax: (510) 836-3709  
Project #: ~~1270.002~~ 1365.002 Project Name: 2400 San Bruno Ave, San Francisco 11875  
Project Location: 2400 San Bruno Ave, San Francisco 11875  
Sampler Signature: [Signature]

SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED			
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other
SS-20		7/3/13	839	1	Swine			X						
SS-19			945											
SS-10			1040											
SS-8			1218											
SS-17			1344											
SS-18			1408											
SSPO-2			1456											
SSPO-3			1524											
SSPO-4			1546											

Analysis Request													Other	Comments
BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015) w/ Silica Gel Cleanup	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010 / 8021	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8081	EPA 608 / 8082 PCB's ONLY	EPA 8140 / 8141	EPA 8150 / 8151	EPA 524.2 / 624 / 8260	EPA 525 / 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals (6010 / 6020)	LUFT 5 Metals (6010 / 6020)
Lead (200.8 / 200.9 / 6010)	Five fuel oxygenates by EPA Method 8260	VOC's by TO-15 Helian												

Relinquished By: [Signature] Date: 7/3/13 Time: 1750 Received By: [Signature]  
Relinquished By: Date: Time: Received By:  
Relinquished By: Date: Time: Received By:

ICE/T: D/A  
GOOD CONDITION  
HEAD SPACE ABSENT  
DECHLORINATED IN LAB  
APPROPRIATE CONTAINERS  
PRESERVED IN LAB  
VOAS O&G METALS OTHER  
PRESERVATION pH<2

COMMENTS:



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1307138

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdela Fuente@pa

cc:

PO:

ProjectNo: #1365.002; 1187 Solano Ave

## Bill to:

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

Requested TAT:

5 days

Date Received: 07/03/2013

Date Printed: 07/05/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1307138-001	SS-20	Soil Gas	7/3/2013 8:39	<input type="checkbox"/>	A	A	A									
1307138-002	SS-19	Soil Gas	7/3/2013 9:45	<input type="checkbox"/>			A									
1307138-003	SS-10	Soil Gas	7/3/2013 10:40	<input type="checkbox"/>			A									
1307138-004	SS-8	Soil Gas	7/3/2013 12:18	<input type="checkbox"/>			A									
1307138-005	SS-17	Soil Gas	7/3/2013 13:44	<input type="checkbox"/>			A									
1307138-006	SS-18	Soil Gas	7/3/2013 14:08	<input type="checkbox"/>			A									
1307138-007	SSPO-2	Soil Gas	7/3/2013 14:56	<input type="checkbox"/>			A									
1307138-008	SSPO-3	Soil Gas	7/3/2013 15:24	<input type="checkbox"/>			A									
1307138-009	SSPO-4	Soil Gas	7/3/2013 15:46	<input type="checkbox"/>			A									

## Test Legend:

1	PREF REPORT	2	PRUNUSED SUMMA	3	TO15_SOIL(UG/M3)	4		5	
6		7		8		9		10	
11		12							

The following Sample IDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A, 009A contain testgroup.

Prepared by: Maria Venegas

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **7/3/2013 5:50:00 PM**

Project Name: **#1365.002; 1187 Solano Ave**

Login Reviewed by: **Maria Venegas**

WorkOrder N°: **1307138**

Matrix: Soil Gas

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

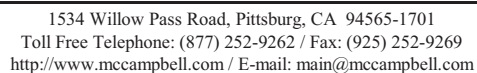
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:





**McC Campbell Analytical, Inc.**

*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
http://www.mcccampbell.com / E-mail: main@mcccampbell.com

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187 Solano Ave	Date Sampled: 07/03/13
	Client Contact: Morgan Gillies	Date Received: 07/03/13
	Client P.O.:	Date Extracted: 07/05/13
		Date Analyzed: 07/05/13

**Leak Check Compound\***

Extraction method: TO15

Analytical methods: TO15

Work Order: 1307138

Lab ID	Client ID	Matrix	Initial Pressure	Final Pressure	Isopropyl Alcohol	DF	% SS	Comments
001A	SS-20	Soil Gas	12.62	25.16	ND	1	N/A	
002A	SS-19	Soil Gas	13.06	26.08	51	1	N/A	
003A	SS-10	Soil Gas	13.26	26.42	ND	1	N/A	
005A	SS-17	Soil Gas	13.05	26.00	ND	1	N/A	
006A	SS-18	Soil Gas	12.41	24.73	ND	1	N/A	
007A	SSPO-2	Soil Gas	12.68	25.30	ND	1	N/A	
008A	SSPO-3	Soil Gas	13.56	27.05	ND	1	N/A	
009A	SSPO-4	Soil Gas	12.78	25.46	ND	1	N/A	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	SoilGas	psia	psia	50	µg/m³

\* leak check compound is reported in µg/m³.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

The (liquid) Leak Check reference is:

DTSC, Advisory-Active Soil Gas Investigations, April 2012, page 17, section 4.2.2.1:

"The laboratory reports should quantify and annotate all detections of the leak check compound at the reporting limit of the target analytes."

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor

CDPH ELAP 1644 ♦ NELAP 12283CA

KF Analyst's Initial

AR Angela Rydelius, Lab Manager





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187 Solano Ave	Date Sampled: 07/03/13
		Date Received: 07/03/13
	Client Contact: Morgan Gillies	Date Extracted: 07/05/13
	Client P.O.:	Date Analyzed: 07/05/13

## Volatile Organic Compounds in µg/m<sup>3</sup>\*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1307138

Lab ID	1307138-001A	Initial Pressure (psia)	12.62
Client ID	SS-20	Final Pressure (psia)	25.16
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	310	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	59	1.0	14	Tetrahydrofuran	71	1.0	6.0
Toluene	ND	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

### Surrogate Recoveries (%)

%SS1:	84	%SS2:	85
%SS3:	81		

Comments:

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: #1365.002; 1187  
Solano Ave

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 07/03/13

Date Received: 07/03/13

Date Extracted: 07/05/13

Date Analyzed: 07/05/13

**Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$ \***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1307138

Lab ID	1307138-002A	Initial Pressure (psia)	13.06
Client ID	SS-19	Final Pressure (psia)	26.08
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	250	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	7.1	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
Isopropyl Alcohol	51	1.0	50	4-Methyl-2-pentanone (MIBK)	8.9	1.0	8.3
Methyl-t-butyl ether (MTBE)	ND	1.0	7.3	Methylene chloride	ND	1.0	7.1
Naphthalene	ND	1.0	11	Propene	ND	1.0	88
Styrene	29	1.0	8.6	1,1,1,2-Tetrachloroethane	ND	1.0	14
1,1,2,2-Tetrachloroethane	ND	1.0	14	Tetrachloroethene	34	1.0	14
Toluene	15	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

**Surrogate Recoveries (%)**

%SS1:	85	%SS2:	84
%SS3:	81		

Comments:

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: #1365.002; 1187  
Solano Ave

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 07/03/13

Date Received: 07/03/13

Date Extracted: 07/05/13

Date Analyzed: 07/05/13

**Volatile Organic Compounds in µg/m<sup>3</sup>\***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1307138

Lab ID	1307138-003A	Initial Pressure (psia)	13.26
Client ID	SS-10	Final Pressure (psia)	26.42
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	390	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	13	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	110	1.0	14	Tetrahydrofuran	38	1.0	6.0
Toluene	ND	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

**Surrogate Recoveries (%)**

%SS1:	86	%SS2:	84
%SS3:	81		

Comments:

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: #1365.002; 1187

Solano Ave

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 07/03/13

Date Received: 07/03/13

Date Extracted: 07/05/13

Date Analyzed: 07/05/13

**Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$ \***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1307138

Lab ID	1307138-004A	Initial Pressure (psia)	12.58
Client ID	SS-8	Final Pressure (psia)	25.12
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	320	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	56	1.0	14	Tetrahydrofuran	61	1.0	6.0
Toluene	ND	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

**Surrogate Recoveries (%)**

%SS1:	85	%SS2:	85
%SS3:	81		

Comments:

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: #1365.002; 1187

Solano Ave

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 07/03/13

Date Received: 07/03/13

Date Extracted: 07/05/13

Date Analyzed: 07/05/13

**Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$ \***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1307138

Lab ID	1307138-005A	Initial Pressure (psia)	13.05
Client ID	SS-17	Final Pressure (psia)	26.00
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	240	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	670	1.0	14	Tetrahydrofuran	39	1.0	6.0
Toluene	ND	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

**Surrogate Recoveries (%)**

%SS1:	87	%SS2:	85
%SS3:	82		

Comments:

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187 Solano Ave	Date Sampled: 07/03/13
		Date Received: 07/03/13
	Client Contact: Morgan Gillies	Date Extracted: 07/05/13
	Client P.O.:	Date Analyzed: 07/05/13

## Volatile Organic Compounds in µg/m<sup>3</sup>\*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1307138

Lab ID	1307138-006A	Initial Pressure (psia)	12.41
Client ID	SS-18	Final Pressure (psia)	24.73
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	200	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	9.0	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	270	1.0	14	Tetrahydrofuran	22	1.0	6.0
Toluene	ND	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

### Surrogate Recoveries (%)

%SS1:	87	%SS2:	85
%SS3:	81		

Comments:

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor





Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: #1365.002; 1187

Solano Ave

Client Contact: Morgan Gillies

Client P.O.:

Date Sampled: 07/03/13

Date Received: 07/03/13

Date Extracted: 07/05/13

Date Analyzed: 07/05/13

**Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$ \***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1307138

Lab ID	1307138-007A	Initial Pressure (psia)	12.68
Client ID	SSPO-2	Final Pressure (psia)	25.30
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	200	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	20	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	450	1.0	14	Tetrahydrofuran	29	1.0	6.0
Toluene	ND	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

**Surrogate Recoveries (%)**

%SS1:	88	%SS2:	86
%SS3:	82		

Comments:

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187	Date Sampled: 07/03/13
	Solano Ave	Date Received: 07/03/13
	Client Contact: Morgan Gillies	Date Extracted: 07/05/13
	Client P.O.:	Date Analyzed: 07/05/13

## Volatile Organic Compounds in µg/m<sup>3</sup>\*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1307138

Lab ID	1307138-008A	Initial Pressure (psia)	13.56
Client ID	SSPO-3	Final Pressure (psia)	27.05
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	180	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	140	1.0	14	Tetrahydrofuran	32	1.0	6.0
Toluene	ND	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

### Surrogate Recoveries (%)

%SS1:	87	%SS2:	85
%SS3:	82		

Comments:

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1365.002; 1187 Solano Ave	Date Sampled: 07/03/13
		Date Received: 07/03/13
	Client Contact: Morgan Gillies	Date Extracted: 07/05/13-07/08/13
	Client P.O.:	Date Analyzed: 07/05/13-07/08/13

## Volatile Organic Compounds in µg/m<sup>3</sup>\*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1307138

Lab ID	1307138-009A	Initial Pressure (psia)	12.78
Client ID	SSPO-4	Final Pressure (psia)	25.46
Matrix	Soil Gas		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	210	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	62	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	57	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	1800	4.0	14	Tetrahydrofuran	35	1.0	6.0
Toluene	ND	1.0	7.7	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

### Surrogate Recoveries (%)

%SS1:	87	%SS2:	85
%SS3:	83		

Comments:

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



## QC SUMMARY REPORT FOR ASTM D 1946-90

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 79227

WorkOrder: 1307138

EPA Method: ASTM D 1946-90

Extraction: ASTM D 1946-90

Spiked Sample ID: N/A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	%	%	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Helium	N/A	0.010	N/A	N/A	N/A	101	N/A	N/A	60 - 140

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

### BATCH 79227 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1307138-004A	07/03/13 12:18 PM	07/09/13	07/09/13 12:34 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification 1644

 QA/QC Officer



## QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 79137

WorkOrder: 1307138

EPA Method: TO15		Extraction: TO15				Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Acrylonitrile	N/A	25	N/A	N/A	N/A	102	N/A	N/A	60 - 140
tert-Amyl methyl ether (TAME)	N/A	25	N/A	N/A	N/A	110	N/A	N/A	60 - 140
Benzene	N/A	25	N/A	N/A	N/A	90.6	N/A	N/A	60 - 140
Benzyl chloride	N/A	25	N/A	N/A	N/A	111	N/A	N/A	60 - 140
Bromodichloromethane	N/A	25	N/A	N/A	N/A	97.6	N/A	N/A	60 - 140
Bromoform	N/A	25	N/A	N/A	N/A	83.8	N/A	N/A	60 - 140
t-Butyl alcohol (TBA)	N/A	25	N/A	N/A	N/A	96.5	N/A	N/A	60 - 140
Carbon Disulfide	N/A	25	N/A	N/A	N/A	103	N/A	N/A	60 - 140
Carbon Tetrachloride	N/A	25	N/A	N/A	N/A	97.2	N/A	N/A	60 - 140
Chlorobenzene	N/A	25	N/A	N/A	N/A	94.9	N/A	N/A	60 - 140
Chloroethane	N/A	25	N/A	N/A	N/A	109	N/A	N/A	60 - 140
Chloroform	N/A	25	N/A	N/A	N/A	96.5	N/A	N/A	60 - 140
Chloromethane	N/A	25	N/A	N/A	N/A	97	N/A	N/A	60 - 140
Dibromochloromethane	N/A	25	N/A	N/A	N/A	97	N/A	N/A	60 - 140
1,2-Dibromo-3-chloropropane	N/A	25	N/A	N/A	N/A	107	N/A	N/A	60 - 140
1,2-Dibromoethane (EDB)	N/A	25	N/A	N/A	N/A	92.4	N/A	N/A	60 - 140
1,2-Dichlorobenzene	N/A	25	N/A	N/A	N/A	83.7	N/A	N/A	60 - 140
1,3-Dichlorobenzene	N/A	25	N/A	N/A	N/A	88	N/A	N/A	60 - 140
1,4-Dichlorobenzene	N/A	25	N/A	N/A	N/A	81.8	N/A	N/A	60 - 140
1,1-Dichloroethane	N/A	25	N/A	N/A	N/A	93	N/A	N/A	60 - 140
1,2-Dichloroethane (1,2-DCA)	N/A	25	N/A	N/A	N/A	95.4	N/A	N/A	60 - 140
1,1-Dichloroethene	N/A	25	N/A	N/A	N/A	113	N/A	N/A	60 - 140
cis-1,2-Dichloroethene	N/A	25	N/A	N/A	N/A	98	N/A	N/A	60 - 140
trans-1,2-Dichloroethene	N/A	25	N/A	N/A	N/A	99.2	N/A	N/A	60 - 140
1,2-Dichloropropane	N/A	25	N/A	N/A	N/A	95.5	N/A	N/A	60 - 140
cis-1,3-Dichloropropene	N/A	25	N/A	N/A	N/A	104	N/A	N/A	60 - 140
trans-1,3-Dichloropropene	N/A	25	N/A	N/A	N/A	109	N/A	N/A	60 - 140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	N/A	25	N/A	N/A	N/A	96.5	N/A	N/A	60 - 140
Diisopropyl ether (DIPE)	N/A	25	N/A	N/A	N/A	97.9	N/A	N/A	60 - 140
1,4-Dioxane	N/A	25	N/A	N/A	N/A	93.9	N/A	N/A	60 - 140
Ethyl acetate	N/A	25	N/A	N/A	N/A	98.2	N/A	N/A	60 - 140

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 79137

WorkOrder: 1307138

EPA Method: TO15		Extraction: TO15					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Ethyl tert-butyl ether (ETBE)	N/A	25	N/A	N/A	N/A	106	N/A	N/A	60 - 140
Ethylbenzene	N/A	25	N/A	N/A	N/A	95.5	N/A	N/A	60 - 140
Freon 113	N/A	25	N/A	N/A	N/A	95.9	N/A	N/A	60 - 140
Hexachlorobutadiene	N/A	25	N/A	N/A	N/A	85	N/A	N/A	60 - 140
4-Methyl-2-pentanone (MIBK)	N/A	25	N/A	N/A	N/A	98.7	N/A	N/A	60 - 140
Methyl-t-butyl ether (MTBE)	N/A	25	N/A	N/A	N/A	99.2	N/A	N/A	60 - 140
Methylene chloride	N/A	25	N/A	N/A	N/A	91.6	N/A	N/A	60 - 140
Naphthalene	N/A	50	N/A	N/A	N/A	88.9	N/A	N/A	60 - 140
Styrene	N/A	25	N/A	N/A	N/A	93.8	N/A	N/A	60 - 140
1,1,1,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	100	N/A	N/A	60 - 140
1,1,2,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	87.6	N/A	N/A	60 - 140
Tetrachloroethene	N/A	25	N/A	N/A	N/A	88.6	N/A	N/A	60 - 140
Tetrahydrofuran	N/A	25	N/A	N/A	N/A	110	N/A	N/A	60 - 140
Toluene	N/A	25	N/A	N/A	N/A	104	N/A	N/A	60 - 140
1,2,4-Trichlorobenzene	N/A	25	N/A	N/A	N/A	82.8	N/A	N/A	60 - 140
1,1,1-Trichloroethane	N/A	25	N/A	N/A	N/A	95.8	N/A	N/A	60 - 140
1,1,2-Trichloroethane	N/A	25	N/A	N/A	N/A	92.7	N/A	N/A	60 - 140
Trichloroethene	N/A	25	N/A	N/A	N/A	96	N/A	N/A	60 - 140
1,2,4-Trimethylbenzene	N/A	25	N/A	N/A	N/A	93.2	N/A	N/A	60 - 140
1,3,5-Trimethylbenzene	N/A	25	N/A	N/A	N/A	90.4	N/A	N/A	60 - 140
Vinyl Chloride	N/A	25	N/A	N/A	N/A	103	N/A	N/A	60 - 140
Xylenes, Total	N/A	75	N/A	N/A	N/A	90.5	N/A	N/A	60 - 140
%SS1:	N/A	500	N/A	N/A	N/A	123	N/A	N/A	60 - 140
%SS2:	N/A	500	N/A	N/A	N/A	125	N/A	N/A	60 - 140
%SS3:	N/A	500	N/A	N/A	N/A	120	N/A	N/A	60 - 140
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

DHS ELAP Certification 1644

 QA/QC Officer





## QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 79137

WorkOrder: 1307138

EPA Method: TO15		Extraction: TO15				Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS

### BATCH 79137 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1307138-001A	07/03/13 8:39 AM	07/05/13	07/05/13 4:15 PM	1307138-002A	07/03/13 9:45 AM	07/05/13	07/05/13 4:56 PM
1307138-003A	07/03/13 10:40 AM	07/05/13	07/05/13 5:37 PM	1307138-005A	07/03/13 1:44 PM	07/05/13	07/05/13 6:59 PM
1307138-006A	07/03/13 2:08 PM	07/05/13	07/05/13 7:40 PM	1307138-007A	07/03/13 2:56 PM	07/05/13	07/05/13 8:22 PM
1307138-008A	07/03/13 3:24 PM	07/05/13	07/05/13 9:03 PM	1307138-009A	07/03/13 3:46 PM	07/05/13	07/05/13 9:44 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/01/13
		Date Received: 08/01/13
	Client Contact: Bob Clark-Riddell	Date Reported: 08/09/13
	Client P.O.:	Date Completed: 08/09/13

**WorkOrder: 1308051**

August 09, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the **4** analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

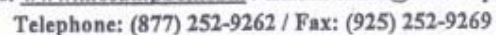
If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***



Sampler Signature: 

Notes:

Received By:

Shipped Via: \_\_\_\_\_



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1308051

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

**Bill to:**

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

**Requested TAT:****5 days****Date Received: 08/01/2013****Date Printed: 08/01/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1308051-001	SS-9	Air	8/1/2013 12:00	<input type="checkbox"/>		A										
1308051-002	SSPO-5	Air	8/1/2013 12:21	<input type="checkbox"/>		A										
1308051-003	SS-16	Air	8/1/2013 12:36	<input type="checkbox"/>		A										
1308051-004	Unused Summa	Air	8/1/2013	<input type="checkbox"/>	A											

**Test Legend:**

1	PRUNUSEDSUMMA	2	TO15_SOIL(UG/M3)	3		4		5	
6		7		8		9		10	
11		12							

The following SampleIDs: 001A, 002A, 003A contain testgroup.

**Prepared by: Jena Alfaro**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **8/1/2013 4:08:05 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Jena Alfaro**

WorkOrder N°: **1308051**

Matrix: Air

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:



**McC Campbell Analytical, Inc.**  
*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
<http://www.mcccampbell.com> / E-mail: [main@mcccampbell.com](mailto:main@mcccampbell.com)

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/01/13
		Date Received: 08/01/13
	Client Contact: Bob Clark-Riddell	Date Reported: 08/08/13
	Client P.O.:	Date Completed: 08/08/13

**Work Order: 1308051**

August 08, 2013

#### CASE NARRATIVE REGARDING TO-15 ANALYSIS

All summa canisters are EVACUATED 5 days after the reporting of the results. Please call or email if a longer retention time is required.

In an effort to attain the lowest reporting limits possible for the majority of the TO-15 target list, high level compounds may be analyzed using EPA Method 8260B.

Polymer (Tedlar) bags are not recommended for TO15 samples. The disadvantages are listed in Appendix B of the DTSC Advisory of April 2012.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/01/13
		Date Received: 08/01/13
	Client Contact: Bob Clark-Riddell	Date Extracted: 08/07/13
	Client P.O.:	Date Analyzed: 08/07/13

### Volatile Organics by P&T and GC/MS in $\mu\text{g}/\text{m}^3$ \*

Extraction method: SW5030B

Analytical methods: SW8260B

Work Order: 1308051

[illegible]

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	SoilGas	psia	psia	500	µg/m³

\*soil vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/01/13
		Date Received: 08/01/13
	Client Contact: Bob Clark-Riddell	Date Extracted: 08/07/13
	Client P.O.:	Date Analyzed: 08/07/13

### Volatile Organics by P&T and GC/MS in $\mu\text{g}/\text{m}^3$ \*

Extraction method: SW5030B

Analytical methods: SW8260B

Work Order: 1308051

[illegible]

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	SoilGas	psia	psia	25000	µg/m³

\*soil vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



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Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/01/13
		Date Received: 08/01/13
	Client Contact: Bob Clark-Riddell	Date Extracted: 08/02/13-08/09/13
	Client P.O.:	Date Analyzed: 08/02/13-08/09/13

## Leak Check Compound\*

Extraction method: TO15

Analytical methods: TO15

Work Order: 1308051

[illegible]

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	SoilGas	psia	psia	50	µg/m³

\* leak check compound is reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

The (liquid) Leak Check reference is:

DTSC, Advisory-Active Soil Gas Investigations, April 2012, page 17, section 4.2.2.1:

"The laboratory reports should quantify and annotate all detections of the leak check compound at the reporting limit of the target analytes."

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor

CDPH ELAP 1644 ♦ NELAP 12283CA

KF Analyst's Initial

 Angela Rydelius, Lab Manager



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/01/13
	Client Contact: Bob Clark-Riddell	Date Received: 08/01/13
	Client P.O.:	Date Extracted: 08/02/13
		Date Analyzed: 08/02/13

## Volatile Organic Compounds in µg/m<sup>3</sup>\*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1308051

Lab ID	1308051-001A	Initial Pressure (psia)	14.88
Client ID	SS-9	Final Pressure (psia)	29.72
Matrix	Air		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	6.2	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	ND	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrahydrofuran	ND	1.0	6.0	Toluene	ND<7.7	1.0	7.71
1,2,4-Trichlorobenzene	ND	1.0	15	1,1,1-Trichloroethane	ND	1.0	11
1,1,2-Trichloroethane	ND	1.0	11	Trichloroethene	75	1.0	11
Trichlorofluoromethane	ND	1.0	11	1,2,4-Trimethylbenzene	ND	1.0	10
1,3,5-Trimethylbenzene	ND	1.0	10	Vinyl Acetate	ND	1.0	180
Vinyl Chloride	ND	1.0	5.2	Xylenes, Total	ND	1.0	27

### Surrogate Recoveries (%)

%SS1:	113	%SS2:	107
%SS3:	108		

Comments:

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/01/13
		Date Received: 08/01/13
	Client Contact: Bob Clark-Riddell	Date Extracted: 08/02/13
	Client P.O.:	Date Analyzed: 08/02/13

## Volatile Organic Compounds in µg/m<sup>3</sup>\*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1308051

Lab ID	1308051-002A	Initial Pressure (psia)	12.94
Client ID	SSPO-5	Final Pressure (psia)	25.78
Matrix	Air		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	6.2	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethanol	ND	1.0	96	Ethyl acetate	ND	1.0	19
Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5	Ethylbenzene	ND	1.0	8.8
4-Ethyltoluene	ND	1.0	10	Freon 113	ND	1.0	16
Heptane	ND	1.0	210	Hexachlorobutadiene	ND	1.0	22
Hexane	ND	1.0	180	2-Hexanone	ND	1.0	210
4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3	Methyl-t-butyl ether (MTBE)	ND	1.0	7.3
Methylene chloride	ND	1.0	7.1	Naphthalene	ND	1.0	11
Propene	ND	1.0	88	Styrene	37	1.0	8.6
1,1,1,2-Tetrachloroethane	ND	1.0	14	1,1,2,2-Tetrachloroethane	ND	1.0	14
Tetrachloroethene	41	1.0	14	Tetrahydrofuran	ND	1.0	6.0
Toluene	ND<7.7	1.0	7.71	1,2,4-Trichlorobenzene	ND	1.0	15
1,1,1-Trichloroethane	ND	1.0	11	1,1,2-Trichloroethane	ND	1.0	11
Trichloroethene	ND	1.0	11	Trichlorofluoromethane	ND	1.0	11
1,2,4-Trimethylbenzene	ND	1.0	10	1,3,5-Trimethylbenzene	ND	1.0	10
Vinyl Acetate	ND	1.0	180	Vinyl Chloride	ND	1.0	5.2
Xylenes, Total	ND	1.0	27				

### Surrogate Recoveries (%)

%SS1:	116	%SS2:	108
%SS3:	110		

Comments:

\*vapor samples are reported in µg/m<sup>3</sup>.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200

Oakland, CA 94612

Client Project ID: #1435.002; Solano Group

Client Contact: Bob Clark-Riddell

Client P.O.:

Date Sampled: 08/01/13

Date Received: 08/01/13

Date Extracted: 08/02/13-08/09/13

Date Analyzed: 08/02/13-08/09/13

**Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$ \***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1308051

Lab ID	1308051-003A	Initial Pressure (psia)	13.23
Client ID	SS-16	Final Pressure (psia)	26.38
Matrix	Air		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	1500	4.0	120	Acrylonitrile	ND	1.0	4.4
tert-Amyl methyl ether (TAME)	ND	1.0	8.5	Benzene	ND	1.0	6.5
Benzyl chloride	ND	1.0	11	Bromodichloromethane	ND	1.0	14
Bromoform	ND	1.0	21	Bromomethane	ND	1.0	7.9
1,3-Butadiene	ND	1.0	4.5	2-Butanone (MEK)	ND	1.0	150
t-Butyl alcohol (TBA)	ND	1.0	6.2	Carbon Disulfide	ND	1.0	6.3
Carbon Tetrachloride	ND	1.0	13	Chlorobenzene	ND	1.0	9.4
Chloroethane	ND	1.0	5.4	Chloroform	ND	1.0	9.9
Chloromethane	ND	1.0	4.2	Cyclohexane	ND	1.0	180
Dibromochloromethane	ND	1.0	17	1,2-Dibromo-3-chloropropane	ND	1.0	20
1,2-Dibromoethane (EDB)	ND	1.0	16	1,2-Dichlorobenzene	ND	1.0	12
1,3-Dichlorobenzene	ND	1.0	12	1,4-Dichlorobenzene	ND	1.0	12
Dichlorodifluoromethane	ND	1.0	10	1,1-Dichloroethane	ND	1.0	8.2
1,2-Dichloroethane (1,2-DCA)	ND	1.0	8.2	1,1-Dichloroethene	ND	1.0	8.1
cis-1,2-Dichloroethene	ND	1.0	8.1	trans-1,2-Dichloroethene	ND	1.0	8.1
1,2-Dichloropropane	ND	1.0	9.4	cis-1,3-Dichloropropene	ND	1.0	9.2
trans-1,3-Dichloropropene	ND	1.0	9.2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	14
Diisopropyl ether (DIPE)	ND	1.0	8.5	1,4-Dioxane	ND	1.0	7.3
Ethyl acetate	350	1.0	19	Ethyl tert-butyl ether (ETBE)	ND	1.0	8.5
Ethylbenzene	ND	1.0	8.8	4-Ethyltoluene	ND	1.0	10
Freon 113	ND	1.0	16	Heptane	ND	1.0	210
Hexachlorobutadiene	ND	1.0	22	Hexane	ND	1.0	180
2-Hexanone	ND	1.0	210	4-Methyl-2-pentanone (MIBK)	ND	1.0	8.3
Methyl-t-butyl ether (MTBE)	ND	1.0	7.3	Methylene chloride	ND	1.0	7.1
Naphthalene	ND	1.0	11	Propene	ND	1.0	88
Styrene	ND	1.0	8.6	1,1,1,2-Tetrachloroethane	ND	1.0	14
1,1,2,2-Tetrachloroethane	ND	1.0	14	Tetrachloroethene	1400	1.0	14
Tetrahydrofuran	ND	1.0	6.0	Toluene	ND<7.7	1.0	7.71
1,2,4-Trichlorobenzene	ND	1.0	15	1,1,1-Trichloroethane	ND	1.0	11
1,1,2-Trichloroethane	ND	1.0	11	Trichloroethene	ND	1.0	11
Trichlorofluoromethane	ND	1.0	11	1,2,4-Trimethylbenzene	ND	1.0	10
1,3,5-Trimethylbenzene	ND	1.0	10	Vinyl Acetate	ND	1.0	180
Vinyl Chloride	ND	1.0	5.2	Xylenes, Total	ND	1.0	27

**Surrogate Recoveries (%)**

%SS1:	108	%SS2:	109
%SS3:	113		

Comments:

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor





## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soilgas

QC Matrix: Water

BatchID: 80313

WorkOrder: 1308051

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
tert-Amyl methyl ether (TAME)	N/A	20	N/A	N/A	N/A	94.3	N/A	N/A	70 - 130
Benzene	N/A	20	N/A	N/A	N/A	93.9	N/A	N/A	70 - 130
t-Butyl alcohol (TBA)	N/A	80	N/A	N/A	N/A	85.8	N/A	N/A	70 - 130
Chlorobenzene	N/A	20	N/A	N/A	N/A	90.1	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	N/A	20	N/A	N/A	N/A	90.9	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	N/A	20	N/A	N/A	N/A	87.5	N/A	N/A	70 - 130
1,1-Dichloroethene	N/A	20	N/A	N/A	N/A	104	N/A	N/A	70 - 130
Diisopropyl ether (DIPE)	N/A	20	N/A	N/A	N/A	97.8	N/A	N/A	70 - 130
Ethyl tert-butyl ether (ETBE)	N/A	20	N/A	N/A	N/A	95.3	N/A	N/A	70 - 130
Methyl-t-butyl ether (MTBE)	N/A	20	N/A	N/A	N/A	90.4	N/A	N/A	70 - 130
Toluene	N/A	20	N/A	N/A	N/A	90.6	N/A	N/A	70 - 130
Trichloroethene	N/A	20	N/A	N/A	N/A	92.1	N/A	N/A	70 - 130
%SS1:	N/A	25	N/A	N/A	N/A	95	N/A	N/A	70 - 130
%SS2:	N/A	25	N/A	N/A	N/A	89	N/A	N/A	70 - 130
%SS3:	N/A	2.5	N/A	N/A	N/A	91	N/A	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 80313 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1308051-003A	08/01/13 12:36 PM	08/07/13	08/07/13 9:33 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soilgas

QC Matrix: Water

BatchID: 80328

WorkOrder: 1308051

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
tert-Amyl methyl ether (TAME)	N/A	10	N/A	N/A	N/A	132, F1	N/A	N/A	70 - 130
Benzene	N/A	10	N/A	N/A	N/A	105	N/A	N/A	70 - 130
t-Butyl alcohol (TBA)	N/A	40	N/A	N/A	N/A	98.2	N/A	N/A	70 - 130
Chlorobenzene	N/A	10	N/A	N/A	N/A	96.7	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	N/A	10	N/A	N/A	N/A	103	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	N/A	10	N/A	N/A	N/A	103	N/A	N/A	70 - 130
1,1-Dichloroethene	N/A	10	N/A	N/A	N/A	100	N/A	N/A	70 - 130
Diisopropyl ether (DIPE)	N/A	10	N/A	N/A	N/A	116	N/A	N/A	70 - 130
Ethyl tert-butyl ether (ETBE)	N/A	10	N/A	N/A	N/A	112	N/A	N/A	70 - 130
Methyl-t-butyl ether (MTBE)	N/A	10	N/A	N/A	N/A	105	N/A	N/A	70 - 130
Toluene	N/A	10	N/A	N/A	N/A	98.5	N/A	N/A	70 - 130
Trichloroethene	N/A	10	N/A	N/A	N/A	102	N/A	N/A	70 - 130
%SS1:	N/A	25	N/A	N/A	N/A	120	N/A	N/A	70 - 130
%SS2:	N/A	25	N/A	N/A	N/A	109	N/A	N/A	70 - 130
%SS3:	N/A	2.5	N/A	N/A	N/A	100	N/A	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									
F1 = MS/MSD recovery and/or %RPD was out of acceptance criteria; LCS validated the prep batch.									

