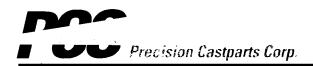
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4:09 pm, Dec 14, 2010

Alameda County Environmental Health



November 30, 2010

Mr. Mark E. Detterman, PG, CEG Environmental Protection Alameda County Health Care Services 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

Subject:Fuel Leak Case No. R0000320, Former Paco Pumps Inc, 9201 San Leandro Street,Oakland, CA: Report and Request for Monitoring Only

Dear Mr. Detterman:

As reported previously, PCC Flow Technologies, Inc. is managing the remediation of residual petroleum hydrocarbons present at the former PACO Pumps site located at 9201 San Leandro in Oakland, California. In the fall of 2009, we retained The Source Group, Inc. (SGI) to review past reports of investigation and, based on their interpretation of site conditions, to perform additional site investigation and prepare and implement a remedial plan for the site. The attached report, "Investigation/Remediation (Area 4), Post Remediation Sampling and First Semi-Annual Monitoring Report," prepared by SGI, presents a summary of SGI's investigation and remediation activities and their recommendations for future activities.

Background

A May 2009, LFR report with proposed remedial action work plan submitted to your agency presented a remedial approach to address residual contamination for Area 4 of the site and also requested closure for four other areas at the property. Although your agency has not specifically confirmed the proposed closure, we understand that ACEH is not requiring additional action for areas 1, 2, 3, and 5.

In June 2009, your agency responded to the May 2009 LFR work plan and authorized LFR's proposed approach for Area 4 remediation. In October 2009, SGI submitted a revised Remediation Workplan that proposed an alternate remedial strategy entailing episodes of high-vapor dual phase extraction rather than construction and operation of a fixed remediation system, as proposed by LFR. It is our understanding that the backlog of cases handled by your agency has not allowed for written approval of this 2009 remediation workplan. Correspondingly, in March 2010, in accordance with 22 C.C.R. 2722(e) and after notification to you of our intent to proceed with the Area 4 remediation, remediation activities

Mr. Mark E. Detterman, PG, CEG November 30, 2010 Page 2

were initiated. These remedial activities were continued until late June 2010, and were followed by a site-wide semi-annual groundwater monitoring event.

Summary of 2010 Field Activities

Field tasks completed this year included an initial dual-phase extraction pilot test, and the installation of one groundwater monitoring and 12 dual-phase extraction wells in June 2010. After installation and development of the extraction wells, SGI coordinated an aggressive 11-day dual-phase extraction remediation (April - 1 day, June - 10 days), with concurrent monitoring of water levels in monitoring wells and testing of the extracted fluids. Although extraction rates were limited due to the extremely tight soil matrix, over 40,000 gallons of contaminated groundwater and 1,590 pounds of hydrocarbons (in both liquid and vapor phase) were removed during the course of the remediation.

The subsequent groundwater monitoring, sampling, and testing confirmed that the Area 4 dissolved hydrocarbon concentrations in outer, low-concentration monitoring wells remained stable and that the dissolved phase plume remains confined to the site. Dissolved-phase concentrations of TPHg and benzene collected before and after the HVDPE exhibited a significant decrease in key wells near the location of the former UST, attributed to the June 2010 remediation event. Further, the active extraction air and water at the site has also likely provided additional oxygen input to the subsurface, promoting biodegradation of residual hydrocarbons at the site.

Discussion

As part of the work completed by SGI, we requested that an evaluation be made as to the possible effects the remaining petroleum hydrocarbons may pose to site visitors and workers. Post-remedial sampling data were used to perform risk modeling following CalEPA guidance for the commercial or industrial worker. The results of this study, as described in the attached report, indicated that the residual petroleum hydrocarbons present at the site do not pose an unacceptable human health risk to the commercial or industrial workers in vicinity of Area 4.

As presented in the SGI report, the subsurface in Area 4 contained residual hydrocarbons in soil and groundwater. The hydrocarbon plume is relatively localized, the lateral and vertical extent is well defined, and downgradient wells contain no detectable hydrocarbon concentrations, indicating that the hydrocarbons are contained within the site boundaries.

Conclusions

The primary source of the hydrocarbons (the former UST) has been removed, a significant secondary source of contaminated soil surrounding the former UST excavation pit has also been removed, the

Mr. Mark E. Detterman, PG, CEG November 30, 2010 Page 3

remediation completed in the summer of 2010 further reduced the contaminant mass through the removal of nearly 1,600 pounds of residual hydrocarbons present in soil and groundwater surrounding the former UST location, and risk modeling demonstrated no unacceptable risk to site workers.

Recommendations

Based on the limited air flow and groundwater extraction rates, low hydrocarbon concentrations present in soil, and an adequately delineated, limited plume, any further efforts focused on the *in-situ* remediation of hydrocarbons would be both lengthy and costly, but not substantially more effective than the on-going natural attenuation of hydrocarbons. Therefore, we concur with the recommendations by SGI that no further active remedial activities be required and that a two-year groundwater monitoring program be implemented. The current groundwater monitoring and sampling program will be expanded to include remediation wells near the former UST to further confirm and monitor the natural degradation of hydrocarbons in the shallow, water-bearing sediments.

Closing

We are requesting, after your review of the attached report, your written concurrence that only Area 4 remains a concern at the site and your approval for the proposed monitoring as described by SGI as the only required task for this site.

As previously discussed, PCC understands that to receive a letter of no further action from your agency, a Covenant and Environmental Restriction on Property (Deed Restriction) will likely be required. PCC will work with the property owner to complete and record such a document as part of the final remedy for the site.

Perjury Statement

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am Mr. Mark E. Detterman, PG, CEG November 30, 2010 Page 4

aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

111

¹ Dave Murray, PCC Flow Technologies, Inc.

Cc: Mr. Scott J. Kaplan, Stoel Rives LLP Marc A. Zeppetello, Barg Coffin Lewis & Trapp, LLP The Source Group, Inc.

INVESTIGATION/REMEDIATION (AREA 4), POST REMEDIATION SAMPLING AND FIRST SEMI-ANNUAL MONITORING REPORT Former PACO Pumps Site 9201 San Leandro Street, Oakland, California

04-PFT-003

Prepared For:

PCC Flow Technologies Holdings, Inc 4600 SE Harney Dr. Portland, OR 97206-0898

Prepared By:



1962 Freeman Avenue Signal Hill, CA 90755

October 8, 2010

Prepared By:

5485 for,

Scott Seipel, P. G., C. HG.

Reviewed By:

E OF CALIF Paul Parmentier, P.G., C.HG.

RED GEO

Paul Parmentier No. 3915

Principal Hydrogeologist

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EXECUTIVE SUMMARY

PCC Flow Technologies (PCC) retained The Source Group (SGI) to conduct groundwater monitoring and implement remedial action at the Area 4 of the former PACO Pumps facility located at 9201 San Leandro Street in Oakland, California. This work was conducted in accordance with SGI's *Remediation Work Plan*, dated October 30, 2009. SGI implemented the additional investigation/remediation at Area 4 (the former underground storage tank location) during April and June 2010, and conducted the first semi-annual groundwater monitoring and sampling event. This report presents the results of additional investigation, remediation, and groundwater monitoring.

Since 1945, the Site was historically used as a manufacturing facility of industrial pumps, tents, and as a foundry and has been used for warehousing and recently for as a plant nursery. Subsurface soil and groundwater conditions have been investigated since the 1980's. These investigations showed that past operation of an underground fuel storage tank may have resulted in releases of petroleum hydrocarbons into the surrounding soil and groundwater.

The site lithology consists largely of clay to a depth of approximately 12 feet, where a gravelly clay zone contains the first encountered water bearing sediments. More clay extends to approximately 23 feet bgs, where deeper water bearing sediments are encountered. Hydrocarbon contamination in soil is concentrated at the edges of a former UST excavation, consisting of hydrocarbons adsorbed to the clayey soil and dissolved in the groundwater. The lateral extent of dissolved hydrocarbon contamination at the site is both limited and laterally defined, with the on-site downgradient monitoring wells containing no detectable hydrocarbons. The deeper groundwater is not impacted by hydrocarbons, as demonstrated by deep grab groundwater samples and samples from wells AS-1D and ASMW-2D. There have been no reported measurements of phase-separated hydrocarbons in wells at the site. The shallow groundwater at the site is not used as a drinking water source.

A gasoline UST was removed in 1992, and is believed to be the source of hydrocarbons present in soil and groundwater in Area 4 of the Site. Following UST removal, petroleum affected soil was excavated from the UST pit and transported off-site for disposal. Access restrictions and slope stability concerns, posed by the adjoining building, limited the amount of hydrocarbon-containing soil and groundwater that could be safely recovered.

In 2009, a remediation work plan was prepared which proposed air sparging, soil vapor extraction, and ozone injection as the remediation approach for the Site. Later that year, SGI reviewed and modified the proposed remedial approach to include dual-phase, high-vacuum extraction (HVDPE) of hydrocarbons present in the shallow vadose zone and shallow water bearing sediments in the vicinity of the former UST excavation. This modified remedial approach included extraction of hydrocarbons from temporary remediation wells to be installed inside the building. After removal of the readily recoverable hydrocarbons, long-term, monitored natural attenuation was proposed as the final site remedy.

A 24-hour, pilot test to evaluate the effectiveness of HVDPE at the Site was conducted in April 2010. The results of this pilot test, which successfully removed 2000 gallons of groundwater with hydrocarbons, indicated that a longer-term remedial action would result in the extraction of additional hydrocarbons.

In June 2010, after installation of 12 extraction wells and an additional (upgradient) groundwater monitoring well, SGI conducted a 10-day, HVDPE event. During the 10 days of dual phase soil vapor and groundwater extraction, 1,590 pounds of hydrocarbons were extracted and captured and 40,920 gallons of groundwater were collected and subsequently shipped off site for treatment. The active extraction of air and water at the site has also provided additional oxygen input to the subsurface, promoting longer term biodegradation of residual hydrocarbons at the site.

Laboratory analytical results of soil vapor samples collected before and after the HVDPE event indicated relatively low concentrations of BTEX and MTBE concentrations in pre-and post extraction samples. These results demonstrate the challenge of effectively treating, in a short time frame, hydrocarbons that have migrated through a longer time period and remain present within a clay soil matrix. Conversely, dissolved-phase concentrations of TPHg and benzene collected before and after the HVDPE exhibited a significant decrease in key wells. These results demonstrate that the overall hydrocarbon mass is limited and concentrated near the source area (the former UST).

The potential health risk to site receptors (commercial workers) posed by the presence of dissolved hydrocarbons was calculated using standard risk models (e.g., the Johnson and Edinger model). This work demonstrated that estimated excess potential cancer risks (6X10⁻⁶) are within the USEPA acceptable risk range of (10⁻⁶ to 10⁻⁴). Based on the results of this evaluation, under current site conditions for the commercial/industrial worker receptor, potential exposure to petroleum hydrocarbons present in the underlying groundwater is not expected to pose an unacceptable human health risk to the commercial/industrial workers in vicinity of Area 4.

Groundwater monitoring has confirmed that the Area 4 dissolved hydrocarbons found in the vicinity of the former USTs are relatively stable, and do not extend offsite. Selected wells from the recently installed remediation wells (installed in immediate vicinity of the former UST) should be added to the groundwater monitoring network to further confirm and monitor the natural degradation of hydrocarbons in this shallow, water bearing clay zone.

Based on the limited air flow and groundwater extraction rates, low hydrocarbon concentrations present in soil, and an adequately delineated, limited benzene plume, any effort focused on in-situ remediation of hydrocarbons would be both lengthy and costly, but not substantially more effective than the on-going natural attenuation of hydrocarbons. The primary source of hydrocarbons (the former UST) has been removed, and significant additional hydrocarbon mass has been removed from the site during the soil removal after UST excavation, and through the recent aggressive dual phase extraction. On this basis, SGI recommends a two-year groundwater monitoring program, expanded to include sampling and monitoring of selected newly installed wells, with no further active remedial action for the Site.

CERTIFICATION

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons whom manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

C. Scott Seipel, P.G. # 7353, CHG #823 Senior Hydrogeologist

1.0 INTRODUCTION

PCC Flow Technologies (PCC) retained The Source Group (SGI) to conduct groundwater monitoring and implement remedial action at the Area 4 of the former PACO Pumps facility located at 9201 San Leandro Street in Oakland, California based on SGI's *Remediation Work Plan*, dated October 30, 2009. SGI implemented the additional investigation/remediation at Area 4 (the former underground storage tank location) during April and June 2010. This report was prepared to describe the results of the investigation/remediation at Area 4 and post-remediation sampling. This report also presents the results of the first Semi-Annual groundwater monitoring.

Subsurface soil and groundwater conditions have been investigated since the 1980's. Levine Fricke, Inc. (LFR) conducted additional investigations and a remediation pilot test in 2009 and recommended site remediation by air sparging, soil vapor extraction and ozone injection. After review of the LFR vapor extraction test data, SGI made alternative recommendations for remediation with the following approach (SGI, October 2009):

- Focused, high vacuum extraction of vadose zone hydrocarbons in the edges of the former UST excavation, including inside the building; and
- Extraction of hydrocarbons from the shallow groundwater zone, followed by natural attenuation.

The remainder of this report is presented as follows:

- Description of site background (Section 2.0);
- Description of 24-hour high-vacuum dual phase extraction (HVDPE) pilot (Section 3.0);
- Description of installation of soil vapor extraction (SVE) wells and one upgradient groundwater monitoring well (Section 4.0);
- Description of HVDPE event (Section 5.0);
- Description of post-remediation monitoring events and Semi-Annual Monitoring (Section 6.0);
- Description of human health risk evaluation (Section 7.0); and
- Description of conclusions and recommendations (Section 8.0).

A list of references is included in Section 9.0.

2.0 SITE BACKGROUND

2.1 Site location and history

The former PACO Pumps facility is located at 9201 San Leandro Street in Oakland, California (the Site, Figure 1). The Site is an approximately 4.6-acre parcel that is generally bounded by: an access road and heavy industrial/manufacturing business to the north; San Leandro Street, Union Pacific Railroad tracks, and elevated Bay Area Rapid Transit (BART) tracks to the east; Union Pacific Railroad tracks and easements for petroleum pipelines to the west; and industrial/warehousing businesses to the south. The surrounding area is a mix of industrial and heavy industrial (manufacturing) use. The western portion of the Site is occupied by a parking lot and a warehouse used for furniture storage. The eastern portion of the Site is occupied by several smaller buildings used as offices and furniture storage.

The Site was historically used as a manufacturing facility since 1945 for industrial pumps, tents, and as a foundry (Jonas & Associates, Inc. [Jonas], October 1991) and has been used for warehousing and recently for medicinal plant growing. The Site is currently owned by 9201 San Leandro LLC. In addition to Area 4, the focus of the remedial tasks described in this report, four areas (Areas 1, 2, 3, and 5) at the site were further addressed in early 2009, and closure of these areas has been requested from the Alameda County Department of Environmental Health (ACDEH). Therefore, the remainder of this report on remedial action focuses on Area 4 only, and the semi-annual groundwater monitoring information addresses groundwater conditions site-wide.

2.2 Previous Site Investigations - Area 4

Site investigations have been conducted at the site since the 1980's and reported to the ACDEH. According to the ERAS (2008) report, a Soil Characterization Report and Work Plan by Jonas dated October 1992 identified the location of a former 550-gallon underground storage tank (UST) located on the southeast side of the Operations Building. According to LFR, the former UST was used for gasoline storage. The UST was reportedly removed prior to a 1992 investigation of the assumed former tank pit area, where gasoline impacted soil was discovered. This former UST location was over excavated in the 1992 investigation and soil was removed from the Site. These activities removed major sources of subsurface contamination, but impacted soil remained near the foundation of the building to the west of the former UST location. Several investigations were completed in the area, including drilling of soil borings inside the building located west of the former UST (B1 and B2).

In 2009, LFR conducted additional investigations and remediation pilot testing. LFR completed 5 soil borings using Membrane Interface Probe (MIP) technology to evaluate the distribution of contaminants in this part of the Site. LFR also collected two shallow groundwater samples (17 to 20 feet below ground surface [ft bgs]), two deep groundwater samples (27 to 30 ft bgs), installed two new groundwater monitoring wells, one shallow and one deep air sparge wells, and three soil

vapor extraction (SVE) test wells. The results of the investigation, as summarized by LFR, indicated that the deeper groundwater did not contain detectable concentrations of petroleum contaminants. Based on the results from additional investigations and a pilot test, LFR recommended remediation by air sparging and SVE, with an estimated design radius of influence of 35 feet in the vadose zone, and an air sparge design radius of influence of 25 feet. In addition to air sparging and SVE, LFR also proposed injection of ozone to accelerate site remediation.

2.3 Summary of Site Conditions – Area 4

The site conditions in Area 4 can be summarized in a simplified conceptual site model as follows:

- A gasoline UST reported to have been removed in 1992 was the likely source of hydrocarbon concentrations in soil and groundwater in Area 4 of the Site. Following UST removal, soil was over excavated and removed around and under the former UST, but residual hydrocarbons remained due to limited access in the area.
- The site lithology appears to consist essentially of clay to a depth of approximately 12 feet, where possibly more gravelly clay contains the first encountered groundwater. More clay extends to approximately 23 ft bgs, where a deeper groundwater zone is found. The dark clay is locally reported to contain organics, and pebbles were noted in some boring logs as rich in calcium carbonate.
- Hydrocarbon contamination in soil is limited to the edges of the former UST excavation, consisting of hydrocarbons adsorbed to the clayey soil. Removal of these hydrocarbons by typical SVE from multiple wells using a central extraction blower is likely to be of very limited effectiveness, and high vacuum extraction is required. Due to the presence of the buildings, additional soil excavation is not possible. The presence of clay also limits the lateral transport of hydrocarbons from the source area.
- Hydrocarbon contamination in groundwater appears to be associated with a gravelly clay layer, noted by geophysical methods during the MIP investigation, although lithologic observations during drilling did not clearly indicate a more permeable zone at a depth of 9-10 ft bgs. The lateral extent of dissolved hydrocarbon contamination at the site is limited, with the on-site downgradient monitoring wells containing no detectable hydrocarbons.
- The upgradient edge of the dissolved hydrocarbon contamination is defined. The deeper groundwater is not impacted by hydrocarbons, as demonstrated by deep grab groundwater samples and samples from the LFR wells AS-1D and ASMW-2D. There have been no reported measurements of phase-separated hydrocarbons in wells at the site.
- Shallow groundwater at the site is not used for beneficial uses (i.e., drinking water).

2.4 Remediation Method

In October 2009, SGI submitted a Remediation Workplan that proposed episodes of high-vapor dual phase extraction rather than construction and operation of a fixed remediation system. In

April, 2010, a 24-hr remedial action pilot test was conducted, and the results indicated that a longer-term remedial action was recommended. In June, after installation of 12 extraction wells and an additional groundwater monitoring well, SGI conducted a 10-day dual phase extraction episode that resulted in the removal of significant hydrocarbon mass and the collection of reliable site contaminant distribution data. Description of field activities and data interpretation are presented in later sections of this report.

3.0 HIGH-VACUUM DUAL PHASE EXTRACTION PILOT TEST

Prior to implementation of the remedial approach, a 24-hour high-vacuum dual phase extraction (HVDPE) pilot test was conducted on April 9 and 10, 2010. The HVDPE pilot test was performed by SGI's subcontractor, CalClean Inc. (CalClean) from Tustin, California. The specific objective of this pilot test was to verify the expected extraction rates from the vadose zone under high vacuum, and to evaluate if the shallow groundwater wells could be pumped dry during short-term extraction.

This initial testing was also expected to provide an estimate of the groundwater extraction rates, which was used as a basis for requesting a site-specific discharge permit into the sanitation district for the subsequent remedial phase.

The pilot test included a 17-hour extraction from well MW-3, followed by several short-term extraction tests of other wells. Access to wells located inside the building (northwest of the former UST) could not be obtained, and monitoring was concentrated on the outdoor wells. As numerous wells were accessible for the test, this is not considered a major data gap for this preliminary test. Extracted vapors were treated using a mobile thermal oxidizer under an approved Bay Area Air Quality Management District air permit Issued to CalClean. The extracted water (approximately 2,000 gallons total) was stored, untreated, in large plastic storage tanks and hauled off-site for treatment and recycling (Appendix A). To reduce cost and potential logistic impacts to on-going site operations, the total amount of water extracted was maintained at about 2,000 gallons. The initial extraction was mainly focused on well MW-3, which is located in the vicinity of the former UST area, screened in the shallow groundwater zone and has a well screen open to the vadose zone. Other wells (AS-1S, ASMW-2S, SVMW-2 and SVE-1) were then individually hooked up for extraction and vapor samples were collected from each of these wells. Selected monitoring data from saturated and vadose zones are summarized in Tables 1A and 1B, respectively. Laboratory analytical results of vapor-phase hydrocarbon concentrations are summarized in Table 1C.

3.1 Test Results – Saturated zone

- Groundwater extraction from well MW-3 at an average rate of 1.7 gallons per minute (gpm) caused a drawdown (deepening of water levels) in all groundwater monitoring wells, including the deeper monitoring wells, and deeper air sparge test. This observation indicated that the apparent shallow groundwater zone is in hydrogeologic communication with the deeper groundwater, essentially acting as a single groundwater zone, and that extraction from shallow wells is likely to induce flow from deeper wells, and therefore full dewatering of the upper part of the groundwater zone may require significant water extraction rates.
- The observed drawdown in wells 10 feet and 27 feet away from the extraction well ranged from 0.3 to 0.5 feet (Table 1A)

3.2 Test Results - Vadose zone

- Vapor extraction from well MW-3 induced a vacuum in the surrounding vadose zone. Measurement of the vacuum response in nearby wells was conducted on an hourly basis. Note that only the pressure data in the wells with open screens in the vadose zone are indicative of vadose zone effects. The data indicate a very small (0.00 to 0.03 inches of water) vacuum response in wells SVE-1 and SVMW-2, located at 10 and 27 feet respectively, from the extraction well. These very low values confirm that the vadose zone has limited air flow permeability, and that a relatively dense network of extraction points may be required to address vadose zone hydrocarbon contamination.
- Vapor analytical results indicate higher contaminant concentrations near the western cluster of wells than in the vicinity of well MW-3. As the samples from the western wells were collected from wells communicating with groundwater, the reported concentrations may reflect dissolved-phase hydrocarbon concentrations, and may be due to downgradient migration of contamination. Nevertheless, this observation indicated that more extraction points will need to be located west/southwest of well MW-3.

Based on logistic site conditions and results from this pilot test, SGI concluded that significant hydrocarbon mass could be recovered from the site by a mobile dual phase extraction (DPE) system, rather than a semi-permanent treatment system requiring considerable disturbance to the Site associated with installation of subsurface conveyance piping and subsequent site visits for system operation and maintenance. SGI also recommended installation of 12 extraction wells (E-1 through E-12) and a groundwater monitoring well (MW-8), southeast of the former tank pit. Because dewatering of the shallow groundwater zone was expected to increase the lateral reach of extraction, it was recommended that an initial set of 12 extraction points be installed, followed by additional wells if deemed necessary at a later date. In addition, based on the shallow water levels and thin vadose zone, SGI recommended that all extraction points be built as single 18 foot deep wells to allow for both groundwater and vapor extraction.

4.0 INSTALLATION OF EXTRACTION WELLS AND UPGRADIENT GROUNDWATER MONITORING WELL

4.1 **Pre-field Activities**

Prior to initiation of field activities, the proposed drilling locations were pre-marked with white paint and Underground Service Alert (USA) was notified to identify any potential subsurface utilities. USA then contacted appropriate utility members with underground utilities near the Site that may have been in conflict with our proposed drilling activities. No conflicts were encountered. Well installation permits were obtained from the Alameda County Public Works Agency Water Resources Section and copies are included in Appendix B. A site-specific Health and Safety Plan (HASP) was prepared for the field activities in accordance with OSHA regulations 29 CFR 1910.120. SGI personnel, as well as all other onsite subcontractors and regulatory personnel, were required to familiarize themselves with and sign the HASP in an attempt to minimize safety hazards. The HASP was signed each day by all appropriate personnel, and remained onsite at all times during drilling activities.

4.2 Well Installation

From June 9 to 11, 2010, SGI's subcontractor, WDC Exploration & Wells from Richmond, California, installed 12 dual phase extraction (DPE) wells, E-1 through E-12, and one groundwater monitoring well, MW8. The 12 two-inch diameter DPE wells were installed near the former UST excavation and downgradient of the former UST excavation, inside the adjacent building. The four-inch diameter monitoring well, MW-8, was installed upgradient of the former UST excavation near the southern fence at the site. The locations of these wells are presented in Figure 2. The DPE well locations were chosen to enhance the network of wells that could be used for soil vapor and groundwater extraction in the areas assumed to be most impacted by petroleum hydrocarbons.

Groundwater monitoring well MW-8 was installed to define the upgradient extent of the hydrocarbon groundwater plume.

Prior to advancing the soil borings to install the monitoring wells, each well location was hand augured at the diameter of the down-hole equipment to a depth of 5 ft bgs. Each boring was then advanced to a total of 18 ft bgs, using 8-inch (E-1 through E-12) or 10-inch (MW-8) hollow-stem augers. The indoor wells were installed using a limited-access rig. Wells E-1 through E-12 were constructed using 2-inch diameter schedule 40 polyvinyl chloride (PVC) well casings and screened with 10 feet of 0.010-inch machined slot screen. Well MW-8 was constructed using a 4-inch diameter schedule 40 PVC casing. Each well was screened from 8 to 18 ft bgs with a filter pack of #2/12 Monterey sand filled in the annular space from 6 to 18 ft bgs. Two feet of hydrated bentonite was placed above each filter pack. Neat cement-grout was then placed above the bentonite to the surface. Wells were completed with traffic-rated vault boxes set in concrete. Soil was logged by visual observations of the soil cuttings. Boring logs and well construction diagrams are included in

Appendix C. Field observations indicated the presence of hydrocarbons in soil, with strong odors noted in some borings near the former UST excavation. Soil matrix samples were collected during well installation as described in the following section.

4.3 Soil Matrix Sampling and Analyses

Soil samples from locations E-1 through E-12 were collected at a depth where it appeared that hydrocarbon impacts were first noted during drilling, generally between 9 to 10 ft bgs, which corresponds to the depth to groundwater. One soil sample was collected from MW-8 near the bottom of the hole at 17 ft bgs. No visual hydrocarbon impacts were noted during advancement of this soil boring.

Soil samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method 8260B, total petroleum hydrocarbons as gasoline (TPHg) and total petroleum hydrocarbons as diesel (TPHd) using EPA Method 8015 modified. A total of thirteen soil samples were submitted to Curtis and Tomkins Laboratory of Berkeley, California (an ELAP certified laboratory) for chemical analysis. Soil analytical results are summarized in Table 2 and a copy of the laboratory report is included in Appendix D.

The highest concentrations of TPHg were detected in soil in E-1, E-4, E-10 through E-12, located in the immediate vicinity of former tank pit, with the highest concentration of 690 milligrams per kilogram (mg/kg) in E-1. Trace levels of benzene were detected in wells E-4, E-9, and E-10 ranging from 0.018 to 0.1 mg/kg. Trace levels of toluene, ethyl benzene, and xylenes were also detected in selected wells. TPHd was reported above detection limits with a 'flagged' concentration to note that the soil samples exhibited chromatographic patterns which did not resemble standards used by the laboratory. No MTBE or other fuel additives were detected in any of the samples.

As shown on Figure 4, soil samples collected from locations beyond the immediate vicinity of the former tank pit were reported to contain no detectable or trace levels of TPHg, indicating that the lateral extent of adsorbed hydrocarbons is limited.

4.4 Well Development

Between June 14 and 16, 2010, Gregg Drilling from Martinez, California, mobilized to the Site to develop wells E-1 through E-12 and MW-8. Prior to development, wells were monitored for dissolved oxygen (DO) and oxidation-reduction potential (ORP) using a YSI 556 meter equipped with a down-hole cable. The wells were developed by surging, swabbing, and purging 10 well casing volumes. During well development, groundwater parameters including specific conductivity, temperature, and pH were monitored. These parameters were allowed to stabilize prior to terminating development. Once development was completed, DO and ORP were monitored a second time. The well development information is included in Appendix E.

4.5 Well Survey

The newly installed 12 DPE wells (E-1 through E-12) and one groundwater monitoring well (MW-8) were surveyed on June 30, 2010, by Virgil Chavez Land Surveying from Vallejo, California. The latitude, longitude, and coordinates for top of casing are based on the California State Coordinate System Zone III (NAD83). A copy of the well survey report is included in Appendix F.

5.0 HIGH-VACUUM DUAL PHASE EXTRACTION EVENT – TEN DAYS

Based on the recommendations from pilot test results, a ten-day HVDPE event was conducted at the Site by CalClean from June 16 to 25, 2010. The objective of this short-term extraction event was to:

- Extract hydrocarbons simultaneously from the vadose zone, capillary fringe, and saturated zone; and
- Evaluate the effect on the removal rates from the induced groundwater drawdown.

During this event, hydrocarbons vapors were extracted by the HVDPE system from selected wells among E-1 through E-12, MW-3, ASMW-2S, and SVE-1, with the wells being extracted individually or in combination. Based on the observed limited reductions in concentrations after 10 days, the extraction was changed from extraction from the wells near MW-3 to rotating extraction from the other extraction wells for sampling, and the removal was then halted.

Prior to commencing the June HVDPE event, baseline soil vapor and groundwater samples were collected from selected wells to represent site conditions on June 16, 2010. These initial samples were then duplicated after the ten-day HVDPE extraction event to evaluate the effect of the extraction. The pre-extraction sampling event, HVDPE event, and post-extraction sampling are described in the following sections. Post extraction groundwater samples from Site source area wells were collected on August 10, 2010 and are described in Section 6.0.

5.1 Pre-Extraction Sampling

Prior to commencing the short-term HVDPE event, baseline soil vapor and groundwater samples were collected on June 16, 2010. All baseline soil vapor samples were submitted to Associated Laboratories in Orange, California and analyzed for TPHg, BTEX, and MTBE. Baseline groundwater samples were submitted to Curtis and Tompkins Laboratory in Berkeley, California and analyzed for TPHg, BTEX, fuel oxygenates (MTBE, TAME, TBA, ETBE, DIPE) and lead scavengers (1,2-DCA, EDB).

5.1.1 Soil Vapor

Soil vapor samples were collected from wells E-1 through E-3, E-7, E-10, E-11, SVE-1, MW-3, and ASMW-2S by CalClean personnel at the start of the HVDPE event by evacuating the well using a small electric pump and collecting a soil vapor sample into a tedlar bag. TPHg, BTEX, and MTBE were detected in all samples, with generally in low concentrations except in the vicinity of the former UST (Figure 4).

The maximum concentrations of TPHg, BTEX, and MTBE were detected in well SVE-1, located near the former UST. In SVE-1, TPHg and benzene were detected at 13,200 and 194 μ g/L. Soil gas samples from the three most westerly wells (E-2, E-3, and E-7) contained less than 10 μ g/L benzene.

5.1.2 Groundwater

Pre-extraction groundwater samples were collected by SGI personnel from wells E-1, E-2, E-7, E-11, and E-12 by hand-bailing 2 to 3 bailers from each well, and collecting a grab groundwater sample. TPHg and BTEX were detected in all samples, with highest concentrations near the former UST, in well E-1, with, TPHg and benzene detected at 36,000 and 3,200 micrograms per liter (μ g/L), respectively (Figure 5).

The concentrations in the two downgradient wells sampled (E-7 and E-2) indicated a rapid decrease in dissolved benzene concentrations downgradient from the tank pit, at 100 and 5 μ g/L respectively.

5.2 High-Vacuum Dual phase extraction Event

Following collection of baseline samples, CalClean commenced HVDPE system operation on June 16, 2010. During extraction, field measurements of vapor flow rates and vapor concentrations were recorded. Extraction rates of groundwater and depth-to-water in groundwater monitoring wells were also recorded to evaluate the effect of extraction. Initial soil vapor concentrations were measured after ten minutes of operation. The influent soil vapor concentration measured after 3.5 hours of system operation on June 16, 2010 was 15,530 parts per million by volume (ppmv), and this influent concentration declined during the first week of operation to 2,310 ppmv, as measured on June 23, 2010. Full-time extraction was conducted from wells MW-3, SVE-1, ASMW-2S, E-9, E-11, and E-12 until June 22, 2010. Extraction was then moved between wells E-1, E-3, E-4, E-5, E-7, E-9 through E-11, MW-3, and ASMW-2S from June 22 to 24, 2010, and vapor concentrations increased during this time (7,980 ppmv on June 23 and 7,460 ppmv on June 24, 2010), and declined to 5,440 ppmv on the last day of HVDPE operation (June 25, 2010). Extraction was conducted from wells MW-3, ASMW-2S, E-4, and E-10 during the last two days of operation, June 24-25, 2010.

The volume of extracted air from the wells was relatively low, requiring significant dilution of vapor flow from the wells with ambient air, to maintain vapor combustion and compliance with air quality permit. A summary of the HVDPE system operational/monitoring data and field data sheets are presented in Appendix G. Approximately 1,590 pounds of hydrocarbons were recovered during this short-term extraction event and treated by the mobile HVPDE system. Extraction rate of groundwater during this short-term HVDPE ranged from 2.23 to 4.77 gallons per minute (gpm) and appeared to be sustained within 2.5 to 3.5 gpm. Approximately, 40,920 gallons of groundwater was extracted, treated on-site, and discharged into the sanitary sewer, under a site-specific permit obtained by CalClean from the East Bay Municipal Utility District.

5.3 Post-extraction Sampling

Post-extraction samples were collected after the ten-day HVDPE extraction event to evaluate the effect of extraction. Post-extraction soil vapor samples were collected on June 25, 2010. Post-extraction groundwater samples were collected on June 30, 2010. Post-extraction soil vapor

samples were submitted to Associated Laboratories in Orange, California and analyzed for TPHg, BTEX, and MTBE. Post-extraction groundwater samples were submitted to Accutest Laboratories in San Jose, California and analyzed for TPHg, BTEX, fuel oxygenates (MTBE, TAME, TBA, ETBE, DIPE) and lead scavengers (1,2-DCA, EDB).

Post-extraction groundwater samples also included the samples collected as part of the semiannual groundwater monitoring at the site, conducted on June 28, 2010, and selected samples collected after an additional approximate one-month "rebound" period on August 10th, 2010.

5.3.1 Soil Vapor

As summarized in Table 4, the laboratory analytical results of soil vapor samples collected from selected wells before (June 16, 2010) and after (June 25, 2010) the HVDPE event indicate relatively low concentrations of BTEX and MTBE concentrations and no significant changes in preand post-extraction concentrations were observed for these compounds. Operation of HVDPE system increased the concentrations of TPHg in five wells (E-2, E-3, E-7, E-10, and E-11), and decreased in three wells (MW-3, E-1, and ASMW-2S).

5.3.2 Groundwater

As summarized in Table 5, dissolved-phase concentrations of TPHg collected pre- and postextraction indicate a significant decrease in wells E-1, E-11, and E-12. As shown on Figure 5, benzene concentrations decreased significantly in wells E-1 (3,200 to 11.7 μ g/L) and E-11 (1,800 to 268 μ g/L).

To further evaluate the effect of HVDPE operation, dissolved-phase concentrations of benzene from selected samples (MW-3, MW-6, AS-1S, and ASMW-2S) collected before the HVDPE event (second semiannual 2009 groundwater sampling on November 6, 2009), after the HVDPE event (first semiannual 2010 groundwater sampling on June 28, 2010; discussed in Section 6.0), and from the sampling on August 10, 2010, were reviewed. The data indicate a significant decrease in benzene concentrations in all these wells since the HVDPE event.

6.0 FIRST SEMI-ANNUAL GROUNDWATER MONITORING (JUNE 2010) AND ADDITIONAL GROUNDWATER SAMPLING IN AUGUST 2010

The first semi-annual sampling at the Site was conducted in June after completion of the extraction. In addition to sampling the new groundwater monitoring well (MW-8) in the vicinity of Area 4, all groundwater monitoring wells from the previous monitoring events were also sampled. The 12 extraction wells installed in June 2010 for remediation represent a localized area near the former UST in Area 4, and were not integrated into the site-wide groundwater monitoring network.

6.1 First Semi-Annual Groundwater Monitoring

SGI's subcontractor, Blaine Tech Services Inc. of San Jose, CA, conducted the site-wide, first semiannual 2010 groundwater monitoring and sampling event on June 28, 2010. Twelve groundwater monitoring wells (MW-1 through MW-8, AS-1S, ASMW-2S, AS-1D, and ASMW-2D) were gauged and sampled. Field records of monitoring are included in Appendix H.

6.1.1 Groundwater Gauging and Sampling

Depth to water levels ranged from 8.05 to 10.30 feet below the top of well casings and groundwater elevations ranged from 7.76 to 11.32 feet above mean sea level (MSL). Well MW-7 was not accessible and no gauging data was measured during this event. As shown on Figure 6, the groundwater flow direction is towards the west with a gradient of approximately 0.007 feet per foot (ft/ft). This groundwater gradient is similar to previous findings, and indicates that the new well MW-8 constitutes an appropriate upgradient well for the former UST area. Current and historical depth to water and groundwater elevations are presented in Table 6.

Prior to sampling, three well volumes were purged from each well using a vacuum truck and dedicated stingers. During purging, water parameters including pH, temperature, conductivity, and turbidity were monitored and recorded. Copies of field data sheets are included in Appendix H. At the end of purging, groundwater samples were collected using a disposable bailer equipped with a bottom-emptying device. Samples were decanted into appropriate containers provided by the laboratory. The containers were capped, labeled, placed on ice, and transported to Accutest Laboratories in San Jose, California for analysis of TPH-g, BTEX, oxygenates, 1,2-dichloroethane (1,2-DCA), ethylene dibromide (EDB) by EPA Method 8260, and TPH-d by EPA Method 8015. A laboratory-supplied trip blank was also included with the well samples. Purged groundwater generated during this event was transported to the DeMenno Kerdoon facility in Compton, CA, for recycling/disposal under a separate manifest, included in Appendix A.

6.1.2 Shallow Groundwater Analytical Results

The laboratory results of semi-annual sampling are included in Appendix D, and the results are listed on Table 7 along with historical results. Figure 7 illustrates the distribution of dissolved TPHg, TPHd and benzene in groundwater wells at the site. The highest concentration of TPHg was detected in well MW-3 at 22,200 μ g/L (31,000 μ g/L in the duplicate sample). Since the previous

sampling event on November 6, 2009, TPHg concentrations have decreased in wells AS-1S (3,800 μ g/L to 1,630 μ g/L), ASMW-2S (18,000 μ g/L to 8,330 μ g/L), and MW-6 (4,500 μ g/L to 3,810 μ g/L). TPHg was also detected in well MW4 at 186 μ g/L (previously not detected in November 2009). TPHd was detected in seven samples with concentrations ranging from 53.4 μ g/L (J-flag) to 699 μ g/L (722 μ g/L in the duplicate sample), with the highest concentration detected in well MW-3. Since the previous sampling event on November 6, 2009, TPHd concentrations have decreased in wells MW-2, MW-6, AS-1S, and ASMW-2S.

The highest concentrations of BTEX compounds were detected in well MW-3. Since the previous sampling event on November 6, 2009, benzene concentrations have decreased in wells MW-3 (3,400 μ g/L to 1,740 μ g/L), ASMW-2S (4,700 μ g/L to 416 μ g/L), MW-6 (1,300 μ g/L to 484 μ g/L), and AS-1S (950 μ g/L to 202 μ g/L). As discussed in other sections of this report, these decreases in benzene concentrations are likely due to the June 2010 remedial action. Benzene concentrations slightly increased in well MW-4 from 4.0 μ g/L in November 2009 to 12.3 μ g/L in June 2010. MTBE was detected at low or trace concentrations in wells AS-1S, MW-7, and MW-8. The dissolved phase TPHg and BTEX concentrations do not extend offsite.

In June 2010, 1,2-DCA was detected above detection limits in two wells, MW6 and AS-1S, at 20.8 and 3.1 μ g/L, respectively. Laboratory analytical results are summarized in Table 7 and copies of laboratory reports are included in Appendix D. TPHg and benzene concentrations are also shown on Figure 7, and this figure confirms previous findings that the hydrocarbon concentrations rapidly decrease downgradient from the former UST area.

6.1.3 Deep Groundwater Analytical Results

Two deep groundwater samples were collected from wells AS-1D and ASMW-2D. No chemicals were detected above the detection limits in either sample, confirming previous findings that the deeper groundwater zone has not been impacted.

6.2 August 10, 2010 Groundwater Sampling

SGI conducted an additional post-remediation groundwater monitoring and sampling event on August 10, 2010. Four groundwater monitoring wells (MW-3, MW-6, AS-1S, ASMW-2S) were gauged and sampled.

After purging of 3 bailer volumes from each well, groundwater samples were collected using a new disposable bailer equipped with a bottom-emptying device The containers were capped, labeled, placed on ice, and transported to Curtis and Tompkins Laboratory in Berkeley, California for analysis of TPH-g, BTEX, oxygenates, and 1,2-dichloroethane (1,2-DCA), ethylene dibromide (EDB) by EPA Method 8260B. A laboratory-supplied trip blank was also included with the well samples. Purged groundwater generated during this event has been stored on-site in a drum, pending transport and disposal.

The data indicate that even after more than a month of rebound / equilibration time, the dissolved benzene concentrations in wells MW-3, MW-6, ASMW-2S and AS-1S remain at concentrations significantly lower than initial concentrations.

Laboratory analytical results are summarized in Table 5 and Table 7, and copies of laboratory reports are included in Appendix D.

7.0 HUMAN HEALTH RISK EVALUATION

This human health risk evaluation was prepared to quantify potential exposures associated with the onsite warehouse/building in Area 4 (the former underground storage tank location) in order to identify the need for, and the possible extent of, remediation or engineering solutions to adequately protect human health. Under current site conditions, (1) direct contact with soil is prevented by the concrete cover and (2) groundwater will unlikely be used as a drinking water source or for other beneficial uses (Section 7.1). Currently, no point of direct contact with groundwater was identified for the Site. Therefore, this human health risk evaluation focuses on evaluating indirect exposure to contaminants in the subsurface via indoor air exposures.

The chemicals of potential concern (COPCs) include volatile organic compounds (VOCs), which can be released from the subsurface (i.e., volatilize) into ambient air resulting in an indirect exposure to contaminants in the subsurface. In the absence of soil gas data from specific soil gas sampling probes, exposure points associated with indirect contact with groundwater were used in the evaluation of potential indoor air impacts. The soil gas data obtained as part of the monitoring data during remediation were collected from remediation wells that included a screened section open to the vadose zone, rather than from depth-specific soil gas probes. It should be noted that the soil gas concentrations measured in the wells that were installed for remediation were low (Figure 4).

The site areas that would be expected to be potentially impacted from subsurface vapors are located downgradient from the source area, the former UST. Vapors that could impact indoor air would be expected to volatilize from groundwater that has migrated from the source area, rather than from contaminated soil, since the source area (with significant previous removal), is located upgradient and not directly under the occupied indoor work spaces.

Therefore the potential vapor volatilization that would affect indoor air would be expected to be caused from volatilization from groundwater, and evaluation of vapor intrusion risk from VOCs in groundwater is an approved method.

The DTSC-recommended Johnson and Ettinger vapor intrusion model (CalEPA, 2009) was used to estimate vapor concentrations in indoor air directly from groundwater. Using model supplied equations, exposure factors, and toxicity values, the model estimates the hazard index and excess cancer risk for each COPC.

The remainder of this section focuses on evaluating indoor air exposures associated with the onsite warehouse/building in Area 4 (the former underground storage tank vicinity) and is presented as follows:

- Exposure Setting and Land Use;
- Data Evaluation;
- Exposure Assessment;
- Toxicity Assessment;

- Risk Characterization;
- Uncertainty Analysis; and
- Summary of Results.

7.1 Exposure Setting and Land Use

The former PACO Pumps facility is an approximately 4.6-acre parcel located at 9201 San Leandro Street in Oakland, California. The Site was historically used as a manufacturing facility since 1945, and as a foundry (Jonas & Associates, Inc. [Jonas], October 1991) and is now used for warehousing and other commercial uses. The western portion of the Site is occupied by a parking lot and a warehouse used for furniture storage. The eastern portion of the Site is occupied by several smaller buildings used as offices and furniture storage. The Site is generally bounded by a mix of industrial and heavy industrial (manufacturing) use and transportation tracks (i.e., BART and Union Pacific Railroad).

The 4.6-acre Site is generally paved with concrete or asphalt. The warehouse in Area 4 is currently used for storage and other commercial operations. Employees work inside this warehouse area. The building has several roll-up doors and the flooring consists of concrete slab-on-grade construction.

Based on the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) (CRWQCB, 1995), groundwater beneath the Site is part of the East Bay Plain basin, which has beneficial uses for municipal and domestic drinking water supply, industrial process and service water supply, and agricultural water supply. However, East Bay Municipal Utility District (EBMUD) provides water for these uses to the Site and vicinity from Sierra-fed surface-water sources, and development of the shallow water-bearing zones beneath the site for beneficial uses is a remote possibility due to uneconomically low, sustainable well yields, and the presence of regional contamination (e.g., coliform from leaking sanitary sewer lines, unrelated chemical plumes), and presence of more productive water-bearing zones at depth (CRWQCB, 1999). In addition, State regulations require sealing of at least the upper 50 feet of subsurface for public/industrial water supply wells (Department of Water Resources, 1991). Therefore, groundwater will unlikely be used as a drinking water source or for other beneficial uses. Therefore, no point of direct human contact with groundwater was identified for the hypothetical receptors at the Site.

7.2 Data Evaluation

As discussed in Section 5.0 and 6.0, soil vapor and groundwater data have been collected at the Site. For the purposes of evaluating the effectiveness of the HVDPE event, soil vapor data was collected during the HVDPE event by evacuating the well using a small electric pump and collecting a soil vapor sample into a tedlar bag. This sampling method is appropriate for evaluation of remediation by vapor extraction, but does not provide specific soil gas concentrations, therefore the soil gas data were not used directly to estimate indoor air concentrations for risk assessment purposes. Groundwater data was collected during the recent additional investigation/remediation event in Area 4 (the former underground storage tank location). Following guidance documents,

the groundwater data coupled with the Johnson and Ettinger vapor intrusion model (CalEPA, 2009) was used to evaluate potential indoor air impacts.

To evaluate current conditions, the most recent groundwater data collected on August 10, 2010 from wells MW-3, MW-6, AS-1S, and ASMW-2S were used (Table 8). These wells are located near the former UST excavation. Groundwater monitoring well MW-6 is located inside the onsite warehouse/building adjacent to the former UST excavation area. Wells MW-3, AS-1S, and ASMW-2S are located outside the onsite warehouse/building adjacent to the former UST excavation area. The groundwater sample locations are shown on Figures 4 and 7. The groundwater samples were analyzed for TPH-g, BTEX, oxygenates, and VOCs. In addition to TPH-g, eleven VOCs were detected in one or more groundwater samples.

7.3 Exposure Assessment

This section describes the methods used to estimate exposures for potential human receptors at the Site. The exposure assessment provides a scientifically defensible basis for the selection of potentially exposed hypothetical human receptors and the most likely ways they might be exposed to chemicals at the Site. As mentioned previously, this human health risk evaluation focuses on evaluating potential indoor air exposures associated with the onsite warehouse/building.

As defined by USEPA (1989), all of the following four components are necessary for a chemical exposure pathway to be considered complete and for chemical exposure to occur:

- A chemical source and a mechanism of chemical release to the environment;
- An environmental transport medium (e.g., groundwater) for the released chemical;
- A point of contact between the contaminated medium and the receptor (i.e., the exposure point); and
- An exposure route (e.g., inhalation of chemically-impacted vapors in indoor air) at the exposure point.

The following sections describe these components.

7.3.1 Chemical Release Mechanisms and Identification of Transport Media

In this section, the first two components necessary for a complete exposure pathway are addressed. As discussed in Section 7.2, the COPCs include VOCs. These chemicals typically have a low organic-carbon partition coefficient (K_{oc}), a low molecular weight, and a high Henry's Law constant, indicating that these chemicals may volatilize. Therefore, volatilization of VOCs is evaluated in this human health risk evaluation.

7.3.2 Potential Exposure Points

The third component necessary for an exposure pathway to be complete is a point of contact between the contaminated medium and the receptor (i.e., the exposure point). For the volatilization pathway into indoor air (CalEPA, 2005b), exposure to subsurface contamination can

be characterized through the collection of groundwater samples. For indoor air exposures, the exposure point for vapor from groundwater is defined as Area 4 (warehouse and former underground storage tank location).

7.3.3 Potential Human Receptors and Exposure Pathways Considered Potentially Complete and Significant

In addition to exposure points, potential human receptors at Area 4 are necessary for an exposure pathway to be complete. The fourth and final component, a complete exposure pathway (i.e., route of exposure) is discussed in combination with the third component (i.e., presence of receptors) to define those exposure pathways considered to be complete and significant. Based on the current land use at Area 4 including an onsite warehouse/building, the indoor commercial/industrial worker receptor was evaluated. This receptor is a long-term receptor (i.e., greater than 7 years [USEPA, 1989]) and is assumed to represent a full-time employee that spends 250 days per year at work for 25 years. This receptor spends the entire workday indoors performing light work duties and has limited to no direct contact with outdoor media. Although inhalation of outdoor air may be complete, outdoor air concentrations are typically lower than indoor air concentrations due to dispersion; such relatively minor exposures are subsumed by the assumption that all exposure is from indoor air. The exposure pathway assumed to be complete and significant for the hypothetical indoor commercial/industrial worker receptor includes inhalation of vapors in indoor air generated from the subsurface.

7.3.4 Selection of Chemicals of Potential Concern

Typically only the most toxic, persistent, and prevalent site-related chemicals detected at a site are fully evaluated in a risk assessment. In this way, the HHRA can focus solely on those chemicals that are expected to account for the majority of the estimated health impacts. These selected chemicals are known as COPCs. In order to provide a conservative and more complete characterization of potential risks associated with exposures at the site, all detected VOCs were retained as COPCs.

Although TPH-g was detected in all the groundwater samples, the evaluation of its components most likely to reflect risk (i.e., benzene, toluene, ethylbenzene, xylenes [BTEX], and naphthalene) is included in this risk evaluation. MTBE and other fuel oxygenates were not detected in the groundwater samples. It is unlikely that other less toxic components of the TPH mixtures will drive the overall risk at the Site; therefore, TPH mixtures were not evaluated further in this risk assessment as the most toxic components of TPH were included in the risk evaluation.

7.3.5 Estimating Exposure Point Concentrations

The exposure point concentration (EPC) represents the amount of a chemical to which a hypothetical receptor is assumed to be exposed. Consistent with USEPA (1989) procedures, when evaluating a reasonable maximum exposure (RME) scenario the lesser of the maximum detected concentration and the 95-percent upper confidence limit of the mean (95UCL) is typically

selected as the appropriate source EPC or starting concentration for modeling. However, due to limitations in the datasets (i.e., limited number of samples), a 95UCL could not be estimated for the COPCs in groundwater. Therefore, the maximum detected concentration during the August 2010 sampling event was conservatively used as the EPC. For indirect exposure pathways (i.e., inhalation), measured concentrations of volatile chemicals in groundwater were used as starting concentrations that were coupled with mathematical models to estimate COPC concentrations in indoor air. The Johnson and Ettinger (1991) model, recommended by the DTSC (CaIEPA, 2005 and 2009), was used for estimating vapor emissions from groundwater to indoor air. The conceptual approach to modeling indoor air concentrations, the model inputs used, and the model outputs are presented in the following section. The EPCs for groundwater and indoor air are presented in Table 9.

7.3.6 Vapor Intrusion Modeling

The modeling addresses chemical sources in groundwater under current conditions. Specifically, the modeling includes calculations for volatilization of chemicals from groundwater, migration of vapors to the soil surface, and mixing with indoor air for the indoor commercial/industrial worker receptor. Volatile compounds can be released from the subsurface into indoor air resulting in an indirect exposure to contaminants in the subsurface.

Using the CalEPA (2009) version of the Johnson and Ettinger (1991) model, vapor concentrations in indoor air from groundwater were estimated for the indoor commercial/industrial worker receptor. This model estimates vapor concentrations in indoor air directly from source vapor concentrations, accounting for advection and diffusion in the vadose zone and building foundation and mixing in the building interior.

Vapor emissions were modeled for the Site using source concentrations from groundwater (C_{gw}) (Table 9). Source concentrations in groundwater (i.e., groundwater EPCs) represent the maximum detected concentration. The resulting modeled indoor air EPCs are presented in the same tables referenced above.

During the drilling leading to the HVDPE event, site-specific subsurface soil properties were not evaluated at the Site. Previously, on January 31, 1997, a soil sample (B1) was collected at approximately 5.5 ft bgs and analyzed for bulk density, porosity, organic content, and moisture (Jonas, 1997, Appendix I). This soil sample was collected beneath the onsite warehouse/building near the former UST excavation. There has not been any re-development in this area; therefore, this soil sample should accurately reflect subsurface conditions, and the physical soil properties from the B-1 soil sample collected at 5.5 ft bgs were used for this risk assessment. The soil dry bulk density for soil sample B-1 collected at 5.5 ft bgs is 95.4 pounds per cubic foot or 1.53 grams per cubic centimeter (g/cm³). The total porosity for soil sample B-1 was 0.428. The water-filled porosity is the portion of the total porosity containing water. This value can be calculated at the product of the moisture content of a soil times the dry bulk density. The moisture content for soil sample B-1 was 25.3-percent (%); therefore, the water-filled porosity is 0.387.

As discussed in Section 4.0, 12 dual phase extraction wells were installed and logged by visual observations of the soil cuttings. The soil boring logs are included in Appendix C. Based on the visual observations, soil encountered was consistently clay, similar to findings during previous investigations at the site. Therefore, a soil type of clay was used in the vapor intrusion model.

Default chemical properties supplied by the vapor intrusion model (CalEPA, 2009) were used for the dimensionless Henry's Law constant, organic carbon-water partition coefficient (K_{oc}), and molecular diffusion coefficients in air and water, D_i and D_{w} , for each COPC.

The following table summarizes the soil and building properties input into the Johnson and Ettinger model (CalEPA, 2009) for vapor migration from groundwater to indoor air.

Equation Variables – Vapor Migration from Groundwater to Indoor Air		
Properties	Symbol	Assumed Value
Depth Below Grade to Bottom of Enclosed Space Floor (default)	L _F	15 cm
		274 cm
Depth Below Grade to Water Table	L _{WT}	(9 feet)
SCS Soil Type Directly Above Water Table		Clay (C)
Average Soil/Groundwater Temperature (default)	Ts	24°C
Average Vapor Flow Rate into Building (default)	Q _{soil}	5 L/min
Vadose Zone Soil Vapor Permeability (default)	kv	1.00E-08 cm ²
Vadose Zone SCS Soil Type		Clay (C)
Vadose Zone Soil Dry Bulk Density	ρь	1.53 g/cm ³
Vadose Zone Soil Total Porosity	θ_{T}	0.428
Vadose Zone Soil Water-Filled Porosity	θ_w	0.387
Averaging Time for Carcinogens	ATc	70 years
Averaging Time for Noncarcinogens	AT _{NC}	25 years
Exposure Duration	ED	25 years
Exposure Frequency	EF	250 days/year

7.4 Toxicity Assessment

Toxicity values are combined with exposure factors to estimate adverse noncancer health effects and excess cancer risks. Toxicity values include inhalation reference concentrations (RfCs) and inhalation unit risk factors (URFs). Toxicity values supplied by the model (CalEPA, 2009) were used.