### BATCH 80328 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1308051-001A	08/01/13 12:00 PM	08/07/13	08/07/13 9:08 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

*SH*



## QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 80224

WorkOrder: 1308051

EPA Method: TO15		Extraction: TO15				Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Acrylonitrile	N/A	25	N/A	N/A	N/A	94.3	N/A	N/A	60 - 140
tert-Amyl methyl ether (TAME)	N/A	25	N/A	N/A	N/A	93.6	N/A	N/A	60 - 140
Benzene	N/A	25	N/A	N/A	N/A	86.7	N/A	N/A	60 - 140
Benzyl chloride	N/A	25	N/A	N/A	N/A	112	N/A	N/A	60 - 140
Bromodichloromethane	N/A	25	N/A	N/A	N/A	98.5	N/A	N/A	60 - 140
Bromoform	N/A	25	N/A	N/A	N/A	113	N/A	N/A	60 - 140
t-Butyl alcohol (TBA)	N/A	25	N/A	N/A	N/A	83.3	N/A	N/A	60 - 140
Carbon Disulfide	N/A	25	N/A	N/A	N/A	91.1	N/A	N/A	60 - 140
Carbon Tetrachloride	N/A	25	N/A	N/A	N/A	98.9	N/A	N/A	60 - 140
Chlorobenzene	N/A	25	N/A	N/A	N/A	97.5	N/A	N/A	60 - 140
Chloroethane	N/A	25	N/A	N/A	N/A	97	N/A	N/A	60 - 140
Chloroform	N/A	25	N/A	N/A	N/A	92.1	N/A	N/A	60 - 140
Chloromethane	N/A	25	N/A	N/A	N/A	78.5	N/A	N/A	60 - 140
Dibromochloromethane	N/A	25	N/A	N/A	N/A	107	N/A	N/A	60 - 140
1,2-Dibromo-3-chloropropane	N/A	25	N/A	N/A	N/A	98.4	N/A	N/A	60 - 140
1,2-Dibromoethane (EDB)	N/A	25	N/A	N/A	N/A	99.4	N/A	N/A	60 - 140
1,2-Dichlorobenzene	N/A	25	N/A	N/A	N/A	96.6	N/A	N/A	60 - 140
1,3-Dichlorobenzene	N/A	25	N/A	N/A	N/A	96.1	N/A	N/A	60 - 140
1,4-Dichlorobenzene	N/A	25	N/A	N/A	N/A	103	N/A	N/A	60 - 140
Dichlorodifluoromethane	N/A	25	N/A	N/A	N/A	91.4	N/A	N/A	60 - 140
1,1-Dichloroethane	N/A	25	N/A	N/A	N/A	90.2	N/A	N/A	60 - 140
1,2-Dichloroethane (1,2-DCA)	N/A	25	N/A	N/A	N/A	95.7	N/A	N/A	60 - 140
1,1-Dichloroethene	N/A	25	N/A	N/A	N/A	95.2	N/A	N/A	60 - 140
cis-1,2-Dichloroethene	N/A	25	N/A	N/A	N/A	94.8	N/A	N/A	60 - 140
trans-1,2-Dichloroethene	N/A	25	N/A	N/A	N/A	103	N/A	N/A	60 - 140
1,2-Dichloropropane	N/A	25	N/A	N/A	N/A	92.4	N/A	N/A	60 - 140
cis-1,3-Dichloropropene	N/A	25	N/A	N/A	N/A	99.4	N/A	N/A	60 - 140
trans-1,3-Dichloropropene	N/A	25	N/A	N/A	N/A	103	N/A	N/A	60 - 140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	N/A	25	N/A	N/A	N/A	88.1	N/A	N/A	60 - 140
Diisopropyl ether (DIPE)	N/A	25	N/A	N/A	N/A	87.7	N/A	N/A	60 - 140
1,4-Dioxane	N/A	25	N/A	N/A	N/A	97.7	N/A	N/A	60 - 140

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 80224

WorkOrder: 1308051

EPA Method: TO15		Extraction: TO15					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Ethyl acetate	N/A	25	N/A	N/A	N/A	87.2	N/A	N/A	60 - 140
Ethyl tert-butyl ether (ETBE)	N/A	25	N/A	N/A	N/A	91.7	N/A	N/A	60 - 140
Ethylbenzene	N/A	25	N/A	N/A	N/A	90.3	N/A	N/A	60 - 140
Freon 113	N/A	25	N/A	N/A	N/A	90.4	N/A	N/A	60 - 140
Hexachlorobutadiene	N/A	25	N/A	N/A	N/A	101	N/A	N/A	60 - 140
4-Methyl-2-pentanone (MIBK)	N/A	25	N/A	N/A	N/A	93.5	N/A	N/A	60 - 140
Methyl-t-butyl ether (MTBE)	N/A	25	N/A	N/A	N/A	91	N/A	N/A	60 - 140
Methylene chloride	N/A	25	N/A	N/A	N/A	73.8	N/A	N/A	60 - 140
Naphthalene	N/A	50	N/A	N/A	N/A	101	N/A	N/A	60 - 140
Styrene	N/A	25	N/A	N/A	N/A	99.2	N/A	N/A	60 - 140
1,1,1,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	103	N/A	N/A	60 - 140
1,1,2,2-Tetrachloroethane	N/A	25	N/A	N/A	N/A	97.4	N/A	N/A	60 - 140
Tetrachloroethene	N/A	25	N/A	N/A	N/A	95.6	N/A	N/A	60 - 140
Tetrahydrofuran	N/A	25	N/A	N/A	N/A	89.1	N/A	N/A	60 - 140
Toluene	N/A	25	N/A	N/A	N/A	83.8	N/A	N/A	60 - 140
1,2,4-Trichlorobenzene	N/A	25	N/A	N/A	N/A	105	N/A	N/A	60 - 140
1,1,1-Trichloroethane	N/A	25	N/A	N/A	N/A	95.4	N/A	N/A	60 - 140
1,1,2-Trichloroethane	N/A	25	N/A	N/A	N/A	96.6	N/A	N/A	60 - 140
Trichloroethene	N/A	25	N/A	N/A	N/A	97.7	N/A	N/A	60 - 140
1,2,4-Trimethylbenzene	N/A	25	N/A	N/A	N/A	95.3	N/A	N/A	60 - 140
1,3,5-Trimethylbenzene	N/A	25	N/A	N/A	N/A	97.1	N/A	N/A	60 - 140
Vinyl Chloride	N/A	25	N/A	N/A	N/A	98.2	N/A	N/A	60 - 140
Xylenes, Total	N/A	75	N/A	N/A	N/A	94.7	N/A	N/A	60 - 140
%SS1:	N/A	500	N/A	N/A	N/A	106	N/A	N/A	60 - 140
%SS2:	N/A	500	N/A	N/A	N/A	107	N/A	N/A	60 - 140
%SS3:	N/A	500	N/A	N/A	N/A	110	N/A	N/A	60 - 140
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



## QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 80224

WorkOrder: 1308051

EPA Method: TO15		Extraction: TO15				Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS

### BATCH 80224 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1308051-001A	08/01/13 12:00 PM	08/02/13	08/02/13 8:41 PM	1308051-002A	08/01/13 12:21 PM	08/02/13	08/02/13 9:25 PM
1308051-003A	08/01/13 12:36 PM	08/02/13	08/02/13 10:09 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/07/13
		Date Received: 08/13/13
	Client Contact: Bob Clark-Riddell	Date Reported: 08/16/13
	Client P.O.:	Date Completed: 08/15/13

**WorkOrder: 1308416**

August 16, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the 2 analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***







# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1308416

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group**Bill to:**Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612**Requested TAT:****3 days****Date Received: 08/13/2013****Date Printed: 08/13/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1308416-001	F-1-2	Soil	8/7/2013 16:45	<input type="checkbox"/>	A	A										
1308416-002	F-2-2.5	Soil	8/7/2013 16:15	<input type="checkbox"/>	A											

**Test Legend:**

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Jena Alfaro****Comments:**NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **8/13/2013 6:02:18 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Jena Alfaro**

WorkOrder N°: **1308416** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 2.3°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/07/13
	Client Contact: Bob Clark-Riddell	Date Received: 08/13/13
	Client P.O.:	Date Extracted 08/13/13
		Date Analyzed 08/14/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1308416

Lab ID	1308416-001A
Client ID	F-1-2
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.0075	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	111	%SS2:	123
%SS3:	119		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/07/13
	Client Contact: Bob Clark-Riddell	Date Received: 08/13/13
	Client P.O.:	Date Extracted 08/13/13
		Date Analyzed 08/14/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1308416

Lab ID	1308416-002A
Client ID	F-2-2.5
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.014	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	110	%SS2:	124
%SS3:	117		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 80520

WorkOrder: 1308416

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	N/A	0.050	N/A	N/A	N/A	91.3	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	N/A	0.050	N/A	N/A	N/A	89.6	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	N/A	0.050	N/A	N/A	N/A	88	N/A	N/A	70 - 130
1,1-Dichloroethene	N/A	0.050	N/A	N/A	N/A	101	N/A	N/A	70 - 130
Trichloroethene	N/A	0.050	N/A	N/A	N/A	93.3	N/A	N/A	70 - 130
%SS1:	N/A	0.12	N/A	N/A	N/A	107	N/A	N/A	70 - 130
%SS2:	N/A	0.12	N/A	N/A	N/A	104	N/A	N/A	70 - 130
%SS3:	N/A	0.012	N/A	N/A	N/A	105	N/A	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 80520 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1308416-001A	08/07/13 4:45 PM	08/13/13	08/14/13 2:45 PM	1308416-002A	08/07/13 4:15 PM	08/13/13	08/14/13 3:22 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - \text{Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.





## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/15/13
		Date Received: 08/15/13
	Client Contact: Bob Clark-Riddell	Date Reported: 08/21/13
	Client P.O.:	Date Completed: 08/21/13

**WorkOrder: 1308563**

August 21, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the **5** analyzed samples from your project: **#1435.002; Solano Group**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***

## Page 2 of 11



# McCampbell Analytical, Inc.



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 1308563

ClientCode: PEO

☐ WaterTrax

☐ WriteOn

☒ EDF

☐ Excel

☐ EQulS

☒ Email

☐ HardCopy

☐ ThirdParty

☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

5 days

**Date Received:** 08/15/2013

**Date Printed:** 08/16/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1308563-001	SW-N1-2'	Soil	8/15/2013 10:00	<input type="checkbox"/>	A	A										
1308563-002	SW-N2-1'	Soil	8/15/2013 10:15	<input type="checkbox"/>	A											
1308563-003	SW-W-1'	Soil	8/15/2013 10:30	<input type="checkbox"/>	A											
1308563-004	F-3-3'	Soil	8/15/2013 11:15	<input type="checkbox"/>	A											
1308563-005	F-4-3'	Soil	8/15/2013 11:30	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.





## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **8/15/2013 6:44:19 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1308563** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 2°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/15/13
	Client Contact: Bob Clark-Riddell	Date Received: 08/15/13
	Client P.O.:	Date Extracted 08/15/13
		Date Analyzed 08/20/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1308563

Lab ID	1308563-001A
Client ID	SW-N1-2'
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.016	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	106	%SS2:	103
%SS3:	105		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.





Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/15/13
	Client Contact: Bob Clark-Riddell	Date Received: 08/15/13
	Client P.O.:	Date Extracted 08/15/13
		Date Analyzed 08/20/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1308563

Lab ID	1308563-002A
Client ID	SW-N2-1'
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.017	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	108	%SS2:	104
%SS3:	105		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/15/13
	Client Contact: Bob Clark-Riddell	Date Received: 08/15/13
	Client P.O.:	Date Extracted 08/15/13
		Date Analyzed 08/20/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1308563

Lab ID	1308563-003A
Client ID	SW-W-1'
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	0.015	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	108	%SS2:	103
%SS3:	105		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/15/13
	Client Contact: Bob Clark-Riddell	Date Received: 08/15/13
	Client P.O.:	Date Extracted 08/15/13
		Date Analyzed 08/20/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1308563

Lab ID	1308563-004A
Client ID	F-3-3'
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	106	%SS2:	104
%SS3:	108		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/15/13
	Client Contact: Bob Clark-Riddell	Date Received: 08/15/13
	Client P.O.:	Date Extracted 08/15/13
		Date Analyzed 08/21/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1308563

Lab ID	1308563-005A
Client ID	F-4-3'
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	108	%SS2:	102
%SS3:	104		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 80606

WorkOrder: 1308563

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1308489-001A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	103	102	0.688	98.9	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	107	108	0.848	104	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	89.5	89	0.545	88.3	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	109	109	0	105	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	104	104	0	99.9	60 - 116	30	70 - 130
%SS1:	107	0.12	111	111	0	112	70 - 130	30	70 - 130
%SS2:	106	0.12	126	122	3.18	122	70 - 130	30	70 - 130
%SS3:	100	0.012	120	120	0	121	70 - 130	30	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 80606 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1308563-001A	08/15/13 10:00 AM	08/15/13	08/20/13 4:16 PM	1308563-002A	08/15/13 10:15 AM	08/15/13	08/20/13 4:59 PM
1308563-003A	08/15/13 10:30 AM	08/15/13	08/20/13 5:42 PM	1308563-004A	08/15/13 11:15 AM	08/15/13	08/20/13 6:24 PM
1308563-005A	08/15/13 11:30 AM	08/15/13	08/21/13 4:25 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



**McC Campbell Analytical, Inc.**  
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
<http://www.mccampbell.com> / E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/19/13
		Date Received: 08/19/13
	Client Contact: Bob Clark-Riddell	Date Reported: 08/23/13
	Client P.O.:	Date Completed: 08/23/13

**WorkOrder: 1308655**

August 23, 2013

Dear Bob:

Enclosed within are:

- 1) The results of the 1 analyzed sample from your project: **#1435.002; Solano Group**,
- 2) QC data for the above sample, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*



## Page 2 of 6



## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1308655

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

5 days

**Date Received:** 08/19/2013**Date Printed:** 08/19/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1308655-001	F-5-2.5'	Soil	8/19/2013 12:00	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **8/19/2013 6:10:17 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1308655** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 5.4°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1435.002; Solano Group	Date Sampled: 08/19/13
	Client Contact: Bob Clark-Riddell	Date Received: 08/19/13
	Client P.O.:	Date Extracted 08/19/13
		Date Analyzed 08/22/13

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1308655

Lab ID	1308655-001A
Client ID	F-5-2.5'
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Bromodichloromethane	ND	1.0	0.005	Bromoform	ND	1.0	0.005
Bromomethane	ND	1.0	0.005	Carbon Tetrachloride	ND	1.0	0.005
Chlorobenzene	ND	1.0	0.005	Chloroethane	ND	1.0	0.005
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromoethane (EDB)	ND	1.0	0.004
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Methylene chloride	ND	1.0	0.005
1,1,1,2-Tetrachloroethane	ND	1.0	0.005	1,1,2,2-Tetrachloroethane	ND	1.0	0.005
Tetrachloroethene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	Vinyl Chloride	ND	1.0	0.005

### Surrogate Recoveries (%)

%SS1:	88	%SS2:	110
%SS3:	105		

### Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or surrogate coelutes with another peak.



## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 80756

WorkOrder: 1308655

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1308655-001A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Chlorobenzene	ND	0.050	93.6	94.6	1.06	98	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	91.7	95	3.59	96	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	86.3	87.5	1.40	89.7	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	97.5	100	2.77	102	46 - 111	30	70 - 130
Trichloroethene	ND	0.050	93.3	95.3	2.12	98.2	60 - 116	30	70 - 130
%SS1:	88	0.12	108	109	1.08	107	70 - 130	30	70 - 130
%SS2:	110	0.12	107	107	0	106	70 - 130	30	70 - 130
%SS3:	105	0.012	108	107	0.860	108	70 - 130	30	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE									

### BATCH 80756 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1308655-001A	08/19/13 12:00 PM	08/19/13	08/22/13 3:51 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.
% Recovery = $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD = $100 * (MS - MSD) / ((MS + MSD) / 2)$ .
MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.
N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.
Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.



# McC Campbell Analytical, Inc.

*"When Quality Counts"*

## Analytical Report

**WorkOrder:** 1308845

**Report Created for:** Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Project Contact:** Bob Clark-Riddell  
**Project Name:** #1435.002; Solano Group  
**Project P.O.:**

**Project Received:** 08/23/2013

Analytical Report reviewed & approved for release on 08/30/2013 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***







## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1308845

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 8/23/13 20:34

**Analytical Method:** SW8260B

**Date Prepared:** 8/23/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SW-W2-1'	1308845-001A	Soil	08/21/2013 15:45	GC10	80945
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/26/2013 16:14
Bromoform	ND		0.0050	1	08/26/2013 16:14
Bromomethane	ND		0.0050	1	08/26/2013 16:14
Carbon Tetrachloride	ND		0.0050	1	08/26/2013 16:14
Chlorobenzene	ND		0.0050	1	08/26/2013 16:14
Chloroethane	ND		0.0050	1	08/26/2013 16:14
Chloroform	ND		0.0050	1	08/26/2013 16:14
Chloromethane	ND		0.0050	1	08/26/2013 16:14
Dibromochloromethane	ND		0.0050	1	08/26/2013 16:14
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/26/2013 16:14
1,2-Dichlorobenzene	ND		0.0050	1	08/26/2013 16:14
1,3-Dichlorobenzene	ND		0.0050	1	08/26/2013 16:14
1,4-Dichlorobenzene	ND		0.0050	1	08/26/2013 16:14
Dichlorodifluoromethane	ND		0.0050	1	08/26/2013 16:14
1,1-Dichloroethane	ND		0.0050	1	08/26/2013 16:14
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/26/2013 16:14
1,1-Dichloroethene	ND		0.0050	1	08/26/2013 16:14
cis-1,2-Dichloroethene	ND		0.0050	1	08/26/2013 16:14
trans-1,2-Dichloroethene	ND		0.0050	1	08/26/2013 16:14
1,2-Dichloropropane	ND		0.0050	1	08/26/2013 16:14
cis-1,3-Dichloropropene	ND		0.0050	1	08/26/2013 16:14
trans-1,3-Dichloropropene	ND		0.0050	1	08/26/2013 16:14
Freon 113	ND		0.10	1	08/26/2013 16:14
Methylene chloride	ND		0.0050	1	08/26/2013 16:14
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/26/2013 16:14
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/26/2013 16:14
Tetrachloroethene	ND		0.0050	1	08/26/2013 16:14
1,1,1-Trichloroethane	ND		0.0050	1	08/26/2013 16:14
1,1,2-Trichloroethane	ND		0.0050	1	08/26/2013 16:14
Trichloroethene	ND		0.0050	1	08/26/2013 16:14
Trichlorofluoromethane	ND		0.0050	1	08/26/2013 16:14
Vinyl Chloride	ND		0.0050	1	08/26/2013 16:14
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	98		70-130		08/26/2013 16:14
toluene-d8	107		70-130		08/26/2013 16:14
4-BFB	94		70-130		08/26/2013 16:14

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1308845

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 8/23/13 20:34

**Analytical Method:** SW8260B

**Date Prepared:** 8/23/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
F-5'-3'	1308845-002A	Soil	08/21/2013 15:50	GC10	80945
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/26/2013 16:56
Bromoform	ND		0.0050	1	08/26/2013 16:56
Bromomethane	ND		0.0050	1	08/26/2013 16:56
Carbon Tetrachloride	ND		0.0050	1	08/26/2013 16:56
Chlorobenzene	ND		0.0050	1	08/26/2013 16:56
Chloroethane	ND		0.0050	1	08/26/2013 16:56
Chloroform	ND		0.0050	1	08/26/2013 16:56
Chloromethane	ND		0.0050	1	08/26/2013 16:56
Dibromochloromethane	ND		0.0050	1	08/26/2013 16:56
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/26/2013 16:56
1,2-Dichlorobenzene	ND		0.0050	1	08/26/2013 16:56
1,3-Dichlorobenzene	ND		0.0050	1	08/26/2013 16:56
1,4-Dichlorobenzene	ND		0.0050	1	08/26/2013 16:56
Dichlorodifluoromethane	ND		0.0050	1	08/26/2013 16:56
1,1-Dichloroethane	ND		0.0050	1	08/26/2013 16:56
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/26/2013 16:56
1,1-Dichloroethene	ND		0.0050	1	08/26/2013 16:56
cis-1,2-Dichloroethene	ND		0.0050	1	08/26/2013 16:56
trans-1,2-Dichloroethene	ND		0.0050	1	08/26/2013 16:56
1,2-Dichloropropane	ND		0.0050	1	08/26/2013 16:56
cis-1,3-Dichloropropene	ND		0.0050	1	08/26/2013 16:56
trans-1,3-Dichloropropene	ND		0.0050	1	08/26/2013 16:56
Freon 113	ND		0.10	1	08/26/2013 16:56
Methylene chloride	ND		0.0050	1	08/26/2013 16:56
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/26/2013 16:56
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/26/2013 16:56
Tetrachloroethene	0.015		0.0050	1	08/26/2013 16:56
1,1,1-Trichloroethane	ND		0.0050	1	08/26/2013 16:56
1,1,2-Trichloroethane	ND		0.0050	1	08/26/2013 16:56
Trichloroethene	ND		0.0050	1	08/26/2013 16:56
Trichlorofluoromethane	ND		0.0050	1	08/26/2013 16:56
Vinyl Chloride	ND		0.0050	1	08/26/2013 16:56
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	96		70-130		08/26/2013 16:56
toluene-d8	107		70-130		08/26/2013 16:56
4-BFB	90		70-130		08/26/2013 16:56

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 8/23/13 20:34

**Date Prepared:** 8/23/13

**WorkOrder:** 1308845

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
F-6-3'	1308845-003A	Soil	08/21/2013 16:00	GC10	80945
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/26/2013 17:38
Bromoform	ND		0.0050	1	08/26/2013 17:38
Bromomethane	ND		0.0050	1	08/26/2013 17:38
Carbon Tetrachloride	ND		0.0050	1	08/26/2013 17:38
Chlorobenzene	ND		0.0050	1	08/26/2013 17:38
Chloroethane	ND		0.0050	1	08/26/2013 17:38
Chloroform	ND		0.0050	1	08/26/2013 17:38
Chloromethane	ND		0.0050	1	08/26/2013 17:38
Dibromochloromethane	ND		0.0050	1	08/26/2013 17:38
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/26/2013 17:38
1,2-Dichlorobenzene	ND		0.0050	1	08/26/2013 17:38
1,3-Dichlorobenzene	ND		0.0050	1	08/26/2013 17:38
1,4-Dichlorobenzene	ND		0.0050	1	08/26/2013 17:38
Dichlorodifluoromethane	ND		0.0050	1	08/26/2013 17:38
1,1-Dichloroethane	ND		0.0050	1	08/26/2013 17:38
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/26/2013 17:38
1,1-Dichloroethene	ND		0.0050	1	08/26/2013 17:38
cis-1,2-Dichloroethene	ND		0.0050	1	08/26/2013 17:38
trans-1,2-Dichloroethene	ND		0.0050	1	08/26/2013 17:38
1,2-Dichloropropane	ND		0.0050	1	08/26/2013 17:38
cis-1,3-Dichloropropene	ND		0.0050	1	08/26/2013 17:38
trans-1,3-Dichloropropene	ND		0.0050	1	08/26/2013 17:38
Freon 113	ND		0.10	1	08/26/2013 17:38
Methylene chloride	ND		0.0050	1	08/26/2013 17:38
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/26/2013 17:38
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/26/2013 17:38
Tetrachloroethene	0.036		0.0050	1	08/26/2013 17:38
1,1,1-Trichloroethane	ND		0.0050	1	08/26/2013 17:38
1,1,2-Trichloroethane	ND		0.0050	1	08/26/2013 17:38
Trichloroethene	ND		0.0050	1	08/26/2013 17:38
Trichlorofluoromethane	ND		0.0050	1	08/26/2013 17:38
Vinyl Chloride	ND		0.0050	1	08/26/2013 17:38
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	102		70-130		08/26/2013 17:38
toluene-d8	106		70-130		08/26/2013 17:38
4-BFB	91		70-130		08/26/2013 17:38



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 8/23/13  
**Date Analyzed:** 8/23/13  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1308845  
**BatchID:** 80945  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-80945

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS	LCS %REC	LCS Limits
Acetone	ND	-	0.050	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	-	0.0050	-	-	-	-
Benzene	ND	-	0.0050	-	-	-	-
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	-	0.050	-	-	-	-
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.04601	0.0050	0.050	-	92	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.05141	0.0040	0.050	-	103	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.04898	0.0040	0.050	-	98	70-130
1,1-Dichloroethene	ND	0.05414	0.0050	0.050	-	108	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 8/23/13

**Date Analyzed:** 8/23/13

**Instrument:** GC10

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1308845

**BatchID:** 80945

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

**Sample ID:** MB/LCS-80945

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS	LCS %REC	LCS Limits
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
Diisopropyl ether (DIPE)	ND	-	0.0050	-	-	-	-
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	-	0.0050	-	-	-	-
Freon 113	ND	-	0.10	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	-	0.0050	-	-	-	-
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	-	0.0050	-	-	-	-
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.04721	0.0050	0.050	-	94.4	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-

#### Surrogate Recovery

dibromofluoromethane	0.1116	0.1288	0.12	89	103	70-130
toluene-d8	0.1374	0.1341	0.12	110	107	70-130
4-BFB	0.01239	0.01207	0.012	99	97	70-130



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1308845

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

**Bill to:**

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

**Requested TAT:****5 days*****Date Received:* 08/23/2013*****Date Printed:* 08/26/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1308845-001	SW-W2-1'	Soil	8/21/2013 15:45	<input type="checkbox"/>	A	A										
1308845-002	F-5'-3'	Soil	8/21/2013 15:50	<input type="checkbox"/>	A											
1308845-003	F-6-3'	Soil	8/21/2013 16:00	<input type="checkbox"/>	A											

**Test Legend:**

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Jena Alfaro**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



1308845

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)

Fax: (925) 252-9269

Bill To: Pangea

E-Mail: [briddell@pangeaenv.com](mailto:briddell@pangeaenv.com)

Tele: (510) 435-8664

Fax: (510) 836-3709

Project #: 1435.002

**Project Name:** Solano Group

**Project Location:** 1187 Solano Ave, Albany

**Sampler Signature:**

## TURN AROUND TIME

☐ RUSH    ☐ 24 HR    ☐ 48 HR    ☐ 72 HR    ☒ 5 DAY

EDF Required? Coelt (Normal)

No Write On (DW) No

### Analysis Request

Other

Comments

Filter  
Samples  
for Metals  
analysis:  
Yes / No

PTPHg/BTEX (8015Cm/8021B)  
Five fuel oxygenates (8260B)  
VOCs by EPA Method 8010  
VOCs by EPA Method 8260

Received By:

Received By:

Received By:

ICE/t<sup>3</sup> 3.8

**GOOD CONDITION**

### HEAD SPACE ABSENT

## DECHLORINATED IN LAB

### APPROPRIATE CONTAINERS

PRESERVED IN LAB

## PRESERVATION

	VOAS	O&G	METALS	OTHER
Operating income	\$10.7	\$16.8	\$19.0	\$10.0
Depreciation and amortization	1.5	1.5	1.5	1.5
Provision for doubtful accounts	0.1	0.1	0.1	0.1
Income taxes	(0.5)	(0.5)	(0.5)	(0.5)
Other non-recurring items	0.1	0.1	0.1	0.1
Total cash provided by operations	\$12.8	\$18.9	\$20.2	\$10.6
Capital expenditures	(1.5)	(1.5)	(1.5)	(1.5)
Acquisitions	(0.1)	(0.1)	(0.1)	(0.1)
Divestitures	0.1	0.1	0.1	0.1
Financing activities	(0.1)	(0.1)	(0.1)	(0.1)
Total cash used in investing and financing activities	(1.5)	(1.5)	(1.5)	(1.5)
Free cash flow	\$11.3	\$17.4	\$18.7	\$9.1

pH < 2

COMMENTS:



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **8/23/2013 8:34:16 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Jena Alfaro**

WorkOrder N°: **1308845** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 3.8°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



# McC Campbell Analytical, Inc.

*"When Quality Counts"*

## Analytical Report

**WorkOrder:** 1308A45

**Report Created for:** Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Project Contact:** Morgan Gillies  
**Project Name:** #1435.002; Solano Group  
**Project P.O.:**

**Project Received:** 08/29/2013

Analytical Report reviewed & approved for release on 09/05/2013 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***





## Glossary of Terms & Qualifier Definitions

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**WorkOrder:** 1308A45

<u>Glossary Abbreviation</u>	<u>Description</u>
DF	Dilution Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RL	Reporting Limit
RPD	Relative Percent Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1308A45

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 8/29/13 20:47

**Analytical Method:** SW8260B

**Date Prepared:** 8/29/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
HA-2-5	1308A45-012A	Soil	08/29/2013 16:05	GC16	81182
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/30/2013 02:50
Bromoform	ND		0.0050	1	08/30/2013 02:50
Bromomethane	ND		0.0050	1	08/30/2013 02:50
Carbon Tetrachloride	ND		0.0050	1	08/30/2013 02:50
Chlorobenzene	ND		0.0050	1	08/30/2013 02:50
Chloroethane	ND		0.0050	1	08/30/2013 02:50
Chloroform	ND		0.0050	1	08/30/2013 02:50
Chloromethane	ND		0.0050	1	08/30/2013 02:50
Dibromochloromethane	ND		0.0050	1	08/30/2013 02:50
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/30/2013 02:50
1,2-Dichlorobenzene	ND		0.0050	1	08/30/2013 02:50
1,3-Dichlorobenzene	ND		0.0050	1	08/30/2013 02:50
1,4-Dichlorobenzene	ND		0.0050	1	08/30/2013 02:50
Dichlorodifluoromethane	ND		0.0050	1	08/30/2013 02:50
1,1-Dichloroethane	ND		0.0050	1	08/30/2013 02:50
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/30/2013 02:50
1,1-Dichloroethene	ND		0.0050	1	08/30/2013 02:50
cis-1,2-Dichloroethene	ND		0.0050	1	08/30/2013 02:50
trans-1,2-Dichloroethene	ND		0.0050	1	08/30/2013 02:50
1,2-Dichloropropane	ND		0.0050	1	08/30/2013 02:50
cis-1,3-Dichloropropene	ND		0.0050	1	08/30/2013 02:50
trans-1,3-Dichloropropene	ND		0.0050	1	08/30/2013 02:50
Freon 113	ND		0.10	1	08/30/2013 02:50
Methylene chloride	ND		0.0050	1	08/30/2013 02:50
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/30/2013 02:50
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/30/2013 02:50
Tetrachloroethene	ND		0.0050	1	08/30/2013 02:50
1,1,1-Trichloroethane	ND		0.0050	1	08/30/2013 02:50
1,1,2-Trichloroethane	ND		0.0050	1	08/30/2013 02:50
Trichloroethene	ND		0.0050	1	08/30/2013 02:50
Trichlorofluoromethane	ND		0.0050	1	08/30/2013 02:50
Vinyl Chloride	ND		0.0050	1	08/30/2013 02:50
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	89		70-130		08/30/2013 02:50
toluene-d8	106		70-130		08/30/2013 02:50
4-BFB	116		70-130		08/30/2013 02:50

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1308A45

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 8/29/13 20:47

**Analytical Method:** SW8260B

**Date Prepared:** 8/29/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
HA-3-NW-3	1308A45-015A	Soil	08/29/2013 17:20	GC16	81182
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/30/2013 03:32
Bromoform	ND		0.0050	1	08/30/2013 03:32
Bromomethane	ND		0.0050	1	08/30/2013 03:32
Carbon Tetrachloride	ND		0.0050	1	08/30/2013 03:32
Chlorobenzene	ND		0.0050	1	08/30/2013 03:32
Chloroethane	ND		0.0050	1	08/30/2013 03:32
Chloroform	ND		0.0050	1	08/30/2013 03:32
Chloromethane	ND		0.0050	1	08/30/2013 03:32
Dibromochloromethane	ND		0.0050	1	08/30/2013 03:32
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/30/2013 03:32
1,2-Dichlorobenzene	ND		0.0050	1	08/30/2013 03:32
1,3-Dichlorobenzene	ND		0.0050	1	08/30/2013 03:32
1,4-Dichlorobenzene	ND		0.0050	1	08/30/2013 03:32
Dichlorodifluoromethane	ND		0.0050	1	08/30/2013 03:32
1,1-Dichloroethane	ND		0.0050	1	08/30/2013 03:32
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/30/2013 03:32
1,1-Dichloroethene	ND		0.0050	1	08/30/2013 03:32
cis-1,2-Dichloroethene	ND		0.0050	1	08/30/2013 03:32
trans-1,2-Dichloroethene	ND		0.0050	1	08/30/2013 03:32
1,2-Dichloropropane	ND		0.0050	1	08/30/2013 03:32
cis-1,3-Dichloropropene	ND		0.0050	1	08/30/2013 03:32
trans-1,3-Dichloropropene	ND		0.0050	1	08/30/2013 03:32
Freon 113	ND		0.10	1	08/30/2013 03:32
Methylene chloride	ND		0.0050	1	08/30/2013 03:32
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/30/2013 03:32
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/30/2013 03:32
Tetrachloroethene	ND		0.0050	1	08/30/2013 03:32
1,1,1-Trichloroethane	ND		0.0050	1	08/30/2013 03:32
1,1,2-Trichloroethane	ND		0.0050	1	08/30/2013 03:32
Trichloroethene	ND		0.0050	1	08/30/2013 03:32
Trichlorofluoromethane	ND		0.0050	1	08/30/2013 03:32
Vinyl Chloride	ND		0.0050	1	08/30/2013 03:32
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	88		70-130		08/30/2013 03:32
toluene-d8	108		70-130		08/30/2013 03:32
4-BFB	116		70-130		08/30/2013 03:32

(Cont.)