7.5 Risk Characterization

The risk characterization process incorporates data from the exposure and toxicity assessments to estimate noncancer adverse health effects and excess cancer risks. To estimate noncancer effects, the chronic daily intake is divided by the RfC. The resulting value is referred to as a hazard quotient (HQ). Exposures to multiple chemicals were evaluated by summing the HQs for each COPC, resulting in a hazard index (HI). A HI less than or equal to 1 indicates that no adverse noncancer health effects are expected to occur (USEPA, 1989). Consistent with USEPA (1989)

risk assessment guidelines, carcinogenic effects are typically evaluated by multiplying the URF by the chronic daily intake averaged over 70 years to estimate lifetime excess cancer risk. The resulting values are referred to as excess cancer risks. These potential excess cancer risks are compared to the USEPA acceptable risk range of one-in-one-million (1×10^{-6}) to one-in-ten thousand (1×10^{-4}) .

Using exposure factors and toxicity values supplied by the Johnson and Ettinger vapor intrusion model (CalEPA, 2009), that model estimates the hazard index and excess cancer risk for each COPC. The results based on groundwater data are presented in Table 9. The spreadsheets containing the results of the Johnson and Ettinger (1991) model, for subsurface vapor intrusion into buildings (CalEPA, 2009) from groundwater are presented in Appendix J.

7.6 Uncertainty Analysis

Although many factors can contribute to the potential for over- or underestimating risk, a mixture of conservative and upper-bound input values were identified to estimate potential exposures. Compounding conservative and upper-bound input values in the risk assessment process is intended to yield maximum, health-conservative estimates. Quantifying uncertainty is an essential element of the risk assessment process. According to the USEPA Guidance on Risk Characterization for Risk Managers and Risk Assessors, point estimates of risk "do not fully convey the range of information considered and used in developing the assessment" (USEPA, 1992). This section presents the major sources of uncertainty associated with the risk assessment.

Specifically, the Johnson and Ettinger (1991) model employs a series of simplified, analytical solutions to chemical transport, often resulting in overestimation of indoor air EPCs. The conservatism inherent to the formulation of these models is supplemented by additional conservatism associated with selection of model input data and conceptualization of site conditions used by model users. As a result of this multilevel conservatism, actual EPCs and corresponding health risks are likely to be significantly lower than were estimated for the inhalation exposure pathway.

Some of the conservative aspects of the Johnson and Ettinger model include the following assumptions,

- No loss mechanisms, such as biodegradation and vapor-phase adsorption result in overestimation of vapor emissions to ambient air, yielding higher EPCs.
- No depletion of contaminant source: a constant source results in an unlimited supply of contaminated vapor and an overestimation of vapor emissions to ambient air, yielding higher EPCs.
- No water movement (and dissolved chemical) movement through unsaturated soil results in an overestimation of chemical mass in vapor-phase available for transport to ambient air, yielding higher EPCs.
- No positive pressure on buildings, which neglects significant periods where neutral or positive pressurized conditions exist, thereby over-estimating advective transport of contaminated vapors to ambient air, yielding higher EPCs.

- Vapor transport only occurs under a single (vertical) dimension, which ignores the potential for vapor migration in multiple directions away from the source area, resulting in an overestimation of vapor emissions and higher EPCs.
- Various model input data characterizing soil physical properties and building parameters used in this analysis correspond to conservative default values adopted by CaIEPA (2009a,b).
- Indoor points of exposure (buildings) are assumed to directly overlie locations of sources in soil gas and groundwater.
- COPCs are assumed to be uniformly distributed in soil gas and groundwater, with no spatial and temporal changes in concentrations.

ltem	Potential to Overestimate Risk	Potential to Underestimate Risk	Comments
All detected organic chemicals were retained as COPCs, regardless of detection frequency	High	Low	Including all COPCs including those COPCs detected in only one or two samples, will likely result in an overestimation of site-related noncancer hazards and excess cancer risks.
A single representative concentration for COPCs was used for the Site.	Moderate	Low	Using a single upperbound concentration to represent an entire site will likely result in an overestimate of exposures for the majority of the site.
COPCs in groundwater were considered at steady-state concentrations throughout the duration of the exposure.	Moderate	Low	Conservative intake assumptions are used, likely resulting in an overestimate of risks. No mass reduction over time is assumed.
EPCs in indoor air were modeled using a variety of conservative assumptions. These conservative assumptions included assuming low building air exchange rates and high amounts of foundation cracking.	High	Low	Assumptions used to address uncertainty are conservative and multiplicative.
Default input parameters recommended by the regulatory agencies were used to estimate exposures. The input parameters may not represent actual receptor intakes.	Moderate-High	Low	Chronic daily intake likely does not accurately reflect actual exposure for most receptors.

A summary of uncertainties is presented in the following table.

Notes:

The potential for under- or overestimation of risk (low, moderate, high) associated with each uncertainty item is based on the professional judgment of the risk assessor.

The analysis of uncertainties associated with the human health risk evaluation indicates that predicted noncancer adverse health effects as well as predicted excess cancer risk estimates will overestimate actual potential impacts to human health.

7.7 Summary of Results

Based on the risk characterization performed using the Johnson and Ettinger model for vapor intrusion, the estimated HIs for noncancer adverse health effects do not exceed the USEPA recommended target HI of one (1; USEPA, 1989) and the estimated excess cancer risks are within the USEPA acceptable risk range of one-in-one-million (1×10^{-6}) to one-in-ten thousand (1×10^{-4}). The excess cancer risk estimate of 6 x 10^{-6} is on the low end of the USEPA acceptable risk range and generally acceptable for occupational-related exposures.

A summary of the estimated HIs and excess cancer risks for the COPCs is presented in the following table:

COPC	Hypothetical Indoor Commercial/Industrial Receptor Groundwater to Indoor Air		
	CR	HI	
Benzene	6 x 10 ⁻⁶	0.02	
Ethylbenzene	7 x 10 ⁻⁸	0.00008	
Toluene	NE	0.002	
Total Xylenes	NE	0.002	
tert-Butylbenzene	NE	0.00001	
1,2-Dichloroethane	2 x 10 ⁻⁸	0.000007	
Isopropylbenzene (Cumene)	NE	0.003	
Naphthalene	3 x 10 ⁻⁷	0.008	
n-Propylbenzene	NE	0.0003	
1,2,4-Trimethylbenzene	NE	0.04	
1,3,5-Trimethylbenzene	NE	0.01	
Total	6 x 10 ⁻⁶	0.09	

Notes:

NE = not estimated.

HI = hazard index.

CR = excess cancer risk. In summary, the 4.6–acre Site including the onsite warehouse/building in Area 4 (the former underground storage tank location) is located in an industrial land use area. Based on activities that could possibly result in exposure to site-related compounds, an indoor commercial/industrial worker receptor was included in this evaluation. For all COPCs evaluated in the HHRA, the estimated HIs for noncancer adverse health effects (total 0.09) do not exceed the USEPA recommended target HI of one (1; USEPA, 1989) and the estimated excess cancer risks are within the USEPA acceptable risk range of one-in-one-million (1×10^{-6}) to one-in-ten thousand (1×10^{-4}) . The excess cancer risk estimate for occupational exposures at the Site was 6×10^{-6} , which is on the low end of the USEPA acceptable risk range and generally acceptable for occupational-related exposures. Based on the results of this evaluation, under current site conditions for the indoor commercial/industrial worker receptor, potential exposure to COPCs in groundwater is not expected to pose an unacceptable human health risk to occupational receptors at the onsite warehouse/building in Area 4.

8.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations can be made based on the findings of recent investigation/remediation:

- Field observations during drilling indicated hydrocarbon contamination in soil, however, laboratory analytical results of soil matrix samples at 10 feet bgs (groundwater depth) showed low TPH and benzene concentrations outside the source area, indicating a relatively small source area. This observation is also supported by low hydrocarbon concentrations in soil vapor and groundwater before HVDPE extraction.
- In addition to a 24-hour initial extraction event, the June 2010 remediation action by vapor and water extraction resulted in the removal of 1,590 pounds of hydrocarbons, and 40,920 gallons of groundwater were extracted from the wells, treated and discharged to the sewer under a site-specific permit.
- Although extraction wells E-1 through E-12 were constructed with a screening interval open within the expected capillary fringe and the vadose zone, the very limited vapor flow rate observed during the short-term HVDPE event confirmed the field observation of a clayey lithology for the upper 10 feet bgs. This site-specific lithologic setting indicates that remediation of the vadose zone through any extraction of vapors or circulation of air flow in the vadose zone would not be effective.
- The sustained groundwater extraction rates indicate that the saturated zone would not likely be dewatered within a short period of time.
- Laboratory analytical results of soil vapor samples collected before and after the HVDPE event indicate relatively low concentrations of BTEX and MTBE concentrations in pre-and post extraction samples.
- Dissolved-phase concentrations of TPHg and benzene collected before and after the HVDPE exhibited a significant decrease in key wells, likely attributed to the operation of HVPDE system. The active extraction air and water at the site also provided additional oxygen input to the subsurface, promoting biodegradation of residual hydrocarbons at the site.
- Groundwater at the site is not used for drinking water and is unlikely to be used as a drinking groundwater source.
- For all COPCs evaluated in the human health risk evaluation, the estimated HIs for noncancer adverse health effects do not exceed the USEPA recommended target HI of one (1; USEPA, 1989) and the estimated excess cancer risks (6x10⁻⁶)are within the USEPA acceptable risk range (10⁻⁶ to 10⁻⁴). Based on the results of this evaluation, under current site conditions for the commercial/industrial worker receptor, potential exposure to

COPCs in groundwater is not expected to pose an unacceptable human health risk to occupational receptors at the onsite warehouse/building in Area 4.

Groundwater monitoring has confirmed that the Area 4 dissolved hydrocarbons found in the vicinity of the former USTs are relatively stable, and do not extend offsite. A new upgradient monitoring well has been added to the network of groundwater monitoring points at the site. Selected wells from the recently installed dozen wells in the vicinity of the former tank pit can be added to the groundwater monitoring network to further confirm that natural degradation of hydrocarbons in this shallow, un-used groundwater zone is an appropriate approach.

Based on the limited air flow and groundwater extraction rates, low hydrocarbon concentrations present in soil, and an adequately delineated, limited benzene plume, any effort focused on in-situ remediation of hydrocarbons would be both lengthy and costly, but not substantially more effective than the on-going natural attenuation of hydrocarbons. The primary source of hydrocarbons (the former UST) has been removed, and significant additional hydrocarbon mass has been removed from the site during the soil removal after UST excavation, and through the recent aggressive dual phase extraction.

On this basis, SGI recommends a two-year groundwater monitoring program, expanded to include sampling and monitoring of newly installed wells E-2, E-7 and E-8, with no further active remedial action for the Site.

9.0 REFERENCES

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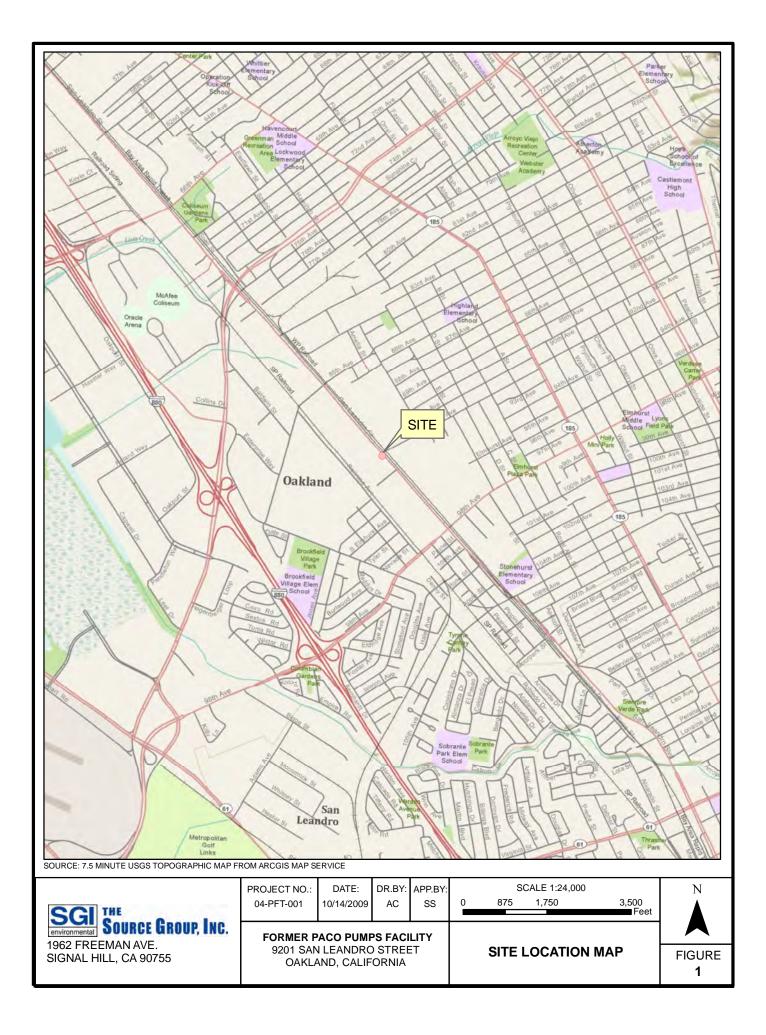
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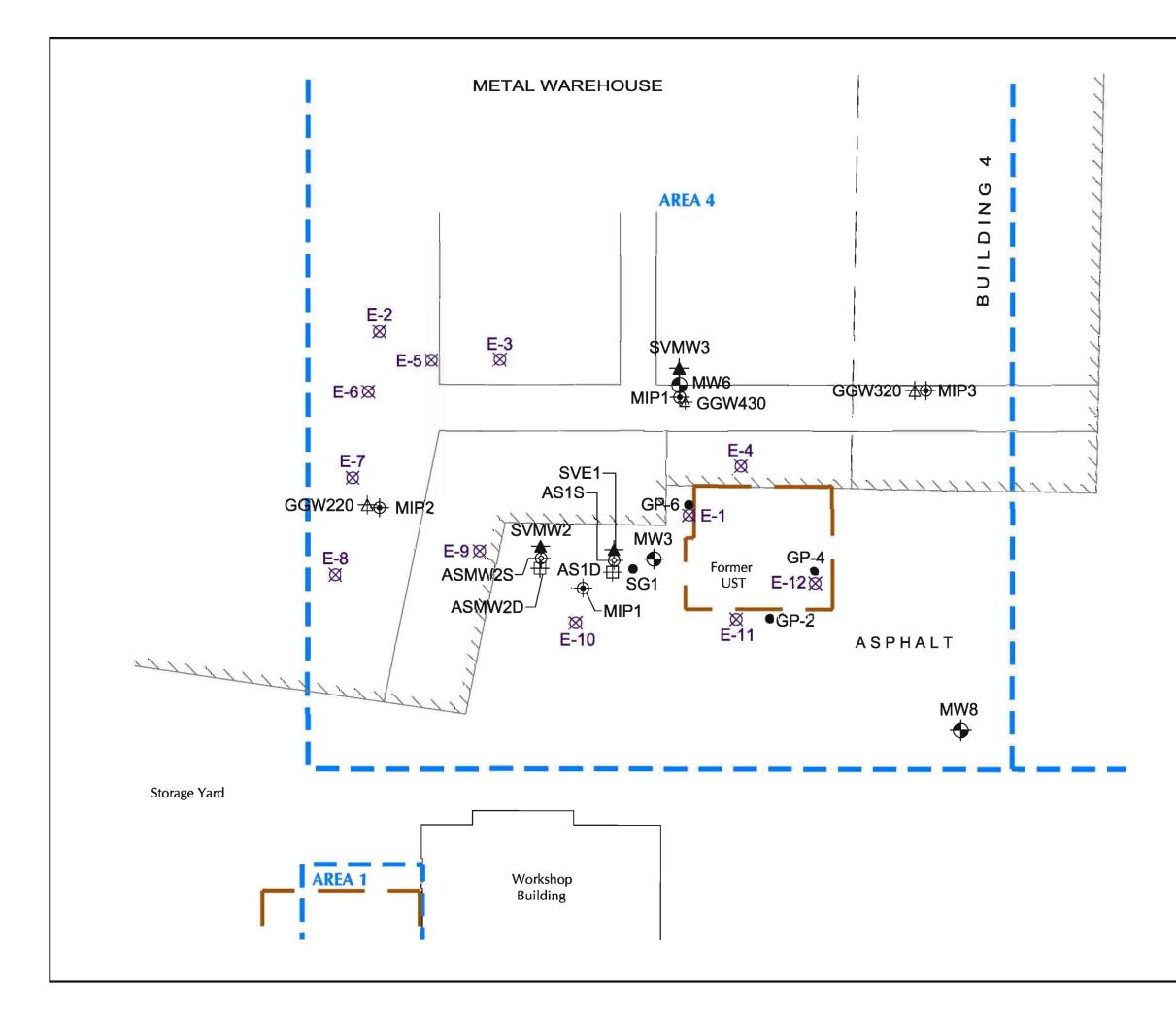
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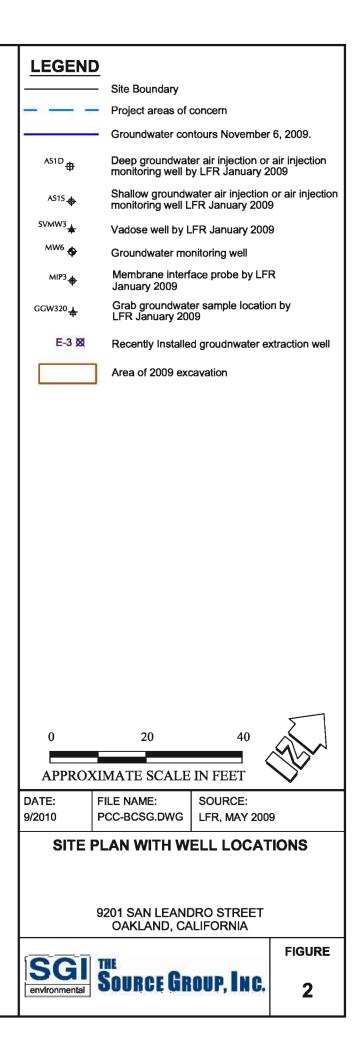
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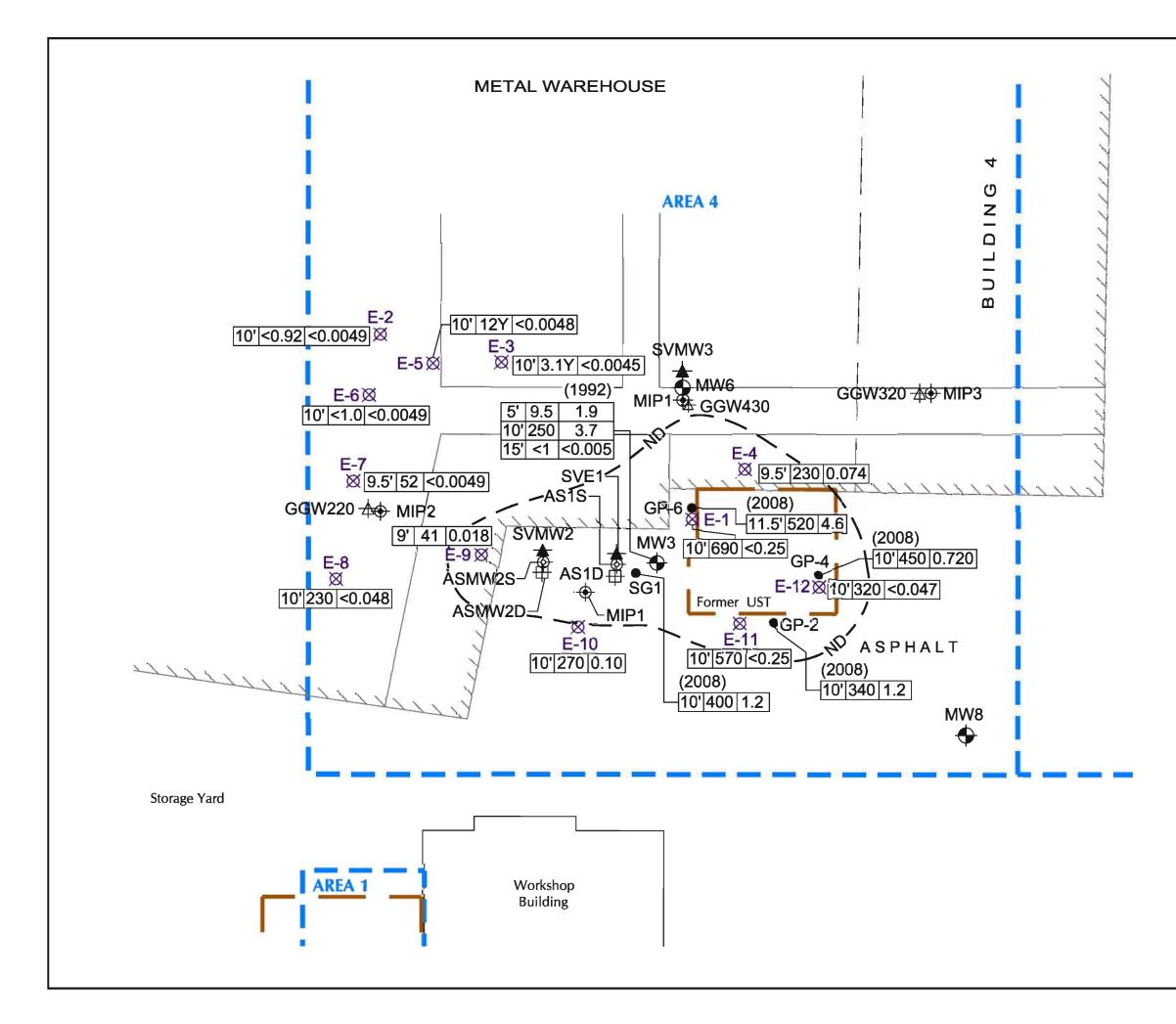
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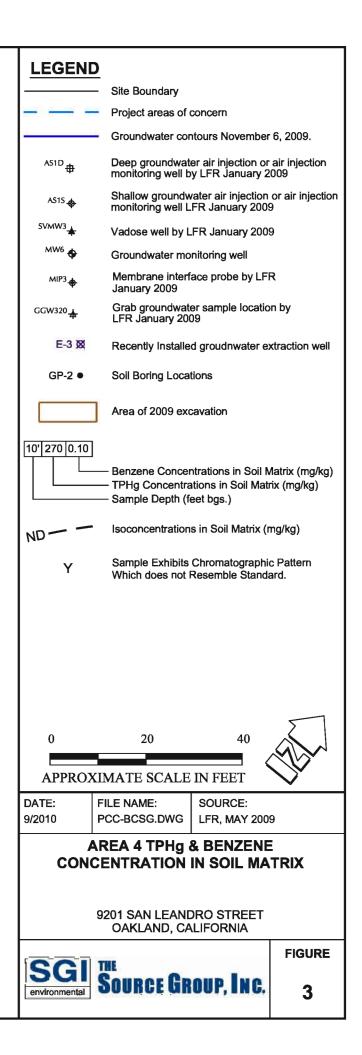
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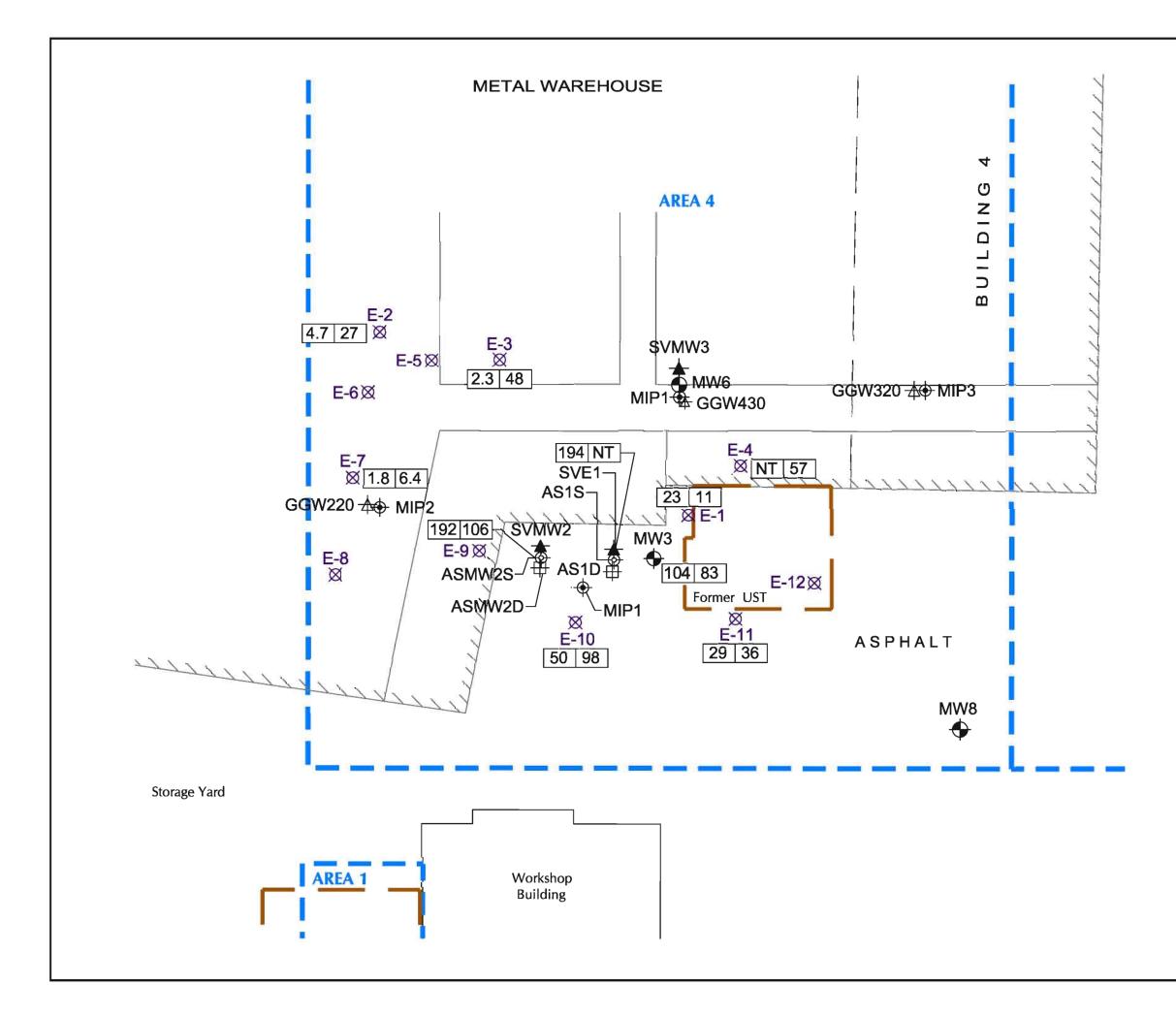