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 8/29/13 20:47

**Date Prepared:** 8/29/13

**WorkOrder:** 1308A45

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-1183-1	1308A45-016A	Soil	08/29/2013 17:30	GC16	81182
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/30/2013 04:15
Bromoform	ND		0.0050	1	08/30/2013 04:15
Bromomethane	ND		0.0050	1	08/30/2013 04:15
Carbon Tetrachloride	ND		0.0050	1	08/30/2013 04:15
Chlorobenzene	ND		0.0050	1	08/30/2013 04:15
Chloroethane	ND		0.0050	1	08/30/2013 04:15
Chloroform	ND		0.0050	1	08/30/2013 04:15
Chloromethane	ND		0.0050	1	08/30/2013 04:15
Dibromochloromethane	ND		0.0050	1	08/30/2013 04:15
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/30/2013 04:15
1,2-Dichlorobenzene	ND		0.0050	1	08/30/2013 04:15
1,3-Dichlorobenzene	ND		0.0050	1	08/30/2013 04:15
1,4-Dichlorobenzene	ND		0.0050	1	08/30/2013 04:15
Dichlorodifluoromethane	ND		0.0050	1	08/30/2013 04:15
1,1-Dichloroethane	ND		0.0050	1	08/30/2013 04:15
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/30/2013 04:15
1,1-Dichloroethene	ND		0.0050	1	08/30/2013 04:15
cis-1,2-Dichloroethene	ND		0.0050	1	08/30/2013 04:15
trans-1,2-Dichloroethene	ND		0.0050	1	08/30/2013 04:15
1,2-Dichloropropane	ND		0.0050	1	08/30/2013 04:15
cis-1,3-Dichloropropene	ND		0.0050	1	08/30/2013 04:15
trans-1,3-Dichloropropene	ND		0.0050	1	08/30/2013 04:15
Freon 113	ND		0.10	1	08/30/2013 04:15
Methylene chloride	ND		0.0050	1	08/30/2013 04:15
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/30/2013 04:15
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/30/2013 04:15
Tetrachloroethene	ND		0.0050	1	08/30/2013 04:15
1,1,1-Trichloroethane	ND		0.0050	1	08/30/2013 04:15
1,1,2-Trichloroethane	ND		0.0050	1	08/30/2013 04:15
Trichloroethene	ND		0.0050	1	08/30/2013 04:15
Trichlorofluoromethane	ND		0.0050	1	08/30/2013 04:15
Vinyl Chloride	ND		0.0050	1	08/30/2013 04:15
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	87		70-130		08/30/2013 04:15
toluene-d8	108		70-130		08/30/2013 04:15
4-BFB	120		70-130		08/30/2013 04:15



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1308A45

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 8/29/13 20:47

**Analytical Method:** SW8260B

**Date Prepared:** 8/29/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
F-7-2.5	1308A45-001A	Soil	08/29/2013 14:00	GC16	81162
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/31/2013 01:02
Bromoform	ND		0.0050	1	08/31/2013 01:02
Bromomethane	ND		0.0050	1	08/31/2013 01:02
Carbon Tetrachloride	ND		0.0050	1	08/31/2013 01:02
Chlorobenzene	ND		0.0050	1	08/31/2013 01:02
Chloroethane	ND		0.0050	1	08/31/2013 01:02
Chloroform	ND		0.0050	1	08/31/2013 01:02
Chloromethane	ND		0.0050	1	08/31/2013 01:02
Dibromochloromethane	ND		0.0050	1	08/31/2013 01:02
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/31/2013 01:02
1,2-Dichlorobenzene	ND		0.0050	1	08/31/2013 01:02
1,3-Dichlorobenzene	ND		0.0050	1	08/31/2013 01:02
1,4-Dichlorobenzene	ND		0.0050	1	08/31/2013 01:02
Dichlorodifluoromethane	ND		0.0050	1	08/31/2013 01:02
1,1-Dichloroethane	ND		0.0050	1	08/31/2013 01:02
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/31/2013 01:02
1,1-Dichloroethene	ND		0.0050	1	08/31/2013 01:02
cis-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 01:02
trans-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 01:02
1,2-Dichloropropane	ND		0.0050	1	08/31/2013 01:02
cis-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 01:02
trans-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 01:02
Freon 113	ND		0.10	1	08/31/2013 01:02
Methylene chloride	ND		0.0050	1	08/31/2013 01:02
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 01:02
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 01:02
Tetrachloroethene	ND		0.0050	1	08/31/2013 01:02
1,1,1-Trichloroethane	ND		0.0050	1	08/31/2013 01:02
1,1,2-Trichloroethane	ND		0.0050	1	08/31/2013 01:02
Trichloroethene	ND		0.0050	1	08/31/2013 01:02
Trichlorofluoromethane	ND		0.0050	1	08/31/2013 01:02
Vinyl Chloride	ND		0.0050	1	08/31/2013 01:02
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	87		70-130		08/31/2013 01:02
toluene-d8	105		70-130		08/31/2013 01:02
4-BFB	120		70-130		08/31/2013 01:02

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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1308A45

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 8/29/13 20:47

**Analytical Method:** SW8260B

**Date Prepared:** 8/29/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
F-8-4	1308A45-002A	Soil	08/29/2013 14:30	GC16	81182
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/31/2013 01:45
Bromoform	ND		0.0050	1	08/31/2013 01:45
Bromomethane	ND		0.0050	1	08/31/2013 01:45
Carbon Tetrachloride	ND		0.0050	1	08/31/2013 01:45
Chlorobenzene	ND		0.0050	1	08/31/2013 01:45
Chloroethane	ND		0.0050	1	08/31/2013 01:45
Chloroform	ND		0.0050	1	08/31/2013 01:45
Chloromethane	ND		0.0050	1	08/31/2013 01:45
Dibromochloromethane	ND		0.0050	1	08/31/2013 01:45
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/31/2013 01:45
1,2-Dichlorobenzene	ND		0.0050	1	08/31/2013 01:45
1,3-Dichlorobenzene	ND		0.0050	1	08/31/2013 01:45
1,4-Dichlorobenzene	ND		0.0050	1	08/31/2013 01:45
Dichlorodifluoromethane	ND		0.0050	1	08/31/2013 01:45
1,1-Dichloroethane	ND		0.0050	1	08/31/2013 01:45
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/31/2013 01:45
1,1-Dichloroethene	ND		0.0050	1	08/31/2013 01:45
cis-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 01:45
trans-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 01:45
1,2-Dichloropropane	ND		0.0050	1	08/31/2013 01:45
cis-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 01:45
trans-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 01:45
Freon 113	ND		0.10	1	08/31/2013 01:45
Methylene chloride	ND		0.0050	1	08/31/2013 01:45
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 01:45
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 01:45
Tetrachloroethene	ND		0.0050	1	08/31/2013 01:45
1,1,1-Trichloroethane	ND		0.0050	1	08/31/2013 01:45
1,1,2-Trichloroethane	ND		0.0050	1	08/31/2013 01:45
Trichloroethene	ND		0.0050	1	08/31/2013 01:45
Trichlorofluoromethane	ND		0.0050	1	08/31/2013 01:45
Vinyl Chloride	ND		0.0050	1	08/31/2013 01:45
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	87		70-130		08/31/2013 01:45
toluene-d8	105		70-130		08/31/2013 01:45
4-BFB	118		70-130		08/31/2013 01:45

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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 8/29/13 20:47

**Date Prepared:** 8/29/13

**WorkOrder:** 1308A45

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
HA-1-3	1308A45-006A	Soil	08/29/2013 15:30	GC16	81182
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/31/2013 02:28
Bromoform	ND		0.0050	1	08/31/2013 02:28
Bromomethane	ND		0.0050	1	08/31/2013 02:28
Carbon Tetrachloride	ND		0.0050	1	08/31/2013 02:28
Chlorobenzene	ND		0.0050	1	08/31/2013 02:28
Chloroethane	ND		0.0050	1	08/31/2013 02:28
Chloroform	ND		0.0050	1	08/31/2013 02:28
Chloromethane	ND		0.0050	1	08/31/2013 02:28
Dibromochloromethane	ND		0.0050	1	08/31/2013 02:28
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/31/2013 02:28
1,2-Dichlorobenzene	ND		0.0050	1	08/31/2013 02:28
1,3-Dichlorobenzene	ND		0.0050	1	08/31/2013 02:28
1,4-Dichlorobenzene	ND		0.0050	1	08/31/2013 02:28
Dichlorodifluoromethane	ND		0.0050	1	08/31/2013 02:28
1,1-Dichloroethane	ND		0.0050	1	08/31/2013 02:28
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/31/2013 02:28
1,1-Dichloroethene	ND		0.0050	1	08/31/2013 02:28
cis-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 02:28
trans-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 02:28
1,2-Dichloropropane	ND		0.0050	1	08/31/2013 02:28
cis-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 02:28
trans-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 02:28
Freon 113	ND		0.10	1	08/31/2013 02:28
Methylene chloride	ND		0.0050	1	08/31/2013 02:28
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 02:28
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 02:28
Tetrachloroethene	ND		0.0050	1	08/31/2013 02:28
1,1,1-Trichloroethane	ND		0.0050	1	08/31/2013 02:28
1,1,2-Trichloroethane	ND		0.0050	1	08/31/2013 02:28
Trichloroethene	ND		0.0050	1	08/31/2013 02:28
Trichlorofluoromethane	ND		0.0050	1	08/31/2013 02:28
Vinyl Chloride	ND		0.0050	1	08/31/2013 02:28
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	87		70-130		08/31/2013 02:28
toluene-d8	105		70-130		08/31/2013 02:28
4-BFB	116		70-130		08/31/2013 02:28

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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 8/29/13 20:47

**Date Prepared:** 8/29/13

**WorkOrder:** 1308A45

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
HA-2-3	1308A45-007A	Soil	08/29/2013 15:40	GC16	81182
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/31/2013 03:11
Bromoform	ND		0.0050	1	08/31/2013 03:11
Bromomethane	ND		0.0050	1	08/31/2013 03:11
Carbon Tetrachloride	ND		0.0050	1	08/31/2013 03:11
Chlorobenzene	ND		0.0050	1	08/31/2013 03:11
Chloroethane	ND		0.0050	1	08/31/2013 03:11
Chloroform	ND		0.0050	1	08/31/2013 03:11
Chloromethane	ND		0.0050	1	08/31/2013 03:11
Dibromochloromethane	ND		0.0050	1	08/31/2013 03:11
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/31/2013 03:11
1,2-Dichlorobenzene	ND		0.0050	1	08/31/2013 03:11
1,3-Dichlorobenzene	ND		0.0050	1	08/31/2013 03:11
1,4-Dichlorobenzene	ND		0.0050	1	08/31/2013 03:11
Dichlorodifluoromethane	ND		0.0050	1	08/31/2013 03:11
1,1-Dichloroethane	ND		0.0050	1	08/31/2013 03:11
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/31/2013 03:11
1,1-Dichloroethene	ND		0.0050	1	08/31/2013 03:11
cis-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 03:11
trans-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 03:11
1,2-Dichloropropane	ND		0.0050	1	08/31/2013 03:11
cis-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 03:11
trans-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 03:11
Freon 113	ND		0.10	1	08/31/2013 03:11
Methylene chloride	ND		0.0050	1	08/31/2013 03:11
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 03:11
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 03:11
Tetrachloroethene	ND		0.0050	1	08/31/2013 03:11
1,1,1-Trichloroethane	ND		0.0050	1	08/31/2013 03:11
1,1,2-Trichloroethane	ND		0.0050	1	08/31/2013 03:11
Trichloroethene	ND		0.0050	1	08/31/2013 03:11
Trichlorofluoromethane	ND		0.0050	1	08/31/2013 03:11
Vinyl Chloride	ND		0.0050	1	08/31/2013 03:11
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	87		70-130		08/31/2013 03:11
toluene-d8	105		70-130		08/31/2013 03:11
4-BFB	114		70-130		08/31/2013 03:11

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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1308A45

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 8/29/13 20:47

**Analytical Method:** SW8260B

**Date Prepared:** 8/29/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
HA-1-5	1308A45-010A	Soil	08/29/2013 15:55	GC16	81182
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/31/2013 03:53
Bromoform	ND		0.0050	1	08/31/2013 03:53
Bromomethane	ND		0.0050	1	08/31/2013 03:53
Carbon Tetrachloride	ND		0.0050	1	08/31/2013 03:53
Chlorobenzene	ND		0.0050	1	08/31/2013 03:53
Chloroethane	ND		0.0050	1	08/31/2013 03:53
Chloroform	ND		0.0050	1	08/31/2013 03:53
Chloromethane	ND		0.0050	1	08/31/2013 03:53
Dibromochloromethane	ND		0.0050	1	08/31/2013 03:53
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/31/2013 03:53
1,2-Dichlorobenzene	ND		0.0050	1	08/31/2013 03:53
1,3-Dichlorobenzene	ND		0.0050	1	08/31/2013 03:53
1,4-Dichlorobenzene	ND		0.0050	1	08/31/2013 03:53
Dichlorodifluoromethane	ND		0.0050	1	08/31/2013 03:53
1,1-Dichloroethane	ND		0.0050	1	08/31/2013 03:53
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/31/2013 03:53
1,1-Dichloroethene	ND		0.0050	1	08/31/2013 03:53
cis-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 03:53
trans-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 03:53
1,2-Dichloropropane	ND		0.0050	1	08/31/2013 03:53
cis-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 03:53
trans-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 03:53
Freon 113	ND		0.10	1	08/31/2013 03:53
Methylene chloride	ND		0.0050	1	08/31/2013 03:53
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 03:53
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 03:53
Tetrachloroethene	ND		0.0050	1	08/31/2013 03:53
1,1,1-Trichloroethane	ND		0.0050	1	08/31/2013 03:53
1,1,2-Trichloroethane	ND		0.0050	1	08/31/2013 03:53
Trichloroethene	ND		0.0050	1	08/31/2013 03:53
Trichlorofluoromethane	ND		0.0050	1	08/31/2013 03:53
Vinyl Chloride	ND		0.0050	1	08/31/2013 03:53
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	88		70-130		08/31/2013 03:53
toluene-d8	104		70-130		08/31/2013 03:53
4-BFB	116		70-130		08/31/2013 03:53

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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1308A45

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 8/29/13 20:47

**Analytical Method:** SW8260B

**Date Prepared:** 8/29/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SW-SW-2.5	1308A45-011A	Soil	08/29/2013 16:00	GC16	81182
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/31/2013 04:36
Bromoform	ND		0.0050	1	08/31/2013 04:36
Bromomethane	ND		0.0050	1	08/31/2013 04:36
Carbon Tetrachloride	ND		0.0050	1	08/31/2013 04:36
Chlorobenzene	ND		0.0050	1	08/31/2013 04:36
Chloroethane	ND		0.0050	1	08/31/2013 04:36
Chloroform	ND		0.0050	1	08/31/2013 04:36
Chloromethane	ND		0.0050	1	08/31/2013 04:36
Dibromochloromethane	ND		0.0050	1	08/31/2013 04:36
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/31/2013 04:36
1,2-Dichlorobenzene	ND		0.0050	1	08/31/2013 04:36
1,3-Dichlorobenzene	ND		0.0050	1	08/31/2013 04:36
1,4-Dichlorobenzene	ND		0.0050	1	08/31/2013 04:36
Dichlorodifluoromethane	ND		0.0050	1	08/31/2013 04:36
1,1-Dichloroethane	ND		0.0050	1	08/31/2013 04:36
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/31/2013 04:36
1,1-Dichloroethene	ND		0.0050	1	08/31/2013 04:36
cis-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 04:36
trans-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 04:36
1,2-Dichloropropane	ND		0.0050	1	08/31/2013 04:36
cis-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 04:36
trans-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 04:36
Freon 113	ND		0.10	1	08/31/2013 04:36
Methylene chloride	ND		0.0050	1	08/31/2013 04:36
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 04:36
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 04:36
Tetrachloroethene	ND		0.0050	1	08/31/2013 04:36
1,1,1-Trichloroethane	ND		0.0050	1	08/31/2013 04:36
1,1,2-Trichloroethane	ND		0.0050	1	08/31/2013 04:36
Trichloroethene	ND		0.0050	1	08/31/2013 04:36
Trichlorofluoromethane	ND		0.0050	1	08/31/2013 04:36
Vinyl Chloride	ND		0.0050	1	08/31/2013 04:36
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	89		70-130		08/31/2013 04:36
toluene-d8	105		70-130		08/31/2013 04:36
4-BFB	119		70-130		08/31/2013 04:36

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1308A45

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 8/29/13 20:47

**Analytical Method:** SW8260B

**Date Prepared:** 8/29/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SW-W-2.5	1308A45-013A	Soil	08/29/2013 16:30	GC16	81182
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/31/2013 05:19
Bromoform	ND		0.0050	1	08/31/2013 05:19
Bromomethane	ND		0.0050	1	08/31/2013 05:19
Carbon Tetrachloride	ND		0.0050	1	08/31/2013 05:19
Chlorobenzene	ND		0.0050	1	08/31/2013 05:19
Chloroethane	ND		0.0050	1	08/31/2013 05:19
Chloroform	ND		0.0050	1	08/31/2013 05:19
Chloromethane	ND		0.0050	1	08/31/2013 05:19
Dibromochloromethane	ND		0.0050	1	08/31/2013 05:19
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/31/2013 05:19
1,2-Dichlorobenzene	ND		0.0050	1	08/31/2013 05:19
1,3-Dichlorobenzene	ND		0.0050	1	08/31/2013 05:19
1,4-Dichlorobenzene	ND		0.0050	1	08/31/2013 05:19
Dichlorodifluoromethane	ND		0.0050	1	08/31/2013 05:19
1,1-Dichloroethane	ND		0.0050	1	08/31/2013 05:19
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/31/2013 05:19
1,1-Dichloroethene	ND		0.0050	1	08/31/2013 05:19
cis-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 05:19
trans-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 05:19
1,2-Dichloropropane	ND		0.0050	1	08/31/2013 05:19
cis-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 05:19
trans-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 05:19
Freon 113	ND		0.10	1	08/31/2013 05:19
Methylene chloride	ND		0.0050	1	08/31/2013 05:19
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 05:19
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 05:19
Tetrachloroethene	ND		0.0050	1	08/31/2013 05:19
1,1,1-Trichloroethane	ND		0.0050	1	08/31/2013 05:19
1,1,2-Trichloroethane	ND		0.0050	1	08/31/2013 05:19
Trichloroethene	ND		0.0050	1	08/31/2013 05:19
Trichlorofluoromethane	ND		0.0050	1	08/31/2013 05:19
Vinyl Chloride	ND		0.0050	1	08/31/2013 05:19
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	88		70-130		08/31/2013 05:19
toluene-d8	104		70-130		08/31/2013 05:19
4-BFB	116		70-130		08/31/2013 05:19

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 8/29/13 20:47

**Date Prepared:** 8/29/13

**WorkOrder:** 1308A45

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SW-NW-2.5	1308A45-014A	Soil	08/29/2013 16:35	GC16	81182
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	08/31/2013 06:02
Bromoform	ND		0.0050	1	08/31/2013 06:02
Bromomethane	ND		0.0050	1	08/31/2013 06:02
Carbon Tetrachloride	ND		0.0050	1	08/31/2013 06:02
Chlorobenzene	ND		0.0050	1	08/31/2013 06:02
Chloroethane	ND		0.0050	1	08/31/2013 06:02
Chloroform	ND		0.0050	1	08/31/2013 06:02
Chloromethane	ND		0.0050	1	08/31/2013 06:02
Dibromochloromethane	ND		0.0050	1	08/31/2013 06:02
1,2-Dibromoethane (EDB)	ND		0.0040	1	08/31/2013 06:02
1,2-Dichlorobenzene	ND		0.0050	1	08/31/2013 06:02
1,3-Dichlorobenzene	ND		0.0050	1	08/31/2013 06:02
1,4-Dichlorobenzene	ND		0.0050	1	08/31/2013 06:02
Dichlorodifluoromethane	ND		0.0050	1	08/31/2013 06:02
1,1-Dichloroethane	ND		0.0050	1	08/31/2013 06:02
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	08/31/2013 06:02
1,1-Dichloroethene	ND		0.0050	1	08/31/2013 06:02
cis-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 06:02
trans-1,2-Dichloroethene	ND		0.0050	1	08/31/2013 06:02
1,2-Dichloropropane	ND		0.0050	1	08/31/2013 06:02
cis-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 06:02
trans-1,3-Dichloropropene	ND		0.0050	1	08/31/2013 06:02
Freon 113	ND		0.10	1	08/31/2013 06:02
Methylene chloride	ND		0.0050	1	08/31/2013 06:02
1,1,1,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 06:02
1,1,2,2-Tetrachloroethane	ND		0.0050	1	08/31/2013 06:02
Tetrachloroethene	ND		0.0050	1	08/31/2013 06:02
1,1,1-Trichloroethane	ND		0.0050	1	08/31/2013 06:02
1,1,2-Trichloroethane	ND		0.0050	1	08/31/2013 06:02
Trichloroethene	ND		0.0050	1	08/31/2013 06:02
Trichlorofluoromethane	ND		0.0050	1	08/31/2013 06:02
Vinyl Chloride	ND		0.0050	1	08/31/2013 06:02
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	88		70-130		08/31/2013 06:02
toluene-d8	104		70-130		08/31/2013 06:02
4-BFB	111		70-130		08/31/2013 06:02



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 8/29/13

**Date Analyzed:** 8/29/13 - 8/30/13

**Instrument:** GC16

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1308A45

**BatchID:** 81162

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

**Sample ID:** MB/LCS-81162  
1308A31-001AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.050	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	-	0.0050	-	-	-	-
Benzene	ND	-	0.0050	-	-	-	-
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	-	0.050	-	-	-	-
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.04835	0.0050	0.050	-	96.7	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.04487	0.0040	0.050	-	89.7	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.04418	0.0040	0.050	-	88.4	70-130
1,1-Dichloroethene	ND	0.04591	0.0050	0.050	-	91.8	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

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## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 8/29/13

**Date Analyzed:** 8/29/13 - 8/30/13

**Instrument:** GC16

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1308A45

**BatchID:** 81162

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

**Sample ID:** MB/LCS-81162  
1308A31-001AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
Diisopropyl ether (DIPE)	ND	-	0.0050	-	-	-	-
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	-	0.0050	-	-	-	-
Freon 113	ND	-	0.10	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	-	0.0050	-	-	-	-
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	-	0.0050	-	-	-	-
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.04398	0.0050	0.050	-	88	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-

#### Surrogate Recovery

dibromofluoromethane	0.1279	0.1119		0.12	102	89	70-130
toluene-d8	0.1444	0.1318		0.12	115	105	70-130
4-BFB	0.01441	0.01352		0.012	115	108	70-130

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## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 8/29/13

**Date Analyzed:** 8/29/13 - 8/30/13

**Instrument:** GC16

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1308A45

**BatchID:** 81162

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

**Sample ID:** MB/LCS-81162  
1308A31-001AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chlorobenzene	0.04507	0.04638	0.050	ND	90.1	92.8	61-108	2.88	30
1,2-Dibromoethane (EDB)	0.04064	0.0417	0.050	ND	81.3	83.4	54-119	2.57	30
1,2-Dichloroethane (1,2-DCA)	0.04076	0.04118	0.050	ND	81.5	82.4	48-115	1.04	30
1,1-Dichloroethene	0.04255	0.04431	0.050	ND	85.1	88.6	46-111	4.04	30
Trichloroethene	0.04064	0.04106	0.050	ND	81.3	82.1	60-116	1.02	30
<b>Surrogate Recovery</b>									
dibromofluoromethane	0.1127	0.1119	0.12	89	90	89	70-130	0.742	30
toluene-d8	0.1312	0.1306	0.12	109	105	105	70-130	0	30
4-BFB	0.01359	0.01354	0.012	118	109	108	70-130	0.348	30

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## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 8/29/13

**Date Analyzed:** 8/29/13 - 8/30/13

**Instrument:** GC28

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1308A45

**BatchID:** 81182

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

**Sample ID:** MB/LCS-81182  
1308A45-016AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.050	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	-	0.0050	-	-	-	-
Benzene	ND	-	0.0050	-	-	-	-
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	-	0.050	-	-	-	-
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.04807	0.0050	0.050	-	96.1	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.04794	0.0040	0.050	-	95.9	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0428	0.0040	0.050	-	85.6	70-130
1,1-Dichloroethene	ND	0.05058	0.0050	0.050	-	101	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 8/29/13

**Date Analyzed:** 8/29/13 - 8/30/13

**Instrument:** GC28

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1308A45

**BatchID:** 81182

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

**Sample ID:** MB/LCS-81182  
1308A45-016AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
Diisopropyl ether (DIPE)	ND	-	0.0050	-	-	-	-
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	-	0.0050	-	-	-	-
Freon 113	ND	-	0.10	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	-	0.0050	-	-	-	-
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	-	0.0050	-	-	-	-
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.04544	0.0050	0.050	-	90.9	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-

#### Surrogate Recovery

dibromofluoromethane	0.1158	0.1221	0.12	93	98	70-130
toluene-d8	0.1378	0.1356	0.12	110	108	70-130
4-BFB	0.01399	0.01325	0.012	112	106	70-130

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## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 8/29/13

**Date Analyzed:** 8/29/13 - 8/30/13

**Instrument:** GC28

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1308A45

**BatchID:** 81182

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

**Sample ID:** MB/LCS-81182  
1308A45-016AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chlorobenzene	0.03653	0.04273	0.050	ND	73.1	85.5	61-108	15.6	30
1,2-Dibromoethane (EDB)	0.03713	0.043	0.050	ND	74.3	86	54-119	14.7	30
1,2-Dichloroethane (1,2-DCA)	0.02889	0.03396	0.050	ND	57.8	67.9	48-115	16.1	30
1,1-Dichloroethene	0.02203	0.02507	0.050	ND	44.1,F1	50.1	46-111	12.9	30
Trichloroethene	0.02795	0.03365	0.050	ND	55.9,F1	67.3	60-116	18.5	30
<b>Surrogate Recovery</b>									
dibromofluoromethane	0.1223	0.1235	0.12	87	98	99	70-130	0.985	30
toluene-d8	0.1313	0.132	0.12	108	105	106	70-130	0.565	30
4-BFB	0.01326	0.01355	0.012	120	106	108	70-130	2.20	30



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1308A45

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Morgan Gillies  
 Pangea Environmental Svcs., Inc.  
 1710 Franklin Street, Ste. 200  
 Oakland, CA 94612  
 (510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com; tdelafuente@pa  
 cc:  
 PO:  
 ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

5 days

Date Received: 08/29/2013

Date Printed: 08/29/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1308A45-001	F-7-2.5	Soil	8/29/2013 14:00	<input type="checkbox"/>	A	A										
1308A45-002	F-8-4	Soil	8/29/2013 14:30	<input type="checkbox"/>	A											
1308A45-006	HA-1-3	Soil	8/29/2013 15:30	<input type="checkbox"/>	A											
1308A45-007	HA-2-3	Soil	8/29/2013 15:40	<input type="checkbox"/>	A											
1308A45-010	HA-1-5	Soil	8/29/2013 15:55	<input type="checkbox"/>	A											
1308A45-011	SW-SW-2.5	Soil	8/29/2013 16:00	<input type="checkbox"/>	A											
1308A45-012	HA-2-5	Soil	8/29/2013 16:05	<input type="checkbox"/>	A											
1308A45-013	SW-W-2.5	Soil	8/29/2013 16:30	<input type="checkbox"/>	A											
1308A45-014	SW-NW-2.5	Soil	8/29/2013 16:35	<input type="checkbox"/>	A											
1308A45-015	HA-3-NW-3	Soil	8/29/2013 17:20	<input type="checkbox"/>	A											
1308A45-016	SS-1183-1	Soil	8/29/2013 17:30	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

Comments: 012, 015 and 016 are 24hr RUSH!

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.





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## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **8/29/2013 8:47:29 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Jena Alfaro**

WorkOrder N°: **1308A45** Matrix: Soil

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 4.4°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



# McC Campbell Analytical, Inc.

*"When Quality Counts"*

## Analytical Report

**WorkOrder:** 1309014

**Report Created for:** Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Project Contact:** Bob Clark-Riddell  
**Project Name:** #1435.002; Solano Group  
**Project P.O.:**

**Project Received:** 09/03/2013

Analytical Report reviewed & approved for release on 09/09/2013 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309014

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/3/13 16:32

**Analytical Method:** SW8260B

**Date Prepared:** 9/3/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
HA-2D-1'ss	1309014-001A	Soil	08/30/2013 15:00	GC10	81244
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/04/2013 13:16
Bromoform	ND		0.0050	1	09/04/2013 13:16
Bromomethane	ND		0.0050	1	09/04/2013 13:16
Carbon Tetrachloride	ND		0.0050	1	09/04/2013 13:16
Chlorobenzene	ND		0.0050	1	09/04/2013 13:16
Chloroethane	ND		0.0050	1	09/04/2013 13:16
Chloroform	ND		0.0050	1	09/04/2013 13:16
Chloromethane	ND		0.0050	1	09/04/2013 13:16
Dibromochloromethane	ND		0.0050	1	09/04/2013 13:16
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/04/2013 13:16
1,2-Dichlorobenzene	ND		0.0050	1	09/04/2013 13:16
1,3-Dichlorobenzene	ND		0.0050	1	09/04/2013 13:16
1,4-Dichlorobenzene	ND		0.0050	1	09/04/2013 13:16
Dichlorodifluoromethane	ND		0.0050	1	09/04/2013 13:16
1,1-Dichloroethane	ND		0.0050	1	09/04/2013 13:16
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/04/2013 13:16
1,1-Dichloroethene	ND		0.0050	1	09/04/2013 13:16
cis-1,2-Dichloroethene	ND		0.0050	1	09/04/2013 13:16
trans-1,2-Dichloroethene	ND		0.0050	1	09/04/2013 13:16
1,2-Dichloropropane	ND		0.0050	1	09/04/2013 13:16
cis-1,3-Dichloropropene	ND		0.0050	1	09/04/2013 13:16
trans-1,3-Dichloropropene	ND		0.0050	1	09/04/2013 13:16
Freon 113	ND		0.10	1	09/04/2013 13:16
Methylene chloride	ND		0.0050	1	09/04/2013 13:16
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/04/2013 13:16
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/04/2013 13:16
Tetrachloroethene	ND		0.0050	1	09/04/2013 13:16
1,1,1-Trichloroethane	ND		0.0050	1	09/04/2013 13:16
1,1,2-Trichloroethane	ND		0.0050	1	09/04/2013 13:16
Trichloroethene	ND		0.0050	1	09/04/2013 13:16
Trichlorofluoromethane	ND		0.0050	1	09/04/2013 13:16
Vinyl Chloride	ND		0.0050	1	09/04/2013 13:16
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	95		70-130		09/04/2013 13:16
toluene-d8	99		70-130		09/04/2013 13:16
4-BFB	95		70-130		09/04/2013 13:16



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 9/3/13  
**Date Analyzed:** 9/3/13  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1309014  
**BatchID:** 81244  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-81244

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.050	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	-	0.0050	-	-	-	-
Benzene	ND	-	0.0050	-	-	-	-
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	-	0.050	-	-	-	-
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.04777	0.0050	0.050	-	95.5	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.04845	0.0040	0.050	-	96.9	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.04292	0.0040	0.050	-	85.8	70-130
1,1-Dichloroethene	ND	0.04741	0.0050	0.050	-	94.8	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 9/3/13  
**Date Analyzed:** 9/3/13  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1309014  
**BatchID:** 81244  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-81244

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
Diisopropyl ether (DIPE)	ND	-	0.0050	-	-	-	-
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	-	0.0050	-	-	-	-
Freon 113	ND	-	0.10	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	-	0.0050	-	-	-	-
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	-	0.0050	-	-	-	-
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.04491	0.0050	0.050	-	89.8	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-

#### Surrogate Recovery

dibromofluoromethane	0.1227	0.1228		0.12	98	98	70-130
toluene-d8	0.1283	0.1208		0.12	103	97	70-130
4-BFB	0.01279	0.0121		0.012	102	97	70-130



## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1309014

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

5 days

**Date Received:** 09/03/2013**Date Printed:** 09/03/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1309014-001	HA-2D-1'ss	Soil	8/30/2013 15:00	<input type="checkbox"/>	A	A										

## Test Legend:

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## Page 7 of 8



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **9/3/2013 4:32:48 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Jena Alfaro**

WorkOrder N°: **1309014** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 3.8°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



# McC Campbell Analytical, Inc.

*"When Quality Counts"*

## Analytical Report

**WorkOrder:** 1309013

**Report Created for:** Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Project Contact:** Bob Clark-Riddell  
**Project Name:** #1435.002; Solano Group  
**Project P.O.:**

**Project Received:** 09/03/2013

Analytical Report reviewed & approved for release on 09/09/2013 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309013

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/3/13 16:32

**Analytical Method:** SW8260B

**Date Prepared:** 9/3/13-9/5/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
1183 Central N-4'	1309013-001A	Soil	09/02/2013	GC10	81244
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/04/2013 11:09
Bromoform	ND		0.0050	1	09/04/2013 11:09
Bromomethane	ND		0.0050	1	09/04/2013 11:09
Carbon Tetrachloride	ND		0.0050	1	09/04/2013 11:09
Chlorobenzene	ND		0.0050	1	09/04/2013 11:09
Chloroethane	ND		0.0050	1	09/04/2013 11:09
Chloroform	ND		0.0050	1	09/04/2013 11:09
Chloromethane	ND		0.0050	1	09/04/2013 11:09
Dibromochloromethane	ND		0.0050	1	09/04/2013 11:09
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/04/2013 11:09
1,2-Dichlorobenzene	ND		0.0050	1	09/04/2013 11:09
1,3-Dichlorobenzene	ND		0.0050	1	09/04/2013 11:09
1,4-Dichlorobenzene	ND		0.0050	1	09/04/2013 11:09
Dichlorodifluoromethane	ND		0.0050	1	09/04/2013 11:09
1,1-Dichloroethane	ND		0.0050	1	09/04/2013 11:09
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/04/2013 11:09
1,1-Dichloroethene	ND		0.0050	1	09/04/2013 11:09
cis-1,2-Dichloroethene	ND		0.0050	1	09/04/2013 11:09
trans-1,2-Dichloroethene	ND		0.0050	1	09/04/2013 11:09
1,2-Dichloropropane	ND		0.0050	1	09/04/2013 11:09
cis-1,3-Dichloropropene	ND		0.0050	1	09/04/2013 11:09
trans-1,3-Dichloropropene	ND		0.0050	1	09/04/2013 11:09
Freon 113	ND		0.10	1	09/04/2013 11:09
Methylene chloride	ND		0.0050	1	09/04/2013 11:09
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/04/2013 11:09
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/04/2013 11:09
Tetrachloroethene	ND		0.0050	1	09/04/2013 11:09
1,1,1-Trichloroethane	ND		0.0050	1	09/04/2013 11:09
1,1,2-Trichloroethane	ND		0.0050	1	09/04/2013 11:09
Trichloroethene	ND		0.0050	1	09/04/2013 11:09
Trichlorofluoromethane	ND		0.0050	1	09/04/2013 11:09
Vinyl Chloride	ND		0.0050	1	09/04/2013 11:09
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	96		70-130		09/04/2013 11:09
toluene-d8	103		70-130		09/04/2013 11:09
4-BFB	104		70-130		09/04/2013 11:09

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309013

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/3/13 16:32

**Analytical Method:** SW8260B

**Date Prepared:** 9/3/13-9/5/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
1183 Central N-6'	1309013-002A	Soil	09/02/2013	GC10	81244
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/04/2013 11:51
Bromoform	ND		0.0050	1	09/04/2013 11:51
Bromomethane	ND		0.0050	1	09/04/2013 11:51
Carbon Tetrachloride	ND		0.0050	1	09/04/2013 11:51
Chlorobenzene	ND		0.0050	1	09/04/2013 11:51
Chloroethane	ND		0.0050	1	09/04/2013 11:51
Chloroform	ND		0.0050	1	09/04/2013 11:51
Chloromethane	ND		0.0050	1	09/04/2013 11:51
Dibromochloromethane	ND		0.0050	1	09/04/2013 11:51
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/04/2013 11:51
1,2-Dichlorobenzene	ND		0.0050	1	09/04/2013 11:51
1,3-Dichlorobenzene	ND		0.0050	1	09/04/2013 11:51
1,4-Dichlorobenzene	ND		0.0050	1	09/04/2013 11:51
Dichlorodifluoromethane	ND		0.0050	1	09/04/2013 11:51
1,1-Dichloroethane	ND		0.0050	1	09/04/2013 11:51
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/04/2013 11:51
1,1-Dichloroethene	ND		0.0050	1	09/04/2013 11:51
cis-1,2-Dichloroethene	ND		0.0050	1	09/04/2013 11:51
trans-1,2-Dichloroethene	ND		0.0050	1	09/04/2013 11:51
1,2-Dichloropropane	ND		0.0050	1	09/04/2013 11:51
cis-1,3-Dichloropropene	ND		0.0050	1	09/04/2013 11:51
trans-1,3-Dichloropropene	ND		0.0050	1	09/04/2013 11:51
Freon 113	ND		0.10	1	09/04/2013 11:51
Methylene chloride	ND		0.0050	1	09/04/2013 11:51
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/04/2013 11:51
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/04/2013 11:51
Tetrachloroethene	ND		0.0050	1	09/04/2013 11:51
1,1,1-Trichloroethane	ND		0.0050	1	09/04/2013 11:51
1,1,2-Trichloroethane	ND		0.0050	1	09/04/2013 11:51
Trichloroethene	ND		0.0050	1	09/04/2013 11:51
Trichlorofluoromethane	ND		0.0050	1	09/04/2013 11:51
Vinyl Chloride	ND		0.0050	1	09/04/2013 11:51
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	96		70-130		09/04/2013 11:51
toluene-d8	99		70-130		09/04/2013 11:51
4-BFB	98		70-130		09/04/2013 11:51

(Cont.)