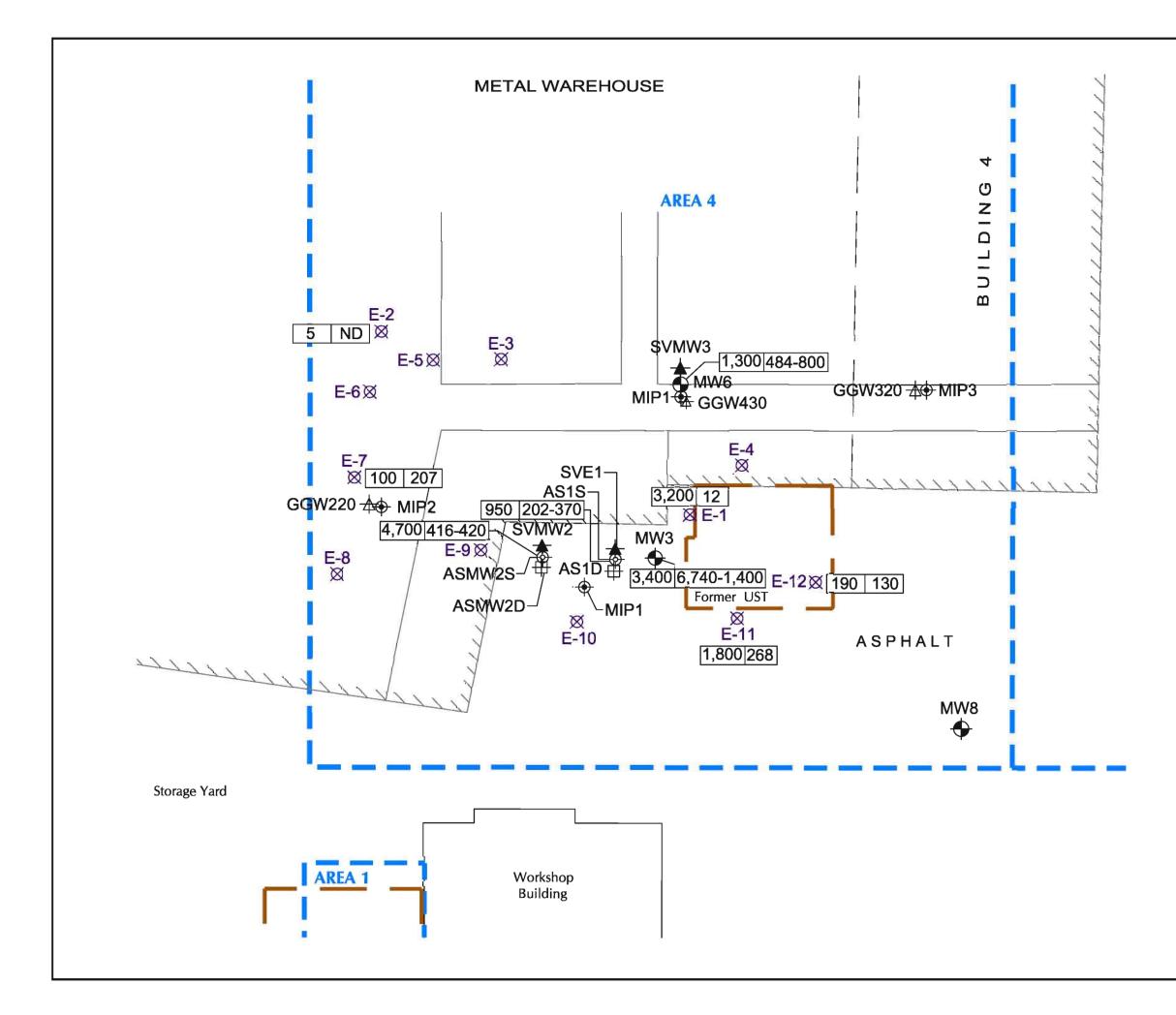




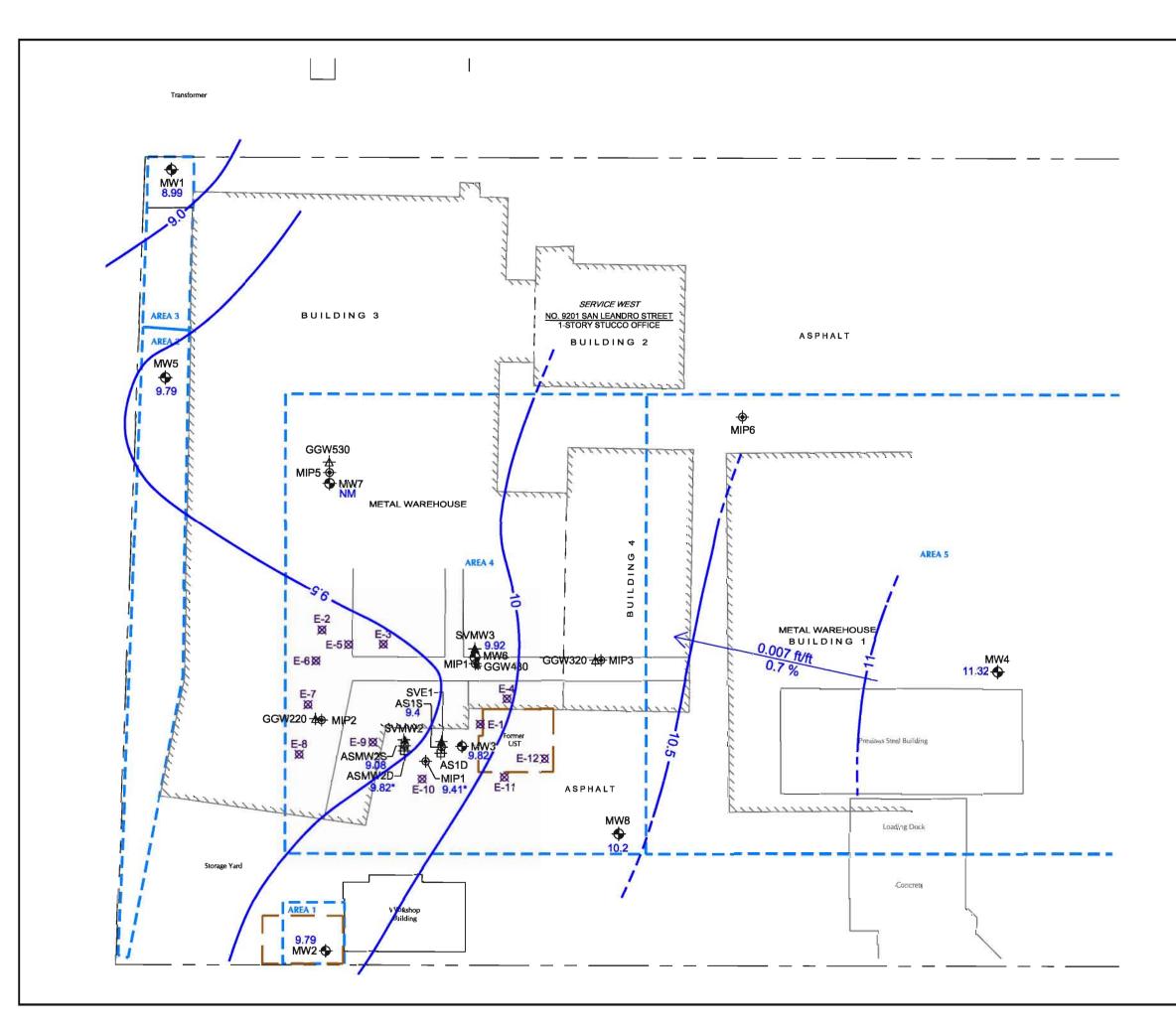


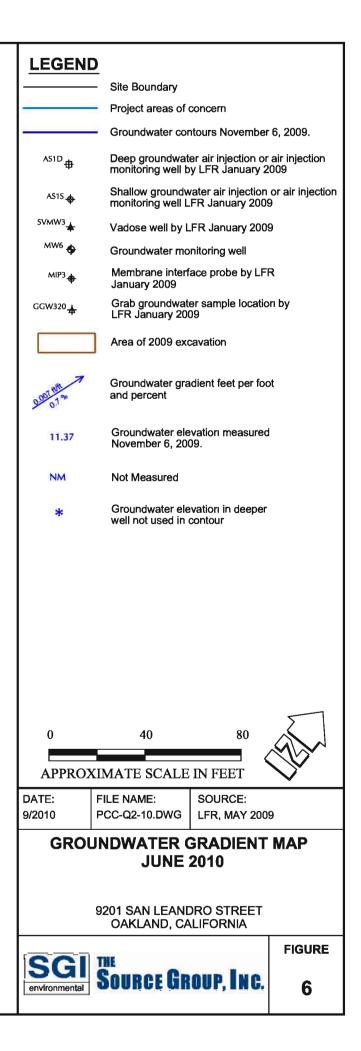


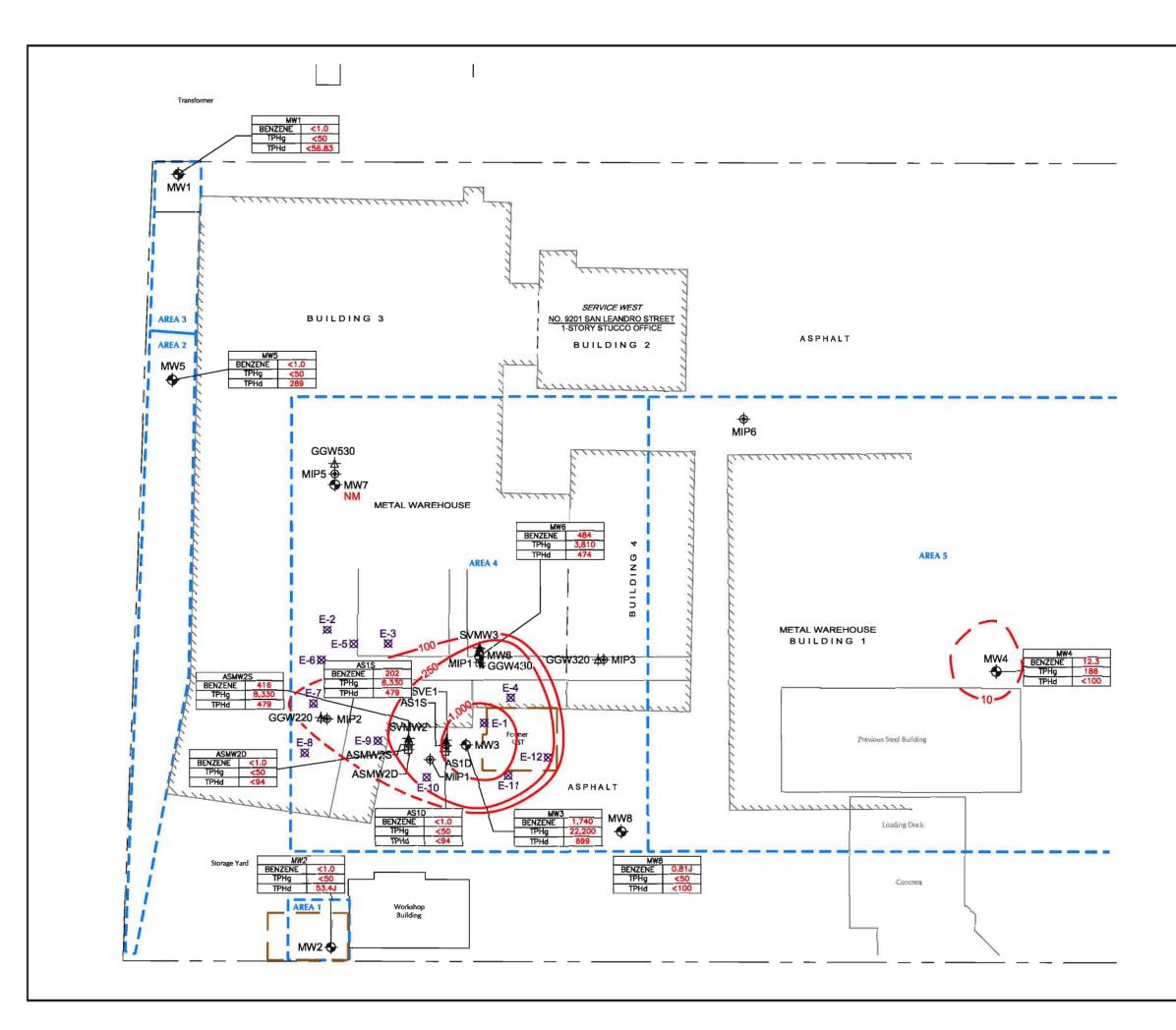
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	Site Boundary						
	Project areas of		0.0000				
	Groundwater cor	ntours November	6, 2009.				
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^{AS1S} ∳	Shallow groundw monitoring well L						
SVMW3	Vadose well by L	FR January 200	9				
MW6 💠	Groundwater mo	nitoring well					
MIP3.	Membrane interf January 2009	ace probe by LFI	R				
GGW320 ★	Grab groundwate LFR January 200		n by				
E-3 🕱	Recently Installe	d groudnwater e	xtraction well				
	Area of 2009 exc	cavation					
NT	Not Taken						
29 36	Berizene Coricer Pre And Post Ex		βas (μg/L)				
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AREA 4 BENZENE CONCENTRATION IN SOIL GAS PRE AND POST EXTRACTION							
9	201 SAN LEAND OAKLAND, CA						
	ne Source Gr	oup, Inc.	FIGURE 4				

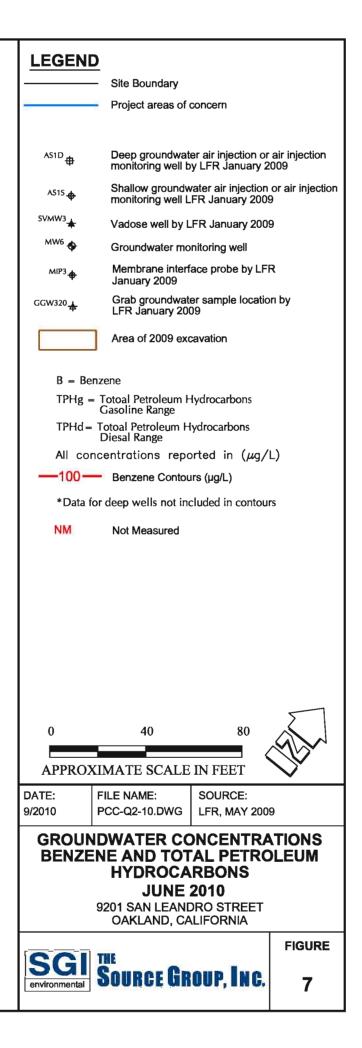


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E-3 🕅	Recently Installe	d groudnwater e	xtraction well
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GI	ENZENE CO ROUNDWAT POST EXTI 201 SAN LEANE OAKLAND, CA	ER PRE AN RACTION	
	ne Source Gr	OUP, INC.	FIGURE









TABLES

Table 1aExtraction Test and Monitoring of Depth to WaterPaco Pumps9201 San Leandro StreetOakland, California

					Wells	s Screened in Gr	oundwater		Vadose	e Wells	Cumulative	
Date/Time		Vapor Inlet Concentration	Well Under Extraction	MW-3 Screened 20 - 5 ft	AS-1S Screened 17-14 ft - 10 ft from MW-3	AS-1D Screened 33-30 ft - 10 ft from MW-3	ASMW-2S Screened 17- 11 ft - 27 ft from MW-3	ASWM-2D Screened from 33-23 ft - 27 ft from MW-3	SVMW-2 Screened 9 to 5 ft - 27 ft from MW-3	SVE-1 Screened	Water Extracted Volume (gallons)	Comments
		(ppmv)			DTW (ft)	DTW (ft)	DTW (ft)	DTW (ft)	DTW (ft)	DTW (ft)		
4/9/10 15:00	22	732	(MW-3)	Sampled Influent	8.35	8.66	8.78	8.82	Dry	5.75	0	Dual phase
4/9/10 20:00	22	709	(MW-3)		8.74	8.65	8.71	8.85	Dry	5.14	375	extraction of MW- 3 to evaluate
4/10/10 0:00	22	638	(MW-3)	Stinger at 19 ft depth	8.84	8.76	8.77	8.94	Dry	4.75	999	impact in nearby and deeper
4/10/10 8:00	22	599	(MW-3)		8.94	8.87	8.94	9.07	Dry	4.31	1,670	groundwater wells
cumulative drawdown (ft)					0.59	0.21	0.16	0.25		apparent rise in groundwater	average rate: 1.7	
4/10/2010 9:00:00 AM-	4/10/2010 Short-Term Tests of vadose wells									2,060		

Notes:

DTW: Depth to Water

Table 1bVapor Extraction Tests and Monitoring of VacuumPaco Pumps9201 San Leandro StreetOakland, California

			Vapor Inlet Concentration			Wells Scr	eened in Ground	lwater		Vadose	Wells	
Date/Time	Unit Vacuum (" Hg)	Air Flow (cfm)	ppmv inlet	Well under extraction	MW-3 Notes	AS-1S Vacuum ("H2O)-10 ft from MW-3	ASMW-2S Vacuum ("H2O)-27 ft from MW-3	ASWM-2D Vacuum ("H2O)-27 ft from MW-	AS-1D Vacuum ("H2O)-10 ft from MW-3	SVMW-2 Vacuum ("H2O) -27 ft from MW-3	SVE-1 Vacuum ("H2O)-10 ft from MW-3	um -10 ft
4/9/10 15:00	22	37	732		Sampled Influent	0*	0*	0*	0.01*	0.00	0.00	
4/9/10 20:00	22	37	709			0.01*	0.01*	0.02*	0.02*	0.01	0.01	
4/9/2010 24:00:00 PM	22	34	638	MW-3		0.01*	0.01*	0.01*	0.02*	0.01	0.01	MW-3 Extraction
4/10/10 8:00	22	34	599		off @ 9 AM	0.02*	0.01*	0.01-0.03*	0.02*	0.01	0.03-0.00	
4/10/10 9:00	22	37	120			Extraction ON & Sampled						
4/10/10 9:30	23	38	120	AS-1S		Extraction ON						Stinger in AS-1S at 16 ft
4/10/10 10:00	23	38	290			Extraction OFF						
4/10/10 10:00	23	43	13100				Extraction ON & Sampled					
4/10/10 10:30	23	40	12360				Extraction ON					Stinger in AS-MW-
4/10/10 11:00	23	39	10290	ASMW-2S			Extraction ON					2S at 16 ft
4/10/10 11:30	23	39	9730				Extraction OFF					
4/10/10 11:30	23	42	9310							Extraction ON & Sampled		
4/10/10 12:00	23	42	9360	SVMW-2						Extraction ON		Stinger in SVMW-
4/10/10 12:30	23	42	9170	3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						Extraction ON		2 at 8 ft
4/10/10 13:00	23	37	9020							Extraction OFF		
4/10/10 13:10	-	-	430	SVE-1								Stinger in SVE-1 at 8 ft

Notes:

* Screen interval wholly submerged

Table 1cInitial Extraction Test: Vapor Sample ResultsPaco Pumps9201 San Leandro StreetOakland, California

Compound	MW-3	AS-1S	ASMW-2S	SVMW-2	SVE-1
Benzene	51	7.4	270	127	9.5
Ethylbenzene	8.7	1.4	37	24	6.6
MtBE	56	1.4	137	102	3.6
Toluene	34	2.5	171	57	9.5
Xylenes	16	2.5	65	57	15
TPHg	2300	121	13500	6360	580

Notes:

All results: ppmv

Table 2Soil Analytical ResultsPaco Pumps9201 San Leandro StreetOakland, California

Sample Location	Date Collected	Depth feet bgs	TPHd	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes	МТВЕ	Other Fuel Additives
E-1	10-Jun-10	10	140 Y	690	ND<0.25	0.57	1.2	3.6	ND<0.25	ND
E-2	11-Jun-10	10	110 Y	ND<0.92	ND<0.0049	<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND
E-3	11-Jun-10	10	330 Y	3.1 Y	ND<0.0045	<0.0045	ND<0.0045	ND<0.0045	ND<0.0045	ND
E-4	11-Jun-10	9.5	30 Y	230	0.074	<0.0048	0.44	0.69	ND<0.0048	ND
E-5	9-Jun-10	10	360 Y	12 Y	ND<0.0048	0.010	0.0051	0.0127	ND<0.0048	ND
E-6	9-Jun-10	10	7.8 Y	ND<1.0	ND<0.0049	<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND
E-7	10-Jun-10	9.5	23 Y	52	ND<0.0049	0.032	0.097	0.43	ND<0.0049	ND
E-8	10-Jun-10	10	100 Y	230	ND<0.048	0.049	0.30	1.2	ND<0.048	ND
E-9	9-Jun-10	9	22 Y	41	0.018	<0.0049	0.058	0.106	ND<0.0049	ND
E-10	10-Jun-10	10	79 Y	270	0.10	1.2	0.95	4.5	ND<0.049	ND
E-11	10-Jun-10	10	110 Y	570	ND<0.25	0.26	1.3	2.6	ND<0.25	ND
E-12	10-Jun-10	10	87 Y	320	ND<0.047	<0.047	0.5	0.6	ND<0.047	ND
MW-8	11-Jun-10	17	ND<1.0	ND<1.0	ND<0.005	0.0062	ND<0.005	ND<0.005	ND<0.005	ND

Notes:

concentrations (mg/kg)

ND = parameter not present above laboratory reporting limits

TPHd = total petroleum hydrocarbons as diesel

TPHg = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary-butyl ether

Y = Sample exhibits chromatographic pattern which does not resemble standard

Fuel Additives - 1,2 dichloroehtane (1,2-DCA), Ethylene Dibromide (EDB), Ethyl tert butyl ether (ETBE),

tert butyl alcahol (TBA), methyl tert amyl ether (TAME), di isopropyl ether (DIPE)

Table 3CalClean High-vacuum DPE SummaryFormer paco Pumps Facility9201 San Leandro Street, Oakland, CA

Date	Time	Influent vapor concentration (ppmv)	Extraction wells	approximate water extraction rate (gpm)*
6/16/2010	17:00- 20:00	misc	10 minutes extractions to collect initial soil gas values	n/a
6/16/2010	20:30	15,530	MW-3, SVE-1, ASMW-2S, E-9, E-11, E-12	n/a
6/17/2010	20:00	4,750	MW-3, SVE-1, ASMW-2S, E-9, E-11, E-12	2.23
6/18/2010	20:00	3,180	MW-3, SVE-1, ASMW-2S, E-9, E-11, E-12	2.53
6/19/2010	20:00	2,880	MW-3, SVE-1, ASMW-2S, E-9, E-11, E-12	4.55
6/20/2010	20:00	4,480	MW-3, SVE-1, ASMW-2S, E-9, E-11, E-12	3.49
6/21/2010	20:00	4,050	MW-3, SVE-1, ASMW-2S, E-9, E-11, E-12	3.81
6/22/2010	16:30	3,740	OFF @16:30 MW-3, SVE-1, ASMW-2S, E-9, E-11, E-12	n/a
6/22/2010	20:00	5,480	ON @ 17:30 E-1, E-9, E-11	4.77
6/23/2010	10:00	2,310	OFF @ 10:00 E-1, E-9, E-11	n/a
6/23/2010	11:00	7,980	ON @ 11:00 MW-3, ASMW-2S, E-4	2.67
6/24/2010	8:00	8,390	MW-3, ASMW-2S, E-4, E-10 to 9 AM	
6/24/2010	9:00 to 12:30		E-3 ON @ 9:00; OFF @ 11:00 E-5 ON @ 10:00; OFF @ 12:00 E-7 ON @ 11:00; OFF @ 12:30	n/a
6/24/2010	12:00	7,460	MW-3, ASMW-2S, E-4, E-10 ON @ 12:00	n/a
6/25/2010	16:00	5440 (at 13:00)	MW-3, ASMW-2S, E-4, E-10 OFF at 16:00	2.44

notes:

* approximate gpm calculated from water meter readings (gallons) recorded over time

n/a water meter reading not available to calculate gpm

Table 4 Soil Vapor Analytical Results (µg/L) from selected wells, Pre- and Post-Extraction 9201 San Leandro Street Oakland, California

Well	TPH-G	asoline	Ben	zene	Tolu	lene	Ethylb	enzene	Xyle	enes	МТ	BE
wen	6/16/10	6/25/10	6/16/10	6/25/10	6/16/10	6/25/10	6/16/10	6/25/10	6/16/10	6/25/10	6/16/10	6/25/10
MW-3	7140	4460	104	83	60	59	12	13	26	27	198	192
E-1	732	434	23	11	11	13	3.9	5.4	7.6	10	29	5.4
E-2	274	1560	4.7	27	3.9	28	2.1	5.7	4.5	13	1.1	38
E-3	152	2620	2.3	48	4.8	36	3.1	6.9	5.8	17	1.4	103
E-4	NT	2750	NT	57	NT	44	NT	18	NT	39	NT	56
E-7	203	549	1.8	6.4	1.2	12	1.1	4.8	2.7	13	3.3	12
E-10	1870	4700	50	98	19	59	5.0	12	11	25	127	177
E-11	1340	1980	29	36	10	18	1.7	3.1	4.0	7.2	34	123
SVE-1	13200	NT	194	NT	146	NT	23	NT	43	NT	266	NT
ASMW-2S	11600	5880	192	106	86	71	11	15	20	29	361	302

NOTES:

Pre-extraction samples collected on 6/16/10 Post-extraction samples collected on 6/25/10 TPH = total petroleum hydrocarbons

MTBE = methyl tertiary butyl ether

Table 5 TPH-gasoline and Benzene Concentrations in Groundwater (µg/L), Pre- and Post-Extraction Paco Pumps Site Oakland, California

Well	TPH-Ga	soline	Benzene			
wen	6/16/10	6/25/10	6/16/10	6/25/10		
E-1	36,000	124	3,200	11.7		
E-2	72	ND<50	5.3	ND<1.0		
E-7	780	3,460	100	207		
E-11	25,000	15,300	1,800	268		
E-12	4,300	1,570	190	130		

Well	Т	PH-Gasolir	ne	Benzene			
wen	11/6/09	6/28/10	8/10/10	11/6/09	6/28/10	8/10/10	
MW3	13,000	22,200	12,000	3,400	1,740	1,400	
MW6	4,500	3,810	4,600	1,300	484	800	
AS-1S	3,800	1,630	1,200	950	202	370	
ASMW-2S	18,000	8,330	3,200	4,700	416	420	

Notes:

Pre-extraction samples collected on 6/16/2010 Post-extraction samples collected on 6/30/2010 TPH = total petroleum hydrocarbons

Notes:

Pre-extraction samples collected on 11/6/09 Post-extraction samples collected on 6/28/10 and 8/10/10

Table 6Current and Historical Groundwater ElevationsPaco Pump9201 San Leandro StreetOakland, California

Well Identification	Date Collected	Top-of-Casing	Depth to	Groundwater
		Elevation ⁽¹⁾	Groundwater ⁽²⁾	Elevation ⁽¹⁾
MW-1	15-Nov-92	18.05	9.34	8.71
	9-Mar-93		8.50	9.55
	21-Jul-93		9.00	9.05
	26-May-94		9.06	8.99
	24-Aug-94		8.40	9.65
	22-Nov-94		8.20	9.85
	8-Feb-95		8.30	9.75
	31-May-95		9.35	8.70
	8-Aug-95		9.16	8.89
	29-Nov-95		9.28	8.77
	29-Feb-96		7.62	10.43
	23-May-96		8.28	9.77
	4-Nov-96		9.20	8.85
	13-May-97		9.04	9.01
	14-Nov-07		8.50	9.55
	17-Jun-08		9.04	9.01
	13-Jan-09	17.76	8.65	9.11
	28-Apr-09		8.67	9.09
	6-Nov-09		8.79	8.97
	28-Jun-10		8.77	8.99
MW-2	15-Nov-92	19.40	10.05	9.35
	9-Mar-93		9.21	10.19
	21-Jul-93		9.72	9.68
	26-May-94		9.58	9.82
	24-Aug-94		9.98	9.42
	22-Nov-94		8.70	10.70
	8-Feb-95		8.68	10.72
	31-May-95		9.48	9.92
	8-Aug-95		9.64	9.76
	29-Nov-95		9.86	9.54
	29-Feb-96		8.12	11.28
	23-May-96		8.70	10.70
	4-Nov-96		9.50	9.90
	13-May-97		9.44	9.96
	14-Nov-07		8.94	10.46
	17-Jun-08		9.57	9.83
	13-Jan-09	19.12	9.21	9.91
	28-Apr-09		9.30	9.82
	6-Nov-09		8.91	10.21
	28-Jun-10		9.33	9.79
MW-3	15-Nov-92	19.70	10.35	9.35
	9-Mar-93		9.19	10.51
	21-Jul-93		11.07	8.63
	26-May-94		10.04	9.66
	24-Aug-94		11.08	8.62
	22-Nov-94		8.92	10.78
	8-Feb-95		8.90	10.80