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309013

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/3/13 16:32

**Analytical Method:** SW8260B

**Date Prepared:** 9/3/13-9/5/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
1183 North -2'	1309013-003A	Soil	09/02/2013	GC10	81359
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/05/2013 23:26
Bromoform	ND		0.0050	1	09/05/2013 23:26
Bromomethane	ND		0.0050	1	09/05/2013 23:26
Carbon Tetrachloride	ND		0.0050	1	09/05/2013 23:26
Chlorobenzene	ND		0.0050	1	09/05/2013 23:26
Chloroethane	ND		0.0050	1	09/05/2013 23:26
Chloroform	ND		0.0050	1	09/05/2013 23:26
Chloromethane	ND		0.0050	1	09/05/2013 23:26
Dibromochloromethane	ND		0.0050	1	09/05/2013 23:26
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/05/2013 23:26
1,2-Dichlorobenzene	ND		0.0050	1	09/05/2013 23:26
1,3-Dichlorobenzene	ND		0.0050	1	09/05/2013 23:26
1,4-Dichlorobenzene	ND		0.0050	1	09/05/2013 23:26
Dichlorodifluoromethane	ND		0.0050	1	09/05/2013 23:26
1,1-Dichloroethane	ND		0.0050	1	09/05/2013 23:26
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/05/2013 23:26
1,1-Dichloroethene	ND		0.0050	1	09/05/2013 23:26
cis-1,2-Dichloroethene	ND		0.0050	1	09/05/2013 23:26
trans-1,2-Dichloroethene	ND		0.0050	1	09/05/2013 23:26
1,2-Dichloropropane	ND		0.0050	1	09/05/2013 23:26
cis-1,3-Dichloropropene	ND		0.0050	1	09/05/2013 23:26
trans-1,3-Dichloropropene	ND		0.0050	1	09/05/2013 23:26
Freon 113	ND		0.10	1	09/05/2013 23:26
Methylene chloride	ND		0.0050	1	09/05/2013 23:26
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/05/2013 23:26
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/05/2013 23:26
Tetrachloroethene	ND		0.0050	1	09/05/2013 23:26
1,1,1-Trichloroethane	ND		0.0050	1	09/05/2013 23:26
1,1,2-Trichloroethane	ND		0.0050	1	09/05/2013 23:26
Trichloroethene	ND		0.0050	1	09/05/2013 23:26
Trichlorofluoromethane	ND		0.0050	1	09/05/2013 23:26
Vinyl Chloride	ND		0.0050	1	09/05/2013 23:26
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	90		70-130		09/05/2013 23:26
toluene-d8	93		70-130		09/05/2013 23:26
4-BFB	83		70-130		09/05/2013 23:26





## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 9/3/13  
**Date Analyzed:** 9/3/13  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1309013  
**BatchID:** 81244  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-81244

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.050	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	-	0.0050	-	-	-	-
Benzene	ND	-	0.0050	-	-	-	-
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	-	0.050	-	-	-	-
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.04777	0.0050	0.050	-	95.5	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.04845	0.0040	0.050	-	96.9	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.04292	0.0040	0.050	-	85.8	70-130
1,1-Dichloroethene	ND	0.04741	0.0050	0.050	-	94.8	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 9/3/13  
**Date Analyzed:** 9/3/13  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1309013  
**BatchID:** 81244  
**Extraction Method** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-81244

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
Diisopropyl ether (DIPE)	ND	-	0.0050	-	-	-	-
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	-	0.0050	-	-	-	-
Freon 113	ND	-	0.10	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	-	0.0050	-	-	-	-
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	-	0.0050	-	-	-	-
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.04491	0.0050	0.050	-	89.8	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
<b>Surrogate Recovery</b>							
dibromofluoromethane	0.1227	0.1228		0.12	98	98	70-130
toluene-d8	0.1283	0.1208		0.12	103	97	70-130
4-BFB	0.01279	0.0121		0.012	102	97	70-130

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 9/5/13

**Date Analyzed:** 9/5/13 - 9/6/13

**Instrument:** GC10

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1309013

**BatchID:** 81359

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

**Sample ID:** MB/LCS-81359  
1308A84-008AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.050	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	-	0.0050	-	-	-	-
Benzene	ND	-	0.0050	-	-	-	-
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	-	0.050	-	-	-	-
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.04963	0.0050	0.050	-	99.3	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.04645	0.0040	0.050	-	92.9	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.04328	0.0040	0.050	-	86.6	70-130
1,1-Dichloroethene	ND	0.04226	0.0050	0.050	-	84.5	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 9/5/13

**Date Analyzed:** 9/5/13 - 9/6/13

**Instrument:** GC10

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1309013

**BatchID:** 81359

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

**Sample ID:** MB/LCS-81359  
1308A84-008AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
Diisopropyl ether (DIPE)	ND	-	0.0050	-	-	-	-
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	-	0.0050	-	-	-	-
Freon 113	ND	-	0.10	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	-	0.0050	-	-	-	-
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	-	0.0050	-	-	-	-
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.04758	0.0050	0.050	-	95.2	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-

#### Surrogate Recovery

dibromofluoromethane	0.1199	0.1755	0.18	96	100	70-130
toluene-d8	0.1252	0.1728	0.18	100	99	70-130
4-BFB	0.01164	0.01755	0.018	93	100	70-130

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 9/5/13

**Date Analyzed:** 9/5/13 - 9/6/13

**Instrument:** GC10

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1309013

**BatchID:** 81359

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

**Sample ID:** MB/LCS-81359  
1308A84-008AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chlorobenzene	0.04943	0.05031	0.050	ND	98.9	101	61-108	1.78	30
1,2-Dibromoethane (EDB)	0.05016	0.04612	0.050	ND	100	92.2	54-119	8.40	30
1,2-Dichloroethane (1,2-DCA)	0.0447	0.04497	0.050	ND	89.4	89.9	48-115	0.597	30
1,1-Dichloroethene	0.04319	0.04366	0.050	ND	86.4	87.3	46-111	1.08	30
Trichloroethene	0.04821	0.0479	0.050	ND	96.4	95.8	60-116	0.644	30
<b>Surrogate Recovery</b>									
dibromofluoromethane	0.1799	0.1762	0.18	92	103	101	70-130	2.08	30
toluene-d8	0.1722	0.1719	0.18	99	98	98	70-130	0	30
4-BFB	0.01724	0.01723	0.018	87	99	98	70-130	0.0806	30



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1309013

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag**Report to:**
 Bob Clark-Riddell  
 Pangea Environmental Svcs., Inc.  
 1710 Franklin Street, Ste. 200  
 Oakland, CA 94612  
 (510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com

cc:

PO:

ProjectNo: #1435.002; Solano Group

**Bill to:**
 Bob Clark-Riddell  
 Pangea Environmental Svcs., Inc.  
 1710 Franklin Street, Ste. 200  
 Oakland, CA 94612
**Requested TAT:****5 days*****Date Received:* 09/03/2013*****Date Printed:* 09/03/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1309013-001	1183 Central N-4'	Soil	9/2/2013	<input type="checkbox"/>	A	A										
1309013-002	1183 Central N-6'	Soil	9/2/2013	<input type="checkbox"/>	A											
1309013-003	1183 North -2'	Soil	9/2/2013	<input type="checkbox"/>	A											

**Test Legend:**

1	8010BMS_S	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Jena Alfaro**  


---

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.







## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **9/3/2013 4:32:13 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Jena Alfaro**

WorkOrder N°: **1309013** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 3.8°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



# McC Campbell Analytical, Inc.

*"When Quality Counts"*

## Analytical Report

**WorkOrder:** 1309183

**Report Created for:** Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Project Contact:** Bob Clark-Riddell

**Project P.O.:**

**Project Name:** #1435.002; Solano Group

**Project Received:** 09/09/2013

Analytical Report reviewed & approved for release on 09/13/2013 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***





## Glossary of Terms & Qualifier Definitions

**Client:** Pangea Environmental Svcs., Inc.  
**Project:** #1435.002; Solano Group  
**WorkOrder:** 1309183

<u>Glossary Abbreviation</u>	<u>Description</u>
95% Interval	95% Confident Interval
DF	Dilution Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RL	Reporting Limit
RPD	Relative Percent Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309183

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/9/13 17:59

**Analytical Method:** SW8260B

**Date Prepared:** 9/9/13-9/12/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
F-9-3'	1309183-001A	Soil	09/05/2013 14:30	GC10	81459
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/11/2013 19:56
Bromoform	ND		0.0050	1	09/11/2013 19:56
Bromomethane	ND		0.0050	1	09/11/2013 19:56
Carbon Tetrachloride	ND		0.0050	1	09/11/2013 19:56
Chlorobenzene	ND		0.0050	1	09/11/2013 19:56
Chloroethane	ND		0.0050	1	09/11/2013 19:56
Chloroform	ND		0.0050	1	09/11/2013 19:56
Chloromethane	ND		0.0050	1	09/11/2013 19:56
Dibromochloromethane	ND		0.0050	1	09/11/2013 19:56
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/11/2013 19:56
1,2-Dichlorobenzene	ND		0.0050	1	09/11/2013 19:56
1,3-Dichlorobenzene	ND		0.0050	1	09/11/2013 19:56
1,4-Dichlorobenzene	ND		0.0050	1	09/11/2013 19:56
Dichlorodifluoromethane	ND		0.0050	1	09/11/2013 19:56
1,1-Dichloroethane	ND		0.0050	1	09/11/2013 19:56
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/11/2013 19:56
1,1-Dichloroethene	ND		0.0050	1	09/11/2013 19:56
cis-1,2-Dichloroethene	ND		0.0050	1	09/11/2013 19:56
trans-1,2-Dichloroethene	ND		0.0050	1	09/11/2013 19:56
1,2-Dichloropropane	ND		0.0050	1	09/11/2013 19:56
cis-1,3-Dichloropropene	ND		0.0050	1	09/11/2013 19:56
trans-1,3-Dichloropropene	ND		0.0050	1	09/11/2013 19:56
Freon 113	ND		0.10	1	09/11/2013 19:56
Methylene chloride	ND		0.0050	1	09/11/2013 19:56
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/11/2013 19:56
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/11/2013 19:56
Tetrachloroethene	ND		0.0050	1	09/11/2013 19:56
1,1,1-Trichloroethane	ND		0.0050	1	09/11/2013 19:56
1,1,2-Trichloroethane	ND		0.0050	1	09/11/2013 19:56
Trichloroethene	ND		0.0050	1	09/11/2013 19:56
Trichlorofluoromethane	ND		0.0050	1	09/11/2013 19:56
Vinyl Chloride	ND		0.0050	1	09/11/2013 19:56
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	108		70-130		09/11/2013 19:56
toluene-d8	118		70-130		09/11/2013 19:56
4-BFB	94		70-130		09/11/2013 19:56

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309183

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/9/13 17:59

**Analytical Method:** SW8260B

**Date Prepared:** 9/9/13-9/12/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
F-10-3'	1309183-002A	Soil	09/05/2013 14:35	GC10	81459
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/11/2013 20:39
Bromoform	ND		0.0050	1	09/11/2013 20:39
Bromomethane	ND		0.0050	1	09/11/2013 20:39
Carbon Tetrachloride	ND		0.0050	1	09/11/2013 20:39
Chlorobenzene	ND		0.0050	1	09/11/2013 20:39
Chloroethane	ND		0.0050	1	09/11/2013 20:39
Chloroform	ND		0.0050	1	09/11/2013 20:39
Chloromethane	ND		0.0050	1	09/11/2013 20:39
Dibromochloromethane	ND		0.0050	1	09/11/2013 20:39
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/11/2013 20:39
1,2-Dichlorobenzene	ND		0.0050	1	09/11/2013 20:39
1,3-Dichlorobenzene	ND		0.0050	1	09/11/2013 20:39
1,4-Dichlorobenzene	ND		0.0050	1	09/11/2013 20:39
Dichlorodifluoromethane	ND		0.0050	1	09/11/2013 20:39
1,1-Dichloroethane	ND		0.0050	1	09/11/2013 20:39
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/11/2013 20:39
1,1-Dichloroethene	ND		0.0050	1	09/11/2013 20:39
cis-1,2-Dichloroethene	ND		0.0050	1	09/11/2013 20:39
trans-1,2-Dichloroethene	ND		0.0050	1	09/11/2013 20:39
1,2-Dichloropropane	ND		0.0050	1	09/11/2013 20:39
cis-1,3-Dichloropropene	ND		0.0050	1	09/11/2013 20:39
trans-1,3-Dichloropropene	ND		0.0050	1	09/11/2013 20:39
Freon 113	ND		0.10	1	09/11/2013 20:39
Methylene chloride	ND		0.0050	1	09/11/2013 20:39
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/11/2013 20:39
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/11/2013 20:39
Tetrachloroethene	0.023		0.0050	1	09/11/2013 20:39
1,1,1-Trichloroethane	ND		0.0050	1	09/11/2013 20:39
1,1,2-Trichloroethane	ND		0.0050	1	09/11/2013 20:39
Trichloroethene	ND		0.0050	1	09/11/2013 20:39
Trichlorofluoromethane	ND		0.0050	1	09/11/2013 20:39
Vinyl Chloride	ND		0.0050	1	09/11/2013 20:39
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	108		70-130		09/11/2013 20:39
toluene-d8	112		70-130		09/11/2013 20:39
4-BFB	95		70-130		09/11/2013 20:39

(Cont.)





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309183

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/9/13 17:59

**Analytical Method:** SW8260B

**Date Prepared:** 9/9/13-9/12/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
F-11-2'	1309183-003A	Soil	09/05/2013 14:40	GC10	81584
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/12/2013 18:00
Bromoform	ND		0.0050	1	09/12/2013 18:00
Bromomethane	ND		0.0050	1	09/12/2013 18:00
Carbon Tetrachloride	ND		0.0050	1	09/12/2013 18:00
Chlorobenzene	ND		0.0050	1	09/12/2013 18:00
Chloroethane	ND		0.0050	1	09/12/2013 18:00
Chloroform	ND		0.0050	1	09/12/2013 18:00
Chloromethane	ND		0.0050	1	09/12/2013 18:00
Dibromochloromethane	ND		0.0050	1	09/12/2013 18:00
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/12/2013 18:00
1,2-Dichlorobenzene	ND		0.0050	1	09/12/2013 18:00
1,3-Dichlorobenzene	ND		0.0050	1	09/12/2013 18:00
1,4-Dichlorobenzene	ND		0.0050	1	09/12/2013 18:00
Dichlorodifluoromethane	ND		0.0050	1	09/12/2013 18:00
1,1-Dichloroethane	ND		0.0050	1	09/12/2013 18:00
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/12/2013 18:00
1,1-Dichloroethene	ND		0.0050	1	09/12/2013 18:00
cis-1,2-Dichloroethene	ND		0.0050	1	09/12/2013 18:00
trans-1,2-Dichloroethene	ND		0.0050	1	09/12/2013 18:00
1,2-Dichloropropane	ND		0.0050	1	09/12/2013 18:00
cis-1,3-Dichloropropene	ND		0.0050	1	09/12/2013 18:00
trans-1,3-Dichloropropene	ND		0.0050	1	09/12/2013 18:00
Freon 113	ND		0.10	1	09/12/2013 18:00
Methylene chloride	ND		0.0050	1	09/12/2013 18:00
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/12/2013 18:00
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/12/2013 18:00
Tetrachloroethene	ND		0.0050	1	09/12/2013 18:00
1,1,1-Trichloroethane	ND		0.0050	1	09/12/2013 18:00
1,1,2-Trichloroethane	ND		0.0050	1	09/12/2013 18:00
Trichloroethene	ND		0.0050	1	09/12/2013 18:00
Trichlorofluoromethane	ND		0.0050	1	09/12/2013 18:00
Vinyl Chloride	ND		0.0050	1	09/12/2013 18:00
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	108		70-130		09/12/2013 18:00
toluene-d8	106		70-130		09/12/2013 18:00
4-BFB	84		70-130		09/12/2013 18:00

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 9/9/13 17:59

**Date Prepared:** 9/9/13-9/12/13

**WorkOrder:** 1309183

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
F-12-2.5'	1309183-004A	Soil	09/05/2013 14:45	GC10	81459
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/11/2013 22:05
Bromoform	ND		0.0050	1	09/11/2013 22:05
Bromomethane	ND		0.0050	1	09/11/2013 22:05
Carbon Tetrachloride	ND		0.0050	1	09/11/2013 22:05
Chlorobenzene	ND		0.0050	1	09/11/2013 22:05
Chloroethane	ND		0.0050	1	09/11/2013 22:05
Chloroform	ND		0.0050	1	09/11/2013 22:05
Chloromethane	ND		0.0050	1	09/11/2013 22:05
Dibromochloromethane	ND		0.0050	1	09/11/2013 22:05
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/11/2013 22:05
1,2-Dichlorobenzene	ND		0.0050	1	09/11/2013 22:05
1,3-Dichlorobenzene	ND		0.0050	1	09/11/2013 22:05
1,4-Dichlorobenzene	ND		0.0050	1	09/11/2013 22:05
Dichlorodifluoromethane	ND		0.0050	1	09/11/2013 22:05
1,1-Dichloroethane	ND		0.0050	1	09/11/2013 22:05
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/11/2013 22:05
1,1-Dichloroethene	ND		0.0050	1	09/11/2013 22:05
cis-1,2-Dichloroethene	ND		0.0050	1	09/11/2013 22:05
trans-1,2-Dichloroethene	ND		0.0050	1	09/11/2013 22:05
1,2-Dichloropropane	ND		0.0050	1	09/11/2013 22:05
cis-1,3-Dichloropropene	ND		0.0050	1	09/11/2013 22:05
trans-1,3-Dichloropropene	ND		0.0050	1	09/11/2013 22:05
Freon 113	ND		0.10	1	09/11/2013 22:05
Methylene chloride	ND		0.0050	1	09/11/2013 22:05
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/11/2013 22:05
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/11/2013 22:05
Tetrachloroethene	ND		0.0050	1	09/11/2013 22:05
1,1,1-Trichloroethane	ND		0.0050	1	09/11/2013 22:05
1,1,2-Trichloroethane	ND		0.0050	1	09/11/2013 22:05
Trichloroethene	ND		0.0050	1	09/11/2013 22:05
Trichlorofluoromethane	ND		0.0050	1	09/11/2013 22:05
Vinyl Chloride	ND		0.0050	1	09/11/2013 22:05
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	112		70-130		09/11/2013 22:05
toluene-d8	114		70-130		09/11/2013 22:05
4-BFB	97		70-130		09/11/2013 22:05

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309183

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/9/13 17:59

**Analytical Method:** SW8260B

**Date Prepared:** 9/9/13-9/12/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
F-13-2.5'	1309183-005A	Soil	09/05/2013 14:50	GC10	81459
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/11/2013 22:48
Bromoform	ND		0.0050	1	09/11/2013 22:48
Bromomethane	ND		0.0050	1	09/11/2013 22:48
Carbon Tetrachloride	ND		0.0050	1	09/11/2013 22:48
Chlorobenzene	ND		0.0050	1	09/11/2013 22:48
Chloroethane	ND		0.0050	1	09/11/2013 22:48
Chloroform	ND		0.0050	1	09/11/2013 22:48
Chloromethane	ND		0.0050	1	09/11/2013 22:48
Dibromochloromethane	ND		0.0050	1	09/11/2013 22:48
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/11/2013 22:48
1,2-Dichlorobenzene	ND		0.0050	1	09/11/2013 22:48
1,3-Dichlorobenzene	ND		0.0050	1	09/11/2013 22:48
1,4-Dichlorobenzene	ND		0.0050	1	09/11/2013 22:48
Dichlorodifluoromethane	ND		0.0050	1	09/11/2013 22:48
1,1-Dichloroethane	ND		0.0050	1	09/11/2013 22:48
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/11/2013 22:48
1,1-Dichloroethene	ND		0.0050	1	09/11/2013 22:48
cis-1,2-Dichloroethene	ND		0.0050	1	09/11/2013 22:48
trans-1,2-Dichloroethene	ND		0.0050	1	09/11/2013 22:48
1,2-Dichloropropane	ND		0.0050	1	09/11/2013 22:48
cis-1,3-Dichloropropene	ND		0.0050	1	09/11/2013 22:48
trans-1,3-Dichloropropene	ND		0.0050	1	09/11/2013 22:48
Freon 113	ND		0.10	1	09/11/2013 22:48
Methylene chloride	ND		0.0050	1	09/11/2013 22:48
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/11/2013 22:48
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/11/2013 22:48
Tetrachloroethene	ND		0.0050	1	09/11/2013 22:48
1,1,1-Trichloroethane	ND		0.0050	1	09/11/2013 22:48
1,1,2-Trichloroethane	ND		0.0050	1	09/11/2013 22:48
Trichloroethene	ND		0.0050	1	09/11/2013 22:48
Trichlorofluoromethane	ND		0.0050	1	09/11/2013 22:48
Vinyl Chloride	ND		0.0050	1	09/11/2013 22:48
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	110		70-130		09/11/2013 22:48
toluene-d8	113		70-130		09/11/2013 22:48
4-BFB	94		70-130		09/11/2013 22:48

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309183

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/9/13 17:59

**Analytical Method:** SW8260B

**Date Prepared:** 9/9/13-9/12/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
F-14-2.5'	1309183-006A	Soil	09/05/2013 15:00	GC10	81459
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/11/2013 23:30
Bromoform	ND		0.0050	1	09/11/2013 23:30
Bromomethane	ND		0.0050	1	09/11/2013 23:30
Carbon Tetrachloride	ND		0.0050	1	09/11/2013 23:30
Chlorobenzene	ND		0.0050	1	09/11/2013 23:30
Chloroethane	ND		0.0050	1	09/11/2013 23:30
Chloroform	ND		0.0050	1	09/11/2013 23:30
Chloromethane	ND		0.0050	1	09/11/2013 23:30
Dibromochloromethane	ND		0.0050	1	09/11/2013 23:30
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/11/2013 23:30
1,2-Dichlorobenzene	ND		0.0050	1	09/11/2013 23:30
1,3-Dichlorobenzene	ND		0.0050	1	09/11/2013 23:30
1,4-Dichlorobenzene	ND		0.0050	1	09/11/2013 23:30
Dichlorodifluoromethane	ND		0.0050	1	09/11/2013 23:30
1,1-Dichloroethane	ND		0.0050	1	09/11/2013 23:30
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/11/2013 23:30
1,1-Dichloroethene	ND		0.0050	1	09/11/2013 23:30
cis-1,2-Dichloroethene	ND		0.0050	1	09/11/2013 23:30
trans-1,2-Dichloroethene	ND		0.0050	1	09/11/2013 23:30
1,2-Dichloropropane	ND		0.0050	1	09/11/2013 23:30
cis-1,3-Dichloropropene	ND		0.0050	1	09/11/2013 23:30
trans-1,3-Dichloropropene	ND		0.0050	1	09/11/2013 23:30
Freon 113	ND		0.10	1	09/11/2013 23:30
Methylene chloride	ND		0.0050	1	09/11/2013 23:30
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/11/2013 23:30
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/11/2013 23:30
Tetrachloroethene	ND		0.0050	1	09/11/2013 23:30
1,1,1-Trichloroethane	ND		0.0050	1	09/11/2013 23:30
1,1,2-Trichloroethane	ND		0.0050	1	09/11/2013 23:30
Trichloroethene	ND		0.0050	1	09/11/2013 23:30
Trichlorofluoromethane	ND		0.0050	1	09/11/2013 23:30
Vinyl Chloride	ND		0.0050	1	09/11/2013 23:30
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	113		70-130		09/11/2013 23:30
toluene-d8	122		70-130		09/11/2013 23:30
4-BFB	102		70-130		09/11/2013 23:30

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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309183

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/9/13 17:59

**Analytical Method:** SW8260B

**Date Prepared:** 9/9/13-9/12/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
F-15-2.5'	1309183-007A	Soil	09/05/2013 15:05	GC10	81459
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/12/2013 00:13
Bromoform	ND		0.0050	1	09/12/2013 00:13
Bromomethane	ND		0.0050	1	09/12/2013 00:13
Carbon Tetrachloride	ND		0.0050	1	09/12/2013 00:13
Chlorobenzene	ND		0.0050	1	09/12/2013 00:13
Chloroethane	ND		0.0050	1	09/12/2013 00:13
Chloroform	ND		0.0050	1	09/12/2013 00:13
Chloromethane	ND		0.0050	1	09/12/2013 00:13
Dibromochloromethane	ND		0.0050	1	09/12/2013 00:13
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/12/2013 00:13
1,2-Dichlorobenzene	ND		0.0050	1	09/12/2013 00:13
1,3-Dichlorobenzene	ND		0.0050	1	09/12/2013 00:13
1,4-Dichlorobenzene	ND		0.0050	1	09/12/2013 00:13
Dichlorodifluoromethane	ND		0.0050	1	09/12/2013 00:13
1,1-Dichloroethane	ND		0.0050	1	09/12/2013 00:13
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/12/2013 00:13
1,1-Dichloroethene	ND		0.0050	1	09/12/2013 00:13
cis-1,2-Dichloroethene	ND		0.0050	1	09/12/2013 00:13
trans-1,2-Dichloroethene	ND		0.0050	1	09/12/2013 00:13
1,2-Dichloropropane	ND		0.0050	1	09/12/2013 00:13
cis-1,3-Dichloropropene	ND		0.0050	1	09/12/2013 00:13
trans-1,3-Dichloropropene	ND		0.0050	1	09/12/2013 00:13
Freon 113	ND		0.10	1	09/12/2013 00:13
Methylene chloride	ND		0.0050	1	09/12/2013 00:13
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/12/2013 00:13
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/12/2013 00:13
Tetrachloroethene	ND		0.0050	1	09/12/2013 00:13
1,1,1-Trichloroethane	ND		0.0050	1	09/12/2013 00:13
1,1,2-Trichloroethane	ND		0.0050	1	09/12/2013 00:13
Trichloroethene	ND		0.0050	1	09/12/2013 00:13
Trichlorofluoromethane	ND		0.0050	1	09/12/2013 00:13
Vinyl Chloride	ND		0.0050	1	09/12/2013 00:13
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	110		70-130		09/12/2013 00:13
toluene-d8	116		70-130		09/12/2013 00:13
4-BFB	95		70-130		09/12/2013 00:13

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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309183

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/9/13 17:59

**Analytical Method:** SW8260B

**Date Prepared:** 9/9/13-9/12/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SW-S1-3'	1309183-008A	Soil	09/05/2013 15:10	GC10	81459
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/12/2013 00:55
Bromoform	ND		0.0050	1	09/12/2013 00:55
Bromomethane	ND		0.0050	1	09/12/2013 00:55
Carbon Tetrachloride	ND		0.0050	1	09/12/2013 00:55
Chlorobenzene	ND		0.0050	1	09/12/2013 00:55
Chloroethane	ND		0.0050	1	09/12/2013 00:55
Chloroform	ND		0.0050	1	09/12/2013 00:55
Chloromethane	ND		0.0050	1	09/12/2013 00:55
Dibromochloromethane	ND		0.0050	1	09/12/2013 00:55
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/12/2013 00:55
1,2-Dichlorobenzene	ND		0.0050	1	09/12/2013 00:55
1,3-Dichlorobenzene	ND		0.0050	1	09/12/2013 00:55
1,4-Dichlorobenzene	ND		0.0050	1	09/12/2013 00:55
Dichlorodifluoromethane	ND		0.0050	1	09/12/2013 00:55
1,1-Dichloroethane	ND		0.0050	1	09/12/2013 00:55
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/12/2013 00:55
1,1-Dichloroethene	ND		0.0050	1	09/12/2013 00:55
cis-1,2-Dichloroethene	ND		0.0050	1	09/12/2013 00:55
trans-1,2-Dichloroethene	ND		0.0050	1	09/12/2013 00:55
1,2-Dichloropropane	ND		0.0050	1	09/12/2013 00:55
cis-1,3-Dichloropropene	ND		0.0050	1	09/12/2013 00:55
trans-1,3-Dichloropropene	ND		0.0050	1	09/12/2013 00:55
Freon 113	ND		0.10	1	09/12/2013 00:55
Methylene chloride	ND		0.0050	1	09/12/2013 00:55
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/12/2013 00:55
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/12/2013 00:55
Tetrachloroethene	ND		0.0050	1	09/12/2013 00:55
1,1,1-Trichloroethane	ND		0.0050	1	09/12/2013 00:55
1,1,2-Trichloroethane	ND		0.0050	1	09/12/2013 00:55
Trichloroethene	ND		0.0050	1	09/12/2013 00:55
Trichlorofluoromethane	ND		0.0050	1	09/12/2013 00:55
Vinyl Chloride	ND		0.0050	1	09/12/2013 00:55
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	112		70-130		09/12/2013 00:55
toluene-d8	118		70-130		09/12/2013 00:55
4-BFB	97		70-130		09/12/2013 00:55

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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309183

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/9/13 17:59

**Analytical Method:** SW8260B

**Date Prepared:** 9/9/13-9/12/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SW-S2-3'	1309183-009A	Soil	09/05/2013 15:20	GC10	81459
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.0050	1	09/12/2013 01:38
Bromoform	ND		0.0050	1	09/12/2013 01:38
Bromomethane	ND		0.0050	1	09/12/2013 01:38
Carbon Tetrachloride	ND		0.0050	1	09/12/2013 01:38
Chlorobenzene	ND		0.0050	1	09/12/2013 01:38
Chloroethane	ND		0.0050	1	09/12/2013 01:38
Chloroform	ND		0.0050	1	09/12/2013 01:38
Chloromethane	ND		0.0050	1	09/12/2013 01:38
Dibromochloromethane	ND		0.0050	1	09/12/2013 01:38
1,2-Dibromoethane (EDB)	ND		0.0040	1	09/12/2013 01:38
1,2-Dichlorobenzene	ND		0.0050	1	09/12/2013 01:38
1,3-Dichlorobenzene	ND		0.0050	1	09/12/2013 01:38
1,4-Dichlorobenzene	ND		0.0050	1	09/12/2013 01:38
Dichlorodifluoromethane	ND		0.0050	1	09/12/2013 01:38
1,1-Dichloroethane	ND		0.0050	1	09/12/2013 01:38
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	09/12/2013 01:38
1,1-Dichloroethene	ND		0.0050	1	09/12/2013 01:38
cis-1,2-Dichloroethene	ND		0.0050	1	09/12/2013 01:38
trans-1,2-Dichloroethene	ND		0.0050	1	09/12/2013 01:38
1,2-Dichloropropane	ND		0.0050	1	09/12/2013 01:38
cis-1,3-Dichloropropene	ND		0.0050	1	09/12/2013 01:38
trans-1,3-Dichloropropene	ND		0.0050	1	09/12/2013 01:38
Freon 113	ND		0.10	1	09/12/2013 01:38
Methylene chloride	ND		0.0050	1	09/12/2013 01:38
1,1,1,2-Tetrachloroethane	ND		0.0050	1	09/12/2013 01:38
1,1,2,2-Tetrachloroethane	ND		0.0050	1	09/12/2013 01:38
Tetrachloroethene	ND		0.0050	1	09/12/2013 01:38
1,1,1-Trichloroethane	ND		0.0050	1	09/12/2013 01:38
1,1,2-Trichloroethane	ND		0.0050	1	09/12/2013 01:38
Trichloroethene	ND		0.0050	1	09/12/2013 01:38
Trichlorofluoromethane	ND		0.0050	1	09/12/2013 01:38
Vinyl Chloride	ND		0.0050	1	09/12/2013 01:38
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	107		70-130		09/12/2013 01:38
toluene-d8	117		70-130		09/12/2013 01:38
4-BFB	97		70-130		09/12/2013 01:38

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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1309183

**Project:** #1435.002; Solano Group

**Extraction Method** SW5030B

**Date Received:** 9/9/13 17:59

**Analytical Method:** SW8260B

**Date Prepared:** 9/9/13-9/12/13

**Unit:** mg/kg

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SW-E-4'	1309183-010A	Soil	09/05/2013 15:30	GC4	81459
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Bromodichloromethane	ND		0.020	4	09/12/2013 17:39
Bromoform	ND		0.020	4	09/12/2013 17:39
Bromomethane	ND		0.020	4	09/12/2013 17:39
Carbon Tetrachloride	ND		0.020	4	09/12/2013 17:39
Chlorobenzene	ND		0.020	4	09/12/2013 17:39
Chloroethane	ND		0.020	4	09/12/2013 17:39
Chloroform	ND		0.020	4	09/12/2013 17:39
Chloromethane	ND		0.020	4	09/12/2013 17:39
Dibromochloromethane	ND		0.020	4	09/12/2013 17:39
1,2-Dibromoethane (EDB)	ND		0.016	4	09/12/2013 17:39
1,2-Dichlorobenzene	ND		0.020	4	09/12/2013 17:39
1,3-Dichlorobenzene	ND		0.020	4	09/12/2013 17:39
1,4-Dichlorobenzene	ND		0.020	4	09/12/2013 17:39
Dichlorodifluoromethane	ND		0.020	4	09/12/2013 17:39
1,1-Dichloroethane	ND		0.020	4	09/12/2013 17:39
1,2-Dichloroethane (1,2-DCA)	ND		0.016	4	09/12/2013 17:39
1,1-Dichloroethene	ND		0.020	4	09/12/2013 17:39
cis-1,2-Dichloroethene	ND		0.020	4	09/12/2013 17:39
trans-1,2-Dichloroethene	ND		0.020	4	09/12/2013 17:39
1,2-Dichloropropane	ND		0.020	4	09/12/2013 17:39
cis-1,3-Dichloropropene	ND		0.020	4	09/12/2013 17:39
trans-1,3-Dichloropropene	ND		0.020	4	09/12/2013 17:39
Freon 113	ND		0.40	4	09/12/2013 17:39
Methylene chloride	ND		0.020	4	09/12/2013 17:39
1,1,1,2-Tetrachloroethane	ND		0.020	4	09/12/2013 17:39
1,1,2,2-Tetrachloroethane	ND		0.020	4	09/12/2013 17:39
Tetrachloroethene	0.31		0.020	4	09/12/2013 17:39
1,1,1-Trichloroethane	ND		0.020	4	09/12/2013 17:39
1,1,2-Trichloroethane	ND		0.020	4	09/12/2013 17:39
Trichloroethene	ND		0.020	4	09/12/2013 17:39
Trichlorofluoromethane	ND		0.020	4	09/12/2013 17:39
Vinyl Chloride	ND		0.020	4	09/12/2013 17:39
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
dibromofluoromethane	88		70-130		09/12/2013 17:39
toluene-d8	104		70-130		09/12/2013 17:39
4-BFB	94		70-130		09/12/2013 17:39



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 9/9/13

**Date Analyzed:** 9/10/13

**Instrument:** GC16

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1309183

**BatchID:** 81459

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/Kg

**Sample ID:** MB/LCS-81459  
1309170-004AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.050	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	-	0.0050	-	-	-	-
Benzene	ND	-	0.0050	-	-	-	-
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	-	0.050	-	-	-	-
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.04477	0.0050	0.050	-	89.5	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.04587	0.0040	0.050	-	91.7	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.04511	0.0040	0.050	-	90.2	70-130
1,1-Dichloroethene	ND	0.04799	0.0050	0.050	-	96	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

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## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 9/9/13

**Date Analyzed:** 9/10/13

**Instrument:** GC16

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1309183

**BatchID:** 81459

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/Kg

**Sample ID:** MB/LCS-81459  
1309170-004AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
Diisopropyl ether (DIPE)	ND	-	0.0050	-	-	-	-
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	-	0.0050	-	-	-	-
Freon 113	ND	-	0.10	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	-	0.0050	-	-	-	-
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	-	0.0050	-	-	-	-
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.04338	0.0050	0.050	-	86.8	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-

#### Surrogate Recovery

dibromofluoromethane	0.1123	0.1164	0.12	90	93	70-130
toluene-d8	0.1275	0.1255	0.12	102	100	70-130
4-BFB	0.01228	0.01107	0.012	98	89	70-130

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## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 9/9/13

**Date Analyzed:** 9/10/13

**Instrument:** GC16

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1309183

**BatchID:** 81459

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/Kg

**Sample ID:** MB/LCS-81459  
1309170-004AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chlorobenzene	0.0435	0.04337	0.050	ND	87	86.7	61-108	0.282	30
1,2-Dibromoethane (EDB)	0.04283	0.04219	0.050	ND	85.7	84.4	54-119	1.50	30
1,2-Dichloroethane (1,2-DCA)	0.04337	0.04304	0.050	ND	86.7	86.1	48-115	0.762	30
1,1-Dichloroethene	0.04807	0.04764	0.050	ND	96.1	95.3	46-111	0.899	30
Trichloroethene	0.05061	0.05459	0.050	ND	101	109	60-116	7.57	30
<b>Surrogate Recovery</b>									
dibromofluoromethane	0.1168	0.115	0.12	91	93	92	70-130	1.60	30
toluene-d8	0.1256	0.1264	0.12	100	100	101	70-130	0.633	30
4-BFB	0.011	0.01178	0.012	97	88	94	70-130	6.84	30



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 9/11/13

**Date Analyzed:** 9/12/13

**Instrument:** GC16

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1309183

**BatchID:** 81584

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/Kg

**Sample ID:** MB/LCS-81584  
1309020-006AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.050	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	-	0.0050	-	-	-	-
Benzene	ND	-	0.0050	-	-	-	-
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	-	0.050	-	-	-	-
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.04613	0.0050	0.050	-	92.3	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.04963	0.0040	0.050	-	99.3	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.04517	0.0040	0.050	-	90.3	70-130
1,1-Dichloroethene	ND	0.03857	0.0050	0.050	-	77.1	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)





## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 9/11/13

**Date Analyzed:** 9/12/13

**Instrument:** GC16

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1309183

**BatchID:** 81584

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/Kg

**Sample ID:** MB/LCS-81584  
1309020-006AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
Diisopropyl ether (DIPE)	ND	-	0.0050	-	-	-	-
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	-	0.0050	-	-	-	-
Freon 113	ND	-	0.10	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	-	0.0050	-	-	-	-
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	-	0.0050	-	-	-	-
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.0418	0.0050	0.050	-	83.6	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-

#### Surrogate Recovery

dibromofluoromethane	0.1164	0.1173	0.12	93	94	70-130
toluene-d8	0.1221	0.1221	0.12	98	98	70-130
4-BFB	0.01172	0.01106	0.012	94	88	70-130

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.