Table 6Current and Historical Groundwater ElevationsPaco Pump9201 San Leandro StreetOakland, California

Well Identification	Date Collected	Top-of-Casing	Depth to	Groundwater
		Elevation ⁽¹⁾	Groundwater ⁽²⁾	Elevation ⁽¹⁾
	31-May-95		10.16	9.54
MW-3	8-Aug-95		9.92	9.78
(continued)	29-Nov-95		10.7	9.00
	29-Feb-96		8.52	11.18
	23-May-96		8.15	11.55
	4-Nov-96		7.21	12.49
	13-May-97		9.82	9.88
	14-Nov-07		9.21	10.49
	17-Jun-08		9.81	9.89
	13-Jan-09	19.42	9.58	9.84
	28-Apr-09		9.59	9.83
	6-Nov-09		9.52	9.90
	28-Jun-10		9.60	9.82
MW-4	15-Nov-92	19.65	8.87	10.78
	9-Mar-93	10100	7.96	11.69
	21-Jul-93		8.06	11.59
	26-May-94		8.57	11.08
	24-Aug-94		8.75	10.90
	22-Nov-94		7.41	12.24
	8-Feb-95		7.20	12.45
	31-May-95		8.32	11.33
	8-Aug-95		8.66	10.99
	29-Nov-95		8.93	10.72
	29-Feb-96		6.54	13.11
	23-May-96		7.24	12.41
	4-Nov-96		8.58	11.07
	13-May-97		8.42	11.23
	14-Nov-07		7.61	12.04
	17-Jun-08		8.31	11.34
	13-Jan-09	19.37	NM	NM
	28-Apr-09	10.07	NM	NM
	6-Nov-09		8.00	11.37
	28-Jun-10		8.05	11.32
	1	40.40		
MW-5	24-Aug-94	18.49	8.22	10.27
	22-Nov-94		7.90	10.59
	8-Feb-95		7.92	10.57
	31-May-95		8.74	9.75
	8-Aug-95		8.93	9.56
	29-Nov-95		9.11	9.38
	29-Feb-96		7.36	11.13
	23-May-96		7.92	10.57
	4-Nov-96		8.78	9.71
	13-May-97		8.82	9.67
	14-Nov-07		8.16	10.33
	17-Jun-08		8.75	9.74
	13-Jan-09	18.21	8.46	9.75
	28-Apr-09		8.50	9.71

Table 6 **Current and Historical Groundwater Elevations** Paco Pump 9201 San Leandro Street Oakland, California

Well Identification	Date Collected	Top-of-Casing Elevation ⁽¹⁾	Depth to Groundwater ⁽²⁾	Groundwater Elevation ⁽¹⁾
MW-5	6-Nov-09		9.93	8.28
(continued)	28-Jun-10		8.42	9.79
MW-6	13-Jan-09	19.46	9.59	9.87
	28-Apr-09		9.65	9.81
	6-Nov-09		9.60	9.86
	28-Jun-10		9.54	9.92
MW-7	13-Jan-09	19.44	9.66	9.78
	28-Apr-09		9.67	9.77
	6-Nov-09		9.64	9.80
	28-Jun-10		NM	NM
MW-8	28-Jun-10	15.83	8.07	7.76
AS-1S	13-Jan-09	19.38	9.45	9.93
	28-Apr-09		9.67	9.71
	6-Nov-09		9.63	9.75
	28-Jun-10		9.90	9.48
ASMW2S	13-Jan-09	19.38	9.51	9.87
	28-Apr-09		9.55	9.83
	6-Nov-09		9.53	9.85
	28-Jun-10		10.30	9.08
AS-1D	13-Jan-09	19.31	9.42	9.89
	28-Apr-09		9.48	9.83
	6-Nov-09		9.50	9.81
	28-Jun-10		9.90	9.41
ASMW-2D	13-Jan-09	19.52	9.65	9.87
	28-Apr-09		9.69	9.83
	6-Nov-09		9.70	9.82
	28-Jun-10		9.70	9.82

Notes:

⁽¹⁾ Top-of-casing and groundwater elevation in North America Vertical Datum 1988; wells re-surveyed by Tronoff Assocaites Land Surveying on February 2, 2009.
 ⁽²⁾ Depth to water measured in feet below top of casing.

Table 7

Current and Historical Analytical Results for Volatile Organic Compounds in Groundwater

Paco Pump 9201 San Leandro Street

Oakland, California

concentrations (µg/L)

Sample Location	Date Collected	Depth (feet bgs)	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes	МТВЕ	Other Fuel Additives
LFR Area 1 - S	Southwestern	Corner of the	Site, wes	t of the "v	vorkshop	building"						
MW-2	16-Nov-92	5.25-20.25	<50	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	9-Mar-93		430	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	21-Jul-93		<50	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	29-Jan-94		<50	NA	NA	<50	<2.0	<2.0	<2.0	<2.0	NA	NA
	26-May-94		<50	NA	NA	<50	2.3	0.8	<0.5	<0.5	NA	NA
	24-Aug-94		<50	NA	NA	<50	3.1	1.4	0.5	0.6	NA	NA
	22-Nov-94		<50	NA	NA	<50	3.4	1.8	<0.5	0.5	NA	NA
	8-Feb-95		<50	NA	NA	<50	4.5	1.3	<0.5	0.5	NA	NA
	31-May-95		<50	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8-Aug-95		<50	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	29-Nov-95		<50	NA	NA	NA	NA	NA	NA	NA	NA	NA
	29-Feb-96		<50	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	23-May-96		<50	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Nov-96		<50	NA	NA	NA	NA	NA	NA	NA	NA	ND
	13-Nov-03		NA	NA	NA	<50	<0.5	<0.5	<0.5	<2.0	NA	ND
	17-Jun-08		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	1.1	ND
	6-Nov-09		360	NA	NA	<50	<0.5	<0.5	<0.5	<1.0	0.63	ND
	28-Jun-10		53.4J	NA	NA	<50	<1.0	<1.0	<1.0	<2.0	<1.0	ND
FR Area 2 - A	Area South of t	the Warehous	e Storage	e Area Bui	Iding Adj	acent to th	ne Southeri	n Property	Boundary	y		
MW-1	15-Nov-92	5.25-20.25	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9-Mar-93		140	NA	NA	NA	NA	NA	NA	NA	NA	NA
	21-Jul-93		<50	NA	NA	NA	NA	NA	NA	NA	NA	NA
	29-Jan-94		<50	NA	NA	NA	NA	NA	NA	NA	NA	NA
	26-May-94		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	24-Aug-94		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	22-Nov-94		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	8-Feb-95		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	31-May-95		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	23-May-96		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	27-Oct-00		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	14-Nov-07		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	<2.0	NA
	17-Jun-08		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	0.67	NA
	6-Nov-09		<51	NA	NA	<50	<0.5	<0.5	<0.5	<1.0	<0.5	ND
	28-Jun-10		56.8J	NA	NA	<50	<1.0	<1.0	<1.0	<2.0	<1.0	ND
FR Area 4 - F	Former UST ne	ear Groundwa	1				1	1		1	1	1
MW-3	16-Nov-92	5.25-20.25	<50	NA	NA	40,000	2,900	6,100	550	1,700	NA	NA
-	9-Mar-93		290	NA	NA	12,000	1,000	300	110	170	NA	NA
	21-Jul-93		<50	NA	NA	3,400	420	63	36	37	NA	NA
	29-Jan-94		<50	NA	NA	5,600	910	220	47	36	NA	NA
	26-May-94		<50	NA	NA	5,200	890	180	45	43	NA	NA
	24-Aug-94		<50	NA	NA	5,200	580	76	29	22	NA	NA
	22-Nov-94		<50	NA	NA	2,200	670	130	31	28	NA	NA
	8-Feb-95		<50	NA	NA	2,900	780	120	31	33	NA	NA
	31-May-95		NA	NA	NA	9,100	2,800	160	91	72	NA	NA
D	31-May-95		NA	NA	NA	5,300	1,300	170	37	44	NA	NA

Table 7 Current and Historical Analytical Results for Volatile Organic Compounds in Groundwater Paco Pump 9201 San Leandro Street Oakland, California

concentrations (µg/L)

Sample Location	Date Collected	Depth (feet bgs)	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Other Fuel Additives
MW-3	28-Aug-95		NA	NA	NA	1,400	<0.5	<0.5	1.7	8.9	NA	NA
D	28-Aug-95		NA	NA	NA	4,800	2,500	150	53	44	NA	NA
	29-Nov-95		NA	NA	NA	3,000	780	43	32	32	NA	NA
D	29-Nov-95		NA	NA	NA	2,400	830	38	21	16	NA	NA
	29-Feb-96		NA	NA	NA	3,800	1,200	130	36	35	NA	NA
D	29-Feb-96		NA	NA	NA	8,000	3,400	430	100	99	NA	NA
	23-May-96		NA	NA	NA	6,900	3,300	340	71	74	NA	NA
D	23-May-96		NA	NA	NA	4,300	3,200	350	72	74	NA	NA
	4-Nov-96		NA	NA	NA	4,900	2,100	110	70	44	NA	NA
D	4-Nov-96		NA	NA	NA	4,500	2,100	130	61	39	NA	NA
	13-May-97		NA	NA	NA	10,000	4,800	530	100	92	<100	NA
	26-Jan-98		NA	NA	NA	12,000	5,000	250	91	100	NA	NA
	27-Oct-00		NA	NA	NA	19,000	9,000	1,000	250	130	NA	NA
	3-Nov-03		NA	NA	NA	13,000	3,900	370	300	130	<40	NA
	17-Jun-08		NA	NA	NA	13,000	4,400	600	300	150	<100	NA
	6-Nov-09		710	NA	NA	13,000	3,400	400	310	220	<2.5	4.1 (1,2-DCA)
	28-Jun-10		699	NA	NA	22,200	1,740	2,100	318	1,060	<50	ND
D	28-Jun-10		722	NA	NA	31,000	1,560	2,210	380	1,240	<50	ND
MW-5	24-Aug-94	5.25-20.25	130	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
D	22-Nov-94		<50	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	8-Feb-95		<50	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	31-May-95		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	8-Aug-95		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	29-Feb-96		NA	NA	NA	<50	0.6	<0.5	<0.5	<0.5	NA	NA
	13-May-97		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	27-Oct-00		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	13-Nov-03		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	<2.0	NA
	17-Jun-08		NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	6-Nov-09		1,300	NA	NA	<50	<0.5	<0.5	<0.5	<1.0	<0.5	ND
	28-Jun-10		289	NA	NA	<50	<1.0	<1.0	<1.0	<2.0	<1.0	ND
FR Area 4 - F	Former UST ne	ear Groundwa	ter Monit	oring Well	MW-3 (c	ontinued)						
MW-6	14-Jan-09	10-17	NA	NA		740	66	48	6.3	23	1.2	17 (1,2-DCA)
	6-Nov-09	10-17	1,200	NA		4,500	1,300	270	110	44	<2.5	39 (1,2-DCA)
	28-Jun-10	10-17	474	NA		3,810	484	284	78.7	233	<10	20.8 (1,2-DCA
AS-1S	13-Jan-09	14-17	NA	NA		41,000	4,100	2,700	510	1,000	<25	ND
	6-Nov-09	14-17	1,300	NA		3,800	950	7.3	76	42	<0.5	3.1 (1,2-DCA)
	28-Jun-10	14-17	214	NA		1,630	202	26.2	9.1	25.4	2.1	3.1 (1,2-DCA)
ASMW-2S	13-Jan-09	10-17	NA	NA		9,100	2,800	430	140	230	<10	25 (1,2-DCA)
	6-Nov-09	10-17	2,400	NA		18,000	4,700	540	330	530	<2.5	50 (1,2-DCA) 46 (TBA)
	28-Jun-10	10-17	479	NA		8,330	416	434	151	583	<33	ND
MW-7	14-Jan-09	20-28	NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	1.1	ND
	6-Nov-09	20-28	<52	NA	NA	<50	<0.5	<0.5	<0.5	<1.0	1.3	ND
MW-8	28-Jun-10	8-18	<100	NA	NA	<50	0.81J	1.3	0.41J	1.6 J	0.62J	ND
AS-1D	13-Jan-09	31-34	NA	NA		<50	0.69	0.54	<0.5	<0.5	<0.5	ND
	6-Nov-09	31-34	<53	NA		<50	<0.5	<0.5	<0.5	<1.0	<0.5	ND
	28-Jun-10	31-34	<94	NA		<50	<1.0	<1.0	<1.0	<2.0	<1.0	ND

Table 7 Current and Historical Analytical Results for Volatile Organic Compounds in Groundwater Paco Pump 9201 San Leandro Street Oakland, California Oakland, California

concentrations (µg/L)

Sample Location	Date Collected	Depth (feet bgs)	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Other Fuel Additives
ASMW-2D	13-Jan-09	24-34	NA	NA		<50	0.80	0.78	<0.5	<0.5	0.56	ND
	6-Nov-09	24-34	<51	NA		<50	<0.5	<0.5	<0.5	<1.0	0.58	ND
	28-Jun-10	24-34	<94	NA		<50	<1.0	<1.0	<1.0	<2.0	<1.0	ND
LFR Area 5 - S	Suspected For	mer UST near	Ground	vater Mon	itoring W	ell MW-4						
MW-4	16-Nov-92	5.25-20.25	<50	NA	NA	560	66	73	16	130	NA	NA
D	16-Nov-92		<50	NA	NA	520	63	67	15	140	NA	NA
	9-Mar-93		<50	NA	NA	750	67	12	29	62	NA	NA
	21-Jul-93		<50	NA	NA	250	21	4.2	8.4	11	NA	NA
	29-Jan-94		<50	NA	NA	180	28	2.2	6.2	10	NA	NA
	26-May-94		NA	NA	NA	130	14	3.2	6.1	4.7	NA	NA
	24-Aug-94		NA	NA	NA	70	6.7	0.9	2.8	2.6	NA	NA
	22-Nov-94		NA	NA	NA	90	16	1.7	5.6	3.4	NA	NA
	8-Feb-95		NA	NA	NA	90	17	1.3	5.5	3.0	NA	NA
	31-May-95		NA	NA	NA	90	13	0.6	2.3	1.2	NA	NA
	8-Aug-95		NA	NA	NA	80	3.6	<0.5	1.4	0.6	NA	NA
	29-Nov-95		NA	NA	NA	<50	4.5	0.7	1.0	0.7	NA	NA
	29-Feb-96		NA	NA	NA	<50	7.4	1.0	3.2	2.4	NA	NA
	23-May-96		NA	NA	NA	80	11	2.0	2.3	1.0	NA	NA
	3-Nov-03		<50	NA	NA	<50	6.3	0.56	3.4	1.0	<2.0	NA
	18-Jun-08		<50	NA	NA	81	11	0.51	4.7	1.6	<0.5	ND
	6-Nov-09		<50	NA	NA	<50	4.0	<0.5	1.3	<1.0	<0.5	ND
	28-Jun-10		<100	NA	NA	186	12.3	0.85	5.9	2.3	<1.0	ND
	lwater <u>is</u> curre king water sou		100	100	100	100	1	40	30	20	5	0.5 (1,2-DCA) 12 (TBA)
	lwater <u>is not</u> o king water sou		210	210	210	210	46	130	43	100	1,400	200 (1,2-DCA) 18,000 (TBA)

Notes:

bgs = below ground surface

NA = parameter not analyzed

ND = parameter not present above laboratory reporting limits

TPHd = total petroleum hydrocarbons as diesel

TPHmo = total petroleum hydrocarbons as motor oil

TPHg = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary-butyl ether

D = duplicate sample

1,2-DCA = 1,2-dichloroethane

TBA - tertiary butyl alcohol

ESL = San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels Table F-1a and Table F-1b RWQCB May 2008

Bold Font denotes concentration was greater than the ESL .

J = Estimated value above method detection limit but below laboratory reporting limit.

Table 8 Groundwater Analytical Results Used in Risk Evaluation Paco Pump 9201 San Leandro Street Oakland, California

concentrations (µg/L)

Sample Location	Date Collected	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes	tert-Butyl- benzene	1,2-DCA	lsopropyl- benzene	Naphthalene	n-Propyl- benzene	1,2,4- Trimethyl- benzene	1,3,5- Trimethyl- benzene
LFR Area 4 - F	ormer UST Ar	ea														
MW-3	10-Aug-10	NA	NA	NA	12,000	1,400	1,200	190	640	<13	<13	40	160	84	1,000	190
MW-6	10-Aug-10	NA	NA	NA	4,600	800	160	160	210	<6.3	12	24	60	54	490	23
AS-1S	10-Aug-10	NA	NA	NA	1,200	370	44	34	34	3.8	3	8	16	17	83	2.6
ASMW-2S	10-Aug-10	NA	NA	NA	3,200	420	69	61	130	3.4	3.4	14	41	32	370	38

Notes:

bgs = below ground surface

NA = parameter not analyzed

ND = parameter not present above laboratory reporting limits

TPHd = total petroleum hydrocarbons as diesel

TPHmo = total petroleum hydrocarbons as motor oil

TPHg = total petroleum hydrocarbons as gasoline

1,2-DCA = 1,2-dichloroethane

Table 8

Table 9 Summary of Risk Characterization for the Current Indoor Commercial/Industrial Worker Receptor Inhalation of COPCs Volatilizing from Groundwater

Paco Pump 9201 San Leandro Street Oakland, California

	Grou	ndwater	Indoor Air	Cancer Risk	Hazard Quotient
Chemical of Potential Concern	MDC	EPC (C _{gw}) ¹	EPC (C _{building}) ²		
	(µg/L)	(µg/L)	(µg/m ³)		
Volatile Organic Compounds					
Benzene	1400	1400	8.09E-01	6 E-06	2 E-02
Toluene	1200	1200	7.20E-01	NA	2 E-03
Ethylbenzene	190	190	1.11E-01	7 E-08	8 E-05
Total Xylenes	640	640	3.43E-01	NA	2 E-03
tert-Butylbenzene	3.8	3.8	2.45E-03	NA	1 E-05
1,2-Dichloroethane	12	12	3.97E-03	2 E-08	7 E-06
Isopropylbenzene	40	40	1.89E+00	NA	3 E-03
Naphthalene	160	160	3.50E-02	3 E-07	8 E-03
n-Propylbenzene	84	84	5.17E-02	NA	3 E-04
1,2,4-Trimethylbenzene	1000	1000	4.48E-01	NA	4 E-02
1,3,5-Trimethylbenzene	190	190	8.67E-02	NA	1 E-02
			Total	6 E-06	9 E-02

Notes:

MDC = maximum detected concentration. EPC = exposure point concentration.

 μ g/L = micrograms per liter.

¹ EPC represents the maximum detected concentration. Due to limitations of chemical dataset, ProUCL was unable to estimate a 95UCL.

² EPC in groundwater (C_{gw}) was coupled with mathematical models to estimate COPC concentrations in indoor air ($C_{building}$).

APPENDIX A

WASTE MANIFESTS

103 NON-HAZARDOUS Waste Hauler Document Daily Field Ticket No. 640 GENERATOR **DESIGNATED TSD FACILITY ALTERNATE TDS FACILITY** Flam Name: PCC noi Name: Name EPA # EPA # EPA # Address: Addres Address Order Placed: Order Date WASTE - DRILLING MUD - GASWELL WATER D- OTHER Alute 00 Units Ud Weight/Volume Tank Truck Container: - Dump Truck This material is nonhazardous because: chis material is nonnazaroous because: 1) it is a drilling mud containing only the additives listed by the Department in its exemption letter and contains no significant concentrations of texic materials from natural sources, or 2) is a sulfucidioxide scrubber solution from an odjum hydroxise or sodium carbonate oil field boiler scrubber system; and possesses ho characteristics that would require its handling as a hazardous waste. TRANSPORTER Job No. Service Gre 10-10 Pick-dp Date Warren E. Gomes Exc., Inc. Unit No. 20 P. O. Box 369 Rio Vista, CA 94571 SIGNAT REOF BUYER. (707) 374-2881 EPA # CAD076557370 Method of Disposal: TSD FACILITY - Injection Well Name ZnStva (nAl D - Landfill TY Measured I - Land Treatment - Surface Impoundment - BBL - TONS OTHER EPA # Cother_ -21-SIGNATURE OF AUTHORIZED AGENT

TSDF TO GENERATOR

NO. 687541

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NON-HAZARDOUS WASTE DATA FORM

A series of the series

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	Generator's Name and Mailing Address		Generator's Site Address (if differe	nt than mailing address)	
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	.4650 Macadam	۰.	9201 SAN LEANDRO		
	" Poulland DD 97120	1-41100	OAKLAND, CA 2460		
	1º THUNA , OR TYASU	-Java			
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	Description of Soll Sand Organic Clay Other Sand Organic Clay Other Sand Organic Clay Other Sand Organic Clay Other List any exception to items listed a Generator's and/or consult Sheet completed and certif any way. Print or Type Name: K Mansporter's certification: condition as when received without off-loading, adding Print or Type Name: C C Discrepancies: Q SQ	Moisture Content	Contaminated b Gas Diesel O Other O Gas Diesel O Other O I/We certify that Consultant e receipt of the solution of	the soil resistown ab	PAR-460- x. Qty: Desc	ription of Deliv Scale Ticket# s taken entirel has been adde 	y from those a soil is bei Generation	ross Weight 19200 619 50 soils desc to such soil ing delivered n Site to the	Tare Weight 376JU ribed in the S that would d Wonth U?- 2 d in exactly e Designated Month 7	Net Weigh 115 JT 5 TL Soil Data alter it in Day Year Control of the same t Facility Day Year Tacility
Recycling Facility Transporter	Description of Soll Sand Organic Clay Other Sand Organic Clay Other Sand Organic Clay Other Sand Organic Clay Other List any exception to items listed a Generator's and/or consult Sheet completed and certification: condition as when receive: Without off-loading, adding Print or Type Name: List of List Discrepancies: QQO SQO SQO SQO SQO SQO SqO Print or Type Name:	Moisture Content	Contaminated b Gas Diesel O Other O Gas Diesel O Other O I/We certify that Consultant consultant e receipt of the solution of the s	the soil resistown ab	PAR-ARD- x. Qty: Desc besc ferenced herein is ove and nothing mature and date: 1. Centrological delivery to such mature and date: 1. Centrological delivery to such mature and date: Control and centrol and	ription of Deliv Scale Ticket# s taken entirel has been adde 	y from those a soil is bei Generation	ross Weight 19200 619 50 soils desc to such soil ing delivered n Site to the	Tare Weight 376JU ribed in the S that would d Wonth U?- 2 d in exactly e Designated Month 7	Net Weigh 115 JT 5 TL Soil Data alter it in Day Year Control of the same t Facility Day Year Tacility

TRANSPORTER COPY

APPENDIX B

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: 06/02/2010 By jamesy

Permit Numbers: W2010-0374 Permits Valid from 06/08/2010 to 07/30/2010

Application Id: Site Location: Project Start Date: Assigned Inspector:	1274803154148 9201 San Leandro, Oakland, CA 06/08/2010 Contact Vicky Hamlin at (510) 670-5443	City of Project Site:Oakland Completion Date:07/30/2010 or vickyh@acpwa.org
Applicant:	The Source Group, Inc - Paul Parmentie	Phone: 562-597-1055
	1962 Freeman Ave, Signal Hill, CA 907	55
Property Owner:	9201 San Leandro LLC 9201 San Leandro, Oakland, CA 94621	Phone:
Client:	The Source Group, Inc 1962 Freeman Ave, Signal Hill, CA 907	Phone: 562-597-1055
Contact:	Paul Parmentier	Phone: 562-597-1055 Cell: 714-519-1218

	Total Due:	\$265.00
Receipt Number: WR2010-0189		\$265.00 PAID IN FULL
Payer Name : The Source Group, Inc	Faiu by. CHECK	FAID IN FULL

Works Requesting Permits:

Remediation Well Construction-Extraction - 12 Wells Driller: Gregg Drilling - Lic #: 485165 - Method: hstem

Specifications Permit # Issued Date Expire Date Owner Well Hole Diam. Casing Seal Depth Max. Depth ld Diam. W2010-06/02/2010 09/06/2010 E-1 8.00 in. 2.00 in. 5.00 ft 20.00 ft 0374 W2010-06/02/2010 09/06/2010 E-10 8.00 in. 2.00 in. 5.00 ft 20.00 ft 0374 W2010-06/02/2010 09/06/2010 8.00 in. 2.00 in. 5.00 ft 20.00 ft E-11 0374 06/02/2010 09/06/2010 E-12 8.00 in. 2.00 in. 5.00 ft 20.00 ft W2010-0374 W2010-06/02/2010 09/06/2010 E-2 8.00 in. 2.00 in. 5.00 ft 20.00 ft 0374 8.00 in. W2010-06/02/2010 09/06/2010 E-3 2.00 in. 5.00 ft 20.00 ft 0374 W2010-06/02/2010 09/06/2010 E-4 8.00 in. 2.00 in. 5.00 ft 20.00 ft 0374 W2010-06/02/2010 09/06/2010 E-5 8.00 in. 2.00 in. 5.00 ft 20.00 ft 0374 W2010-06/02/2010 09/06/2010 E-6 8.00 in. 2.00 in. 5.00 ft 20.00 ft 0374 W2010-06/02/2010 09/06/2010 E-7 8.00 in. 2.00 in. 5.00 ft 20.00 ft 0374 W2010-06/02/2010 09/06/2010 8.00 in. 2.00 in. 5.00 ft 20.00 ft E-8 0374 W2010-8.00 in. 2.00 in. 20.00 ft 06/02/2010 09/06/2010 E-9 5.00 ft 0374

Specific Work Permit Conditions

1. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend

Work Total: \$265.00

Alameda County Public Works Agency - Water Resources Well Permit

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. 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. Including permit number and site map.

4. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.

5. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@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. Minimum seal depth (Neat Cement Seal) is 2 feet below ground surface (BGS).

7. Minimum surface seal thickness is two inches of cement grout placed by tremie

8. 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.

9. 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.

Well Cons	struction-Mo	nitoring-Mo	onitoring - 0	Wells				
Driller: Gr	egg Drilling	- Lic #: 485	5165 - Meth	od: auger				Work Total: ** \$0.00
						** Ca	ncelled Work.	Total amount adjusted. **
Specificatio	ons							
Permit #	Issued Date	Expire Date	Owner Well	Hole Diam.	Casing	Seal Depth	Max. Depth	
			ld		Diam.			
* Cancelled	*		MW-8	11.00 in.	4.00 in.	5.00 ft	20.00 ft	

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: 06/02/2010 By jamesy

Permit Numbers: W2010-0375 Permits Valid from 06/08/2010 to 07/30/2010

Application Id: Site Location: Project Start Date: Assigned Inspector:	1275518104742 9201 San Leandro, Oakland, CA 06/08/2010 Contact Vicky Hamlin at (510) 670-5443 or	City of Project Site:Oakland Completion Date:07/30/2010 vickyh@acpwa.org	
Applicant:	The Source Group, Inc - Paul Parmentier	Phone: 562-597-1055	
Property Owner:	1962 Freeman Ave, Signal Hill, CA 90755 9201 San Leandro LLC	Phone:	
Client:	9201 San Leandro, Oakland, CA 94621 The Source Group, Inc	Phone: 525-597-1055	
Contact:	1962 Freeman Ave, Signal Hill, CA 90755 Paul Parmentier	Phone: 562-597-1055 Cell: 714-519-1218	
			07.00

	Total Due:	\$397.00
Receipt Number: WR2010-0190	Total Amount Paid:	\$397.00
Payer Name : The Source Group, Inc		PAID IN FULL

Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 1 Wells Driller: Gregg Drilling, Inc - Lic #: 485165 - Method: hstem

Work Total: \$397.00

Specifications									
Permit #	Issued Date	Expire Date	Owner Well	Hole Diam.	Casing	Seal Depth	Max. Depth		
			ld		Diam.				
W2010-	06/02/2010	09/06/2010	MW-8	11.00 in.	4.00 in.	5.00 ft	20.00 ft		
0375									

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

Alameda County Public Works Agency - Water Resources Well Permit

(Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Including permit number and site map.

5. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.

6. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@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

BORING LOGS

C	-		TH	IE	1.5	- 1. M		BORING/WELL ID:
0	C		S	AIIR	er f	ROUP, INC.		E-1
	onme		2.00		1.50.00			
	-			ADDRE		9201 San Leandro Stre	eet	Project No. 04-PFT-003
BORIN	IG LC	DCAT	ION (/	AT SITE):	In Former Tank Pit		Logged By: Kristene Tidwell
					ENT:		5 Limited Access Drilling Rig	
SAMP	LING	MET	HOD:			Macrocore	MONITORING DEVICE:	NA
STAR	r dat	ΓE/ (T	IME):			6/10/10 11:10	FINISH DATE/ TIME	6/10/2010 13:00:00 AM
FIRST	WAT	ER (E	BGS):			9 feet	STABILIZED WATER LEVEL:	9.4 feet
SURF	ACE E	ELEV	ATIO	N:			CASING TOP ELEVATION:	
ΌΤΑ	BO	RING	DEPT	'H(S):	1	18 feet	BORING DIAMETER/DEPTH:	
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	ALL PERCEI	LITHOLOGIC DESCRIP fication, color, moisture, density, gra NTAGES ARE APPROXIMATE UNL	in size/plasticity, other)
1:10				0		Borehole cuttings logo Tank backfill to 10 fee	-	
				1				
				2		2 2 2	Por	tland Neat Cement
				3		Fill		
				4			Ну	rdrated Bentonite Seal
				5				
				6		2		Schedule 40 PVC Blank
				7		2	2/1	2 Monterey Sand
	∇			8				
	V			9				
2:10				10		CLAY (80% clay, 20% permeability	silt), greenish brown, moist, high pl	asticity, low estimated
				11				
				12				Schedule 40 PVC 0.010
				13			L	
				14				
				15				
				16				
				17			Dottom of being 10 ()	t bas
				18			Bottom of boing - 18 feet	i bgs
				19				
				20				

C	0		TH	E	1.0	1 - 1 - 1 - 1		BORING/WELL ID:					
envi	ronme	ental	S	DUR	CE C	ROUP, INC.		E-12					
PROJ		NAME	AND	ADDRE	ESS:	Paco Pumps - 9201 San Le	eandro Street - Oakland, CA	Project No. 04-PFT-003					
BORIN	IG LO	DCAT	ION (A		:):	Near Former Tank Pit		Logged By: Kristene Tidwell					
CONT	RAC	for a	ND E	QUIPM	ENT:	WDC Drilling/ CME-55 Lir							
SAMP	LING	MET	HOD:			Macrocore	MONITORING DEVICE:	NA					
STAR	r da'	ГЕ/ (Т	IME):			6/10/10 13:35	FINISH DATE/ TIME	6/10/10 14:40					
FIRST	WAT	ER (E	BGS):			9 feet	STABILIZED WATER LEVEL:	8.76 feet					
SURF							CASING TOP ELEVATION:						
ΤΟΤΑ	BO	RING	DEPT	H(S):	1	18 feet	BORING DIAMETER/DEPTH:	8-inch/18-feet					
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	ALL PERCENTA	LITHOLOGIC DESCRIPT ion, color, moisture, density, gra IGES ARE APPROXIMATE UNL	in size/plasticity, other)	Well construction details				
12.25				0			rehole cuttings logged						
13:35				1		Fill to 2 feet bgs		Portland Neat Cement					
				•									
				2									
				3		CLAY (80% clay, 20% silt), greyish brown, dry, high plasti	city, low estimated permeability					
				4			Ну	drated Bentonite Seal					
				5									
				6			Schedule 40 PVC Blank						
				7			2/1	2 Monterey Sand					
	⊻			8									
14:00	┸			9		Moist							
14:00				10		Strong hydrocarbon odor							
				12			Г						
				13				Schedule 40 PVC 0.010					
				14									
				15									
				16									
				17									
				18			Bottom of boing - 18 fee	t bgs					
				19									
				20									

C	0		TH					BORING/WELL ID:				
envi	ronm	ental	S	OUR	CE C	GROUP, INC.		E-2				
PROJ	ECT	NAME	AND	ADDR	ESS:	Paco Pumps - 9201 San L	eandro Street - Oakland, CA	Project No. 04-PFT-003				
BORIN	IG LO	DCAT	ION (AT SITE	E):	Inside Building		Logged By: Kristene Tidwell				
					ENT:		imited Access Drilling Rig					
SAMP	LING	MET	HOD:			Macrocore	MONITORING DEVICE:	NA				
STAR	T DA	ГЕ/ (Т	IME):			6/11/10 9:00	FINISH DATE/ TIME	6/11/10 11:20				
FIRST	WAT	ER (E	BGS):			9 feet	STABILIZED WATER LEVEL:	9.6 feet				
SURF							CASING TOP ELEVATION:					
ΤΟΤΑ	L BO	RING	DEP	ΓH(S):	1	18 feet	BORING DIAMETER/DEPTH:	8-inch/18-feet	_			
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	ALL PERCENT	LITHOLOGIC DESCRIP ation, color, moisture, density, gra AGES ARE APPROXIMATE UNL	in size/plasticity, other)	Well construction details			
11.10	1:10					Borehole cuttings logged	gged					
11:10	1:10					Fill to 2 feet bgs	[Portland Neat Cement				
				I		2 2						
				2								
				3		CLAY (80% clay, 20% si	lt), greyish brown, dry, high plasti	city, low estimated permeability				
				4		Hydrated Bentonite Seal						
				5			_					
				6			Schedule 40 PVC Blank	4				
				7			2/1	2 Monterey Sand				
	¥			8		Maint						
10:10	┸			9 10		Moist						
12:10				10		Moderate hydrocarbon o	aor					
							_					
				12				Schedule 40 PVC 0.010				
				13								
				14 15								
				16 17								
				17			Bottom of boing - 18 fee	t bas				
				10		4						
				19								
				20								

C			TH	IE	1.13	BORING/WELL ID:			
envi	ronm	ental	S	OUR	CE C	GROUP, INC.		E-3	
PROJ	ECT	NAME	AND	ADDRI	ESS:	Paco Pumps - 9201 San L	eandro Street - Oakland, CA	Project No. 04-PFT-003	
BORIN	IG LO	DCAT	ION (AT SITE	:	Inside Building		Logged By: Kristene Tidwell	
CONT	RAC	OR A	AND E		ENT:	WDC Drilling/ CME-55 Li			
SAMP						Macrocore	MONITORING DEVICE:	NA	
STAR						6/11/10 12:00	FINISH DATE/ TIME	6/11/10 13:00	
FIRST						9 feet	STABILIZED WATER LEVEL:	9.55 feet	
SURF							CASING TOP ELEVATION:		
ΤΟΤΑ	L BO	RING	DEP	ΓH(S):		18 feet	BORING DIAMETER/DEPTH:	8-inch/18-feet	
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	ALL PERCENTA	LITHOLOGIC DESCRIP ion, color, moisture, density, gra AGES ARE APPROXIMATE UNL	in size/plasticity, other)	Well construction details
				0		Borehole cuttings logged			
12:00	2:00					Fill to 2 feet bgs	[Portland Neat Cement	
				I		×			
				2	Ì				
						CLAY (80% clay, 20% sil	t), greyish brown, dry, high plasti	city, low estimated permeability	
				3					
				4			Ну	drated Bentonite Seal	
				5					
				6			[Schedule 40 PVC Blank	
				7			2/1	2 Monterey Sand	
	⊻			8					
10.50	┸			9		Moist			
12:50				10		Strong hydrocarbon odor			
				11			-		
				12				Schedule 40 PVC 0.010	
				13			L		
				14					
				15					
				16					
				17					
				18			Bottom of boing - 18 fee	t bgs	
				19					
				20					

C			TH					BORING/WELL ID:				
envi	ronme	ental	S	OUR	CE C	BROUP, INC.		E-4				
PROJ		NAME	AND	ADDR	ESS:		eandro Street - Oakland, CA	Project No. 04-PFT-003				
BORIN	IG LC	DCAT	ION (AT SITE	=):	Inside Building - South of	Tank Pit	Logged By: Kristene Tidwell				
CONT	RAC	OR A	ND E		ENT:	WDC Drilling/ CME-55 Li	mited Access Drilling Rig					
SAMP	LING	MET	HOD:			Macrocore	MONITORING DEVICE:	NA				
STAR	T DA	ГЕ/ (Т	IME):			6/11/10 8:30	FINISH DATE/ TIME	6/11/10 10:15				
FIRST	WAT	ER (E	BGS):			9 feet	STABILIZED WATER LEVEL:	9.51 feet				
SURF							CASING TOP ELEVATION:					
ΤΟΤΑ	L BOI	RING	DEP	ΓH(S):	1	18 feet	BORING DIAMETER/DEPTH:	8-inch/18-feet	Well construction details			
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	ALL PERCENT	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED Borehole cuttings logged					
0.00	3:30						logged					
8:30	3:30					Fill to 2 feet bgs	[Portland Neat Cement				
				I								
				2								
				3		CLAY (80% clay, 20% sil	t), greyish brown, dry, high plasti	city, low estimated permeability				
				4			Ну	drated Bentonite Seal				
				5								
				6			[Schedule 40 PVC Blank				
				7			2/1	2 Monterey Sand				
	⊻			8								
	┸			9		Moist						
9:15				10		Very strong hydrocarbon	odor					
				11			_					
				12				Schedule 40 PVC 0.010				
				13			L					
				14								
				15								
				16								
				17								
				18			Bottom of boing - 18 fee	et bgs				
				19								
				20								

C	-		TH	IE	1.0	BORING/WELL ID:							
envi	ronm	ental	S	OUR	CE C	BROUP, INC.		E-5					
PROJ	ECT I	NAME	AND	ADDR	ESS:	Paco Pumps - 9201 San L	eandro Street - Oakland, CA	Project No. 04-PFT-003					
BORIN	IG LO	DCAT	ION (AT SITE):	Inside Building		Logged By: Kristene Tidwell					
CONT	RAC	FOR A	AND E		ENT:	WDC Drilling/ CME-55 Li	mited Access Drilling Rig						
SAMP	LING	MET	HOD:			Macrocore	MONITORING DEVICE:	NA					
STAR	T DA	ГЕ/ (Т	IME):			6/9/10 10:30	FINISH DATE/ TIME	6/10/10 9:00					
FIRST						9 feet	STABILIZED WATER LEVEL:	9.6 feet					
SURF							CASING TOP ELEVATION:						
ΤΟΤΑ	L BOI	RING	DEP	TH(S):	1	18 feet	BORING DIAMETER/DEPTH:	8-inch/18-feet	-				
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	ALL PERCENT	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED						
40.00				0	XXX	Borehole cuttings logged	_						
10:30	10:30					Fill to 2 feet bgs	[Portland Neat Cement					
				I		2							
				2	<u> ()))))</u>								
				3		CLAY (80% clay, 20% sil	t), greyish brown, dry, high plasti	city, low estimated permeability					
							Ну	drated Bentonite Seal					
				5									
				6			Schedule 40 PVC Blank						
				7			2/1	2 Monterey Sand		_			
	⊻			8									
	┸			9		Moist							
11:00				10 11		Moderate hydrocarbon o	dor						
				12			Г						
				13				Schedule 40 PVC 0.010					
				14									
				15									
				16									
				17									
				18			Bottom of boing - 18 fee	t bgs		- 000			
				19									
				20									

C			TH	IE	1.13	BORING/WELL ID:							
envi	ronm	ental	S	OUR	CE C	ROUP, INC.		E-6					
PROJ	ECT	AME	AND	ADDRI	ESS:	Paco Pumps - 9201 San Le	eandro Street - Oakland, CA	Project No. 04-PFT-003					
BORIN	IG LO	CAT	ION (AT SITE	:):	Inside Building		Logged By: Kristene Tidwell					
CONT	RAC	OR A	ND E		ENT:	WDC Drilling/ CME-55 Lir							
SAMP						Macrocore	MONITORING DEVICE:	NA					
STAR						6/9/10 13:30	FINISH DATE/ TIME	6/10/10 9:00					
FIRST						9 feet	STABILIZED WATER LEVEL:	9.5 feet					
SURF							CASING TOP ELEVATION:						
ΤΟΤΑ	BO	RING	DEPT	ΓH(S):	1	18 feet	BORING DIAMETER/DEPTH:	8-inch/18-feet					
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	ALL PERCENTA	LITHOLOGIC DESCRIP tion, color, moisture, density, gra AGES ARE APPROXIMATE UNL	in size/plasticity, other)	Well construction details				
				0		Borehole cuttings logged			шн				
13:30	3:30					Fill to 2 feet bgs	[Portland Neat Cement					
				I									
				2									
						CLAY (80% clay, 20% silt	t), greyish brown, dry, high plasti	city, low estimated permeability					
				3									
				4			Ну	drated Bentonite Seal					
				5									
				6			[Schedule 40 PVC Blank					
				7			2/1	2 Monterey Sand					
	∇			8									
	▼			9		Moist							
14:15				10		Some hydrocarbon odor							
				11									
				12				Schedule 40 PVC 0.010					
				13			L						
				14									
				15									
				16									
				17									
				18			Bottom of boing - 18 fee	et bgs					
				19									
				20									

C	1		TH					BORING/WELL ID:			
envi	ronm	ental	S	OUR	CE C	ROUP, INC.		E-7			
PROJ	ECT	NAME	AND	ADDR	ESS:	Paco Pumps - 9201 San L	eandro Street - Oakland, CA	Project No. 04-PFT-003			
BORIN	IG LO	DCAT	ION (AT SITE	:	Inside Building		Logged By: Kristene Tidwell			
CONT	RAC	for A	ND E		ENT:	WDC Drilling/ CME-55 Li	mited Access Drilling Rig				
SAMP	LING	MET	HOD:			Macrocore	MONITORING DEVICE:	NA			
STAR	T DA	ГЕ/ (Т	IME):			6/10/10 12:15	FINISH DATE/ TIME	6/10/10 14:15			
FIRST	WAT	ER (E	BGS):			9 feet	STABILIZED WATER LEVEL:	9.65 feet			
SURF							CASING TOP ELEVATION:				
ΤΟΤΑ	L BO	RING	DEP	TH(S):	1	18 feet	BORING DIAMETER/DEPTH:	8-inch/18-feet	_		
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	ALL PERCENT	LITHOLOGIC DESCRIP tion, color, moisture, density, gra AGES ARE APPROXIMATE UNL	in size/plasticity, other)	Well construction details		
10.15	2:15					Borehole cuttings logged	-				
12:15	2:15					Fill to 2 feet bgs	[Portland Neat Cement			
				2							
				3		CLAY (80% clay, 20% sil	t), greyish brown, dry, high plasti	city, low estimated permeability			
				4			Hydrated Bentonite Seal				
				5							
				6			[Schedule 40 PVC Blank			
				7			2/1	2 Monterey Sand			
	⊻			8		Maint					
	┸			9		Moist					
12:40				10		Moderate hydrocarbon od	lor				
				11							
				12				Schedule 40 PVC 0.010			
				13			L		Á		
				14							
				15							
				16							
				17							
				18			Bottom of boing - 18 fee	t bgs			
				19							
				20							

C	0		TH			1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		BORING/WELL ID:	
envi	ronm	ental	S	OUR	CE C	ROUP, INC.		E-8	
PROJ	ECTI	NAME	AND	ADDR	ESS:	Paco Pumps - 9201 San L	eandro Street - Oakland, CA	Project No. 04-PFT-003	
BORIN	IG LO	DCAT	ION (AT SITE	=):	Inside Building		Logged By: Kristene Tidwell	
					ENT:		mited Access Drilling Rig		
SAMP	LING	MET	HOD:			Macrocore	MONITORING DEVICE:	NA	
STAR	T DA	ГЕ/ (Т	IME):			6/10/10 14:30	FINISH DATE/ TIME	6/10/10 15:50	
FIRST	WAT	ER (E	BGS):			9 feet	STABILIZED WATER LEVEL:	9.55 feet	
SURF							CASING TOP ELEVATION:		
ΤΟΤΑ	L BO	RING	DEP	ΓH(S):	1	18 feet	BORING DIAMETER/DEPTH:	8-inch/18-feet	_
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	ALL PERCENT	LITHOLOGIC DESCRIP tion, color, moisture, density, gra AGES ARE APPROXIMATE UNL	in size/plasticity, other)	Well construction details
44.00	4:30					Borehole cuttings logged	_		н
14:30	4:30					Fill to 2 feet bgs	[Portland Neat Cement	
				I					
				2					
				3		CLAY (80% clay, 20% sil	lt), greyish brown, dry, high plasti	city, low estimated permeability	
				4			Ну	drated Bentonite Seal	
				5					
				6			[Schedule 40 PVC Blank	
				7			2/1	2 Monterey Sand	Ĩ
	∇			8					
	▼			9		Moist			
15:05				10		Moderate hydrocarbon o	dor		
				11					
				12				Schedule 40 PVC 0.010	
				13			l		
				14					
				15					
				16					
				17					
				18			Bottom of boing - 18 fee	et bgs	
				19					
				20					

C	1		TH			0		BORING/WELL ID:			
envi	ronm	ental	S	OUR	CE C	BROUP, INC.		E-9			
PROJ	ECT I	NAME	AND) ADDRI	ESS:	Paco Pumps - 9201 San Le	eandro Street - Oakland, CA	Project No. 04-PFT-003			
BORIN	IG LO	DCAT	ION (AT SITE	:	Near Building Door		Logged By: Kristene Tidwell			
				EQUIPM	ENT:	WDC Drilling/ CME-55 Lir					
SAMP						Macrocore	MONITORING DEVICE:	NA			
STAR		-	-			6/9/10 15:30	FINISH DATE/ TIME	6/9/10 9:00			
FIRST						9 feet	STABILIZED WATER LEVEL:	9.42 feet			
SURF							CASING TOP ELEVATION:				
ΙΟΙΑ	- BO	RING	DEP	TH(S):	1	18 feet	BORING DIAMETER/DEPTH:	8-inch/18-feet	Well construction details		
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	ALL PERCENTA	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED				
	0										
15:30				1		Fill to 2 feet bgs	[Portland Neat Cement			
				1		2					
				2							
				3		CLAY (80% clay, 20% silt), greyish brown, dry, high plasti	city, low estimated permeability			
				4			Ну	drated Bentonite Seal			
				5							
				6			Schedule 40 PVC Blank				
				7			2/1	2 Monterey Sand	T		
	$\underline{\nabla}$			8							
10.00	▼			9 10		Moist, strong hydrocarbor	n odor				
16:30				10							
				12			Г				
				13				Schedule 40 PVC 0.010			
				14							
				15							
				16							
				17							
				18			Bottom of boing - 18 fee	et bgs			
				19							
				20							

C	1		TH	E	1.0			BORING/WELL ID:	
envi	ronm	ental	S	OUR	CE C	ROUP, INC.		E-10	
PROJ	ECT	NAME		ADDR	ESS:	Paco Pumps - 9201 San Le	eandro Street - Oakland, CA	Project No. 04-PFT-003	
BORIN	IG LO	DCAT	ION (A	AT SITE):	West of Tank Pit		Logged By: Kristene Tidwell	
CONT	RAC	OR A	ND E	QUIPM	ENT:	WDC Drilling/ CME-55 Lir	mited Access Drilling Rig		
SAMP	LING	MET	HOD:			Macrocore	MONITORING DEVICE:	NA	
STAR	T DA	ГЕ/ (Т	IME):			6/10/10 9:40	FINISH DATE/ TIME	6/10/10 10:50	
FIRST		-	-			9 feet	STABILIZED WATER LEVEL:	9.58 feet	
SURF							CASING TOP ELEVATION:		
ΤΟΤΑ	BO	RING	DEPT	'H(S):	1	18 feet	BORING DIAMETER/DEPTH:	8-inch/18-feet	_
Time	Water Level	Sample Interval	Recovery (%)	o Depth (feet)	Stratigraphy		LITHOLOGIC DESCRIP ion, color, moisture, density, gra AGES ARE APPROXIMATE UNL	in size/plasticity, other)	Well construction details
9:40	:40					Fill to 2 feet bgs	г		
				1			L	Portland Neat Cement	
				2		CLAY (80% clay, 20% silt	t), greyish brown, dry, high plasti	city, low estimated permeability	
				3			,, g. c, a. , ,g p. a		
				4			Ну	drated Bentonite Seal	
				5					
				6			[Schedule 40 PVC Blank	
				7			2/1	2 Monterey Sand	
	∇			8					
	T			9		Moist			
10:25				10		Strong hydrocarbon odor			
				11					
				12				Schedule 40 PVC 0.010	
				13			L		
				14					
				15					
				16					
				17					
				18			Bottom of boing - 18 fee	et bgs	
				19					
				20					

C	1		THE		1.0			BORING/WELL ID:	
envi	ronm	ental	So	UR	CE C	ROUP, INC.		E-11	
PROJ	ECT I	NAME	AND A	DDR	ESS:	Paco Pumps - 9201 San Le	eandro Street - Oakland, CA	Project No. 04-PFT-003	
BORIN	IG LO	DCAT	ION (A	r site):	Near Former Tank Pit		Logged By: Kristene Tidwell	
CONT	RAC	for A	AND EQ	UIPM	ENT:	WDC Drilling/ CME-55 Lir	nited Access Drilling Rig		
SAMP	LING	MET	HOD:			Macrocore	MONITORING DEVICE:	NA	
STAR	T DA	ГΕ/ (Т	IME):			6/10/10 15:00	FINISH DATE/ TIME	6/10/10 16:30	
FIRST						9 feet	STABILIZED WATER LEVEL:	9.09 feet	
			ATION:				CASING TOP ELEVATION:		
ΤΟΤΑ	L BO	RING	DEPTH	I(S):	1	18 feet	BORING DIAMETER/DEPTH:	8-inch/18-feet	_
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	ALL PERCENTA	LITHOLOGIC DESCRIPT ion, color, moisture, density, gra GES ARE APPROXIMATE UNL	in size/plasticity, other)	Well construction details
15.00				0		Borehole cuttings logged	-		н
15:00	5:00					Fill to 2 feet bgs		Portland Neat Cement	
				-	XXX				
				2		CLAX (80% clay, 20% silt), greyish brown, dry, high plasti	city low optimated permeability	
				3		OLAT (00% Cidy, 20% Sill	, greyish brown, dry, high plasti	city, low estimated permeability	
				4			Ну	drated Bentonite Seal	
				5					
				6			[Schedule 40 PVC Blank	
				7			2/1	2 Monterey Sand	
	⊻			8					
	▼			9		Moist			
16:10				10		Strong hydrocarbon odor			
				11					
				12				Schedule 40 PVC 0.010	
				13			L		Å
				14					
				15					
				16					
				17					
				18			Bottom of boing - 18 fee	et bgs	
				19					
				20					

S	C		TH	E				BORING/WELL ID:		
envir	onme	ental	S	OUR	CE E	ROUP, INC		MW-8		
PROJE		IAME	AND	ADDRE	ESS:	Paco Pumps - 9201	San Leandro Street - Oakland, CA	Project No. 04-PFT-003		
BORIN	G LO	CATI	ON (/	AT SITE	:):	Near Fence - South	Side of Property	Logged By: Kristene Tidwell		
CONTR	RACT	OR A	ND E	QUIPM	ENT:	WDC Drilling/ CME-	55 Limited Access Drilling Rig	Permit No: W-2010 - 0374		
SAMPL	ING	METH	HOD:			Macro Core	MONITORING DEVICE:	N/A		
START	DAT	Е/ (Т	IME):			6/11/10 7:30	FINISH DATE/ TIME	6/11/10 9:50		
FIRST	WAT	ER (E	BGS):			9 feet	STABILIZED WATER LEVEL:	7.42		
SURFA		ELEV	ATION	N:			CASING TOP ELEVATION:			
TOTAL	BOF	RING	DEPT	'H(S):		18 feet	BORING DIAMETER/DEPTH:	10-inch/18-feet		
CASIN	g di	AMET	ER(S):		4"	SCREEN INTERVAL(S):	10"-18' SLOT (IN): 0.010		
ANNUL				-	1	2/12 sand	BORING ANGLE:	Vertical	1	
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy				Well	construction details
7.00				0		6 inches, Clay, brow	n - had auger to 5'			
7:30				1			L	Portland Neat Cement		
				2		Eill to E foot have				
				3		Fill to 5 feet bgs				
				4			Ну	drated Bentonite Seal		
				5			30% clay, 20% silt), light brown, moder	rate to light plasticity, dry,		
				6		low est. k.	[Schedule 40 PVC Blank		
				7			2/1	2 Monterey Sand		
				8						
				9						
				11		Slight increase silt, o	decrease clay			
				12				Schedule 40 PVC 0.010		
				13		Slightly moist			-	
				15						
				16						
8:10				17						
0.10				18			Bottom of boing - 18 fee	et bgs		
				19						
				20					·	

APPENDIX D

LABORATORY ANALYTICAL RESULTS

D-1: SOIL VAPOR FROM PILOT TEST, APRIL 2010

D-2: SOIL MATRIX

D-3: SOIL GAS

D-4: GROUNDWATER SAMPLES FOR HVDPE EVALUATION I, JUNE 2010

D-5: SEMI-ANNUAL GROUNDWATER MONITORING, JUNE 2010

D-6: GROUNDWATER SAMPLES FOR HVDPE EVALUATION II, AUGUST 2010



Laboratory Job Number 220711 ANALYTICAL REPORT

: Paco Pumps	ce Group, Inc.Project : 04-PFT-003ncent RoadLocation : Paco PumpsHill, CA 94523Level : II
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Sample ID	<u>Lab ID</u>
E-1@10'	220711-001
E-2@10'	220711-002
E-3@10'	220711-003
E-4@9.5'	220711-004
E-5@10'	220711-005
E-6@10'	220711-006
E-7@9.5'	220711-007
E-8@10'	220711-008
E-9@9'	220711-009
E-10@10'	220711-010
E-11@10'	220711-011
E-12@10'	220711-012
MW-8@17'	220711-013

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

hult

Signature:

Project Manager

Date: <u>06/23/2010</u>

NELAP # 01107CA



CASE NARRATIVE

Laboratory number: Client: Project: Location: Request Date: Samples Received: 220711 The Source Group, Inc. 04-PFT-003 Paco Pumps 06/14/10 06/11/10

This data package contains sample and QC results for thirteen soil samples, requested for the above referenced project on 06/14/10. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):

Matrix spikes were not performed for this analysis in batch 164139 due to insufficient sample amount. High surrogate recoveries were observed for bromofluorobenzene (FID) in E-8@10' (lab # 220711-008) and E-9@9' (lab # 220711-009). No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):

High surrogate recovery was observed for dibromofluoromethane in E-7@9.5' (lab # 220711-007). A number of samples were diluted due to high non-target analytes. No other analytical problems were encountered.