**Date Prepared:** 9/11/13

**Date Analyzed:** 9/12/13

**Instrument:** GC16

**Matrix:** Soil

**Project:** #1435.002; Solano Group

**WorkOrder:** 1309183

**BatchID:** 81584

**Extraction Method** SW5030B

**Analytical Method:** SW8260B

**Unit:** mg/Kg

**Sample ID:** MB/LCS-81584  
1309020-006AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chlorobenzene	0.03821	0.04395	0.050	ND	76.4	87.9	61-108	14.0	30
1,2-Dibromoethane (EDB)	0.04098	0.04644	0.050	ND	82	92.9	54-119	12.5	30
1,2-Dichloroethane (1,2-DCA)	0.03719	0.04082	0.050	ND	74.4	81.6	48-115	9.31	30
1,1-Dichloroethene	0.03383	0.03125	0.050	ND	67.7	62.5	46-111	7.94	30
Trichloroethene	0.03441	0.03693	0.050	ND	68.8	73.9	60-116	7.06	30
<b>Surrogate Recovery</b>									
dibromofluoromethane	0.1186	0.1172	0.12	93	95	94	70-130	1.22	30
toluene-d8	0.1214	0.1212	0.12	95	97	97	70-130	0	30
4-BFB	0.01088	0.01095	0.012	90	87	88	70-130	0.647	30



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1309183

ClientCode: PEO

☐ WaterTrax☐ WriteOn☒ EDF☐ Excel☐ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
 Pangea Environmental Svcs., Inc.  
 1710 Franklin Street, Ste. 200  
 Oakland, CA 94612  
 (510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com

cc:

PO:

ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

5 days

Date Received: 09/09/2013

Date Printed: 09/09/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1309183-001	F-9-3'	Soil	9/5/2013 14:30	<input type="checkbox"/>	A	A										
1309183-002	F-10-3'	Soil	9/5/2013 14:35	<input type="checkbox"/>	A											
1309183-003	F-11-2'	Soil	9/5/2013 14:40	<input type="checkbox"/>	A											
1309183-004	F-12-2.5'	Soil	9/5/2013 14:45	<input type="checkbox"/>	A											
1309183-005	F-13-2.5'	Soil	9/5/2013 14:50	<input type="checkbox"/>	A											
1309183-006	F-14-2.5'	Soil	9/5/2013 15:00	<input type="checkbox"/>	A											
1309183-007	F-15-2.5'	Soil	9/5/2013 15:05	<input type="checkbox"/>	A											
1309183-008	SW-S1-3'	Soil	9/5/2013 15:10	<input type="checkbox"/>	A											
1309183-009	SW-S2-3'	Soil	9/5/2013 15:20	<input type="checkbox"/>	A											
1309183-010	SW-E-4'	Soil	9/5/2013 15:30	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_S	2	PREFDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
Telephone: (925) 252-9262 Fax: (925) 252-9269

### CHAIN OF CUSTODY RECORD

## TURN AROUND TIME

RUSH    24 HR    48 HR    72 HR    5 DAY

EDF Required? Coelt (Normal)	No	Write On (DW)	No
------------------------------	----	---------------	----

Report To: Bob Clark-Riddell

**Bill To: Pangea**

**Company:** Pangea Environmental Services, Inc.

1710 Franklin Street, Suite 200, Oakland, CA 94612

E-Mail: [briddell@pangeaenv.com](mailto:briddell@pangeaenv.com)

**Tele: (510) 435-8664**

**Fax: (510) 836-3709**

Project #: 1435.002

**Project Name: Solano Group**

**Project Location:** 1187 Solano Ave, Albany

**Sampler Signature:**

Solano Ave, Albany  
Bob L. L.

### Analysis Request

Other

Comments

**Filter Samples for Metals analysis: Yes / No**

[illegible]

Relinquished By:

Date: \_\_\_\_\_

Time:

Received By:

Relinquished By:

Date:

Times:

Received By:

Relinquished By:

Date:

Time:

Received By:

ICE/t<sup>o</sup>

**GOOD CONDITION**

**HEAD SPACE ABSENT**

## DECHLORINATED IN LAB

### APPROPRIATE CONTAINERS

**PRESERVED IN LAB**

	VOAS	O&G	METALS	OTHER
Q1-08	76	9	15	0
Q2-08	76	9	15	0
Q3-08	76	9	15	0
Q4-08	76	9	15	0
Q1-09	76	9	15	0
Q2-09	76	9	15	0
Q3-09	76	9	15	0
Q4-09	76	9	15	0
Q1-10	76	9	15	0
Q2-10	76	9	15	0
Q3-10	76	9	15	0
Q4-10	76	9	15	0
Q1-11	76	9	15	0
Q2-11	76	9	15	0
Q3-11	76	9	15	0
Q4-11	76	9	15	0
Q1-12	76	9	15	0
Q2-12	76	9	15	0
Q3-12	76	9	15	0
Q4-12	76	9	15	0
Q1-13	76	9	15	0
Q2-13	76	9	15	0
Q3-13	76	9	15	0
Q4-13	76	9	15	0
Q1-14	76	9	15	0
Q2-14	76	9	15	0
Q3-14	76	9	15	0
Q4-14	76	9	15	0
Q1-15	76	9	15	0
Q2-15	76	9	15	0
Q3-15	76	9	15	0
Q4-15	76	9	15	0
Q1-16	76	9	15	0
Q2-16	76	9	15	0
Q3-16	76	9	15	0
Q4-16	76	9	15	0
Q1-17	76	9	15	0
Q2-17	76	9	15	0
Q3-17	76	9	15	0
Q4-17	76	9	15	0
Q1-18	76	9	15	0
Q2-18	76	9	15	0
Q3-18	76	9	15	0
Q4-18	76	9	15	0
Q1-19	76	9	15	0
Q2-19	76	9	15	0
Q3-19	76	9	15	0
Q4-19	76	9	15	0
Q1-20	76	9	15	0
Q2-20	76	9	15	0
Q3-20	76	9	15	0
Q4-20	76	9	15	0
Q1-21	76	9	15	0
Q2-21	76	9	15	0
Q3-21	76	9	15	0
Q4-21	76	9	15	0
Q1-22	76	9	15	0
Q2-22	76	9	15	0
Q3-22	76	9	15	0
Q4-22	76	9	15	0
Q1-23	76	9	15	0
Q2-23	76	9	15	0
Q3-23	76	9	15	0
Q4-23	76	9	15	0
Q1-24	76	9	15	0
Q2-24	76	9	15	0
Q3-24	76	9	15	0
Q4-24	76	9	15	0
Q1-25	76	9	15	0
Q2-25	76	9	15	0
Q3-25	76	9	15	0
Q4-25	76	9	15	0
Q1-26	76	9	15	0
Q2-26	76	9	15	0
Q3-26	76	9	15	0
Q4-26	76	9	15	0
Q1-27	76	9	15	0
Q2-27	76	9	15	0
Q3-27	76	9	15	0
Q4-27	76	9	15	0
Q1-28	76	9	15	0
Q2-28	76	9	15	0
Q3-28	76	9	15	0
Q4-28	76	9	15	0
Q1-29	76	9	15	0
Q2-29	76	9	15	0
Q3-29	76	9	15	0
Q4-29	76	9	15	0
Q1-30	76	9	15	0
Q2-30	76	9	15	0
Q3-30	76	9	15	0
Q4-30	76	9	15	0
Q1-31	76	9	15	0
Q2-31	76	9	15	0
Q3-31	76	9	15	0
Q4-31	76	9	15	0
Q1-32				

## PRESERVATION

pH < 2

pH<2

**COMMENTS:**



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **9/9/2013 5:59:18 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Jena Alfaro**

WorkOrder N°: **1309183**

Matrix: Soil

Carrier: Courier

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp: 3.2°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



# McC Campbell Analytical, Inc.

*"When Quality Counts"*

## Analytical Report

**WorkOrder:** 1309888

**Report Created for:** Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Project Contact:** Bob Clark-Riddell

**Project P.O.:**

**Project Name:** Solano

**Project Received:** 09/27/2013

Analytical Report reviewed & approved for release on 10/01/2013 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***







## Glossary of Terms & Qualifier Definitions

**Client:** Pangea Environmental Svcs., Inc.

**Project:** Solano

**WorkOrder:** 1309888

**Glossary**  
**Abbreviation**

**Description**

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit
RPD	Relative Percent Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: Solano	Date Sampled: 09/27/13
		Date Received: 09/27/13
	Client Contact: Bob Clark-Riddell	Date Extracted: 10/01/13
	Client P.O.:	Date Analyzed: 10/01/13

## Volatile Organic Compounds in µg/m³

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1309888

Lab ID	1309888-001A	Initial Pressure (psia)	14.60
Client ID	Air 1187	Final Pressure (psia)	14.60
Matrix	Indoor Air		

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	100	5.0	6.04	Acrolein	ND<0.23	1.0	0.2331
Acrylonitrile	ND	1.0	0.22	tert-Amyl methyl ether (TAME)	ND	1.0	0.42
Benzene	0.52	1.0	0.0032	Benzyl chloride	ND	1.0	0.53
Bromodichloromethane	ND	1.0	0.007	Bromoform	ND	1.0	1.1
Bromomethane	0.82	1.0	0.39	1,3-Butadiene	ND	1.0	0.22
2-Butanone (MEK)	120	5.0	7.5	t-Butyl alcohol (TBA)	ND	1.0	6.2
Carbon Disulfide	ND	1.0	0.32	Carbon Tetrachloride	0.57	1.0	0.0064
Chlorobenzene	ND	1.0	0.47	Chloroethane	ND	1.0	0.27
Chloroform	0.20	1.0	0.0049	Chloromethane	ND	1.0	0.21
Cyclohexane	ND<1.8	1.0	1.75	Dibromochloromethane	ND	1.0	0.87
1,2-Dibromo-3-chloropropane	0.040	1.0	0.0049	1,2-Dibromoethane (EDB)	0.0086	1.0	0.0078
1,2-Dichlorobenzene	ND	1.0	0.61	1,3-Dichlorobenzene	ND	1.0	0.61
1,4-Dichlorobenzene	0.056	1.0	0.0061	Dichlorodifluoromethane	2.2	1.0	0.5
1,1-Dichloroethane	ND	1.0	0.41	1,2-Dichloroethane (1,2-DCA)	0.084	1.0	0.0041
1,1-Dichloroethene	ND	1.0	0.1	cis-1,2-Dichloroethene	ND	1.0	0.4
trans-1,2-Dichloroethene	ND	1.0	0.4	1,2-Dichloropropane	0.014	1.0	0.0047
cis-1,3-Dichloropropene	ND	1.0	0.12	trans-1,3-Dichloropropene	ND	1.0	0.12
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.0	0.71	Diisopropyl ether (DIPE)	ND	1.0	0.42
1,4-Dioxane	ND	1.0	0.0037	Ethyl acetate	4.6	1.0	0.92
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.42	Ethylbenzene	2.2	1.0	0.44
4-Ethyltoluene	ND	1.0	0.5	Freon 113	ND	1.0	0.78
Heptane	ND<2.1	1.0	2.08	Hexachlorobutadiene	ND	1.0	1.1
Hexane	ND<1.8	1.0	1.79	2-Hexanone	ND	1.0	0.42
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.42	Methyl-t-butyl ether (MTBE)	ND	1.0	0.37
Methylene chloride	ND	1.0	0.35	Methyl methacrylate	ND<0.42	1.0	0.4163
Naphthalene	0.25	1.0	0.05	Propene	ND<8.8	1.0	8.75
Styrene	ND	1.0	0.43	1,1,1,2-Tetrachloroethane	ND	1.0	0.007
1,1,2,2-Tetrachloroethane	ND	1.0	0.007	Tetrachloroethene	0.85	1.0	0.0345
Tetrahydrofuran	310	20	0.6	Toluene	1.6	1.0	0.38
1,2,4-Trichlorobenzene	ND	1.0	0.75	1,1,1-Trichloroethane	ND	1.0	0.55
1,1,2-Trichloroethane	ND	1.0	0.0055	Trichloroethene	0.041	1.0	0.0055
Trichlorofluoromethane	1.3	1.0	0.57	1,2,4-Trimethylbenzene	0.75	1.0	0.5
1,3,5-Trimethylbenzene	ND	1.0	0.5	Vinyl Acetate	ND<0.36	1.0	0.358
Vinyl Chloride	ND	1.0	0.0026	Xylenes, Total	12	1.0	1.3

### Surrogate Recoveries (%)

%SS1:	105	%SS2:	107
%SS3:	115		

Comments:

\*vapor samples are reported in µg/m³.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 9/30/13  
**Date Analyzed:** 9/30/13 - 10/1/13  
**Instrument:** GC24  
**Matrix:** Soilgas  
**Project:** Solano

**WorkOrder:** 1309888  
**BatchID:** 82307  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** nL/L  
**Sample ID:** MB/LCS-82307

### QC SUMMARY REPORT FOR TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	25	-	-	-	-
Acrylonitrile	ND	25.52	0.50	25	-	102	60-140
tert-Amyl methyl ether (TAME)	ND	25.86	0.50	25	-	103	60-140
Benzene	ND	23.91	0.50	25	-	95.6	60-140
Benzyl chloride	ND	24.59	0.50	25	-	98.3	60-140
Bromodichloromethane	ND	22.36	0.50	25	-	89.4	60-140
Bromoform	ND	27.87	0.50	25	-	111	60-140
Bromomethane	ND	-	0.50	-	-	-	-
1,3-Butadiene	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	25	-	-	-	-
t-Butyl alcohol (TBA)	ND	-	10	-	-	-	-
Carbon Disulfide	ND	25.37	0.50	25	-	101	60-140
Carbon Tetrachloride	ND	27.47	0.50	25	-	110	60-140
Chlorobenzene	ND	23.34	0.50	25	-	93.4	60-140
Chloroethane	ND	26.66	0.50	25	-	107	60-140
Chloroform	ND	20.82	0.50	25	-	83.3	60-140
Chloromethane	ND	25.56	0.50	25	-	102	60-140
Cyclohexane	ND	-	5.0	-	-	-	-
Dibromochloromethane	ND	30.09	0.50	25	-	120	60-140
1,2-Dibromo-3-chloropropane	ND	25.98	0.012	25	-	104	60-140
1,2-Dibromoethane (EDB)	ND	22.42	0.50	25	-	89.7	60-140
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	23.36	0.50	25	-	93.4	60-140
1,4-Dichlorobenzene	ND	20.59	0.50	25	-	82.4	60-140
Dichlorodifluoromethane	ND	23.83	0.50	25	-	95.3	60-140
1,1-Dichloroethane	ND	24.21	0.50	25	-	96.8	60-140
1,2-Dichloroethane (1,2-DCA)	ND	20.72	0.50	25	-	82.9	60-140
1,1-Dichloroethene	ND	-	0.50	-	-	-	-
cis-1,2-Dichloroethene	ND	25.48	0.50	25	-	102	60-140
trans-1,2-Dichloroethene	ND	26.04	0.50	25	-	104	60-140
1,2-Dichloropropane	ND	20.71	0.50	25	-	82.8	60-140
cis-1,3-Dichloropropene	ND	26.58	0.50	25	-	106	60-140
trans-1,3-Dichloropropene	ND	24.58	0.50	25	-	98.3	60-140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	24.09	0.50	25	-	96.4	60-140
Diisopropyl ether (DIPE)	ND	33.23	0.50	25	-	133	60-140
1,4-Dioxane	ND	23.11	0.50	25	-	92.5	60-140
Ethanol	ND	-	50	-	-	-	-
Ethyl acetate	ND	25.31	0.50	25	-	101	60-140
Ethyl tert-butyl ether (ETBE)	ND	25.24	0.50	25	-	101	60-140
Ethylbenzene	ND	24.18	0.50	25	-	96.7	60-140

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 9/30/13  
**Date Analyzed:** 9/30/13 - 10/1/13  
**Instrument:** GC24  
**Matrix:** Soilgas  
**Project:** Solano

**WorkOrder:** 1309888  
**BatchID:** 82307  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** nL/L  
**Sample ID:** MB/LCS-82307

### QC SUMMARY REPORT FOR TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
4-Ethyltoluene	ND	-	0.50	-	-	-	-
Freon 113	ND	24.75	0.50	25	-	99	60-140
Heptane	ND	-	5.0	-	-	-	-
Hexachlorobutadiene	ND	24.91	0.50	25	-	99.7	60-140
Hexane	ND	-	5.0	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	28.68	0.50	25	-	115	60-140
Methyl-t-butyl ether (MTBE)	ND	26.47	0.50	25	-	106	60-140
Methylene chloride	ND	21.94	0.50	25	-	87.7	60-140
Naphthalene	ND	44.38	1.0	50	-	88.8	60-140
Propene	ND	-	50	-	-	-	-
Styrene	ND	26.36	0.50	25	-	105	60-140
1,1,1,2-Tetrachloroethane	ND	25.75	0.50	25	-	103	60-140
1,1,2,2-Tetrachloroethane	ND	20.02	0.50	25	-	80.1	60-140
Tetrachloroethene	ND	23.91	0.50	25	-	95.6	60-140
Tetrahydrofuran	ND	21.48	0.50	25	-	85.9	60-140
Toluene	ND	22.64	0.50	25	-	90.5	60-140
1,2,4-Trichlorobenzene	ND	24.26	0.50	25	-	97	60-140
1,1,1-Trichloroethane	ND	26.87	0.50	25	-	107	60-140
1,1,2-Trichloroethane	ND	21.69	0.50	25	-	86.8	60-140
Trichloroethene	ND	19.78	0.50	25	-	79.1	60-140
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	23.45	0.50	25	-	93.8	60-140
1,3,5-Trimethylbenzene	ND	23.77	0.50	25	-	95.1	60-140
Vinyl Acetate	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	20.12	0.50	25	-	80.5	60-140
Xylenes, Total	ND	75.09	1.5	75	-	100	60-140

#### Surrogate Recovery

1,2-DCA-d4	538.1	629.5		500	108	126	60-140
toluene-d8	527.3	527.3		500	105	105	60-140
4-BFB	526.8	533.2		500	105	107	60-140



## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1309888

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com

cc:

PO:

ProjectNo: Solano

## Bill to:

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

Requested TAT:

2 days

**Date Received: 09/27/2013****Date Printed: 09/27/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1309888-001	Air 1187	Indoor Air	9/27/2013	<input type="checkbox"/>	A											

## Test Legend:

1	15_SCAN-SIM_Indoor(ug/m	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.









## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **9/27/2013 9:06:39 PM**

Project Name: **Solano**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1309888**

Matrix: Indoor Air

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

Comments:



# McC Campbell Analytical, Inc.

*"When Quality Counts"*

## Analytical Report

**WorkOrder:** 1309889 **Amended:** 10/21/2013

**Report Created for:** Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Project Contact:** Bob Clark-Riddell  
**Project P.O.:**  
**Project Name:** #1435.002; Solano Group

**Project Received:** 09/27/2013

Analytical Report reviewed & approved for release on 10/03/2013 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*





## Glossary of Terms & Qualifier Definitions

**Client:** Pangea Environmental Svcs., Inc.  
**Project:** #1435.002; Solano Group  
**WorkOrder:** 1309889

### Glossary Abbreviation

### Description

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit
RPD	Relative Percent Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value

### Analytical Qualifier

b1 aqueous sample that contains greater than ~1 vol. % sediment

### Quality Control Qualifier

F1 MS/MSD recovery was out of acceptance criteria; LCS validated the prep batch.



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 9/27/13 21:17

**Date Prepared:** 10/2/13

**WorkOrder:** 1309889

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
MW-4	1309889-001A	Water	09/27/2013 20:00	GC28	82303
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	610		100	10	10/02/2013 00:47
tert-Amyl methyl ether (TAME)	ND		5.0	10	10/02/2013 00:47
Benzene	ND		5.0	10	10/02/2013 00:47
Bromobenzene	ND		5.0	10	10/02/2013 00:47
Bromochloromethane	ND		5.0	10	10/02/2013 00:47
Bromodichloromethane	ND		5.0	10	10/02/2013 00:47
Bromoform	ND		5.0	10	10/02/2013 00:47
Bromomethane	ND		5.0	10	10/02/2013 00:47
2-Butanone (MEK)	230		20	10	10/02/2013 00:47
t-Butyl alcohol (TBA)	ND		20	10	10/02/2013 00:47
n-Butyl benzene	ND		5.0	10	10/02/2013 00:47
sec-Butyl benzene	ND		5.0	10	10/02/2013 00:47
tert-Butyl benzene	ND		5.0	10	10/02/2013 00:47
Carbon Disulfide	ND		5.0	10	10/02/2013 00:47
Carbon Tetrachloride	ND		5.0	10	10/02/2013 00:47
Chlorobenzene	ND		5.0	10	10/02/2013 00:47
Chloroethane	ND		5.0	10	10/02/2013 00:47
Chloroform	ND		5.0	10	10/02/2013 00:47
Chloromethane	ND		5.0	10	10/02/2013 00:47
2-Chlorotoluene	ND		5.0	10	10/02/2013 00:47
4-Chlorotoluene	ND		5.0	10	10/02/2013 00:47
Dibromochloromethane	ND		5.0	10	10/02/2013 00:47
1,2-Dibromo-3-chloropropane	ND		2.0	10	10/02/2013 00:47
1,2-Dibromoethane (EDB)	ND		5.0	10	10/02/2013 00:47
Dibromomethane	ND		5.0	10	10/02/2013 00:47
1,2-Dichlorobenzene	ND		5.0	10	10/02/2013 00:47
1,3-Dichlorobenzene	ND		5.0	10	10/02/2013 00:47
1,4-Dichlorobenzene	ND		5.0	10	10/02/2013 00:47
Dichlorodifluoromethane	ND		5.0	10	10/02/2013 00:47
1,1-Dichloroethane	ND		5.0	10	10/02/2013 00:47
1,2-Dichloroethane (1,2-DCA)	ND		5.0	10	10/02/2013 00:47
1,1-Dichloroethene	ND		5.0	10	10/02/2013 00:47
cis-1,2-Dichloroethene	ND		5.0	10	10/02/2013 00:47
trans-1,2-Dichloroethene	ND		5.0	10	10/02/2013 00:47
1,2-Dichloropropane	ND		5.0	10	10/02/2013 00:47
1,3-Dichloropropane	ND		5.0	10	10/02/2013 00:47
2,2-Dichloropropane	ND		5.0	10	10/02/2013 00:47
1,1-Dichloropropene	ND		5.0	10	10/02/2013 00:47

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 9/27/13 21:17

**Date Prepared:** 10/2/13

**WorkOrder:** 1309889

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
MW-4	1309889-001A	Water	09/27/2013 20:00	GC28	82303
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		5.0	10	10/02/2013 00:47
trans-1,3-Dichloropropene	ND		5.0	10	10/02/2013 00:47
Diisopropyl ether (DIPE)	ND		5.0	10	10/02/2013 00:47
Ethylbenzene	ND		5.0	10	10/02/2013 00:47
Ethyl tert-butyl ether (ETBE)	ND		5.0	10	10/02/2013 00:47
Freon 113	ND		5.0	10	10/02/2013 00:47
Hexachlorobutadiene	ND		5.0	10	10/02/2013 00:47
Hexachloroethane	ND		5.0	10	10/02/2013 00:47
2-Hexanone	ND		5.0	10	10/02/2013 00:47
Isopropylbenzene	ND		5.0	10	10/02/2013 00:47
4-Isopropyl toluene	ND		5.0	10	10/02/2013 00:47
Methyl-t-butyl ether (MTBE)	ND		5.0	10	10/02/2013 00:47
Methylene chloride	ND		5.0	10	10/02/2013 00:47
4-Methyl-2-pentanone (MIBK)	ND		5.0	10	10/02/2013 00:47
Naphthalene	ND		5.0	10	10/02/2013 00:47
n-Propyl benzene	ND		5.0	10	10/02/2013 00:47
Styrene	ND		5.0	10	10/02/2013 00:47
1,1,1,2-Tetrachloroethane	ND		5.0	10	10/02/2013 00:47
1,1,2,2-Tetrachloroethane	ND		5.0	10	10/02/2013 00:47
Tetrachloroethene	110		5.0	10	10/02/2013 00:47
Toluene	ND		5.0	10	10/02/2013 00:47
1,2,3-Trichlorobenzene	ND		5.0	10	10/02/2013 00:47
1,2,4-Trichlorobenzene	ND		5.0	10	10/02/2013 00:47
1,1,1-Trichloroethane	ND		5.0	10	10/02/2013 00:47
1,1,2-Trichloroethane	ND		5.0	10	10/02/2013 00:47
Trichloroethene	ND		5.0	10	10/02/2013 00:47
Trichlorofluoromethane	ND		5.0	10	10/02/2013 00:47
1,2,3-Trichloropropane	ND		5.0	10	10/02/2013 00:47
1,2,4-Trimethylbenzene	ND		5.0	10	10/02/2013 00:47
1,3,5-Trimethylbenzene	ND		5.0	10	10/02/2013 00:47
Vinyl Chloride	ND		5.0	10	10/02/2013 00:47
Xylenes, Total	ND		5.0	10	10/02/2013 00:47
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> b1	
Dibromofluoromethane	105		70-130		10/02/2013 00:47
Toluene-d8	104		70-130		10/02/2013 00:47
4-BFB	99		70-130		10/02/2013 00:47



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 9/30/13  
**Date Analyzed:** 9/30/13  
**Instrument:** GC28  
**Matrix:** Water  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1309889  
**BatchID:** 82303  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-82303  
1309771-011AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	19.78	0.50	20	-	98.9	70-130
Benzene	ND	19.72	0.50	20	-	98.6	70-130
Bromobenzene	ND	-	0.50	-	-	-	-
Bromochloromethane	ND	-	0.50	-	-	-	-
Bromodichloromethane	ND	-	0.50	-	-	-	-
Bromoform	ND	-	0.50	-	-	-	-
Bromomethane	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	2.0	-	-	-	-
t-Butyl alcohol (TBA)	ND	80.93	2.0	80	-	101	70-130
n-Butyl benzene	ND	-	0.50	-	-	-	-
sec-Butyl benzene	ND	-	0.50	-	-	-	-
tert-Butyl benzene	ND	-	0.50	-	-	-	-
Carbon Disulfide	ND	-	0.50	-	-	-	-
Carbon Tetrachloride	ND	-	0.50	-	-	-	-
Chlorobenzene	ND	21.32	0.50	20	-	107	70-130
Chloroethane	ND	-	0.50	-	-	-	-
Chloroform	ND	-	0.50	-	-	-	-
Chloromethane	ND	-	0.50	-	-	-	-
2-Chlorotoluene	ND	-	0.50	-	-	-	-
4-Chlorotoluene	ND	-	0.50	-	-	-	-
Dibromochloromethane	ND	-	0.50	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.20	-	-	-	-
1,2-Dibromoethane (EDB)	ND	19.87	0.50	20	-	99.4	70-130
Dibromomethane	ND	-	0.50	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.50	-	-	-	-
Dichlorodifluoromethane	ND	-	0.50	-	-	-	-
1,1-Dichloroethane	ND	-	0.50	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	19.13	0.50	20	-	95.7	70-130
1,1-Dichloroethene	ND	15.17	0.50	20	-	75.8	70-130
cis-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
1,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,3-Dichloropropane	ND	-	0.50	-	-	-	-
2,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,1-Dichloropropene	ND	-	0.50	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.50	-	-	-	-

(Cont.)





## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 9/30/13  
**Date Analyzed:** 9/30/13  
**Instrument:** GC28  
**Matrix:** Water  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1309889  
**BatchID:** 82303  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-82303  
1309771-011AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	20.48	0.50	20	-	102	70-130
Ethylbenzene	ND	-	0.50	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	20.02	0.50	20	-	100	70-130
Freon 113	ND	-	0.50	-	-	-	-
Hexachlorobutadiene	ND	-	0.50	-	-	-	-
Hexachloroethane	ND	-	0.50	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
Isopropylbenzene	ND	-	0.50	-	-	-	-
4-Isopropyl toluene	ND	-	0.50	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	19.45	0.50	20	-	97.3	70-130
Methylene chloride	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.50	-	-	-	-
Naphthalene	ND	-	0.50	-	-	-	-
n-Propyl benzene	ND	-	0.50	-	-	-	-
Styrene	ND	-	0.50	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
Tetrachloroethene	ND	-	0.50	-	-	-	-
Toluene	ND	19.89	0.50	20	-	99.4	70-130
1,2,3-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.50	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.50	-	-	-	-
Trichloroethene	ND	20.06	0.50	20	-	100	70-130
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.50	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	-	0.50	-	-	-	-
Xylenes, Total	ND	-	0.50	-	-	-	-

#### Surrogate Recovery

Dibromofluoromethane	26.12	26.26	25	104	105	70-130
Toluene-d8	24.78	24.27	25	99	97	70-130
4-BFB	2.425	2.382	2.5	97	95	70-130

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 9/30/13  
**Date Analyzed:** 9/30/13  
**Instrument:** GC28  
**Matrix:** Water  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1309889  
**BatchID:** 82303  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-82303  
1309771-011AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	18.95	20.13	20	ND	94.7	101	70-130	6.02	20
Benzene	17.67	17.93	20	ND	88.4	89.7	70-130	1.46	20
t-Butyl alcohol (TBA)	80.76	89.4	80	3.7	96.4	107	70-130	10.2	20
Chlorobenzene	19.17	19.41	20	ND	95.8	97.1	70-130	1.27	20
1,2-Dibromoethane (EDB)	20.25	20.56	20	ND	101	103	70-130	1.53	20
1,2-Dichloroethane (1,2-DCA)	17.63	18.28	20	ND	88.1	91.4	70-130	3.61	20
1,1-Dichloroethene	12.7	12.97	20	ND	63.5,F1	64.8,F1	70-130	2.09	20
Diisopropyl ether (DIPE)	18.62	19.07	20	ND	93.1	95.3	70-130	2.39	20
Ethyl tert-butyl ether (ETBE)	18	18.98	20	ND	90	94.9	70-130	5.31	20
Methyl-t-butyl ether (MTBE)	18.66	19.58	20	ND	93.3	97.9	70-130	4.81	20
Toluene	17.68	17.52	20	ND	88.4	87.6	70-130	0.898	20
Trichloroethene	16.73	17.4	20	ND	83.6	87	70-130	3.95	20
<b>Surrogate Recovery</b>									
Dibromofluoromethane	26.13	26.71	25		105	107	70-130	2.22	20
Toluene-d8	24.82	24.42	25		99	98	70-130	1.62	20
4-BFB	2.385	2.341	2.5		95	94	70-130	1.83	20



## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1309889

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

5 days

**Date Received:** 09/27/2013**Date Printed:** 09/27/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1309889-001	MW-4	Water	9/27/2013 20:00	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_W	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.

## Page 9 of 10



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **9/27/2013 9:17:43 PM**

Project Name: **#1435.002; Solano Group**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1309889** Matrix: Water

Carrier: Client Drop-In

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:



# McC Campbell Analytical, Inc.

*"When Quality Counts"*

## Analytical Report

**WorkOrder:** 1310206

**Report Created for:** Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Project Contact:** Bob Clark-Riddell

**Project P.O.:**

**Project Name:** Solano

**Project Received:** 10/07/2013

Analytical Report reviewed & approved for release on 10/09/2013 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***







## Glossary of Terms & Qualifier Definitions

**Client:** Pangea Environmental Svcs., Inc.

**Project:** Solano

**WorkOrder:** 1310206

<u>Glossary Abbreviation</u>	<u>Description</u>
95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit
RPD	Relative Percent Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Air 1183 8hr	1310206-001A	Indoor Air	10/03/2013 09:55	GC24	82622
Analytes	Result	RL	DF	Date Analyzed	
Acetone	45	6.0	1	10/07/2013 20:37	
Acrolein	3.5	0.23	1	10/07/2013 20:37	
Acrylonitrile	ND	0.22	1	10/07/2013 20:37	
tert-Amyl methyl ether (TAME)	ND	0.42	1	10/07/2013 20:37	
Benzene	0.39	0.0032	1	10/07/2013 20:37	
Benzyl chloride	ND	0.53	1	10/07/2013 20:37	
Bromodichloromethane	ND	0.0070	1	10/07/2013 20:37	
Bromoform	ND	1.1	1	10/07/2013 20:37	
Bromomethane	0.89	0.39	1	10/07/2013 20:37	
1,3-Butadiene	ND	0.22	1	10/07/2013 20:37	
2-Butanone (MEK)	ND	7.5	1	10/07/2013 20:37	
t-Butyl alcohol (TBA)	ND	6.2	1	10/07/2013 20:37	
Carbon Disulfide	ND	0.32	1	10/07/2013 20:37	
Carbon Tetrachloride	0.54	0.0064	1	10/07/2013 20:37	
Chlorobenzene	ND	0.47	1	10/07/2013 20:37	
Chloroethane	ND	0.27	1	10/07/2013 20:37	
Chloroform	0.28	0.0049	1	10/07/2013 20:37	
Chloromethane	ND	0.21	1	10/07/2013 20:37	
Cyclohexane	3.7	1.8	1	10/07/2013 20:37	
Dibromochloromethane	ND	0.87	1	10/07/2013 20:37	
1,2-Dibromo-3-chloropropane	ND	0.0049	1	10/07/2013 20:37	
1,2-Dibromoethane (EDB)	0.023	0.0078	1	10/07/2013 20:37	
1,2-Dichlorobenzene	ND	0.61	1	10/07/2013 20:37	
1,3-Dichlorobenzene	ND	0.61	1	10/07/2013 20:37	
1,4-Dichlorobenzene	0.078	0.0061	1	10/07/2013 20:37	
Dichlorodifluoromethane	1.9	0.50	1	10/07/2013 20:37	
1,1-Dichloroethane	ND	0.41	1	10/07/2013 20:37	
1,2-Dichloroethane (1,2-DCA)	1.1	0.0041	1	10/07/2013 20:37	
1,1-Dichloroethene	ND	0.10	1	10/07/2013 20:37	
cis-1,2-Dichloroethene	ND	0.40	1	10/07/2013 20:37	
trans-1,2-Dichloroethene	ND	0.40	1	10/07/2013 20:37	
1,2-Dichloropropane	0.019	0.0047	1	10/07/2013 20:37	
cis-1,3-Dichloropropene	ND	0.12	1	10/07/2013 20:37	
trans-1,3-Dichloropropene	ND	0.12	1	10/07/2013 20:37	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.71	1	10/07/2013 20:37	
Diisopropyl ether (DIPE)	ND	0.42	1	10/07/2013 20:37	
1,4-Dioxane	ND	0.0037	1	10/07/2013 20:37	
Ethyl acetate	2.7	0.92	1	10/07/2013 20:37	

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Air 1183 8hr	1310206-001A	Indoor Air	10/03/2013 09:55	GC24	82622
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Ethyl tert-butyl ether (ETBE)	ND		0.42	1	10/07/2013 20:37
Ethylbenzene	1.9		0.44	1	10/07/2013 20:37
4-Ethyltoluene	ND		0.50	1	10/07/2013 20:37
Freon 113	ND		0.78	1	10/07/2013 20:37
Heptane	ND		2.1	1	10/07/2013 20:37
Hexachlorobutadiene	ND		1.1	1	10/07/2013 20:37
Hexane	40		1.8	1	10/07/2013 20:37
2-Hexanone	ND		0.42	1	10/07/2013 20:37
4-Methyl-2-pentanone (MIBK)	ND		0.42	1	10/07/2013 20:37
Methyl-t-butyl ether (MTBE)	ND		0.37	1	10/07/2013 20:37
Methylene chloride	ND		0.35	1	10/07/2013 20:37
Methyl methacrylate	3.4		0.42	1	10/07/2013 20:37
Naphthalene	0.61		0.050	1	10/07/2013 20:37
Propene	ND		8.8	1	10/07/2013 20:37
Styrene	ND		0.43	1	10/07/2013 20:37
1,1,1,2-Tetrachloroethane	ND		0.0070	1	10/07/2013 20:37
1,1,2,2-Tetrachloroethane	ND		0.0070	1	10/07/2013 20:37
Tetrachloroethene	0.44		0.034	1	10/07/2013 20:37
Tetrahydrofuran	13		0.60	1	10/07/2013 20:37
Toluene	1.3		0.38	1	10/07/2013 20:37
1,2,4-Trichlorobenzene	ND		0.75	1	10/07/2013 20:37
1,1,1-Trichloroethane	ND		0.55	1	10/07/2013 20:37
1,1,2-Trichloroethane	ND		0.0055	1	10/07/2013 20:37
Trichloroethene	0.027		0.0055	1	10/07/2013 20:37
Trichlorofluoromethane	1.2		0.57	1	10/07/2013 20:37
1,2,4-Trimethylbenzene	ND		0.50	1	10/07/2013 20:37
1,3,5-Trimethylbenzene	ND		0.50	1	10/07/2013 20:37
Vinyl Acetate	ND		0.36	1	10/07/2013 20:37
Vinyl Chloride	ND		0.0026	1	10/07/2013 20:37
Xylenes, Total	11		1.3	1	10/07/2013 20:37

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Air 1183 24hr	1310206-002A	Indoor Air	10/03/2013 09:56	GC24	82622
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	46		6.0	1	10/07/2013 21:37
Acrolein	2.4		0.23	1	10/07/2013 21:37
Acrylonitrile	ND		0.22	1	10/07/2013 21:37
tert-Amyl methyl ether (TAME)	ND		0.42	1	10/07/2013 21:37
Benzene	0.29		0.0032	1	10/07/2013 21:37
Benzyl chloride	ND		0.53	1	10/07/2013 21:37
Bromodichloromethane	ND		0.0070	1	10/07/2013 21:37
Bromoform	ND		1.1	1	10/07/2013 21:37
Bromomethane	0.72		0.39	1	10/07/2013 21:37
1,3-Butadiene	ND		0.22	1	10/07/2013 21:37
2-Butanone (MEK)	8.7		7.5	1	10/07/2013 21:37
t-Butyl alcohol (TBA)	ND		6.2	1	10/07/2013 21:37
Carbon Disulfide	ND		0.32	1	10/07/2013 21:37
Carbon Tetrachloride	0.53		0.0064	1	10/07/2013 21:37
Chlorobenzene	ND		0.47	1	10/07/2013 21:37
Chloroethane	ND		0.27	1	10/07/2013 21:37
Chloroform	0.19		0.0049	1	10/07/2013 21:37
Chloromethane	ND		0.21	1	10/07/2013 21:37
Cyclohexane	1.9		1.8	1	10/07/2013 21:37
Dibromochloromethane	ND		0.87	1	10/07/2013 21:37
1,2-Dibromo-3-chloropropane	ND		0.0049	1	10/07/2013 21:37
1,2-Dibromoethane (EDB)	0.017		0.0078	1	10/07/2013 21:37
1,2-Dichlorobenzene	ND		0.61	1	10/07/2013 21:37
1,3-Dichlorobenzene	ND		0.61	1	10/07/2013 21:37
1,4-Dichlorobenzene	0.061		0.0061	1	10/07/2013 21:37
Dichlorodifluoromethane	2.1		0.50	1	10/07/2013 21:37
1,1-Dichloroethane	ND		0.41	1	10/07/2013 21:37
1,2-Dichloroethane (1,2-DCA)	1.7		0.0041	1	10/07/2013 21:37
1,1-Dichloroethene	ND		0.10	1	10/07/2013 21:37
cis-1,2-Dichloroethene	ND		0.40	1	10/07/2013 21:37
trans-1,2-Dichloroethene	ND		0.40	1	10/07/2013 21:37
1,2-Dichloropropane	0.020		0.0047	1	10/07/2013 21:37
cis-1,3-Dichloropropene	ND		0.12	1	10/07/2013 21:37
trans-1,3-Dichloropropene	ND		0.12	1	10/07/2013 21:37
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.71	1	10/07/2013 21:37
Diisopropyl ether (DIPE)	ND		0.42	1	10/07/2013 21:37
1,4-Dioxane	ND		0.0037	1	10/07/2013 21:37
Ethyl acetate	1.4		0.92	1	10/07/2013 21:37

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Air 1183 24hr	1310206-002A	Indoor Air	10/03/2013 09:56	GC24	82622
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Ethyl tert-butyl ether (ETBE)	ND		0.42	1	10/07/2013 21:37
Ethylbenzene	2.3		0.44	1	10/07/2013 21:37
4-Ethyltoluene	ND		0.50	1	10/07/2013 21:37
Freon 113	ND		0.78	1	10/07/2013 21:37
Heptane	ND		2.1	1	10/07/2013 21:37
Hexachlorobutadiene	ND		1.1	1	10/07/2013 21:37
Hexane	11		1.8	1	10/07/2013 21:37
2-Hexanone	ND		0.42	1	10/07/2013 21:37
4-Methyl-2-pentanone (MIBK)	ND		0.42	1	10/07/2013 21:37
Methyl-t-butyl ether (MTBE)	ND		0.37	1	10/07/2013 21:37
Methylene chloride	ND		0.35	1	10/07/2013 21:37
Methyl methacrylate	4.3		0.42	1	10/07/2013 21:37
Naphthalene	0.51		0.050	1	10/07/2013 21:37
Propene	ND		8.8	1	10/07/2013 21:37
Styrene	ND		0.43	1	10/07/2013 21:37
1,1,1,2-Tetrachloroethane	ND		0.0070	1	10/07/2013 21:37
1,1,2,2-Tetrachloroethane	ND		0.0070	1	10/07/2013 21:37
Tetrachloroethene	1.1		0.034	1	10/07/2013 21:37
Tetrahydrofuran	22		0.60	1	10/07/2013 21:37
Toluene	1.9		0.38	1	10/07/2013 21:37
1,2,4-Trichlorobenzene	ND		0.75	1	10/07/2013 21:37
1,1,1-Trichloroethane	ND		0.55	1	10/07/2013 21:37
1,1,2-Trichloroethane	ND		0.0055	1	10/07/2013 21:37
Trichloroethene	0.048		0.0055	1	10/07/2013 21:37
Trichlorofluoromethane	1.2		0.57	1	10/07/2013 21:37
1,2,4-Trimethylbenzene	ND		0.50	1	10/07/2013 21:37
1,3,5-Trimethylbenzene	ND		0.50	1	10/07/2013 21:37
Vinyl Acetate	ND		0.36	1	10/07/2013 21:37
Vinyl Chloride	ND		0.0026	1	10/07/2013 21:37
Xylenes, Total	14		1.3	1	10/07/2013 21:37

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Air 1191 Break 8hr	1310206-003A	Indoor Air	10/03/2013 10:15	GC24	82622
Analytes	Result	RL	DF	Date Analyzed	
Acetone	30	6.0	1	10/07/2013 22:38	
Acrolein	5.6	0.23	1	10/07/2013 22:38	
Acrylonitrile	ND	0.22	1	10/07/2013 22:38	
tert-Amyl methyl ether (TAME)	ND	0.42	1	10/07/2013 22:38	
Benzene	0.37	0.0032	1	10/07/2013 22:38	
Benzyl chloride	ND	0.53	1	10/07/2013 22:38	
Bromodichloromethane	ND	0.0070	1	10/07/2013 22:38	
Bromoform	ND	1.1	1	10/07/2013 22:38	
Bromomethane	0.82	0.39	1	10/07/2013 22:38	
1,3-Butadiene	ND	0.22	1	10/07/2013 22:38	
2-Butanone (MEK)	ND	7.5	1	10/07/2013 22:38	
t-Butyl alcohol (TBA)	ND	6.2	1	10/07/2013 22:38	
Carbon Disulfide	ND	0.32	1	10/07/2013 22:38	
Carbon Tetrachloride	0.66	0.0064	1	10/07/2013 22:38	
Chlorobenzene	ND	0.47	1	10/07/2013 22:38	
Chloroethane	ND	0.27	1	10/07/2013 22:38	
Chloroform	0.30	0.0049	1	10/07/2013 22:38	
Chloromethane	0.63	0.21	1	10/07/2013 22:38	
Cyclohexane	2.2	1.8	1	10/07/2013 22:38	
Dibromochloromethane	ND	0.87	1	10/07/2013 22:38	
1,2-Dibromo-3-chloropropane	ND	0.0049	1	10/07/2013 22:38	
1,2-Dibromoethane (EDB)	0.015	0.0078	1	10/07/2013 22:38	
1,2-Dichlorobenzene	ND	0.61	1	10/07/2013 22:38	
1,3-Dichlorobenzene	ND	0.61	1	10/07/2013 22:38	
1,4-Dichlorobenzene	0.14	0.0061	1	10/07/2013 22:38	
Dichlorodifluoromethane	2.6	0.50	1	10/07/2013 22:38	
1,1-Dichloroethane	ND	0.41	1	10/07/2013 22:38	
1,2-Dichloroethane (1,2-DCA)	0.093	0.0041	1	10/07/2013 22:38	
1,1-Dichloroethene	ND	0.10	1	10/07/2013 22:38	
cis-1,2-Dichloroethene	ND	0.40	1	10/07/2013 22:38	
trans-1,2-Dichloroethene	ND	0.40	1	10/07/2013 22:38	
1,2-Dichloropropane	0.023	0.0047	1	10/07/2013 22:38	
cis-1,3-Dichloropropene	ND	0.12	1	10/07/2013 22:38	
trans-1,3-Dichloropropene	ND	0.12	1	10/07/2013 22:38	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.71	1	10/07/2013 22:38	
Diisopropyl ether (DIPE)	ND	0.42	1	10/07/2013 22:38	
1,4-Dioxane	ND	0.0037	1	10/07/2013 22:38	
Ethyl acetate	11	0.92	1	10/07/2013 22:38	

(Cont.)





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Air 1191 Break 8hr	1310206-003A	Indoor Air	10/03/2013 10:15	GC24	82622
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Ethyl tert-butyl ether (ETBE)	ND		0.42	1	10/07/2013 22:38
Ethylbenzene	0.92		0.44	1	10/07/2013 22:38
4-Ethyltoluene	ND		0.50	1	10/07/2013 22:38
Freon 113	ND		0.78	1	10/07/2013 22:38
Heptane	ND		2.1	1	10/07/2013 22:38
Hexachlorobutadiene	ND		1.1	1	10/07/2013 22:38
Hexane	ND		1.8	1	10/07/2013 22:38
2-Hexanone	ND		0.42	1	10/07/2013 22:38
4-Methyl-2-pentanone (MIBK)	ND		0.42	1	10/07/2013 22:38
Methyl-t-butyl ether (MTBE)	ND		0.37	1	10/07/2013 22:38
Methylene chloride	ND		0.35	1	10/07/2013 22:38
Methyl methacrylate	ND		0.42	1	10/07/2013 22:38
Naphthalene	0.39		0.050	1	10/07/2013 22:38
Propene	ND		8.8	1	10/07/2013 22:38
Styrene	ND		0.43	1	10/07/2013 22:38
1,1,1,2-Tetrachloroethane	ND		0.0070	1	10/07/2013 22:38
1,1,2,2-Tetrachloroethane	ND		0.0070	1	10/07/2013 22:38
Tetrachloroethene	0.40		0.034	1	10/07/2013 22:38
Tetrahydrofuran	ND		0.60	1	10/07/2013 22:38
Toluene	4.1		0.38	1	10/07/2013 22:38
1,2,4-Trichlorobenzene	ND		0.75	1	10/07/2013 22:38
1,1,1-Trichloroethane	ND		0.55	1	10/07/2013 22:38
1,1,2-Trichloroethane	ND		0.0055	1	10/07/2013 22:38
Trichloroethene	0.023		0.0055	1	10/07/2013 22:38
Trichlorofluoromethane	1.8		0.57	1	10/07/2013 22:38
1,2,4-Trimethylbenzene	ND		0.50	1	10/07/2013 22:38
1,3,5-Trimethylbenzene	ND		0.50	1	10/07/2013 22:38
Vinyl Acetate	ND		0.36	1	10/07/2013 22:38
Vinyl Chloride	ND		0.0026	1	10/07/2013 22:38
Xylenes, Total	4.7		1.3	1	10/07/2013 22:38

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Air 1191 Front 24hr	1310206-005A	Indoor Air	10/03/2013 10:17	GC24	82622
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	37		6.0	1	10/07/2013 23:34
Acrolein	7.7		0.23	1	10/07/2013 23:34
Acrylonitrile	ND		0.22	1	10/07/2013 23:34
tert-Amyl methyl ether (TAME)	ND		0.42	1	10/07/2013 23:34
Benzene	0.39		0.0032	1	10/07/2013 23:34
Benzyl chloride	ND		0.53	1	10/07/2013 23:34
Bromodichloromethane	ND		0.0070	1	10/07/2013 23:34
Bromoform	ND		1.1	1	10/07/2013 23:34
Bromomethane	0.81		0.39	1	10/07/2013 23:34
1,3-Butadiene	ND		0.22	1	10/07/2013 23:34
2-Butanone (MEK)	ND		7.5	1	10/07/2013 23:34
t-Butyl alcohol (TBA)	ND		6.2	1	10/07/2013 23:34
Carbon Disulfide	ND		0.32	1	10/07/2013 23:34
Carbon Tetrachloride	0.73		0.0064	1	10/07/2013 23:34
Chlorobenzene	ND		0.47	1	10/07/2013 23:34
Chloroethane	ND		0.27	1	10/07/2013 23:34
Chloroform	0.41		0.0049	1	10/07/2013 23:34
Chloromethane	0.65		0.21	1	10/07/2013 23:34
Cyclohexane	4.2		1.8	1	10/07/2013 23:34
Dibromochloromethane	ND		0.87	1	10/07/2013 23:34
1,2-Dibromo-3-chloropropane	ND		0.0049	1	10/07/2013 23:34
1,2-Dibromoethane (EDB)	0.013		0.0078	1	10/07/2013 23:34
1,2-Dichlorobenzene	ND		0.61	1	10/07/2013 23:34
1,3-Dichlorobenzene	ND		0.61	1	10/07/2013 23:34
1,4-Dichlorobenzene	0.16		0.0061	1	10/07/2013 23:34
Dichlorodifluoromethane	2.6		0.50	1	10/07/2013 23:34
1,1-Dichloroethane	ND		0.41	1	10/07/2013 23:34
1,2-Dichloroethane (1,2-DCA)	0.15		0.0041	1	10/07/2013 23:34
1,1-Dichloroethene	ND		0.10	1	10/07/2013 23:34
cis-1,2-Dichloroethene	ND		0.40	1	10/07/2013 23:34
trans-1,2-Dichloroethene	ND		0.40	1	10/07/2013 23:34
1,2-Dichloropropane	0.030		0.0047	1	10/07/2013 23:34
cis-1,3-Dichloropropene	ND		0.12	1	10/07/2013 23:34
trans-1,3-Dichloropropene	ND		0.12	1	10/07/2013 23:34
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.71	1	10/07/2013 23:34
Diisopropyl ether (DIPE)	ND		0.42	1	10/07/2013 23:34
1,4-Dioxane	ND		0.0037	1	10/07/2013 23:34
Ethyl acetate	19		0.92	1	10/07/2013 23:34

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Air 1191 Front 24hr	1310206-005A	Indoor Air	10/03/2013 10:17	GC24	82622
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Ethyl tert-butyl ether (ETBE)	ND		0.42	1	10/07/2013 23:34
Ethylbenzene	1.8		0.44	1	10/07/2013 23:34
4-Ethyltoluene	ND		0.50	1	10/07/2013 23:34
Freon 113	ND		0.78	1	10/07/2013 23:34
Heptane	ND		2.1	1	10/07/2013 23:34
Hexachlorobutadiene	ND		1.1	1	10/07/2013 23:34
Hexane	ND		1.8	1	10/07/2013 23:34
2-Hexanone	0.63		0.42	1	10/07/2013 23:34
4-Methyl-2-pentanone (MIBK)	0.53		0.42	1	10/07/2013 23:34
Methyl-t-butyl ether (MTBE)	ND		0.37	1	10/07/2013 23:34
Methylene chloride	ND		0.35	1	10/07/2013 23:34
Methyl methacrylate	ND		0.42	1	10/07/2013 23:34
Naphthalene	0.46		0.050	1	10/07/2013 23:34
Propene	ND		8.8	1	10/07/2013 23:34
Styrene	ND		0.43	1	10/07/2013 23:34
1,1,1,2-Tetrachloroethane	ND		0.0070	1	10/07/2013 23:34
1,1,2,2-Tetrachloroethane	ND		0.0070	1	10/07/2013 23:34
Tetrachloroethene	0.37		0.034	1	10/07/2013 23:34
Tetrahydrofuran	ND		0.60	1	10/07/2013 23:34
Toluene	6.3		0.38	1	10/07/2013 23:34
1,2,4-Trichlorobenzene	ND		0.75	1	10/07/2013 23:34
1,1,1-Trichloroethane	ND		0.55	1	10/07/2013 23:34
1,1,2-Trichloroethane	ND		0.0055	1	10/07/2013 23:34
Trichloroethene	0.021		0.0055	1	10/07/2013 23:34
Trichlorofluoromethane	1.6		0.57	1	10/07/2013 23:34
1,2,4-Trimethylbenzene	ND		0.50	1	10/07/2013 23:34
1,3,5-Trimethylbenzene	ND		0.50	1	10/07/2013 23:34
Vinyl Acetate	ND		0.36	1	10/07/2013 23:34
Vinyl Chloride	ND		0.0026	1	10/07/2013 23:34
Xylenes, Total	9.4		1.3	1	10/07/2013 23:34

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Air 1191 Front 8hr	1310206-006A	Indoor Air	10/03/2013 10:40	GC24	82622
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	36		6.0	1	10/08/2013 00:36
Acrolein	5.4		0.23	1	10/08/2013 00:36
Acrylonitrile	ND		0.22	1	10/08/2013 00:36
tert-Amyl methyl ether (TAME)	ND		0.42	1	10/08/2013 00:36
Benzene	0.39		0.0032	1	10/08/2013 00:36
Benzyl chloride	ND		0.53	1	10/08/2013 00:36
Bromodichloromethane	ND		0.0070	1	10/08/2013 00:36
Bromoform	ND		1.1	1	10/08/2013 00:36
Bromomethane	0.74		0.39	1	10/08/2013 00:36
1,3-Butadiene	ND		0.22	1	10/08/2013 00:36
2-Butanone (MEK)	ND		7.5	1	10/08/2013 00:36
t-Butyl alcohol (TBA)	ND		6.2	1	10/08/2013 00:36
Carbon Disulfide	ND		0.32	1	10/08/2013 00:36
Carbon Tetrachloride	0.68		0.0064	1	10/08/2013 00:36
Chlorobenzene	ND		0.47	1	10/08/2013 00:36
Chloroethane	ND		0.27	1	10/08/2013 00:36
Chloroform	0.41		0.0049	1	10/08/2013 00:36
Chloromethane	0.61		0.21	1	10/08/2013 00:36
Cyclohexane	2.6		1.8	1	10/08/2013 00:36
Dibromochloromethane	ND		0.87	1	10/08/2013 00:36
1,2-Dibromo-3-chloropropane	ND		0.0049	1	10/08/2013 00:36
1,2-Dibromoethane (EDB)	0.014		0.0078	1	10/08/2013 00:36
1,2-Dichlorobenzene	ND		0.61	1	10/08/2013 00:36
1,3-Dichlorobenzene	ND		0.61	1	10/08/2013 00:36
1,4-Dichlorobenzene	0.15		0.0061	1	10/08/2013 00:36
Dichlorodifluoromethane	2.7		0.50	1	10/08/2013 00:36
1,1-Dichloroethane	ND		0.41	1	10/08/2013 00:36
1,2-Dichloroethane (1,2-DCA)	0.12		0.0041	1	10/08/2013 00:36
1,1-Dichloroethene	ND		0.10	1	10/08/2013 00:36
cis-1,2-Dichloroethene	ND		0.40	1	10/08/2013 00:36
trans-1,2-Dichloroethene	ND		0.40	1	10/08/2013 00:36
1,2-Dichloropropane	0.026		0.0047	1	10/08/2013 00:36
cis-1,3-Dichloropropene	ND		0.12	1	10/08/2013 00:36
trans-1,3-Dichloropropene	ND		0.12	1	10/08/2013 00:36
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.71	1	10/08/2013 00:36
Diisopropyl ether (DIPE)	ND		0.42	1	10/08/2013 00:36
1,4-Dioxane	ND		0.0037	1	10/08/2013 00:36
Ethyl acetate	15		0.92	1	10/08/2013 00:36

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Air 1191 Front 8hr	1310206-006A	Indoor Air	10/03/2013 10:40	GC24	82622
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Ethyl tert-butyl ether (ETBE)	ND		0.42	1	10/08/2013 00:36
Ethylbenzene	1.1		0.44	1	10/08/2013 00:36
4-Ethyltoluene	ND		0.50	1	10/08/2013 00:36
Freon 113	ND		0.78	1	10/08/2013 00:36
Heptane	ND		2.1	1	10/08/2013 00:36
Hexachlorobutadiene	ND		1.1	1	10/08/2013 00:36
Hexane	ND		1.8	1	10/08/2013 00:36
2-Hexanone	0.53		0.42	1	10/08/2013 00:36
4-Methyl-2-pentanone (MIBK)	0.46		0.42	1	10/08/2013 00:36
Methyl-t-butyl ether (MTBE)	ND		0.37	1	10/08/2013 00:36
Methylene chloride	ND		0.35	1	10/08/2013 00:36
Methyl methacrylate	ND		0.42	1	10/08/2013 00:36
Naphthalene	0.38		0.050	1	10/08/2013 00:36
Propene	ND		8.8	1	10/08/2013 00:36
Styrene	ND		0.43	1	10/08/2013 00:36
1,1,1,2-Tetrachloroethane	ND		0.0070	1	10/08/2013 00:36
1,1,2,2-Tetrachloroethane	ND		0.0070	1	10/08/2013 00:36
Tetrachloroethene	0.36		0.034	1	10/08/2013 00:36
Tetrahydrofuran	ND		0.60	1	10/08/2013 00:36
Toluene	7.7		0.38	1	10/08/2013 00:36
1,2,4-Trichlorobenzene	ND		0.75	1	10/08/2013 00:36
1,1,1-Trichloroethane	ND		0.55	1	10/08/2013 00:36
1,1,2-Trichloroethane	ND		0.0055	1	10/08/2013 00:36
Trichloroethene	0.020		0.0055	1	10/08/2013 00:36
Trichlorofluoromethane	1.7		0.57	1	10/08/2013 00:36
1,2,4-Trimethylbenzene	ND		0.50	1	10/08/2013 00:36
1,3,5-Trimethylbenzene	ND		0.50	1	10/08/2013 00:36
Vinyl Acetate	ND		0.36	1	10/08/2013 00:36
Vinyl Chloride	ND		0.0026	1	10/08/2013 00:36
Xylenes, Total	5.7		1.3	1	10/08/2013 00:36

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
<b>Air Ambient</b>	<b>1310206-007A</b>	<b>Indoor Air</b>	<b>10/03/2013 10:45</b>	<b>GC24</b>	<b>82622</b>
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	15		6.0	1	10/08/2013 01:33
Acrolein	3.0		0.23	1	10/08/2013 01:33
Acrylonitrile	ND		0.22	1	10/08/2013 01:33
tert-Amyl methyl ether (TAME)	ND		0.42	1	10/08/2013 01:33
Benzene	0.25		0.0032	1	10/08/2013 01:33
Benzyl chloride	ND		0.53	1	10/08/2013 01:33
Bromodichloromethane	ND		0.0070	1	10/08/2013 01:33
Bromoform	ND		1.1	1	10/08/2013 01:33
Bromomethane	0.69		0.39	1	10/08/2013 01:33
1,3-Butadiene	ND		0.22	1	10/08/2013 01:33
2-Butanone (MEK)	ND		7.5	1	10/08/2013 01:33
t-Butyl alcohol (TBA)	ND		6.2	1	10/08/2013 01:33
Carbon Disulfide	ND		0.32	1	10/08/2013 01:33
Carbon Tetrachloride	0.58		0.0064	1	10/08/2013 01:33
Chlorobenzene	ND		0.47	1	10/08/2013 01:33
Chloroethane	ND		0.27	1	10/08/2013 01:33
Chloroform	0.24		0.0049	1	10/08/2013 01:33
Chloromethane	0.61		0.21	1	10/08/2013 01:33
Cyclohexane	ND		1.8	1	10/08/2013 01:33
Dibromochloromethane	ND		0.87	1	10/08/2013 01:33
1,2-Dibromo-3-chloropropane	ND		0.0049	1	10/08/2013 01:33
1,2-Dibromoethane (EDB)	0.0093		0.0078	1	10/08/2013 01:33
1,2-Dichlorobenzene	ND		0.61	1	10/08/2013 01:33
1,3-Dichlorobenzene	ND		0.61	1	10/08/2013 01:33
1,4-Dichlorobenzene	0.029		0.0061	1	10/08/2013 01:33
Dichlorodifluoromethane	2.6		0.50	1	10/08/2013 01:33
1,1-Dichloroethane	ND		0.41	1	10/08/2013 01:33
1,2-Dichloroethane (1,2-DCA)	0.038		0.0041	1	10/08/2013 01:33
1,1-Dichloroethene	ND		0.10	1	10/08/2013 01:33
cis-1,2-Dichloroethene	ND		0.40	1	10/08/2013 01:33
trans-1,2-Dichloroethene	ND		0.40	1	10/08/2013 01:33
1,2-Dichloropropane	0.014		0.0047	1	10/08/2013 01:33
cis-1,3-Dichloropropene	ND		0.12	1	10/08/2013 01:33
trans-1,3-Dichloropropene	ND		0.12	1	10/08/2013 01:33
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.71	1	10/08/2013 01:33
Diisopropyl ether (DIPE)	ND		0.42	1	10/08/2013 01:33
1,4-Dioxane	ND		0.0037	1	10/08/2013 01:33
Ethyl acetate	3.4		0.92	1	10/08/2013 01:33

(Cont.)





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310206

**Project:** Solano

**Extraction Method:** TO15

**Date Received:** 10/7/13 11:54

**Analytical Method:** TO15

**Date Prepared:** 10/7/13-10/8/13

**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
Air Ambient	1310206-007A	Indoor Air	10/03/2013 10:45	GC24	82622
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Ethyl tert-butyl ether (ETBE)	ND		0.42	1	10/08/2013 01:33
Ethylbenzene	ND		0.44	1	10/08/2013 01:33
4-Ethyltoluene	ND		0.50	1	10/08/2013 01:33
Freon 113	ND		0.78	1	10/08/2013 01:33
Heptane	ND		2.1	1	10/08/2013 01:33
Hexachlorobutadiene	ND		1.1	1	10/08/2013 01:33
Hexane	ND		1.8	1	10/08/2013 01:33
2-Hexanone	ND		0.42	1	10/08/2013 01:33
4-Methyl-2-pentanone (MIBK)	ND		0.42	1	10/08/2013 01:33
Methyl-t-butyl ether (MTBE)	ND		0.37	1	10/08/2013 01:33
Methylene chloride	ND		0.35	1	10/08/2013 01:33
Methyl methacrylate	ND		0.42	1	10/08/2013 01:33
Naphthalene	0.16		0.050	1	10/08/2013 01:33
Propene	ND		8.8	1	10/08/2013 01:33
Styrene	ND		0.43	1	10/08/2013 01:33
1,1,1,2-Tetrachloroethane	ND		0.0070	1	10/08/2013 01:33
1,1,2,2-Tetrachloroethane	ND		0.0070	1	10/08/2013 01:33
Tetrachloroethene	0.053		0.034	1	10/08/2013 01:33
Tetrahydrofuran	ND		0.60	1	10/08/2013 01:33
Toluene	0.47		0.38	1	10/08/2013 01:33
1,2,4-Trichlorobenzene	ND		0.75	1	10/08/2013 01:33
1,1,1-Trichloroethane	ND		0.55	1	10/08/2013 01:33
1,1,2-Trichloroethane	ND		0.0055	1	10/08/2013 01:33
Trichloroethene	ND		0.0055	1	10/08/2013 01:33
Trichlorofluoromethane	1.3		0.57	1	10/08/2013 01:33
1,2,4-Trimethylbenzene	ND		0.50	1	10/08/2013 01:33
1,3,5-Trimethylbenzene	ND		0.50	1	10/08/2013 01:33
Vinyl Acetate	ND		0.36	1	10/08/2013 01:33
Vinyl Chloride	ND		0.0026	1	10/08/2013 01:33
Xylenes, Total	ND		1.3	1	10/08/2013 01:33



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 10/8/13  
**Date Analyzed:** 10/7/13 - 10/8/13  
**Instrument:** GC24  
**Matrix:** Soilgas  
**Project:** Solano

**WorkOrder:** 1310206  
**BatchID:** 82622  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** nL/L  
**Sample ID:** MB/LCS-82622

### QC SUMMARY REPORT FOR TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	25	-	-	-	-
Acrylonitrile	ND	31.15	0.50	25	-	125	60-140
tert-Amyl methyl ether (TAME)	ND	26.08	0.50	25	-	104	60-140
Benzene	ND	24.68	0.50	25	-	98.7	60-140
Benzyl chloride	ND	26.3	0.50	25	-	105	60-140
Bromodichloromethane	ND	22.67	0.50	25	-	90.7	60-140
Bromoform	ND	29.24	0.50	25	-	117	60-140
Bromomethane	ND	-	0.50	-	-	-	-
1,3-Butadiene	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	25	-	-	-	-
t-Butyl alcohol (TBA)	ND	-	10	-	-	-	-
Carbon Disulfide	ND	25.02	0.50	25	-	100	60-140
Carbon Tetrachloride	ND	28.81	0.50	25	-	115	60-140
Chlorobenzene	ND	23.38	0.50	25	-	93.5	60-140
Chloroethane	ND	34.54	0.50	25	-	138	60-140
Chloroform	ND	20.82	0.50	25	-	83.3	60-140
Chloromethane	ND	26.99	0.50	25	-	108	60-140
Cyclohexane	ND	-	5.0	-	-	-	-
Dibromochloromethane	ND	30.52	0.50	25	-	122	60-140
1,2-Dibromo-3-chloropropane	ND	28.28	0.012	25	-	113	60-140
1,2-Dibromoethane (EDB)	ND	22.67	0.50	25	-	90.7	60-140
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	24.79	0.50	25	-	99.2	60-140
1,4-Dichlorobenzene	ND	21.7	0.50	25	-	86.8	60-140
Dichlorodifluoromethane	ND	24.46	0.50	25	-	97.8	60-140
1,1-Dichloroethane	ND	24.17	0.50	25	-	96.7	60-140
1,2-Dichloroethane (1,2-DCA)	ND	20.21	0.50	25	-	80.9	60-140
1,1-Dichloroethene	ND	-	0.50	-	-	-	-
cis-1,2-Dichloroethene	ND	25.35	0.50	25	-	101	60-140
trans-1,2-Dichloroethene	ND	26.03	0.50	25	-	104	60-140
1,2-Dichloropropane	ND	21.25	0.50	25	-	85	60-140
cis-1,3-Dichloropropene	ND	26.02	0.50	25	-	104	60-140
trans-1,3-Dichloropropene	ND	24.3	0.50	25	-	97.2	60-140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	25.3	0.50	25	-	101	60-140
Diisopropyl ether (DIPE)	ND	31.68	0.50	25	-	127	60-140
1,4-Dioxane	ND	23.18	0.50	25	-	92.7	60-140
Ethanol	ND	-	50	-	-	-	-
Ethyl acetate	ND	25.49	0.50	25	-	102	60-140
Ethyl tert-butyl ether (ETBE)	ND	24.98	0.50	25	-	99.9	60-140
Ethylbenzene	ND	24.52	0.50	25	-	98.1	60-140

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 10/8/13  
**Date Analyzed:** 10/7/13 - 10/8/13  
**Instrument:** GC24  
**Matrix:** Soilgas  
**Project:** Solano