Curtia 8 Tan	CH		F CUSTO	DY	
ENVIRONMENTAL ANA	pkins Laborato		72071) TLOGIN #	And	Page of Chain of Custody #
2323 Fifth Street Berkeley, CA 94710	Phone (510) 486 Fax (510) 486	-0900	I LOGIN #	A LOC	NALYTICAL REQUEST
Project No: 03-PFT-00 Project Name: Paco Pumy	Report To:	Knstere Jon P	Tidul	- D-20 526 (1)	
EDD Format: Report Level:	II [] III [] IV Company :		co yny	4 + TH- diepol-80 mThé+4 Organetor	
	Email: F	philippot	escorcegnanto in	4 + 100- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1	
Lab Sample ID. No.	SAMPLING	MATRIX	CHEMICAL PRESERVATIVE	the scar	
1 E-1 @ 10' 2 E-2 () ()	Date Time Collected Collecte		HU 1000 HU 1000 HU 1000 Nu 100 Nu 1000 Nu 100	X BIXX	
3 E-3 0) 10' 7 E-409,5 5 E-500 10'	6/11/10 1250 6/11/10 1250 6/11/10 0915				
6 E-600/0' 7 E-709.5' 8 F-8 @ 10'	6/9/10 1100 6/9/10 1415 6/10/10 1240				
9 E-9091 9 E-100101 19 E-110101	6/16/10 1505 6/9/10 1630 6/10/10 1023 6/10/10 1610				
12 E-120/01 13 Mw-80/71 Notes:	6/10/10 1400				
,	SAMPLÉ RECEIPT	RELIND	DATE: TIME:	- PA Ao	RECEIVED BY: DATE: 1/10 TIME: 6:25 DATE: IMF
			DATE: TIME:		DATE: TIME: DATE: TIME:

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COOLER RECEIPT CHECKLIST

cb	Curtis & Tompkins,	Ltd.
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Login # 72071) Client THE Sovere	Date Received	6-11-10	Number of cool	ers
Client THE Sovere	Glop Pr	oject PACO	pumps	
Date Opened <u>6-11-10</u> B Date Logged in <u>61910</u> B			fank	<u> </u>
1. Did cooler come with a sh Shipping info	nipping slip (airbill, e	tc)	YE	ES NO
2B. Were custody seals intac3. Were custody papers dry a4. Were custody papers filled5. Is the project identifiable	Name	ved? igned, etc)? ? (If so fill out top	DateYE	NO S NO NO NO NO NO
 6. Indicate the packing in coon Bubble Wrap Cloth material 7. Temperature documentation 	☐ Foam blocks ☐ Cardboard	be) Bags DStrofoam	□ None □ Paper t	owels
Type of ice used:		None	Temp(°C)	
	on ice & cold without			
Samples received	on ice directly from t	he field. Cooling	process had begu	in
 8. Were Method 5035 sample If YES, what time we 9. Did all bottles arrive unbround 10. Are samples in the approximation of the sample labels present 12. Do the sample labels agree 13. Was sufficient amount of 	re they transferred to oken/unopened? priate containers for t, in good condition a se with custody paper	freezer? indicated tests? nd complete? s?	7	YES NO VES NO VES NO VES NO
14. Are the samples appropria	ately preserved?		YES	NO NO
15. Are bubbles > 6 mm abser	nt in VOA samples?		YES	NO NA
16. Was the client contacted of If YES, Who was called	concerning this sampled?	le delivery? By	Date:	YES NO

SOP Volume: **Client Services** Section: 1.1.2 Page: 1 of 1

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		Total	Volatil	e Hydrocar	bons	
Lab #:	220711			Location:		Paco Pumps
Client:	The Source (Group, In	nc.	Prep:		EPA 5030B
Project#: Matrix:	04-PFT-003 Soil			Analysis: Basis:		EPA 8015B as received
Units:	mg/Kg			Received:		06/11/10
Field ID:	E-1@10'			Batch#:		164139
Type:	SAMPLE			Sampled		06/10/10
Lab ID: Diln Fac:	220711-001 50.00			Analyzed:		06/17/10
	nalyte		Result		RL	
Gasoline C7-0	C12		690		50	
	rrogate	%REC	Limits			
Bromofluorob	enzene (FID)	109	57-146			
	E 00101			Deteb		1 (4 0 4 4
Field ID: Type:	E-2@10' SAMPLE			Batch#: Sampled:		164044 06/11/10
Lab ID:	220711-002			Analyzed:		06/15/10
Diln Fac:	1.000					
A	nalyte		Result		RL	
Gasoline C7-0	C12	NI	D		0.9	92
	rrogate	%REC				
Su: Bromofluorob		%REC 95	Limits 57-146			
Bromofluorob	enzene (FID)			Pat ab#.		164100
Bromofluorob Field ID:				Batch#: Sampled:		164100 06/11/10
Bromofluorobo Field ID: Type: Lab ID:	enzene (FID) E-3@10' SAMPLE 220711-003			Batch#: Sampled: Analyzed:		164100 06/11/10 06/16/10
Bromofluorob Field ID: Type:	enzene (FID) E-3@10' SAMPLE			Sampled:		06/11/10
Bromofluorobo Field ID: Type: Lab ID: Diln Fac:	E-3@10' SAMPLE 220711-003 1.000 nalyte		57-146 Result	Sampled: Analyzed:	RL	06/11/10 06/16/10
Bromofluorob Field ID: Type: Lab ID: Diln Fac:	E-3@10' SAMPLE 220711-003 1.000 nalyte		57-146	Sampled: Analyzed:	RL	06/11/10 06/16/10
Bromofluorobo Field ID: Type: Lab ID: Diln Fac: Gasoline C7-0	enzene (FID) E-3@10' SAMPLE 220711-003 1.000 nalyte C12 rrogate	95 *REC	57-146 Result 3.1 S Limits	Sampled: Analyzed:		06/11/10 06/16/10
Bromofluorobo Field ID: Type: Lab ID: Diln Fac: Gasoline C7-0	enzene (FID) E-3@10' SAMPLE 220711-003 1.000 nalyte C12 rrogate	95	57-146 Result 3.1 Y	Sampled: Analyzed:		06/11/10 06/16/10
Bromofluorobo Field ID: Type: Lab ID: Diln Fac: Gasoline C7-0	enzene (FID) E-3@10' SAMPLE 220711-003 1.000 nalyte C12 rrogate	95 *REC	57-146 Result 3.1 S Limits	Sampled: Analyzed:		06/11/10 06/16/10
Bromofluorobo Field ID: Type: Lab ID: Diln Fac: Gasoline C7-0 Bromofluorobo	enzene (FID) E-3@10' SAMPLE 220711-003 1.000 nalyte C12 rrogate enzene (FID)	95 *REC	57-146 Result 3.1 S Limits	Sampled: Analyzed:		06/11/10 06/16/10 99
Bromofluorobo Field ID: Type: Lab ID: Diln Fac: Gasoline C7-0 Su: Bromofluorobo Field ID:	enzene (FID) E-3@10' SAMPLE 220711-003 1.000 nalyte C12 rrogate	95 *REC	57-146 Result 3.1 S Limits	Sampled: Analyzed:		06/11/10 06/16/10 99 164139
Bromofluorobo Field ID: Type: Lab ID: Diln Fac: Gasoline C7-0 Su: Bromofluorobo Field ID: Type: Lab ID:	enzene (FID) E-3@10' SAMPLE 220711-003 1.000 malyte C12 rrogate enzene (FID) E-4@9.5' SAMPLE 220711-004	95 *REC	57-146 Result 3.1 S Limits	Sampled: Analyzed:		06/11/10 06/16/10 99
Field ID: Type: Lab ID: Diln Fac: Gasoline C7-0 Bromofluorobo Field ID: Type:	enzene (FID) E-3@10' SAMPLE 220711-003 1.000 malyte C12 rrogate enzene (FID) E-4@9.5' SAMPLE	95 *REC	57-146 Result 3.1 S Limits	Sampled: Analyzed: Batch#: Sampled:		06/11/10 06/16/10 999 164139 06/11/10
Bromofluorobo Field ID: Type: Lab ID: Diln Fac: Gasoline C7-0 Su: Bromofluorobo Field ID: Type: Lab ID: Diln Fac: And And And And And And And And And And	enzene (FID) E-3@10' SAMPLE 220711-003 1.000 nalyte C12 rrogate enzene (FID) E-4@9.5' SAMPLE 220711-004 25.00 nalyte	95 *REC	57-146 Result 3.1 Y Limits 57-146 Result	Sampled: Analyzed: Batch#: Sampled:	0.9	06/11/10 06/16/10 999 164139 06/11/10
Field ID: Type: Lab ID: Diln Fac: Gasoline C7-(Bromofluorob) Field ID: Type: Lab ID: Diln Fac:	enzene (FID) E-3@10' SAMPLE 220711-003 1.000 nalyte C12 rrogate enzene (FID) E-4@9.5' SAMPLE 220711-004 25.00 nalyte	95 *REC	57-146 Result 3.1 Y Limits 57-146	Sampled: Analyzed: Batch#: Sampled:	0.9	06/11/10 06/16/10 999 164139 06/11/10
Field ID: Type: Lab ID: Diln Fac: Gasoline C7-0 Field ID: Type: Lab ID: Diln Fac: An Gasoline C7-0	enzene (FID) E-3@10' SAMPLE 220711-003 1.000 malyte C12 rrogate enzene (FID) E-4@9.5' SAMPLE 220711-004 25.00 malyte C12 rrogate	95 %REC 97 %REC	57-146 Result 3.1 Y Limits 57-146 Result 230 Limits	Sampled: Analyzed: Batch#: Sampled:	0.9	06/11/10 06/16/10 999 164139 06/11/10
Bromofluorobo Field ID: Type: Lab ID: Diln Fac: Gasoline C7-0 Field ID: Type: Lab ID: Diln Fac: An Gasoline C7-0	enzene (FID) E-3@10' SAMPLE 220711-003 1.000 malyte C12 rrogate enzene (FID) E-4@9.5' SAMPLE 220711-004 25.00 malyte C12 rrogate	95 %REC 97	57-146 Result 3.1 Y Limits 57-146 Result 230	Sampled: Analyzed: Batch#: Sampled:	0.9	06/11/10 06/16/10 999 164139 06/11/10

*= Value outside of QC limits; see narrative Y= Sample exhibits chromatographic pattern which does not resemble standard ND= Not Detected RL= Reporting Limit



		T / 0	J/ 140		
Bromofluorobe	rogate	%REC 178 *	Limits 57-146		
-					5.0
Gasoline C7-C	nalyte		Result 230		RL 5.0
Lab ID: Diln Fac:	220711-008 5.000			Analyzed:	06/17/10
Field ID: Type:	E-8@10' SAMPLE			Batch#: Sampled:	164139 06/10/10
Bromofluorobe	enzene (FID)	116	57-146		
		%REC			- · · ·
Gasoline C7-C	nalyte		Result 52		RL 5.0
Field ID: Type: Lab ID: Diln Fac:	E-7@9.5' SAMPLE 220711-007 5.000			Batch#: Sampled: Analyzed:	164139 06/10/10 06/17/10
Sur Bromofluorobe	rrogate enzene (FID)	%REC 99	Limits 57-146		
Gasoline C7-C		N			1.0
	nalyte		Result		RL
Field ID: Type: Lab ID: Diln Fac:	E-6@10' SAMPLE 220711-006 1.000			Batch#: Sampled: Analyzed:	164044 06/09/10 06/15/10
Bromofluorobe		97	57-146		
	rogate	%REC			
Gasoline C7-C	nalyte		Result 12 Y		RL 1.1
Field ID: Type: Lab ID: Diln Fac:	E-5@10' SAMPLE 220711-005 1.000			Batch#: Sampled: Analyzed:	164100 06/09/10 06/17/10
Matrix: Units:	Soil mg/Kg			Basis: Received:	as received 06/11/10
Lab #: Client: Project#: Matrix:	220711 The Source G 04-PFT-003	group, I	nc.	Location: Prep: Analysis:	Paco Pumps EPA 5030B EPA 8015B
	000511	Total	Volatil	e Hydrocar	

*= Value outside of QC limits; see narrative Y= Sample exhibits chromatographic pattern which does not resemble standard ND= Not Detected RL= Reporting Limit Page 2 of 4



		Total	Volatil	.e Hydrocar	bons	
Lab #: Client:	220711 The Source O	Group, Ir	nc.	Location: Prep:		Paco Pumps EPA 5030B
Project#:	04-PFT-003	£,		Analysis:		EPA 8015B
Matrix: Units:	Soil mg/Kg			Basis: Received:		as received 06/11/10
UIILS.	mg/Kg			received:		00/11/10
Field ID: Type:	E-9@9' SAMPLE			Batch#: Sampled:		164044 06/09/10
Lab ID: Diln Fac:	220711-009 1.000			Analyzed:		06/15/10
	Analyte		Result		RL	
Gasoline C	7-C12		41			.93
	Surrogate	%REC	Limits			
	obenzene (FID)	153 *	57-146			
Field ID: Type:	E-10@10' SAMPLE			Batch#: Sampled:		164139 06/10/10
Lab ID:	220711-010			Analyzed:		06/17/10
Diln Fac:	25.00			-		
	Analyte		Result		RL	
Gasoline C			270		25	
	Surrogate	%REC	Limits			
	obenzene (FID)	110	57-146			
Field ID:	E-11@10'			Batch#:		164139
Type:	SAMPLE			Sampled:		06/10/10
Lab ID: Diln Fac:	220711-011 50.00			Analyzed:		06/17/10
	Analyte		Result		RL	
Gasoline C	7-C12		570		50	
	Surrogate	%REC	Limits			
	obenzene (FID)	113	57-146			
Field ID:	E-12@10'			Batch#:		164139
Type: Lab ID:	SAMPLE 220711-012			Sampled: Analyzed:		06/10/10 06/18/10
Diln Fac:	40.00			Anaryzeu.		00/10/10
	Analyte		Result		RL	
Gasoline C			320		40	
	Surrogate	%REC	Limits			
	obenzene (FID)	105	57-146			

*= Value outside of QC limits; see narrative Y= Sample exhibits chromatographic pattern which does not resemble standard ND= Not Detected RL= Reporting Limit Page 3 of 4



		Total	Volatil	e Hydrocar	bons
Lab #: Client: Project#:	220711 The Source G 04-PFT-003	roup, Ir	nc.	Location: Prep: Analysis:	Paco Pumps EPA 5030B EPA 8015B
Matrix: Units:	Soil mg/Kg			Basis: Received:	as received 06/11/10
Field ID: Type: Lab ID: Diln Fac:	MW-8@17' SAMPLE 220711-013 1.000			Batch#: Sampled: Analyzed:	164100 06/11/10 06/17/10
Ar Gasoline C7-C	nalyte	NI	Result		RL 1.0
					1.0
Sur Bromofluorobe	enzene (FID)	%REC 95	Limits 57-146		
Type: Lab ID: Diln Fac:	BLANK QC548675 1.000			Batch#: Analyzed:	164044 06/15/10
	nalyte	NT	Result		RL
Gasoline C7-C		NI	-		0.20
Sur Bromofluorobe	rogate	%REC 92	Limits 57-146		
Type: Lab ID: Diln Fac:	BLANK QC548889 1.000		57 110	Batch#: Analyzed:	164100 06/16/10
Ar Gasoline C7-C	nalyte	NT	Result		RL
	-	NI			0.20
Sur Bromofluorobe	rrogate enzene (FID)	%REC 94	Limits 57-146		
Type: Lab ID: Diln Fac:	BLANK QC549049 1.000			Batch#: Analyzed:	164139 06/17/10
	nalyte	N .TT	Result		RL
Gasoline C7-C	212	NI	ر		0.20
Sur Bromofluorobe	enzene (FID)	%REC 94	Limits 57-146		

*= Value outside of QC limits; see narrative Y= Sample exhibits chromatographic pattern which does not resemble standard ND= Not Detected RL= Reporting Limit Page 4 of 4



Gasoline C7-C12

	Total Volat	tile Hydrocarbo	ons	
Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8015B	
Туре:	LCS	Diln Fac:	1.000	
Lab ID:	QC548676	Batch#:	164044	
Matrix:	Soil	Analyzed:	06/15/10	
Units:	mg/Kg			
An	alyte Spiked	l Res	ult %REC Limits	

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	57-146

0.9327

93

77-123

1.000



		Total V	<i>V</i> olatil	e Hydrocar	bons				
Lab #:	220711			Location:		Paco Pumps			
Client:	The Source G	roup, Inc		Prep:		EPA 5030B			
Project#:	04-PFT-003			Analysis:		EPA 8015B			
Field ID:	E-2@10'			Diln Fac:		1.000			
MSS Lab ID:	220711-002			Batch#:		164044			
Matrix:	Soil			Sampled:		06/11/10			
Units:	mg/Kg			Received:		06/11/10			
Basis:	as received			Analyzed:		06/15/10			
	MS lyte	MSS Res	ult	Lab ID: Spiked		QC548677 Result	%REC		nits
Gasoline C7-C	12	0	.1649	9.70	9	7.074	71	38-	-120
	rogate	%REC	Limits						
Bromofluorober	nzene (FID)	99	57-146						
Гуре:	MSD			Lab ID:		QC548678			
Ana	alyte	S	piked	I	Result	%REC	Limits	RPD	Lim
Gasoline C7-C2	12		9.174		6.3	353 67	38-120	5	56

Surrogat	%REC	Limits
Bromofluorobenzene	(FID) 98	57-146



Gasoline C7-C12

Total Volatile Hydrocarbons							
Lab #:	220711	Location:	Paco Pumps	_			
Client:	The Source Group, Inc.	Prep:	EPA 5030B				
Project#:	04-PFT-003	Analysis:	EPA 8015B				
Type:	LCS	Diln Fac:	1.000				
Lab ID:	QC548890	Batch#:	164100				
Matrix:	Soil	Analyzed:	06/16/10				
Units:	mg/Kg						
Ar	alyte Spiked	l Res	sult %REC Limits				

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	57-146

0.9856

99

77-123

1.000



Total Volatile Hydrocarbons									
Lab #:	220711			Location:	Paco Pumps				
Client:	The Source G	Source Group, Inc.		Prep:	EPA 5030B				
Project#:	04-PFT-003)3		Analysis:	EPA 8015B				
Field ID:	E-3@10'	E-3@10'		Diln Fac:	1.000				
MSS Lab ID:	220711-003			Batch#:	164100				
Matrix:	Soil			Sampled:	06/11/10				
Units:	mg/Kg			Received:	06/11/10				
Basis:	as received	as received		Analyzed:	06/17/10				
Type:	MS			Lab ID:	QC548891				
Anal		MSS Re		Spiked	Result	%REC	Limits		
Gasoline C7-C1	12		3.126	10.31	10.59	72	38-120		
Suri	rogate	%REC	Limits						
Bromofluorober	izene (FID)	108	57-146						
Type:	MSD			Lab ID:	QC548892				

			~				
Analyte		Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12		10.64	10.48	69	38-120	3	56
Surrogate	%REC	Limits					
Bromofluorobenzene (FID)	105	57-146					



Total Volatile Hydrocarbons									
Lab #:	220711			Location:	Paco P	umps			
Client:	The Source G	Group, In	nc.	Prep:	EPA 50	30B			
Project#:	04-PFT-003			Analysis:	EPA 80	15B			
Matrix:	Soil			Batch#:	164139				
Units:	mg/Kg			Analyzed:	06/17/	10			
Diln Fac:	1.000								
Туре:	BS			Lab ID:	QC5490	51			
	Analyte		Spiked		Result	%REC	Limits		
Gasoline C7	7-C12		1.000		0.9485	95	77-123		
S	Surrogate	%REC	Limits						
Bromofluoro	bbenzene (FID)	98	57-146						
Type:	BSD			Lab ID:	QC5490	52			
	Analyte		Spiked		Result	%REC	Limits	RPD	Lim
Gasoline C7	7-C12		2.000		2.027	101	77-123	7	26
S	Surrogate	%REC	Limits						
Bromofluoro	benzene (FID)	109	57-146						

Sequence File: \\Lims\gdrive\ezchrom\Projects\GC04\Sequence\168.seq Sample Name: 220711-001,164139,50x,tvh Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_006 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 1. Analyst (lims2k3\tvh1) Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe141.met

mVolt 400 100 200 300 500 600 C 0 Name A 220711-001,164139,50x,tvh N ъ σ ω 10 12 Channel Minutes ⊳ 14 Bromofluorobenzene (FID) 16 18 20 22 24 26 ċ 200 500 600 400 100 300 mVolt

Software Version 3.1.7 Run Date: 6/17/2010 7:29:33 PM Analysis Date: 6/18/2010 12:10:48 PM Sample Amount: 1 Multiplier: 1 Vial & pH or Core ID: a

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Sequence File: \\Lims\gdrive\ezchrom\Projects\GC04\Sequence\167.seq Sample Name: mss,220711-003,164100,tvh Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\167_005 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 1. Analyst (lims2k3\tvh1) Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe141.met

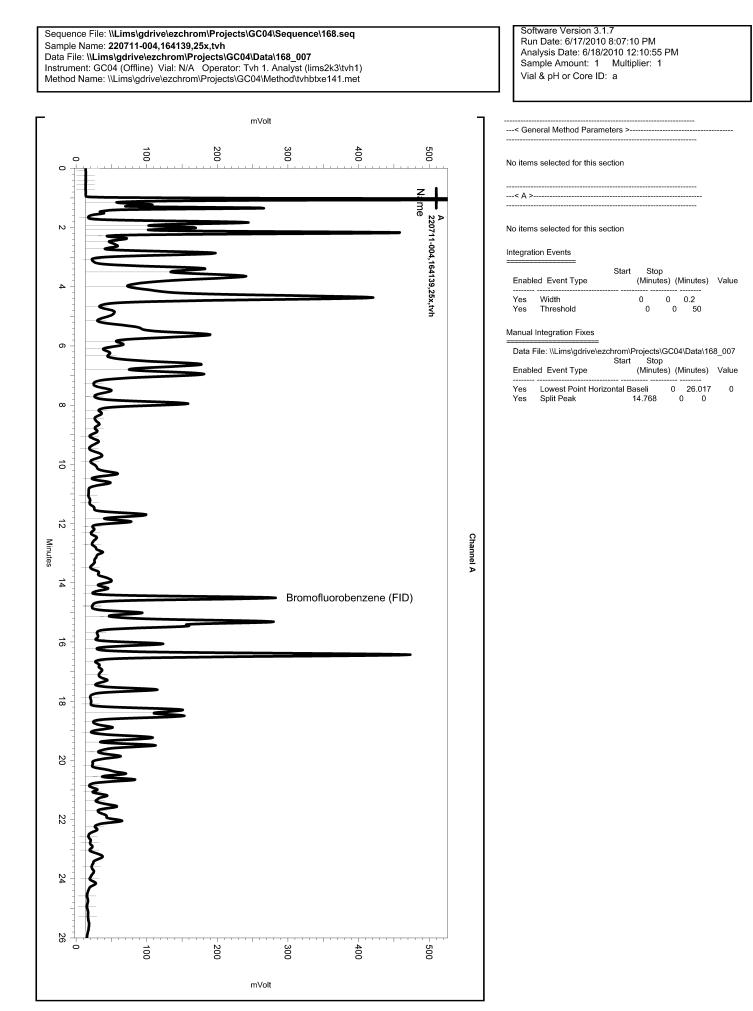
Software Version 3.1.7 Run Date: 6/16/2010 8:57:47 PM Analysis Date: 6/18/2010 11:34:58 AM Sample Amount: 1.01 Multiplier: 1.01 Vial & pH or Core ID: a

---< General Method Parameters >---No items selected for this section ----< A >-----No items selected for this section Integration Events Stop Start (Minutes) (Minutes) Value Enabled Event Type 0 0.2 0 5 Yes Width 0 0 Yes Threshold 50 Manual Integration Fixes
 Start
 Stop

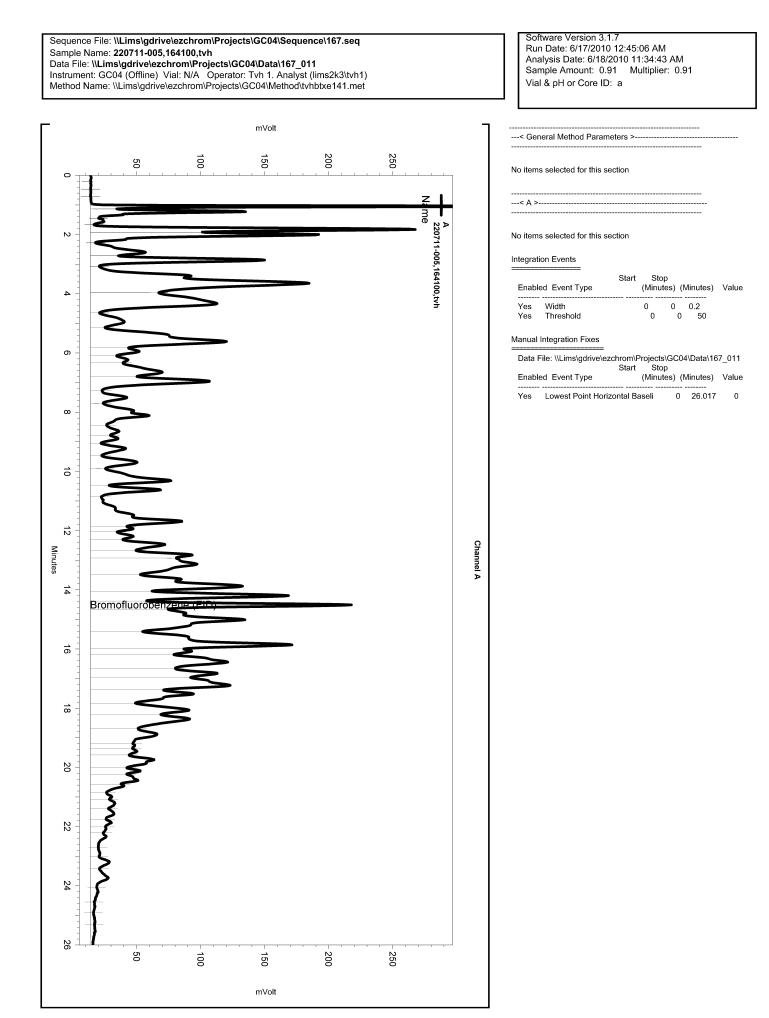
 Enabled
 Event Type
 (Minutes)
 (Minutes)
 Value
 14.732 0 Yes Split Peak 0

Channel

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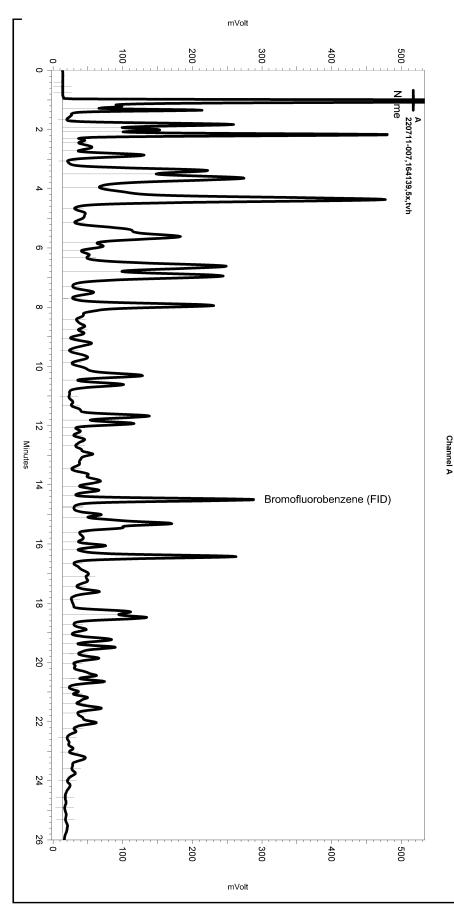


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Page 2 of 4 (2) Curtis & Tompkins Ltd.

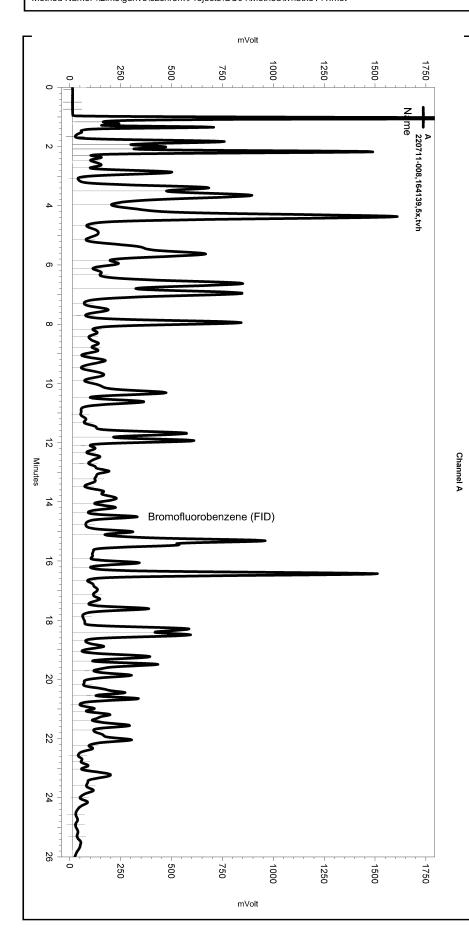
Sequence File: \\Lims\gdrive\ezchrom\Projects\GC04\Sequence\168.seq Sample Name: 220711-007,164139,5x,tvh Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_008 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 1. Analyst (lims2k3\tvh1) Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe141.met

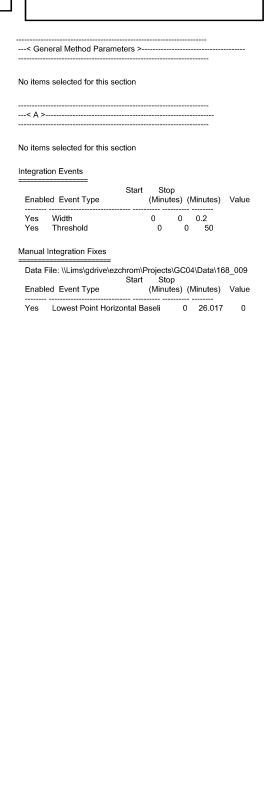


Software Version 3.1.7 Run Date: 6/17/2010 8:44:46 PM Analysis Date: 6/18/2010 12:11:03 PM Sample Amount: 1 Multiplier: 1 Vial & pH or Core ID: a

---< General Method Parameters >--No items selected for this section ----< A >----No items selected for this section Integration Events Stop Start (Minutes) (Minutes) Value Enabled Event Type Yes Width 0 0 0.2 0 0 Yes Threshold 50 Manual Integration Fixes Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_008 Start Stop Enabled Event Type (Minutes) (Minutes) Value 0 26.017 0 0 Lowest Point Horizontal Baseli Split Peak 14.734 Yes 0 Yes

Sequence File: \\Lims\gdrive\ezchrom\Projects\GC04\Sequence\168.seq Sample Name: 220711-008,164139,5x,tvh Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_009 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 1. Analyst (lims2k3\tvh1) Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe141.met Software Version 3.1.7 Run Date: 6/17/2010 9:22:38 PM Analysis Date: 6/18/2010 12:11:10 PM Sample Amount: 1 Multiplier: 1 Vial & pH or Core ID: a





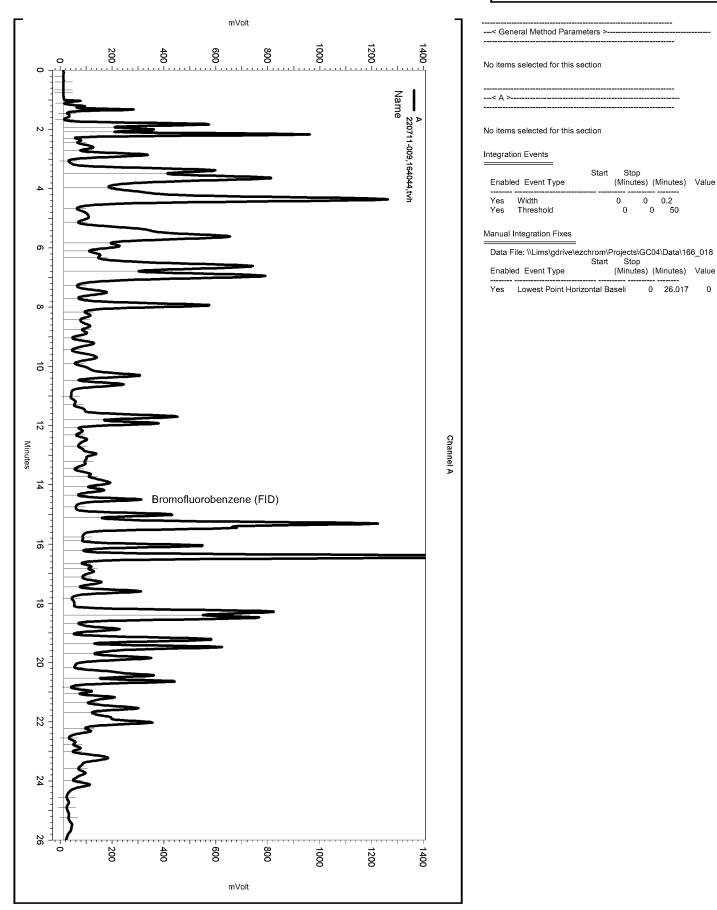
Page 2 of 4 (14) Curtis & Tompkins Ltd.

Sequence File: \\Lims\gdrive\ezchrom\Projects\GC04\Sequence\166.seq Sample Name: 220711-009,164044,tvh Data File: \LLims\gdrive\ezchrom\Projects\GC04\Data\166_018 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2) Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe141.met Software Version 3.1.7 Run Date: 6/15/2010 11:47:58 PM Analysis Date: 6/16/2010 12:11:01 PM Sample Amount: 1.08 Multiplier: 1.08 Vial & pH or Core ID: a

0 0.2 0 50

0 26.017

0



Page 2 of 4 Curtis & Tompkins Ltd.

Sequence File: \\Lims\gdrive\ezchrom\Projects\GC04\Sequence\168.seq Sample Name: 220711-010,164139,25x,tvh Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_010 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 1. Analyst (lims2k3\tvh1) Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe141.met

Software Version 3.1.7 Run Date: 6/17/2010 10:00:19 PM Analysis Date: 6/18/2010 12:11:18 PM Sample Amount: 1 Multiplier: 1 Vial & pH or Core ID: a

---< General Method Parameters >---No items selected for this section ----< A >-----No items selected for this section Integration Events Stop Start (Minutes) (Minutes) Value Enabled Event Type Yes Width 0 0 0.2 0 0 Yes Threshold 50 Manual Integration Fixes
 Start
 Stop

 Enabled
 Event Type
 (Minutes)
 Value
 Yes Lowest Point Horizontal Baseli 0 26.017 0

Channel

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Sequence File: \\Lims\gdrive\ezchrom\Projects\GC04\Sequence\168.seq Sample Name: 220711-011,164139,50x,tvh Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\168_011 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 1. Analyst (lims2k3\tvh1) Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe141.met

mVolt 100 200 300 400 0 Name I A 220711-011,164139,50x,tvh N ъ σ ω 10 12 Minutes 14 Bromofluorobenzene (FID) 16 18 20 22 24 26 300 400 100 200 mVolt

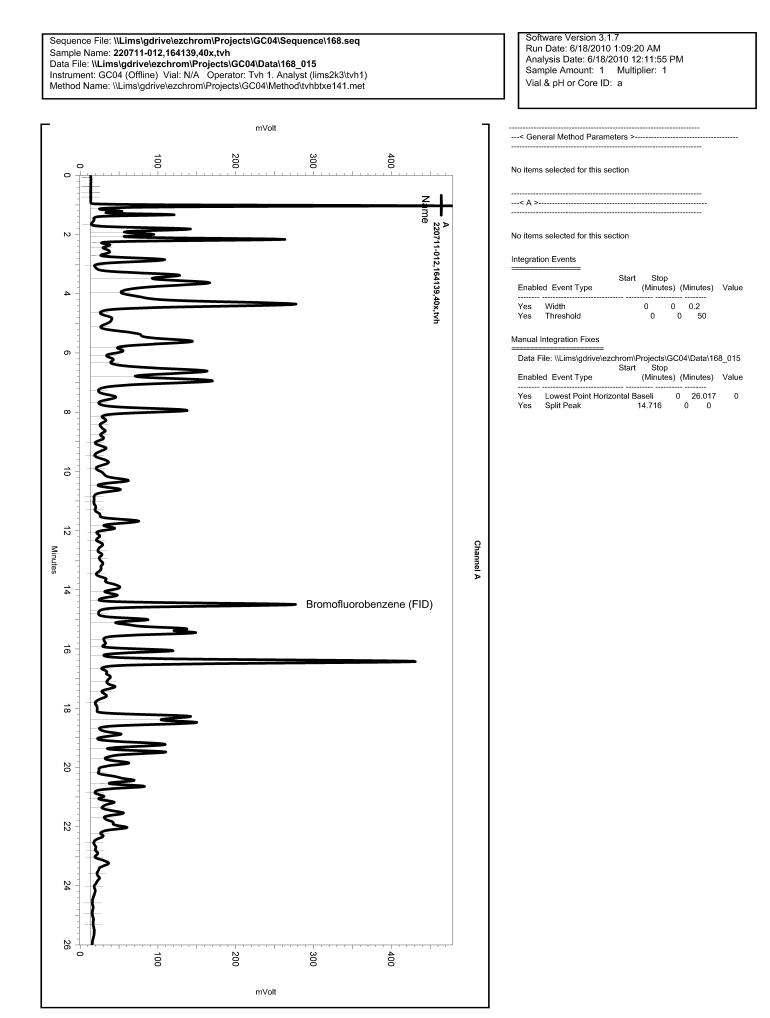
Software Version 3.1.7 Run Date: 6/17/2010 10:38:02 PM Analysis Date: 6/18/2010 12:11:25 PM Sample Amount: 1 Multiplier: 1 Vial & pH or Core ID: a

---< General Method Parameters >--No items selected for this section ----< A >----No items selected for this section Integration Events Stop Start (Minutes) (Minutes) Value Enabled Event Type Yes Width 0 0 0.2 0 0 Yes Threshold 50 Manual Integration Fixes
 Start
 Stop

 Enabled
 Event Type
 (Minutes)
 Value
 Yes Lowest Point Horizontal Baseli 0 26.017 0

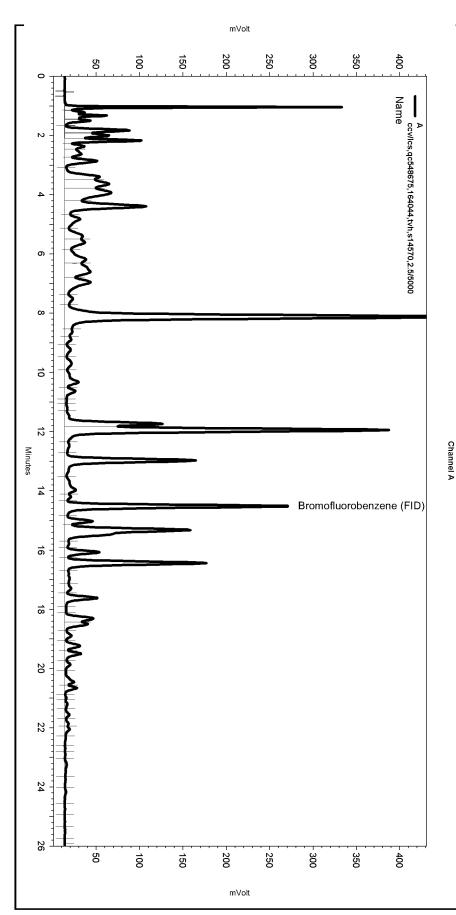
Channel

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Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\166.seq** Sample Name: ccv/lcs,qc548675,164044,tvh,s14570,2.5/5000 Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\166_003** Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2) Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe141.met Software Version 3.1.7 Run Date: 6/15/2010 1:04:14 PM Analysis Date: 6/16/2010 12:22:59 PM Sample Amount: 1 Multiplier: 1 Vial & pH or Core ID: {Data Description}



----< General Method Parameters >-No items selected for this section ----< A >-----No items selected for this section Integration Events Stop (Minutes) (Minutes) Value Start Enabled Event Type 0 0.2 0 50 Width Yes 0 Threshold 0 Yes Manual Integration Fixes Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\166_003 Start Stop (Minutes) (Minutes) Value Enabled Event Type None



		Total I	Extracta	ble Hydroca	arbons	
Lab #: Client: Project#:	220711 The Source G 04-PFT-003	roup, Ir	nc.	Location: Prep: Analysis:	Paco Pumps SHAKER TABLE EPA 8015B	
Matrix: Units: Basis: Diln Fac:	Soil mg/Kg as received 1.000			Batch#: Received: Prepared:	164034 06/11/10 06/15/10	
Field ID: Type: Lab ID:	E-1@10' SAMPLE 220711-001			Sampled: Analyzed:	06/10/10 06/15/10	
Ana Diesel C10-C24	lyte		Result 140 Y		RL 0.99	
Surro	ogate	%REC				
o-Terphenyl		99	45-130			
Field ID: Type: Lab ID:	E-2@10' SAMPLE 220711-002			Sampled: Analyzed:	06/11/10 06/15/10	
Ana Diogol C10 C24	lyte		Result		RL	
Diesel C10-C24			110 Y		RL 0.99	
Diesel C10-C24	lyte ogate	%REC 103	110 Y			
Diesel C10-C24		%REC	110 Y Limits	Sampled: Analyzed:		
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Ana	E-3@10' SAMPLE 220711-003	%REC 103	110 Y Limits 45-130 Result	Sampled: Analyzed:	0.99 06/11/10	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Diesel C10-C24	E-3@10' SAMPLE 220711-003	%REC 103	110 Y Limits 45-130 Result 330 Y	Sampled: Analyzed:	0.99 06/11/10 06/16/10 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Diesel C10-C24	E-3@10' SAMPLE 220711-003	%REC 103	110 Y Limits 45-130 Result 330 Y	Sampled: Analyzed:	0.99 06/11/10 06/16/10 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Diesel C10-C24 Surre	E-3@10' SAMPLE 220711-003	%REC 103 %REC	110 Y Limits 45-130 Result 330 Y Limits	Sampled: Analyzed: Sampled: Analyzed:	0.99 06/11/10 06/16/10 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Type: Lab ID:	E-3@10' SAMPLE 220711-003 Lyte Dgate E-4@9.5' SAMPLE	%REC 103 %REC 89	110 Y Limits 45-130 Result 330 Y Limits	Analyzed:	0.99 06/11/10 06/16/10 RL 0.99 0.99	

Y= Sample exhibits chromatographic pattern which does not resemble standard ND= Not Detected RL= Reporting Limit $_{\rm Page \ 1 \ of \ 4}$



		Total H	Extracta	ble Hydroca	arbons	
Lab #: Client: Project#: Matrix: Units:	220711 The Source G 04-PFT-003 Soil mg/Kg	roup, In	uc.	Location: Prep: Analysis: Batch#: Received:	Paco Pumps SHAKER TABLE EPA 8015B 164034 06/11/10	
Basis: Diln Fac:	as received 1.000			Prepared:	06/15/10	
Field ID: Type: Lab ID:	E-5@10' SAMPLE 220711-005			Sampled: Analyzed:	06/09/10 06/16/10	
Anal Diesel C10-C24	lyte		Result 360 Y		RL 1.0	
Surro	ogate	%REC	Limits			
o-Terphenyl		81	45-130			
Field ID: Type: Lab ID:	E-6@10' SAMPLE 220711-006			Sampled: Analyzed:	06/09/10 06/16/10	
Anal Diesel C10-C24	lyte		Result 7.8 Y		RL 0.99	
Diesel C10-C24	•		7.8 Y	-		
	•	% REC 111	7.8 Y			
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID:	E-7@9.5' SAMPLE 220711-007	%REC 111	7.8 Y Limits 45-130	Sampled: Analyzed:	0.99 06/10/10 06/16/10	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type:	E-7@9.5' SAMPLE 220711-007	%REC 111	7.8 Y Limits	Sampled:	0.99 06/10/10	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Diesel C10-C24	E-7@9.5' SAMPLE 220711-007	%REC 111	7.8 Y Limits 45-130 Result 23 Y	Sampled:	0.99 06/10/10 06/16/10 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Anal	E-7@9.5' SAMPLE 220711-007	%REC 111	7.8 Y Limits 45-130 Result 23 Y	Sampled:	0.99 06/10/10 06/16/10 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Anal Diesel C10-C24 Surre	E-7@9.5' SAMPLE 220711-007	%REC 111 %REC 102	7.8 Y Limits 45-130 Result 23 Y Limits 45-130	Sampled:	0.99 06/10/10 06/16/10 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: O-Terphenyl Field ID: O-Terphenyl Field ID: Surre o-Terphenyl Field ID: Type: Lab ID:	E-7@9.5' SAMPLE 220711-007 Lyte E-8@10' SAMPLE 220711-008	%REC 111 %REC 102	7.8 Y Limits 45-130 Result 23 Y Limits 45-130 Result	Sampled: Analyzed: Sampled:	0.99 06/10/10 06/16/10 RL 0.99 0.99 0.99 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Type: Lab ID:	E-7@9.5' SAMPLE 220711-007 Lyte E-8@10' SAMPLE 220711-008	%REC 111 %REC 102	7.8 Y Limits 45-130 Result 23 Y Limits 45-130	Sampled: Analyzed: Sampled:	0.99 06/10/10 06/16/10 RL 0.99 0.99	

Y= Sample exhibits chromatographic pattern which does not resemble standard ND= Not Detected RL= Reporting Limit $_{\rm Page\ 2\ of\ 4}$



		Total I	Extracta	ble Hydroca	rbons	
Lab #: Client: Project#:	220711 The Source 0 04-PFT-003	Group, In	nc.	Location: Prep: Analysis:	Paco Pumps SHAKER TABLE EPA 8015B	
Matrix: Units: Basis: Diln Fac:	Soil mg/Kg as received 1.000			Batch#: Received: Prepared:	164034 06/11/10 06/15/10	
Field ID: Type: Lab ID:	E-9@9' SAMPLE 220711-009			Sampled: Analyzed:	06/09/10 06/16/10	
Anal Diesel C10-C24	lyte		Result 22 Y		RL 0.99	
Surro	gate	%REC				
o-Terphenyl	Jule	95	45-130			
Field ID: Type: Lab ID:	E-10@10' SAMPLE 220711-010			Sampled: Analyzed:	06/10/10 06/16/10	
Anal	lyte		Result		RL	
Diesel C10-C24	-		79 Y		RL 0.99	
Anal Diesel C10-C24 Co-Terphenyl	-	%REC 95	79 Y			
Diesel C10-C24	-	%REC	79 Y Limits	Sampled: Analyzed:		
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Anal	E-11@10' SAMPLE 220711-011	% REC 95	79 Y Limits 45-130 Result	Sampled: Analyzed:	0.99 06/10/10 06/16/10 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Diesel C10-C24	E-11@10' SAMPLE 220711-011	%REC 95	79 Y Limits 45-130 Result 110 Y	Sampled: Analyzed:	0.99 06/10/10 06/16/10	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Anal	E-11@10' SAMPLE 220711-011	% REC 95	79 Y Limits 45-130 Result 110 Y	Sampled: Analyzed:	0.99 06/10/10 06/16/10 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Diesel C10-C24 Surre	E-11@10' SAMPLE 220711-011	%REC 95 %REC	79 Y Limits 45-130 Result 110 Y Limits	Sampled: Analyzed:	0.99 06/10/10 06/16/10 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Diesel C10-C24 Surre	E-11@10' SAMPLE 220711-011	%REC 95 %REC	79 Y Limits 45-130 Result 110 Y Limits	Sampled: Analyzed: Sampled: Analyzed:	0.99 06/10/10 06/16/10 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Field ID: Type: Lab ID:	E-11@10' SAMPLE 220711-011 Lyte E-12@10' SAMPLE 220711-012	%REC 95 %REC 103	79 Y Limits 45-130 Result 110 Y Limits 45-130 Result	Analyzed:	0.99 06/10/10 06/16/10 RL 06/10/10 06/16/10 RL	
Diesel C10-C24 Surre o-Terphenyl Field ID: Type: Lab ID: Diesel C10-C24 Surre o-Terphenyl	E-11@10' SAMPLE 220711-011 Lyte E-12@10' SAMPLE 220711-012 Lyte	%REC 95 %REC 103	79 Y Limits 45-130 Result 110 Y Limits 45-130	Analyzed:	0.99 06/10/10 06/16/10 RL 1.0 06/10/10 06/16/10	

Y= Sample exhibits chromatographic pattern which does not resemble standard ND= Not Detected RL= Reporting Limit Page 3 of 4



		Total Extra	actable Hydroca	rbons	
Lab #:	220711		Location:	Paco Pumps	
Client:	The Source G	coup, Inc.	Prep:	SHAKER TABLE	
Project#: Matrix:	04-PFT-003 Soil		Analysis: Batch#:	EPA 8015B 164034	
Units:	mg/Kg		Received:	06/11/10	
Basis:	as received		Prepared:	06/15/10	
Diln Fac:	1.000		-1		
Field ID: Type: Lab ID:	MW-8@17' SAMPLE 220711-013		Sampled: Analyzed:	06/11/10 06/15/10	
Anal	yte	Resul	.t	RL	
Anal Diesel C10-C24	yte	Resul ND	t	RL 1.0	
Diesel C10-C24		ND %REC Limi	.ts		
Diesel C10-C24		ND	.ts		
Diesel C10-C24		ND %REC Limi	.ts		
Diesel C10-C24 Surro o-Terphenyl Type: Lab ID:	gate BLANK QC548635	ND %REC Limi 98 45-1	ts 30 Analyzed:	1.0	
Diesel C10-C24 Surro o-Terphenyl Type: Lab ID: Anal	gate BLANK QC548635	ND %REC Limi 98 45-1 Resul	ts 30 Analyzed:	1.0 06/15/10 RL	
Diesel C10-C24 Surro o-Terphenyl Type: Lab ID:	gate BLANK QC548635	ND %REC Limi 98 45-1	ts 30 Analyzed:	1.0	
Diesel C10-C24 Surro o-Terphenyl Type: Lab ID: Anal	gate BLANK QC548635 yte	ND %REC Limi 98 45-1 Resul	.ts .ts	1.0 06/15/10 RL	



Batch QC Report

Total Extractable Hydrocarbons					
Lab #:	220711	Location:	Paco Pumps		
Client:	The Source Group, Inc.	Prep:	SHAKER TABLE		
Project#:	04-PFT-003	Analysis:	EPA 8015B		
Туре:	LCS	Diln Fac:	1.000		
Lab ID:	QC548636	Batch#:	164034		
Matrix:	Soil	Prepared:	06/15/10		
Units:	mg/Kg	Analyzed:	06/15/10		

Cleanup Method: EPA 3630C

Analyte		Spiked	Result	%REC	Limits
Diesel C10-C24		50.00	49.38	99	45-143
Surrogate	%REC	Limits			
o-Terphenyl	101	45-130			

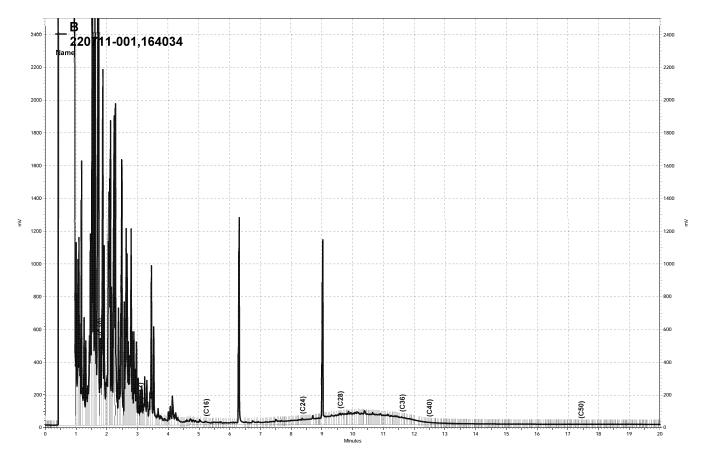


Batch QC Report

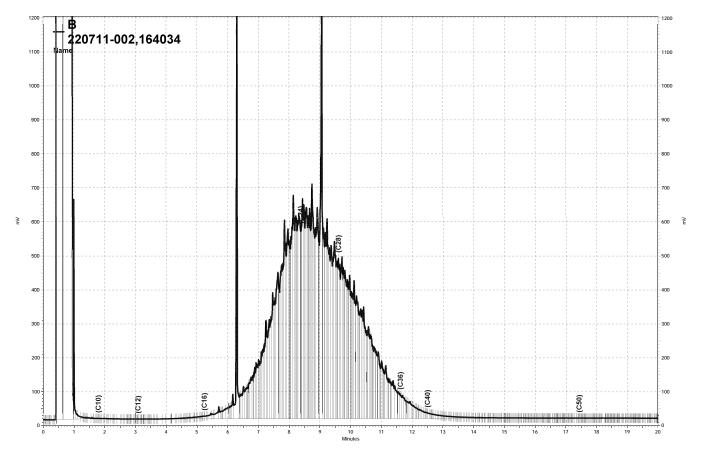
	Total Extra	ctable Hydrocarl	bons		
Lab #:	220711	Location:	Paco Pumps		
Client:	The Source Group, Inc.	Prep:	SHAKER TABLE		
Project#:	04-PFT-003	Analysis:	EPA 8015B		
Field ID:	E-10@10'	Batch#:	164034		
MSS Lab ID:	220711-010	Sampled:	06/10/10		
Matrix:	Soil	Received:	06/11/10		
Units:	mg/Kg	Prepared:	06/15/10		
Basis:	as received	Analyzed:	06/16/10		
Diln Fac:	1.000				
Type:	MS	Lab ID:	QC548637		
Analy	rte MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	4 78.64	49.66	123.1	90	32-142
0		-			

Surrogate%RECLimitso-Terphenyl9745-130

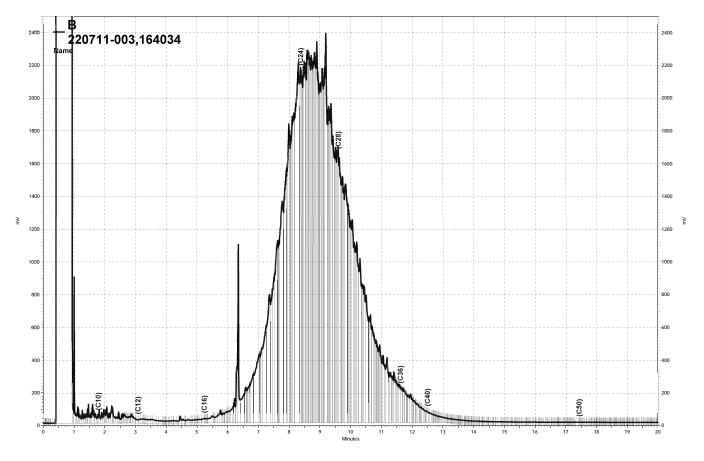
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	Analyte		Spiked		Result	%REC	Limits	RPD	Lim
Diesel C	C10-C24		50.00		109.3	61	32-142	12	55
	Surrogate	%REC	Limits						
o-Terphe	enyl	97	