**WorkOrder:** 1310206  
**BatchID:** 82622  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** nL/L  
**Sample ID:** MB/LCS-82622

### QC SUMMARY REPORT FOR TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
4-Ethyltoluene	ND	-	0.50	-	-	-	-
Freon 113	ND	30.21	0.50	25	-	121	60-140
Heptane	ND	-	5.0	-	-	-	-
Hexachlorobutadiene	ND	26.3	0.50	25	-	105	60-140
Hexane	ND	-	5.0	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	26.12	0.50	25	-	104	60-140
Methyl-t-butyl ether (MTBE)	ND	26.4	0.50	25	-	106	60-140
Methylene chloride	ND	22.04	0.50	25	-	88.1	60-140
Naphthalene	ND	46.23	1.0	50	-	92.5	60-140
Propene	ND	-	50	-	-	-	-
Styrene	ND	26.7	0.50	25	-	107	60-140
1,1,1,2-Tetrachloroethane	ND	25.99	0.50	25	-	104	60-140
1,1,2,2-Tetrachloroethane	ND	20.49	0.50	25	-	81.9	60-140
Tetrachloroethene	ND	24.55	0.50	25	-	98.2	60-140
Tetrahydrofuran	ND	21.85	0.50	25	-	87.4	60-140
Toluene	ND	22.65	0.50	25	-	90.6	60-140
1,2,4-Trichlorobenzene	ND	25.62	0.50	25	-	102	60-140
1,1,1-Trichloroethane	ND	27.16	0.50	25	-	109	60-140
1,1,2-Trichloroethane	ND	21.79	0.50	25	-	87.1	60-140
Trichloroethene	ND	20.34	0.50	25	-	81.3	60-140
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	24.48	0.50	25	-	97.9	60-140
1,3,5-Trimethylbenzene	ND	24.22	0.50	25	-	96.9	60-140
Vinyl Acetate	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	20.4	0.50	25	-	81.6	60-140
Xylenes, Total	ND	76.41	1.5	75	-	102	60-140

#### Surrogate Recovery

1,2-DCA-d4	516.3	531.3		500	103	106	60-140
toluene-d8	540.7	534		500	108	107	60-140
4-BFB	551.1	535.6		500	110	107	60-140

# McC Campbell Analytical, Inc.



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 1310206

ClientCode: PEO

☐ WaterTrax

☐ WriteOn

☐ EDF

☐ Excel

☐ EQulS

☒ Email

☐ HardCopy

☐ ThirdParty

☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com

cc:

PO:

ProjectNo: Solano

## Bill to:

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

## Requested TAT:

2 days

**Date Received:** 10/07/2013

**Date Printed:** 10/07/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1310206-001	Air 1183 8hr	Indoor Air	10/3/2013 9:55	<input type="checkbox"/>		A										
1310206-002	Air 1183 24hr	Indoor Air	10/3/2013 9:56	<input type="checkbox"/>		A										
1310206-003	Air 1191 Break 8hr	Indoor Air	10/3/2013 10:15	<input type="checkbox"/>		A										
1310206-004	Air 1191 Front 8hr DUP	Indoor Air	10/3/2013 10:16	<input checked="" type="checkbox"/>	A											
1310206-005	Air 1191 Front 24hr	Indoor Air	10/3/2013 10:17	<input type="checkbox"/>		A										
1310206-006	Air 1191 Front 8hr	Indoor Air	10/3/2013 10:40	<input type="checkbox"/>		A										
1310206-007	Air Ambient	Indoor Air	10/3/2013 10:45	<input type="checkbox"/>		A										

## Test Legend:

1	PRSUMAHOLD	2	15_SCAN-SIM_Indoor(ug/m	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



# RUSH

1310206

TAT BILL  
PER JOHN**McCAMPBELL ANALYTICAL INC.**

1534 WILLOW PASS ROAD / PITTSBURG, CA 94565-1701

Website: [www.mccampbell.com](http://www.mccampbell.com) / Email: [main@mccampbell.com](mailto:main@mccampbell.com)

Telephone: (877) 252-9262 / Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**

TURN AROUND TIME

RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required? Coelt (Normal)

No Write On (DW) No

Lab Use Only

Report To: Bob Clark-Riddell

Bill To:

Company: PANGLOSS

1710 FRANKLIN

OAKLAND, CA 94612

E-Mail: briddell@pangloss.com

Tele: (510) 435-8664

Fax: ( )

Project #:

Project Name: SOLANO

Project Location: SOLANO

Sampler Signature: Briddell

Field Sample ID (Location)	Collection		Canister SN#	Manifold / Sampler Kit SN#	Analysis Requested	Indoor Air	Soil Gas	Canister Pressure/Vacuum			
	Date	Time						Initial	Final	Receipt	Final (psi)
Air 1183 8hr	10/3/13	9:55	BATCH 503 #7	4888	TO-15	✓		-30	-1.5		
Air 1183 24hr		9:56	" 503 #8	L 4778				-30	-2		
Air 1191 Break 8hr		10:15	" 503 #1	3650				-30	-3		
Air 1191 Front 8hr	Dup	10:16	" 503 #2	4755	HOLD			-30	-2		
Air 1191 Front 24hr		10:17	BATCH 505 #13	A 7741				-30	-4		
Air 1191 Front 8hr		10:40	BATCH 503 #6	A 7790				-30	-4.5		
Air Ambient		10:45	" " #14	3648				-29	-2		

Relinquished By:

Date:

Time:

Received By:

Relinquished By:

Date:

Time:

Received By:

Relinquished By:

Date:

Time:

Received By:

Temp (°C):

Work Order #:

Equipment

Condition:

Shipped Via:



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **10/7/2013 11:54:48 AM**

Project Name: **Solano**

Login Reviewed by: **Jena Alfaro**

WorkOrder N°: **1310206**

Matrix: Indoor Air

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:





# McC Campbell Analytical, Inc.

*"When Quality Counts"*

## Analytical Report

**WorkOrder:** 1310378 **Amended:** 10/21/2013

**Report Created for:** Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Project Contact:** Bob Clark-Riddell  
**Project P.O.:**  
**Project Name:** #1435.002; Solano Group

**Project Received:** 10/10/2013

Analytical Report reviewed & approved for release on 10/11/2013 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*





## Glossary of Terms & Qualifier Definitions

**Client:** Pangea Environmental Svcs., Inc.  
**Project:** #1435.002; Solano Group  
**WorkOrder:** 1310378

### Glossary Abbreviation

### Description

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit
RPD	Relative Percent Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value

### Analytical Qualifier

H samples were analyzed out of holding time



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310378

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/10/13 15:56

**Analytical Method:** SW8260B

**Date Prepared:** 10/10/13

**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1187N	1310378-001A	Air	10/10/2013 11:25	GC28	82761
Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acetone	ND	H	5.0	1	10/10/2013 22:02
tert-Amyl methyl ether (TAME)	ND	H	0.25	1	10/10/2013 22:02
Benzene	ND	H	0.25	1	10/10/2013 22:02
Bromobenzene	ND	H	0.25	1	10/10/2013 22:02
Bromochloromethane	ND	H	0.25	1	10/10/2013 22:02
Bromodichloromethane	ND	H	0.25	1	10/10/2013 22:02
Bromoform	ND	H	0.25	1	10/10/2013 22:02
Bromomethane	ND	H	0.25	1	10/10/2013 22:02
2-Butanone (MEK)	ND	H	1.0	1	10/10/2013 22:02
t-Butyl alcohol (TBA)	ND	H	2.5	1	10/10/2013 22:02
n-Butyl benzene	ND	H	0.25	1	10/10/2013 22:02
sec-Butyl benzene	ND	H	0.25	1	10/10/2013 22:02
tert-Butyl benzene	ND	H	0.25	1	10/10/2013 22:02
Carbon Disulfide	ND	H	0.25	1	10/10/2013 22:02
Carbon Tetrachloride	ND	H	0.25	1	10/10/2013 22:02
Chlorobenzene	ND	H	0.25	1	10/10/2013 22:02
Chloroethane	ND	H	0.25	1	10/10/2013 22:02
Chloroform	ND	H	0.25	1	10/10/2013 22:02
Chloromethane	ND	H	0.25	1	10/10/2013 22:02
2-Chlorotoluene	ND	H	0.25	1	10/10/2013 22:02
4-Chlorotoluene	ND	H	0.25	1	10/10/2013 22:02
Dibromochloromethane	ND	H	0.25	1	10/10/2013 22:02
1,2-Dibromo-3-chloropropane	ND	H	0.25	1	10/10/2013 22:02
1,2-Dibromoethane (EDB)	ND	H	0.25	1	10/10/2013 22:02
Dibromomethane	ND	H	0.25	1	10/10/2013 22:02
1,2-Dichlorobenzene	ND	H	0.25	1	10/10/2013 22:02
1,3-Dichlorobenzene	ND	H	0.25	1	10/10/2013 22:02
1,4-Dichlorobenzene	ND	H	0.25	1	10/10/2013 22:02
Dichlorodifluoromethane	ND	H	0.25	1	10/10/2013 22:02
1,1-Dichloroethane	ND	H	0.25	1	10/10/2013 22:02
1,2-Dichloroethane (1,2-DCA)	ND	H	0.25	1	10/10/2013 22:02
1,1-Dichloroethene	ND	H	0.25	1	10/10/2013 22:02
cis-1,2-Dichloroethene	ND	H	0.25	1	10/10/2013 22:02
trans-1,2-Dichloroethene	ND	H	0.25	1	10/10/2013 22:02
1,2-Dichloropropane	ND	H	0.25	1	10/10/2013 22:02
1,3-Dichloropropane	ND	H	0.25	1	10/10/2013 22:02
2,2-Dichloropropane	ND	H	0.25	1	10/10/2013 22:02
1,1-Dichloropropene	ND	H	0.25	1	10/10/2013 22:02

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310378

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/10/13 15:56

**Analytical Method:** SW8260B

**Date Prepared:** 10/10/13

**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1187N	1310378-001A	Air	10/10/2013 11:25	GC28	82761
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND	H	0.25	1	10/10/2013 22:02
trans-1,3-Dichloropropene	ND	H	0.25	1	10/10/2013 22:02
Diisopropyl ether (DIPE)	ND	H	0.25	1	10/10/2013 22:02
Ethylbenzene	ND	H	0.25	1	10/10/2013 22:02
Ethyl tert-butyl ether (ETBE)	ND	H	0.25	1	10/10/2013 22:02
Freon 113	ND	H	5.0	1	10/10/2013 22:02
Hexachlorobutadiene	ND	H	0.25	1	10/10/2013 22:02
Hexachloroethane	ND	H	0.25	1	10/10/2013 22:02
2-Hexanone	ND	H	0.25	1	10/10/2013 22:02
Isopropylbenzene	ND	H	0.25	1	10/10/2013 22:02
4-Isopropyl toluene	ND	H	0.25	1	10/10/2013 22:02
Methyl-t-butyl ether (MTBE)	ND	H	0.25	1	10/10/2013 22:02
Methylene chloride	ND	H	0.25	1	10/10/2013 22:02
4-Methyl-2-pentanone (MIBK)	ND	H	0.25	1	10/10/2013 22:02
Naphthalene	ND	H	0.25	1	10/10/2013 22:02
n-Propyl benzene	ND	H	0.25	1	10/10/2013 22:02
Styrene	ND	H	0.25	1	10/10/2013 22:02
1,1,1,2-Tetrachloroethane	ND	H	0.25	1	10/10/2013 22:02
1,1,2,2-Tetrachloroethane	ND	H	0.25	1	10/10/2013 22:02
Tetrachloroethene	0.29	H	0.25	1	10/10/2013 22:02
Toluene	ND	H	0.25	1	10/10/2013 22:02
1,2,3-Trichlorobenzene	ND	H	0.25	1	10/10/2013 22:02
1,2,4-Trichlorobenzene	ND	H	0.25	1	10/10/2013 22:02
1,1,1-Trichloroethane	ND	H	0.25	1	10/10/2013 22:02
1,1,2-Trichloroethane	ND	H	0.25	1	10/10/2013 22:02
Trichloroethene	ND	H	0.25	1	10/10/2013 22:02
Trichlorofluoromethane	ND	H	0.25	1	10/10/2013 22:02
1,2,3-Trichloropropane	ND	H	0.25	1	10/10/2013 22:02
1,2,4-Trimethylbenzene	ND	H	0.25	1	10/10/2013 22:02
1,3,5-Trimethylbenzene	ND	H	0.25	1	10/10/2013 22:02
Vinyl Chloride	ND	H	0.25	1	10/10/2013 22:02
Xylenes, Total	ND	H	0.25	1	10/10/2013 22:02
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	100	H	70-130		10/10/2013 22:02
Toluene-d8	90	H	70-130		10/10/2013 22:02
4-BFB	87	H	70-130		10/10/2013 22:02

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310378

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/10/13 15:56

**Analytical Method:** SW8260B

**Date Prepared:** 10/10/13

**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1185N	1310378-002A	Air	10/10/2013 11:30	GC28	82761
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND	H	5.0	1	10/10/2013 18:13
tert-Amyl methyl ether (TAME)	ND	H	0.25	1	10/10/2013 18:13
Benzene	ND	H	0.25	1	10/10/2013 18:13
Bromobenzene	ND	H	0.25	1	10/10/2013 18:13
Bromochloromethane	ND	H	0.25	1	10/10/2013 18:13
Bromodichloromethane	ND	H	0.25	1	10/10/2013 18:13
Bromoform	ND	H	0.25	1	10/10/2013 18:13
Bromomethane	ND	H	0.25	1	10/10/2013 18:13
2-Butanone (MEK)	ND	H	1.0	1	10/10/2013 18:13
t-Butyl alcohol (TBA)	ND	H	2.5	1	10/10/2013 18:13
n-Butyl benzene	ND	H	0.25	1	10/10/2013 18:13
sec-Butyl benzene	ND	H	0.25	1	10/10/2013 18:13
tert-Butyl benzene	ND	H	0.25	1	10/10/2013 18:13
Carbon Disulfide	ND	H	0.25	1	10/10/2013 18:13
Carbon Tetrachloride	ND	H	0.25	1	10/10/2013 18:13
Chlorobenzene	ND	H	0.25	1	10/10/2013 18:13
Chloroethane	ND	H	0.25	1	10/10/2013 18:13
Chloroform	ND	H	0.25	1	10/10/2013 18:13
Chloromethane	ND	H	0.25	1	10/10/2013 18:13
2-Chlorotoluene	ND	H	0.25	1	10/10/2013 18:13
4-Chlorotoluene	ND	H	0.25	1	10/10/2013 18:13
Dibromochloromethane	ND	H	0.25	1	10/10/2013 18:13
1,2-Dibromo-3-chloropropane	ND	H	0.25	1	10/10/2013 18:13
1,2-Dibromoethane (EDB)	ND	H	0.25	1	10/10/2013 18:13
Dibromomethane	ND	H	0.25	1	10/10/2013 18:13
1,2-Dichlorobenzene	ND	H	0.25	1	10/10/2013 18:13
1,3-Dichlorobenzene	ND	H	0.25	1	10/10/2013 18:13
1,4-Dichlorobenzene	ND	H	0.25	1	10/10/2013 18:13
Dichlorodifluoromethane	ND	H	0.25	1	10/10/2013 18:13
1,1-Dichloroethane	ND	H	0.25	1	10/10/2013 18:13
1,2-Dichloroethane (1,2-DCA)	ND	H	0.25	1	10/10/2013 18:13
1,1-Dichloroethene	ND	H	0.25	1	10/10/2013 18:13
cis-1,2-Dichloroethene	ND	H	0.25	1	10/10/2013 18:13
trans-1,2-Dichloroethene	ND	H	0.25	1	10/10/2013 18:13
1,2-Dichloropropane	ND	H	0.25	1	10/10/2013 18:13
1,3-Dichloropropane	ND	H	0.25	1	10/10/2013 18:13
2,2-Dichloropropane	ND	H	0.25	1	10/10/2013 18:13
1,1-Dichloropropene	ND	H	0.25	1	10/10/2013 18:13

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310378

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/10/13 15:56

**Analytical Method:** SW8260B

**Date Prepared:** 10/10/13

**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/Ext/Type	Date Collected	Instrument	Batch ID
SG-1185N	1310378-002A	Air	10/10/2013 11:30	GC28	82761
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND	H	0.25	1	10/10/2013 18:13
trans-1,3-Dichloropropene	ND	H	0.25	1	10/10/2013 18:13
Diisopropyl ether (DIPE)	ND	H	0.25	1	10/10/2013 18:13
Ethylbenzene	ND	H	0.25	1	10/10/2013 18:13
Ethyl tert-butyl ether (ETBE)	ND	H	0.25	1	10/10/2013 18:13
Freon 113	ND	H	5.0	1	10/10/2013 18:13
Hexachlorobutadiene	ND	H	0.25	1	10/10/2013 18:13
Hexachloroethane	ND	H	0.25	1	10/10/2013 18:13
2-Hexanone	ND	H	0.25	1	10/10/2013 18:13
Isopropylbenzene	ND	H	0.25	1	10/10/2013 18:13
4-Isopropyl toluene	ND	H	0.25	1	10/10/2013 18:13
Methyl-t-butyl ether (MTBE)	ND	H	0.25	1	10/10/2013 18:13
Methylene chloride	ND	H	0.25	1	10/10/2013 18:13
4-Methyl-2-pentanone (MIBK)	ND	H	0.25	1	10/10/2013 18:13
Naphthalene	ND	H	0.25	1	10/10/2013 18:13
n-Propyl benzene	ND	H	0.25	1	10/10/2013 18:13
Styrene	ND	H	0.25	1	10/10/2013 18:13
1,1,1,2-Tetrachloroethane	ND	H	0.25	1	10/10/2013 18:13
1,1,2,2-Tetrachloroethane	ND	H	0.25	1	10/10/2013 18:13
Tetrachloroethene	0.94	H	0.25	1	10/10/2013 18:13
Toluene	ND	H	0.25	1	10/10/2013 18:13
1,2,3-Trichlorobenzene	ND	H	0.25	1	10/10/2013 18:13
1,2,4-Trichlorobenzene	ND	H	0.25	1	10/10/2013 18:13
1,1,1-Trichloroethane	ND	H	0.25	1	10/10/2013 18:13
1,1,2-Trichloroethane	ND	H	0.25	1	10/10/2013 18:13
Trichloroethene	ND	H	0.25	1	10/10/2013 18:13
Trichlorofluoromethane	ND	H	0.25	1	10/10/2013 18:13
1,2,3-Trichloropropane	ND	H	0.25	1	10/10/2013 18:13
1,2,4-Trimethylbenzene	ND	H	0.25	1	10/10/2013 18:13
1,3,5-Trimethylbenzene	ND	H	0.25	1	10/10/2013 18:13
Vinyl Chloride	ND	H	0.25	1	10/10/2013 18:13
Xylenes, Total	ND	H	0.25	1	10/10/2013 18:13
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	101	H	70-130		10/10/2013 18:13
Toluene-d8	92	H	70-130		10/10/2013 18:13
4-BFB	88	H	70-130		10/10/2013 18:13





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 10/10/13 15:56

**Date Prepared:** 10/10/13

**WorkOrder:** 1310378

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Volatile Organics by P&T and GC/MS (Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1187N	1310378-001A	Air	10/10/2013 11:25	GC28	82761
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND	H	2.1	1	10/10/2013 22:02
tert-Amyl methyl ether (TAME)	ND	H	0.059	1	10/10/2013 22:02
Benzene	ND	H	0.077	1	10/10/2013 22:02
Bromobenzene	ND	H	0.038	1	10/10/2013 22:02
Bromochloromethane	ND	H	0.047	1	10/10/2013 22:02
Bromodichloromethane	ND	H	0.036	1	10/10/2013 22:02
Bromoform	ND	H	0.024	1	10/10/2013 22:02
Bromomethane	ND	H	0.063	1	10/10/2013 22:02
2-Butanone (MEK)	ND	H	0.33	1	10/10/2013 22:02
t-Butyl alcohol (TBA)	ND	H	0.81	1	10/10/2013 22:02
n-Butyl benzene	ND	H	0.045	1	10/10/2013 22:02
sec-Butyl benzene	ND	H	0.045	1	10/10/2013 22:02
tert-Butyl benzene	ND	H	0.045	1	10/10/2013 22:02
Carbon Disulfide	ND	H	0.079	1	10/10/2013 22:02
Carbon Tetrachloride	ND	H	0.039	1	10/10/2013 22:02
Chlorobenzene	ND	H	0.053	1	10/10/2013 22:02
Chloroethane	ND	H	0.093	1	10/10/2013 22:02
Chloroform	ND	H	0.050	1	10/10/2013 22:02
Chloromethane	ND	H	0.12	1	10/10/2013 22:02
2-Chlorotoluene	ND	H	0.048	1	10/10/2013 22:02
4-Chlorotoluene	ND	H	0.048	1	10/10/2013 22:02
Dibromochloromethane	ND	H	0.029	1	10/10/2013 22:02
1,2-Dibromo-3-chloropropane	ND	H	0.025	1	10/10/2013 22:02
1,2-Dibromoethane (EDB)	ND	H	0.064	1	10/10/2013 22:02
Dibromomethane	ND	H	0.035	1	10/10/2013 22:02
1,2-Dichlorobenzene	ND	H	0.041	1	10/10/2013 22:02
1,3-Dichlorobenzene	ND	H	0.041	1	10/10/2013 22:02
1,4-Dichlorobenzene	ND	H	0.041	1	10/10/2013 22:02
Dichlorodifluoromethane	ND	H	0.050	1	10/10/2013 22:02
1,1-Dichloroethane	ND	H	0.061	1	10/10/2013 22:02
1,2-Dichloroethane (1,2-DCA)	ND	H	0.061	1	10/10/2013 22:02
1,1-Dichloroethene	ND	H	0.062	1	10/10/2013 22:02
cis-1,2-Dichloroethene	ND	H	0.062	1	10/10/2013 22:02
trans-1,2-Dichloroethene	ND	H	0.062	1	10/10/2013 22:02
1,2-Dichloropropane	ND	H	0.053	1	10/10/2013 22:02
1,3-Dichloropropane	ND	H	0.053	1	10/10/2013 22:02
2,2-Dichloropropane	ND	H	0.053	1	10/10/2013 22:02
1,1-Dichloropropene	ND	H	0.054	1	10/10/2013 22:02

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310378

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/10/13 15:56

**Analytical Method:** SW8260B

**Date Prepared:** 10/10/13

**Unit:** µL/L

### Volatile Organics by P&T and GC/MS (Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1187N	1310378-001A	Air	10/10/2013 11:25	GC28	82761
Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	H	0.054	1	10/10/2013 22:02
trans-1,3-Dichloropropene	ND	H	0.054	1	10/10/2013 22:02
Diisopropyl ether (DIPE)	ND	H	0.059	1	10/10/2013 22:02
Ethylbenzene	ND	H	0.057	1	10/10/2013 22:02
Ethyl tert-butyl ether (ETBE)	ND	H	0.059	1	10/10/2013 22:02
Freon 113	ND	H	0.64	1	10/10/2013 22:02
Hexachlorobutadiene	ND	H	0.023	1	10/10/2013 22:02
Hexachloroethane	ND	H	0.025	1	10/10/2013 22:02
2-Hexanone	ND	H	0.060	1	10/10/2013 22:02
Isopropylbenzene	ND	H	0.050	1	10/10/2013 22:02
4-Isopropyl toluene	ND	H	0.045	1	10/10/2013 22:02
Methyl-t-butyl ether (MTBE)	ND	H	0.068	1	10/10/2013 22:02
Methylene chloride	ND	H	0.071	1	10/10/2013 22:02
4-Methyl-2-pentanone (MIBK)	ND	H	0.060	1	10/10/2013 22:02
Naphthalene	ND	H	0.047	1	10/10/2013 22:02
n-Propyl benzene	ND	H	0.050	1	10/10/2013 22:02
Styrene	ND	H	0.058	1	10/10/2013 22:02
1,1,1,2-Tetrachloroethane	ND	H	0.072	1	10/10/2013 22:02
1,1,2,2-Tetrachloroethane	ND	H	0.036	1	10/10/2013 22:02
Tetrachloroethene	0.042	H	0.036	1	10/10/2013 22:02
Toluene	ND	H	0.065	1	10/10/2013 22:02
1,2,3-Trichlorobenzene	ND	H	0.033	1	10/10/2013 22:02
1,2,4-Trichlorobenzene	ND	H	0.033	1	10/10/2013 22:02
1,1,1-Trichloroethane	ND	H	0.045	1	10/10/2013 22:02
1,1,2-Trichloroethane	ND	H	0.045	1	10/10/2013 22:02
Trichloroethene	ND	H	0.046	1	10/10/2013 22:02
Trichlorofluoromethane	ND	H	0.044	1	10/10/2013 22:02
1,2,3-Trichloropropane	ND	H	0.041	1	10/10/2013 22:02
1,2,4-Trimethylbenzene	ND	H	0.050	1	10/10/2013 22:02
1,3,5-Trimethylbenzene	ND	H	0.050	1	10/10/2013 22:02
Vinyl Chloride	ND	H	0.096	1	10/10/2013 22:02
Xylenes, Total	ND	H	0.057	1	10/10/2013 22:02
Surrogates	REC (%)	Qualifiers	Limits		
Dibromofluoromethane	100	H	70-130		10/10/2013 22:02
Toluene-d8	90	H	70-130		10/10/2013 22:02
4-BFB	87	H	70-130		10/10/2013 22:02

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310378

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/10/13 15:56

**Analytical Method:** SW8260B

**Date Prepared:** 10/10/13

**Unit:** µL/L

### Volatile Organics by P&T and GC/MS (Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1185N	1310378-002A	Air	10/10/2013 11:30	GC28	82761
Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acetone	ND	H	2.1	1	10/10/2013 18:13
tert-Amyl methyl ether (TAME)	ND	H	0.059	1	10/10/2013 18:13
Benzene	ND	H	0.077	1	10/10/2013 18:13
Bromobenzene	ND	H	0.038	1	10/10/2013 18:13
Bromochloromethane	ND	H	0.047	1	10/10/2013 18:13
Bromodichloromethane	ND	H	0.036	1	10/10/2013 18:13
Bromoform	ND	H	0.024	1	10/10/2013 18:13
Bromomethane	ND	H	0.063	1	10/10/2013 18:13
2-Butanone (MEK)	ND	H	0.33	1	10/10/2013 18:13
t-Butyl alcohol (TBA)	ND	H	0.81	1	10/10/2013 18:13
n-Butyl benzene	ND	H	0.045	1	10/10/2013 18:13
sec-Butyl benzene	ND	H	0.045	1	10/10/2013 18:13
tert-Butyl benzene	ND	H	0.045	1	10/10/2013 18:13
Carbon Disulfide	ND	H	0.079	1	10/10/2013 18:13
Carbon Tetrachloride	ND	H	0.039	1	10/10/2013 18:13
Chlorobenzene	ND	H	0.053	1	10/10/2013 18:13
Chloroethane	ND	H	0.093	1	10/10/2013 18:13
Chloroform	ND	H	0.050	1	10/10/2013 18:13
Chloromethane	ND	H	0.12	1	10/10/2013 18:13
2-Chlorotoluene	ND	H	0.048	1	10/10/2013 18:13
4-Chlorotoluene	ND	H	0.048	1	10/10/2013 18:13
Dibromochloromethane	ND	H	0.029	1	10/10/2013 18:13
1,2-Dibromo-3-chloropropane	ND	H	0.025	1	10/10/2013 18:13
1,2-Dibromoethane (EDB)	ND	H	0.064	1	10/10/2013 18:13
Dibromomethane	ND	H	0.035	1	10/10/2013 18:13
1,2-Dichlorobenzene	ND	H	0.041	1	10/10/2013 18:13
1,3-Dichlorobenzene	ND	H	0.041	1	10/10/2013 18:13
1,4-Dichlorobenzene	ND	H	0.041	1	10/10/2013 18:13
Dichlorodifluoromethane	ND	H	0.050	1	10/10/2013 18:13
1,1-Dichloroethane	ND	H	0.061	1	10/10/2013 18:13
1,2-Dichloroethane (1,2-DCA)	ND	H	0.061	1	10/10/2013 18:13
1,1-Dichloroethene	ND	H	0.062	1	10/10/2013 18:13
cis-1,2-Dichloroethene	ND	H	0.062	1	10/10/2013 18:13
trans-1,2-Dichloroethene	ND	H	0.062	1	10/10/2013 18:13
1,2-Dichloropropane	ND	H	0.053	1	10/10/2013 18:13
1,3-Dichloropropane	ND	H	0.053	1	10/10/2013 18:13
2,2-Dichloropropane	ND	H	0.053	1	10/10/2013 18:13
1,1-Dichloropropene	ND	H	0.054	1	10/10/2013 18:13

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310378

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/10/13 15:56

**Analytical Method:** SW8260B

**Date Prepared:** 10/10/13

**Unit:** µL/L

### Volatile Organics by P&T and GC/MS (Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1185N	1310378-002A	Air	10/10/2013 11:30	GC28	82761
Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	H	0.054	1	10/10/2013 18:13
trans-1,3-Dichloropropene	ND	H	0.054	1	10/10/2013 18:13
Diisopropyl ether (DIPE)	ND	H	0.059	1	10/10/2013 18:13
Ethylbenzene	ND	H	0.057	1	10/10/2013 18:13
Ethyl tert-butyl ether (ETBE)	ND	H	0.059	1	10/10/2013 18:13
Freon 113	ND	H	0.64	1	10/10/2013 18:13
Hexachlorobutadiene	ND	H	0.023	1	10/10/2013 18:13
Hexachloroethane	ND	H	0.025	1	10/10/2013 18:13
2-Hexanone	ND	H	0.060	1	10/10/2013 18:13
Isopropylbenzene	ND	H	0.050	1	10/10/2013 18:13
4-Isopropyl toluene	ND	H	0.045	1	10/10/2013 18:13
Methyl-t-butyl ether (MTBE)	ND	H	0.068	1	10/10/2013 18:13
Methylene chloride	ND	H	0.071	1	10/10/2013 18:13
4-Methyl-2-pentanone (MIBK)	ND	H	0.060	1	10/10/2013 18:13
Naphthalene	ND	H	0.047	1	10/10/2013 18:13
n-Propyl benzene	ND	H	0.050	1	10/10/2013 18:13
Styrene	ND	H	0.058	1	10/10/2013 18:13
1,1,1,2-Tetrachloroethane	ND	H	0.072	1	10/10/2013 18:13
1,1,2,2-Tetrachloroethane	ND	H	0.036	1	10/10/2013 18:13
Tetrachloroethene	0.14	H	0.036	1	10/10/2013 18:13
Toluene	ND	H	0.065	1	10/10/2013 18:13
1,2,3-Trichlorobenzene	ND	H	0.033	1	10/10/2013 18:13
1,2,4-Trichlorobenzene	ND	H	0.033	1	10/10/2013 18:13
1,1,1-Trichloroethane	ND	H	0.045	1	10/10/2013 18:13
1,1,2-Trichloroethane	ND	H	0.045	1	10/10/2013 18:13
Trichloroethene	ND	H	0.046	1	10/10/2013 18:13
Trichlorofluoromethane	ND	H	0.044	1	10/10/2013 18:13
1,2,3-Trichloropropane	ND	H	0.041	1	10/10/2013 18:13
1,2,4-Trimethylbenzene	ND	H	0.050	1	10/10/2013 18:13
1,3,5-Trimethylbenzene	ND	H	0.050	1	10/10/2013 18:13
Vinyl Chloride	ND	H	0.096	1	10/10/2013 18:13
Xylenes, Total	ND	H	0.057	1	10/10/2013 18:13
Surrogates	REC (%)	Qualifiers	Limits		
Dibromofluoromethane	101	H	70-130		10/10/2013 18:13
Toluene-d8	92	H	70-130		10/10/2013 18:13
4-BFB	88	H	70-130		10/10/2013 18:13



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 10/10/13  
**Date Analyzed:** 10/10/13  
**Instrument:** GC28  
**Matrix:** Water  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1310378  
**BatchID:** 82761  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-82761  
1310358-003BMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	19.16	0.50	20	-	95.8	70-130
Benzene	ND	21.49	0.50	20	-	107	70-130
Bromobenzene	ND	-	0.50	-	-	-	-
Bromochloromethane	ND	-	0.50	-	-	-	-
Bromodichloromethane	ND	-	0.50	-	-	-	-
Bromoform	ND	-	0.50	-	-	-	-
Bromomethane	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	2.0	-	-	-	-
t-Butyl alcohol (TBA)	ND	60.87	2.0	80	-	76.1	70-130
n-Butyl benzene	ND	-	0.50	-	-	-	-
sec-Butyl benzene	ND	-	0.50	-	-	-	-
tert-Butyl benzene	ND	-	0.50	-	-	-	-
Carbon Disulfide	ND	-	0.50	-	-	-	-
Carbon Tetrachloride	ND	-	0.50	-	-	-	-
Chlorobenzene	ND	21.85	0.50	20	-	109	70-130
Chloroethane	ND	-	0.50	-	-	-	-
Chloroform	ND	-	0.50	-	-	-	-
Chloromethane	ND	-	0.50	-	-	-	-
2-Chlorotoluene	ND	-	0.50	-	-	-	-
4-Chlorotoluene	ND	-	0.50	-	-	-	-
Dibromochloromethane	ND	-	0.50	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.20	-	-	-	-
1,2-Dibromoethane (EDB)	ND	20.57	0.50	20	-	103	70-130
Dibromomethane	ND	-	0.50	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.50	-	-	-	-
Dichlorodifluoromethane	ND	-	0.50	-	-	-	-
1,1-Dichloroethane	ND	-	0.50	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	19.04	0.50	20	-	95.2	70-130
1,1-Dichloroethene	ND	18.53	0.50	20	-	92.6	70-130
cis-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
1,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,3-Dichloropropane	ND	-	0.50	-	-	-	-
2,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,1-Dichloropropene	ND	-	0.50	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.50	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 10/10/13  
**Date Analyzed:** 10/10/13  
**Instrument:** GC28  
**Matrix:** Water  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1310378  
**BatchID:** 82761  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-82761  
1310358-003BMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	19.97	0.50	20	-	99.9	70-130
Ethylbenzene	ND	-	0.50	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	18.89	0.50	20	-	94.4	70-130
Freon 113	ND	-	0.50	-	-	-	-
Hexachlorobutadiene	ND	-	0.50	-	-	-	-
Hexachloroethane	ND	-	0.50	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
Isopropylbenzene	ND	-	0.50	-	-	-	-
4-Isopropyl toluene	ND	-	0.50	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	18.12	0.50	20	-	90.6	70-130
Methylene chloride	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.50	-	-	-	-
Naphthalene	ND	-	0.50	-	-	-	-
n-Propyl benzene	ND	-	0.50	-	-	-	-
Styrene	ND	-	0.50	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
Tetrachloroethene	ND	-	0.50	-	-	-	-
Toluene	ND	21.06	0.50	20	-	105	70-130
1,2,3-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.50	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.50	-	-	-	-
Trichloroethene	ND	22.36	0.50	20	-	112	70-130
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.50	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	-	0.50	-	-	-	-
Xylenes, Total	ND	-	0.50	-	-	-	-

#### Surrogate Recovery

Dibromofluoromethane	24.68	24.84	25	99	99	70-130
Toluene-d8	23.05	22.96	25	92	92	70-130
4-BFB	2.228	2.156	2.5	89	86	70-130

(Cont.)





## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 10/10/13  
**Date Analyzed:** 10/10/13  
**Instrument:** GC28  
**Matrix:** Water  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1310378  
**BatchID:** 82761  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-82761  
1310358-003BMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	16.13	17.46	20	ND	80.6	87.3	70-130	7.97	20
Benzene	16.02	17.15	20	ND	80.1	85.7	70-130	6.81	20
t-Butyl alcohol (TBA)	61.58	66.53	80	ND	77	83.2	70-130	7.72	20
Chlorobenzene	15.96	17.5	20	ND	79.8	87.5	70-130	9.21	20
1,2-Dibromoethane (EDB)	17.65	18.55	20	ND	88.2	92.8	70-130	5.00	20
1,2-Dichloroethane (1,2-DCA)	15.45	16.69	20	ND	77.3	83.5	70-130	7.70	20
1,1-Dichloroethene	13.43	14.7	20	ND	67.2,F1	73.5	70-130	9.00	20
Diisopropyl ether (DIPE)	15.82	16.85	20	ND	79.1	84.2	70-130	6.25	20
Ethyl tert-butyl ether (ETBE)	15.29	16.5	20	ND	76.4	82.5	70-130	7.62	20
Methyl-t-butyl ether (MTBE)	15.95	17.04	20	ND	79.8	85.2	70-130	6.60	20
Toluene	15.37	16.34	20	ND	76.8	81.7	70-130	6.12	20
Trichloroethene	15.8	17.56	20	ND	79	87.8	70-130	10.6	20
<b>Surrogate Recovery</b>									
Dibromofluoromethane	25.2	25.25	25		101	101	70-130	0	20
Toluene-d8	22.75	22.26	25		91	89	70-130	2.20	20
4-BFB	2.066	2.076	2.5		83	83	70-130	0	20



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1310378

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

Requested TAT:

1 day

*Date Received:* 10/10/2013*Date Printed:* 10/11/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1310378-001	SG-1187N	Air	10/10/2013 11:25	<input type="checkbox"/>	A											
1310378-002	SG-1185N	Air	10/10/2013 11:30	<input type="checkbox"/>	A											

## Test Legend:

1	8010BMS_A	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Melissa Valles

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.

# RUSH

## TURN AROUND TIME

RUSH

24 HR

48 HR

72 HR

5 DAY

EDF Required? Coelt (Normal)

No

**Write On (DW)**

No

1000

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

Ave, Albany  
C. J. Lott

**Filter  
Samples  
for Metals  
analysis:  
Yes / No**

[illegible]



## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **10/10/2013 3:56:52 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Melissa Valles**

WorkOrder N°: **1310378** Matrix: Water

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments:



# McC Campbell Analytical, Inc.

*"When Quality Counts"*

## Analytical Report

**WorkOrder:** 1310388 **Amended:** 10/21/2013

**Report Created for:** Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Project Contact:** Bob Clark-Riddell  
**Project P.O.:**  
**Project Name:** #1435.002; Solano Group

**Project Received:** 10/11/2013

Analytical Report reviewed & approved for release on 10/14/2013 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*





## Glossary of Terms & Qualifier Definitions

**Client:** Pangea Environmental Svcs., Inc.  
**Project:** #1435.002; Solano Group  
**WorkOrder:** 1310388

<u>Glossary</u> <u>Abbreviation</u>	<u>Description</u>
95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit
RPD	Relative Percent Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value

### Analytical Qualifier

H samples were analyzed out of holding time





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310388

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/11/13 15:05

**Analytical Method:** SW8260B

**Date Prepared:** 10/12/13

**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-16	1310388-001A	Air	10/11/2013 12:10	GC18	82832
Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acetone	ND	H	5.0	1	10/12/2013 13:46
tert-Amyl methyl ether (TAME)	ND	H	0.25	1	10/12/2013 13:46
Benzene	ND	H	0.25	1	10/12/2013 13:46
Bromobenzene	ND	H	0.25	1	10/12/2013 13:46
Bromochloromethane	ND	H	0.25	1	10/12/2013 13:46
Bromodichloromethane	ND	H	0.25	1	10/12/2013 13:46
Bromoform	ND	H	0.25	1	10/12/2013 13:46
Bromomethane	ND	H	0.25	1	10/12/2013 13:46
2-Butanone (MEK)	ND	H	1.0	1	10/12/2013 13:46
n-Butyl benzene	ND	H	0.25	1	10/12/2013 13:46
sec-Butyl benzene	ND	H	0.25	1	10/12/2013 13:46
tert-Butyl benzene	ND	H	0.25	1	10/12/2013 13:46
Carbon Disulfide	ND	H	0.25	1	10/12/2013 13:46
Carbon Tetrachloride	ND	H	0.25	1	10/12/2013 13:46
Chlorobenzene	ND	H	0.25	1	10/12/2013 13:46
Chloroethane	ND	H	0.25	1	10/12/2013 13:46
Chloroform	ND	H	0.25	1	10/12/2013 13:46
Chloromethane	ND	H	0.25	1	10/12/2013 13:46
2-Chlorotoluene	ND	H	0.25	1	10/12/2013 13:46
4-Chlorotoluene	ND	H	0.25	1	10/12/2013 13:46
Dibromochloromethane	ND	H	0.25	1	10/12/2013 13:46
1,2-Dibromo-3-chloropropane	ND	H	0.25	1	10/12/2013 13:46
1,2-Dibromoethane (EDB)	ND	H	0.25	1	10/12/2013 13:46
Dibromomethane	ND	H	0.25	1	10/12/2013 13:46
1,2-Dichlorobenzene	ND	H	0.25	1	10/12/2013 13:46
1,3-Dichlorobenzene	ND	H	0.25	1	10/12/2013 13:46
1,4-Dichlorobenzene	ND	H	0.25	1	10/12/2013 13:46
Dichlorodifluoromethane	ND	H	0.25	1	10/12/2013 13:46
1,1-Dichloroethane	ND	H	0.25	1	10/12/2013 13:46
1,2-Dichloroethane (1,2-DCA)	ND	H	0.25	1	10/12/2013 13:46
1,1-Dichloroethene	ND	H	0.25	1	10/12/2013 13:46
cis-1,2-Dichloroethene	ND	H	0.25	1	10/12/2013 13:46
trans-1,2-Dichloroethene	ND	H	0.25	1	10/12/2013 13:46
1,2-Dichloropropane	ND	H	0.25	1	10/12/2013 13:46
1,3-Dichloropropane	ND	H	0.25	1	10/12/2013 13:46
2,2-Dichloropropane	ND	H	0.25	1	10/12/2013 13:46
1,1-Dichloropropene	ND	H	0.25	1	10/12/2013 13:46
cis-1,3-Dichloropropene	ND	H	0.25	1	10/12/2013 13:46

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310388

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/11/13 15:05

**Analytical Method:** SW8260B

**Date Prepared:** 10/12/13

**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-16	1310388-001A	Air	10/11/2013 12:10	GC18	82832
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
trans-1,3-Dichloropropene	ND	H	0.25	1	10/12/2013 13:46
Diisopropyl ether (DIPE)	ND	H	0.25	1	10/12/2013 13:46
Ethylbenzene	ND	H	0.25	1	10/12/2013 13:46
Ethyl tert-butyl ether (ETBE)	ND	H	0.25	1	10/12/2013 13:46
Freon 113	ND	H	5.0	1	10/12/2013 13:46
Hexachlorobutadiene	ND	H	0.25	1	10/12/2013 13:46
Hexachloroethane	ND	H	0.25	1	10/12/2013 13:46
2-Hexanone	ND	H	0.25	1	10/12/2013 13:46
Isopropylbenzene	ND	H	0.25	1	10/12/2013 13:46
4-Isopropyl toluene	ND	H	0.25	1	10/12/2013 13:46
Methyl-t-butyl ether (MTBE)	ND	H	0.25	1	10/12/2013 13:46
Methylene chloride	ND	H	0.25	1	10/12/2013 13:46
4-Methyl-2-pentanone (MIBK)	ND	H	0.25	1	10/12/2013 13:46
Naphthalene	ND	H	0.25	1	10/12/2013 13:46
n-Propyl benzene	ND	H	0.25	1	10/12/2013 13:46
Styrene	ND	H	0.25	1	10/12/2013 13:46
1,1,1,2-Tetrachloroethane	ND	H	0.25	1	10/12/2013 13:46
1,1,2,2-Tetrachloroethane	ND	H	0.25	1	10/12/2013 13:46
Tetrachloroethene	ND	H	0.25	1	10/12/2013 13:46
Toluene	ND	H	0.25	1	10/12/2013 13:46
1,2,3-Trichlorobenzene	ND	H	0.25	1	10/12/2013 13:46
1,2,4-Trichlorobenzene	ND	H	0.25	1	10/12/2013 13:46
1,1,1-Trichloroethane	ND	H	0.25	1	10/12/2013 13:46
1,1,2-Trichloroethane	ND	H	0.25	1	10/12/2013 13:46
Trichloroethene	ND	H	0.25	1	10/12/2013 13:46
Trichlorofluoromethane	ND	H	0.25	1	10/12/2013 13:46
1,2,3-Trichloropropane	ND	H	0.25	1	10/12/2013 13:46
1,2,4-Trimethylbenzene	ND	H	0.25	1	10/12/2013 13:46
1,3,5-Trimethylbenzene	ND	H	0.25	1	10/12/2013 13:46
Vinyl Chloride	ND	H	0.25	1	10/12/2013 13:46
Xylenes, Total	ND	H	0.25	1	10/12/2013 13:46
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	101	H	70-130		10/12/2013 13:46
Toluene-d8	105	H	70-130		10/12/2013 13:46
4-BFB	105	H	70-130		10/12/2013 13:46

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310388

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/11/13 15:05

**Analytical Method:** SW8260B

**Date Prepared:** 10/12/13

**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-17	1310388-002A	Air	10/11/2013 12:05	GC18	82832
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND	H	5.0	1	10/12/2013 14:24
tert-Amyl methyl ether (TAME)	ND	H	0.25	1	10/12/2013 14:24
Benzene	ND	H	0.25	1	10/12/2013 14:24
Bromobenzene	ND	H	0.25	1	10/12/2013 14:24
Bromochloromethane	ND	H	0.25	1	10/12/2013 14:24
Bromodichloromethane	ND	H	0.25	1	10/12/2013 14:24
Bromoform	ND	H	0.25	1	10/12/2013 14:24
Bromomethane	ND	H	0.25	1	10/12/2013 14:24
2-Butanone (MEK)	ND	H	1.0	1	10/12/2013 14:24
n-Butyl benzene	ND	H	0.25	1	10/12/2013 14:24
sec-Butyl benzene	ND	H	0.25	1	10/12/2013 14:24
tert-Butyl benzene	ND	H	0.25	1	10/12/2013 14:24
Carbon Disulfide	ND	H	0.25	1	10/12/2013 14:24
Carbon Tetrachloride	ND	H	0.25	1	10/12/2013 14:24
Chlorobenzene	ND	H	0.25	1	10/12/2013 14:24
Chloroethane	ND	H	0.25	1	10/12/2013 14:24
Chloroform	ND	H	0.25	1	10/12/2013 14:24
Chloromethane	ND	H	0.25	1	10/12/2013 14:24
2-Chlorotoluene	ND	H	0.25	1	10/12/2013 14:24
4-Chlorotoluene	ND	H	0.25	1	10/12/2013 14:24
Dibromochloromethane	ND	H	0.25	1	10/12/2013 14:24
1,2-Dibromo-3-chloropropane	ND	H	0.25	1	10/12/2013 14:24
1,2-Dibromoethane (EDB)	ND	H	0.25	1	10/12/2013 14:24
Dibromomethane	ND	H	0.25	1	10/12/2013 14:24
1,2-Dichlorobenzene	ND	H	0.25	1	10/12/2013 14:24
1,3-Dichlorobenzene	ND	H	0.25	1	10/12/2013 14:24
1,4-Dichlorobenzene	ND	H	0.25	1	10/12/2013 14:24
Dichlorodifluoromethane	ND	H	0.25	1	10/12/2013 14:24
1,1-Dichloroethane	ND	H	0.25	1	10/12/2013 14:24
1,2-Dichloroethane (1,2-DCA)	ND	H	0.25	1	10/12/2013 14:24
1,1-Dichloroethene	ND	H	0.25	1	10/12/2013 14:24
cis-1,2-Dichloroethene	ND	H	0.25	1	10/12/2013 14:24
trans-1,2-Dichloroethene	ND	H	0.25	1	10/12/2013 14:24
1,2-Dichloropropane	ND	H	0.25	1	10/12/2013 14:24
1,3-Dichloropropane	ND	H	0.25	1	10/12/2013 14:24
2,2-Dichloropropane	ND	H	0.25	1	10/12/2013 14:24
1,1-Dichloropropene	ND	H	0.25	1	10/12/2013 14:24
cis-1,3-Dichloropropene	ND	H	0.25	1	10/12/2013 14:24

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## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 10/11/13 15:05

**Date Prepared:** 10/12/13

**WorkOrder:** 1310388

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-17	1310388-002A	Air	10/11/2013 12:05	GC18	82832
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
trans-1,3-Dichloropropene	ND	H	0.25	1	10/12/2013 14:24
Diisopropyl ether (DIPE)	ND	H	0.25	1	10/12/2013 14:24
Ethylbenzene	ND	H	0.25	1	10/12/2013 14:24
Ethyl tert-butyl ether (ETBE)	ND	H	0.25	1	10/12/2013 14:24
Freon 113	ND	H	5.0	1	10/12/2013 14:24
Hexachlorobutadiene	ND	H	0.25	1	10/12/2013 14:24
Hexachloroethane	ND	H	0.25	1	10/12/2013 14:24
2-Hexanone	ND	H	0.25	1	10/12/2013 14:24
Isopropylbenzene	ND	H	0.25	1	10/12/2013 14:24
4-Isopropyl toluene	ND	H	0.25	1	10/12/2013 14:24
Methyl-t-butyl ether (MTBE)	ND	H	0.25	1	10/12/2013 14:24
Methylene chloride	ND	H	0.25	1	10/12/2013 14:24
4-Methyl-2-pentanone (MIBK)	ND	H	0.25	1	10/12/2013 14:24
Naphthalene	ND	H	0.25	1	10/12/2013 14:24
n-Propyl benzene	ND	H	0.25	1	10/12/2013 14:24
Styrene	ND	H	0.25	1	10/12/2013 14:24
1,1,1,2-Tetrachloroethane	ND	H	0.25	1	10/12/2013 14:24
1,1,2,2-Tetrachloroethane	ND	H	0.25	1	10/12/2013 14:24
Tetrachloroethene	1.2	H	0.25	1	10/12/2013 14:24
Toluene	ND	H	0.25	1	10/12/2013 14:24
1,2,3-Trichlorobenzene	ND	H	0.25	1	10/12/2013 14:24
1,2,4-Trichlorobenzene	ND	H	0.25	1	10/12/2013 14:24
1,1,1-Trichloroethane	ND	H	0.25	1	10/12/2013 14:24
1,1,2-Trichloroethane	ND	H	0.25	1	10/12/2013 14:24
Trichloroethene	ND	H	0.25	1	10/12/2013 14:24
Trichlorofluoromethane	ND	H	0.25	1	10/12/2013 14:24
1,2,3-Trichloropropane	ND	H	0.25	1	10/12/2013 14:24
1,2,4-Trimethylbenzene	ND	H	0.25	1	10/12/2013 14:24
1,3,5-Trimethylbenzene	ND	H	0.25	1	10/12/2013 14:24
Vinyl Chloride	ND	H	0.25	1	10/12/2013 14:24
Xylenes, Total	ND	H	0.25	1	10/12/2013 14:24
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	105	H	70-130		10/12/2013 14:24
Toluene-d8	100	H	70-130		10/12/2013 14:24
4-BFB	102	H	70-130		10/12/2013 14:24



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 10/11/13 15:05

**Date Prepared:** 10/12/13

**WorkOrder:** 1310388

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Volatile Organics by P&T and GC/MS (Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-16	1310388-001A	Air	10/11/2013 12:10	GC18	82832
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND	H	2.1	1	10/12/2013 13:46
tert-Amyl methyl ether (TAME)	ND	H	0.059	1	10/12/2013 13:46
Benzene	ND	H	0.077	1	10/12/2013 13:46
Bromobenzene	ND	H	0.038	1	10/12/2013 13:46
Bromochloromethane	ND	H	0.047	1	10/12/2013 13:46
Bromodichloromethane	ND	H	0.036	1	10/12/2013 13:46
Bromoform	ND	H	0.024	1	10/12/2013 13:46
Bromomethane	ND	H	0.063	1	10/12/2013 13:46
2-Butanone (MEK)	ND	H	0.33	1	10/12/2013 13:46
n-Butyl benzene	ND	H	0.045	1	10/12/2013 13:46
sec-Butyl benzene	ND	H	0.045	1	10/12/2013 13:46
tert-Butyl benzene	ND	H	0.045	1	10/12/2013 13:46
Carbon Disulfide	ND	H	0.079	1	10/12/2013 13:46
Carbon Tetrachloride	ND	H	0.039	1	10/12/2013 13:46
Chlorobenzene	ND	H	0.053	1	10/12/2013 13:46
Chloroethane	ND	H	0.093	1	10/12/2013 13:46
Chloroform	ND	H	0.050	1	10/12/2013 13:46
Chloromethane	ND	H	0.12	1	10/12/2013 13:46
2-Chlorotoluene	ND	H	0.048	1	10/12/2013 13:46
4-Chlorotoluene	ND	H	0.048	1	10/12/2013 13:46
Dibromochloromethane	ND	H	0.029	1	10/12/2013 13:46
1,2-Dibromo-3-chloropropane	ND	H	0.025	1	10/12/2013 13:46
1,2-Dibromoethane (EDB)	ND	H	0.064	1	10/12/2013 13:46
Dibromomethane	ND	H	0.035	1	10/12/2013 13:46
1,2-Dichlorobenzene	ND	H	0.041	1	10/12/2013 13:46
1,3-Dichlorobenzene	ND	H	0.041	1	10/12/2013 13:46
1,4-Dichlorobenzene	ND	H	0.041	1	10/12/2013 13:46
Dichlorodifluoromethane	ND	H	0.050	1	10/12/2013 13:46
1,1-Dichloroethane	ND	H	0.061	1	10/12/2013 13:46
1,2-Dichloroethane (1,2-DCA)	ND	H	0.061	1	10/12/2013 13:46
1,1-Dichloroethene	ND	H	0.062	1	10/12/2013 13:46
cis-1,2-Dichloroethene	ND	H	0.062	1	10/12/2013 13:46
trans-1,2-Dichloroethene	ND	H	0.062	1	10/12/2013 13:46
1,2-Dichloropropane	ND	H	0.053	1	10/12/2013 13:46
1,3-Dichloropropane	ND	H	0.053	1	10/12/2013 13:46
2,2-Dichloropropane	ND	H	0.053	1	10/12/2013 13:46
1,1-Dichloropropene	ND	H	0.054	1	10/12/2013 13:46
cis-1,3-Dichloropropene	ND	H	0.054	1	10/12/2013 13:46

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310388

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/11/13 15:05

**Analytical Method:** SW8260B

**Date Prepared:** 10/12/13

**Unit:** µL/L

### Volatile Organics by P&T and GC/MS (Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-16	1310388-001A	Air	10/11/2013 12:10	GC18	82832
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
trans-1,3-Dichloropropene	ND	H	0.054	1	10/12/2013 13:46
Diisopropyl ether (DIPE)	ND	H	0.059	1	10/12/2013 13:46
Ethylbenzene	ND	H	0.057	1	10/12/2013 13:46
Ethyl tert-butyl ether (ETBE)	ND	H	0.059	1	10/12/2013 13:46
Freon 113	ND	H	0.64	1	10/12/2013 13:46
Hexachlorobutadiene	ND	H	0.023	1	10/12/2013 13:46
Hexachloroethane	ND	H	0.025	1	10/12/2013 13:46
2-Hexanone	ND	H	0.060	1	10/12/2013 13:46
Isopropylbenzene	ND	H	0.050	1	10/12/2013 13:46
4-Isopropyl toluene	ND	H	0.045	1	10/12/2013 13:46
Methyl-t-butyl ether (MTBE)	ND	H	0.068	1	10/12/2013 13:46
Methylene chloride	ND	H	0.071	1	10/12/2013 13:46
4-Methyl-2-pentanone (MIBK)	ND	H	0.060	1	10/12/2013 13:46
Naphthalene	ND	H	0.047	1	10/12/2013 13:46
n-Propyl benzene	ND	H	0.050	1	10/12/2013 13:46
Styrene	ND	H	0.058	1	10/12/2013 13:46
1,1,1,2-Tetrachloroethane	ND	H	0.072	1	10/12/2013 13:46
1,1,2,2-Tetrachloroethane	ND	H	0.036	1	10/12/2013 13:46
Tetrachloroethene	ND	H	0.036	1	10/12/2013 13:46
Toluene	ND	H	0.065	1	10/12/2013 13:46
1,2,3-Trichlorobenzene	ND	H	0.033	1	10/12/2013 13:46
1,2,4-Trichlorobenzene	ND	H	0.033	1	10/12/2013 13:46
1,1,1-Trichloroethane	ND	H	0.045	1	10/12/2013 13:46
1,1,2-Trichloroethane	ND	H	0.045	1	10/12/2013 13:46
Trichloroethene	ND	H	0.046	1	10/12/2013 13:46
Trichlorofluoromethane	ND	H	0.044	1	10/12/2013 13:46
1,2,3-Trichloropropane	ND	H	0.041	1	10/12/2013 13:46
1,2,4-Trimethylbenzene	ND	H	0.050	1	10/12/2013 13:46
1,3,5-Trimethylbenzene	ND	H	0.050	1	10/12/2013 13:46
Vinyl Chloride	ND	H	0.096	1	10/12/2013 13:46
Xylenes, Total	ND	H	0.057	1	10/12/2013 13:46
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	101	H	70-130		10/12/2013 13:46
Toluene-d8	105	H	70-130		10/12/2013 13:46
4-BFB	105	H	70-130		10/12/2013 13:46

(Cont.)





## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**WorkOrder:** 1310388

**Project:** #1435.002; Solano Group

**Extraction Method:** SW5030B

**Date Received:** 10/11/13 15:05

**Analytical Method:** SW8260B

**Date Prepared:** 10/12/13

**Unit:** µL/L

### Volatile Organics by P&T and GC/MS (Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-17	1310388-002A	Air	10/11/2013 12:05	GC18	82832
Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acetone	ND	H	2.1	1	10/12/2013 14:24
tert-Amyl methyl ether (TAME)	ND	H	0.059	1	10/12/2013 14:24
Benzene	ND	H	0.077	1	10/12/2013 14:24
Bromobenzene	ND	H	0.038	1	10/12/2013 14:24
Bromochloromethane	ND	H	0.047	1	10/12/2013 14:24
Bromodichloromethane	ND	H	0.036	1	10/12/2013 14:24
Bromoform	ND	H	0.024	1	10/12/2013 14:24
Bromomethane	ND	H	0.063	1	10/12/2013 14:24
2-Butanone (MEK)	ND	H	0.33	1	10/12/2013 14:24
n-Butyl benzene	ND	H	0.045	1	10/12/2013 14:24
sec-Butyl benzene	ND	H	0.045	1	10/12/2013 14:24
tert-Butyl benzene	ND	H	0.045	1	10/12/2013 14:24
Carbon Disulfide	ND	H	0.079	1	10/12/2013 14:24
Carbon Tetrachloride	ND	H	0.039	1	10/12/2013 14:24
Chlorobenzene	ND	H	0.053	1	10/12/2013 14:24
Chloroethane	ND	H	0.093	1	10/12/2013 14:24
Chloroform	ND	H	0.050	1	10/12/2013 14:24
Chloromethane	ND	H	0.12	1	10/12/2013 14:24
2-Chlorotoluene	ND	H	0.048	1	10/12/2013 14:24
4-Chlorotoluene	ND	H	0.048	1	10/12/2013 14:24
Dibromochloromethane	ND	H	0.029	1	10/12/2013 14:24
1,2-Dibromo-3-chloropropane	ND	H	0.025	1	10/12/2013 14:24
1,2-Dibromoethane (EDB)	ND	H	0.064	1	10/12/2013 14:24
Dibromomethane	ND	H	0.035	1	10/12/2013 14:24
1,2-Dichlorobenzene	ND	H	0.041	1	10/12/2013 14:24
1,3-Dichlorobenzene	ND	H	0.041	1	10/12/2013 14:24
1,4-Dichlorobenzene	ND	H	0.041	1	10/12/2013 14:24
Dichlorodifluoromethane	ND	H	0.050	1	10/12/2013 14:24
1,1-Dichloroethane	ND	H	0.061	1	10/12/2013 14:24
1,2-Dichloroethane (1,2-DCA)	ND	H	0.061	1	10/12/2013 14:24
1,1-Dichloroethene	ND	H	0.062	1	10/12/2013 14:24
cis-1,2-Dichloroethene	ND	H	0.062	1	10/12/2013 14:24
trans-1,2-Dichloroethene	ND	H	0.062	1	10/12/2013 14:24
1,2-Dichloropropane	ND	H	0.053	1	10/12/2013 14:24
1,3-Dichloropropane	ND	H	0.053	1	10/12/2013 14:24
2,2-Dichloropropane	ND	H	0.053	1	10/12/2013 14:24
1,1-Dichloropropene	ND	H	0.054	1	10/12/2013 14:24
cis-1,3-Dichloropropene	ND	H	0.054	1	10/12/2013 14:24

(Cont.)



## Analytical Report

**Client:** Pangea Environmental Svcs., Inc.

**Project:** #1435.002; Solano Group

**Date Received:** 10/11/13 15:05

**Date Prepared:** 10/12/13

**WorkOrder:** 1310388

**Extraction Method:** SW5030B

**Analytical Method:** SW8260B

**Unit:** µL/L

### Volatile Organics by P&T and GC/MS (Basic Target List) in PPMV

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SS-17	1310388-002A	Air	10/11/2013 12:05	GC18	82832
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
trans-1,3-Dichloropropene	ND	H	0.054	1	10/12/2013 14:24
Diisopropyl ether (DIPE)	ND	H	0.059	1	10/12/2013 14:24
Ethylbenzene	ND	H	0.057	1	10/12/2013 14:24
Ethyl tert-butyl ether (ETBE)	ND	H	0.059	1	10/12/2013 14:24
Freon 113	ND	H	0.64	1	10/12/2013 14:24
Hexachlorobutadiene	ND	H	0.023	1	10/12/2013 14:24
Hexachloroethane	ND	H	0.025	1	10/12/2013 14:24
2-Hexanone	ND	H	0.060	1	10/12/2013 14:24
Isopropylbenzene	ND	H	0.050	1	10/12/2013 14:24
4-Isopropyl toluene	ND	H	0.045	1	10/12/2013 14:24
Methyl-t-butyl ether (MTBE)	ND	H	0.068	1	10/12/2013 14:24
Methylene chloride	ND	H	0.071	1	10/12/2013 14:24
4-Methyl-2-pentanone (MIBK)	ND	H	0.060	1	10/12/2013 14:24
Naphthalene	ND	H	0.047	1	10/12/2013 14:24
n-Propyl benzene	ND	H	0.050	1	10/12/2013 14:24
Styrene	ND	H	0.058	1	10/12/2013 14:24
1,1,1,2-Tetrachloroethane	ND	H	0.072	1	10/12/2013 14:24
1,1,2,2-Tetrachloroethane	ND	H	0.036	1	10/12/2013 14:24
Tetrachloroethene	0.17	H	0.036	1	10/12/2013 14:24
Toluene	ND	H	0.065	1	10/12/2013 14:24
1,2,3-Trichlorobenzene	ND	H	0.033	1	10/12/2013 14:24
1,2,4-Trichlorobenzene	ND	H	0.033	1	10/12/2013 14:24
1,1,1-Trichloroethane	ND	H	0.045	1	10/12/2013 14:24
1,1,2-Trichloroethane	ND	H	0.045	1	10/12/2013 14:24
Trichloroethene	ND	H	0.046	1	10/12/2013 14:24
Trichlorofluoromethane	ND	H	0.044	1	10/12/2013 14:24
1,2,3-Trichloropropane	ND	H	0.041	1	10/12/2013 14:24
1,2,4-Trimethylbenzene	ND	H	0.050	1	10/12/2013 14:24
1,3,5-Trimethylbenzene	ND	H	0.050	1	10/12/2013 14:24
Vinyl Chloride	ND	H	0.096	1	10/12/2013 14:24
Xylenes, Total	ND	H	0.057	1	10/12/2013 14:24
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	105	H	70-130		10/12/2013 14:24
Toluene-d8	100	H	70-130		10/12/2013 14:24
4-BFB	102	H	70-130		10/12/2013 14:24



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 10/11/13 - 10/14/13  
**Date Analyzed:** 10/12/13  
**Instrument:** GC18  
**Matrix:** Water  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1310388  
**BatchID:** 82832  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-82832  
1310446-001AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	20.28	0.50	20	-	101	70-130
Benzene	ND	18.06	0.50	20	-	90.3	70-130
Bromobenzene	ND	-	0.50	-	-	-	-
Bromochloromethane	ND	-	0.50	-	-	-	-
Bromodichloromethane	ND	-	0.50	-	-	-	-
Bromoform	ND	-	0.50	-	-	-	-
Bromomethane	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	2.0	-	-	-	-
t-Butyl alcohol (TBA)	ND	-	2.0	-	-	-	-
n-Butyl benzene	ND	-	0.50	-	-	-	-
sec-Butyl benzene	ND	-	0.50	-	-	-	-
tert-Butyl benzene	ND	-	0.50	-	-	-	-
Carbon Disulfide	ND	-	0.50	-	-	-	-
Carbon Tetrachloride	ND	-	0.50	-	-	-	-
Chlorobenzene	ND	18.29	0.50	20	-	91.5	70-130
Chloroethane	ND	-	0.50	-	-	-	-
Chloroform	ND	-	0.50	-	-	-	-
Chloromethane	ND	-	0.50	-	-	-	-
2-Chlorotoluene	ND	-	0.50	-	-	-	-
4-Chlorotoluene	ND	-	0.50	-	-	-	-
Dibromochloromethane	ND	-	0.50	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.20	-	-	-	-
1,2-Dibromoethane (EDB)	ND	20.96	0.50	20	-	105	70-130
Dibromomethane	ND	-	0.50	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.50	-	-	-	-
Dichlorodifluoromethane	ND	-	0.50	-	-	-	-
1,1-Dichloroethane	ND	-	0.50	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	19.9	0.50	20	-	99.5	70-130
1,1-Dichloroethene	ND	17.09	0.50	20	-	85.4	70-130
cis-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
1,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,3-Dichloropropane	ND	-	0.50	-	-	-	-
2,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,1-Dichloropropene	ND	-	0.50	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.50	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 10/11/13 - 10/14/13  
**Date Analyzed:** 10/12/13  
**Instrument:** GC18  
**Matrix:** Water  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1310388  
**BatchID:** 82832  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-82832  
1310446-001AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	19.02	0.50	20	-	95.1	70-130
Ethylbenzene	ND	-	0.50	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	18.53	0.50	20	-	92.6	70-130
Freon 113	ND	-	0.50	-	-	-	-
Hexachlorobutadiene	ND	-	0.50	-	-	-	-
Hexachloroethane	ND	-	0.50	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
Isopropylbenzene	ND	-	0.50	-	-	-	-
4-Isopropyl toluene	ND	-	0.50	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	19.71	0.50	20	-	98.5	70-130
Methylene chloride	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.50	-	-	-	-
Naphthalene	ND	-	0.50	-	-	-	-
n-Propyl benzene	ND	-	0.50	-	-	-	-
Styrene	ND	-	0.50	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
Tetrachloroethene	ND	-	0.50	-	-	-	-
Toluene	ND	20.21	0.50	20	-	101	70-130
1,2,3-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.50	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.50	-	-	-	-
Trichloroethene	ND	18.67	0.50	20	-	93.4	70-130
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.50	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	-	0.50	-	-	-	-
Xylenes, Total	ND	-	0.50	-	-	-	-

#### Surrogate Recovery

Dibromofluoromethane	26.78	25.8	25	107	103	70-130
Toluene-d8	23.9	25.31	25	96	101	70-130
4-BFB	2.694	2.552	2.5	108	102	70-130

(Cont.)



## Quality Control Report

**Client:** Pangea Environmental Svcs., Inc.  
**Date Prepared:** 10/11/13 - 10/14/13  
**Date Analyzed:** 10/12/13  
**Instrument:** GC18  
**Matrix:** Water  
**Project:** #1435.002; Solano Group

**WorkOrder:** 1310388  
**BatchID:** 82832  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-82832  
1310446-001AMS/MSD

### QC SUMMARY REPORT FOR SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	20.34	18.7	20	ND	102	93.5	70-130	8.41	20
Benzene	17.84	17.06	20	ND	89.2	85.3	70-130	4.51	20
Chlorobenzene	18.56	17.39	20	ND	92.8	87	70-130	6.49	20
1,2-Dibromoethane (EDB)	21.54	20.3	20	ND	108	102	70-130	5.91	20
1,2-Dichloroethane (1,2-DCA)	21.6	20.14	20	ND	108	101	70-130	7.02	20
1,1-Dichloroethene	16.51	15.65	20	ND	82.5	78.3	70-130	5.33	20
Diisopropyl ether (DIPE)	19.3	19.45	20	ND	96.5	97.3	70-130	0.769	20
Ethyl tert-butyl ether (ETBE)	18.86	18.5	20	ND	94.3	92.5	70-130	1.94	20
Methyl-t-butyl ether (MTBE)	20.59	19.35	20	ND	103	96.7	70-130	6.23	20
Toluene	19.81	18.84	20	ND	99	94.2	70-130	5.03	20
Trichloroethene	18.79	17.55	20	ND	94	87.8	70-130	6.81	20
<b>Surrogate Recovery</b>									
Dibromofluoromethane	25.84	25.62	25		103	102	70-130	0.854	20
Toluene-d8	25.17	25.3	25		101	101	70-130	0	20
4-BFB	2.478	2.545	2.5		99	102	70-130	2.67	20



## CHAIN-OF-CUSTODY RECORD

WorkOrder: 1310388

ClientCode: PEO

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQuIS☒ Email☐ HardCopy☐ ThirdParty☐ J-flag

## Report to:

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709Email: BRiddell@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1435.002; Solano Group

## Bill to:

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

## Requested TAT:

1 day

**Date Received:** 10/11/2013**Date Printed:** 10/11/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1310388-001	SS-16	Air	10/11/2013 12:10	<input type="checkbox"/>	A	A										
1310388-002	SS-17	Air	10/11/2013 12:05	<input type="checkbox"/>	A	A										

## Test Legend:

1	8010BMS_A	2	8010BMS_PPMV	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

## Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



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## Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **10/11/2013 3:05:00 PM**

Project Name: **#1435.002; Solano Group**

Login Reviewed by: **Jena Alfaro**

WorkOrder N°: **1310388** Matrix: Air

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

\* NOTE: If the "No" box is checked, see comments below.

Comments: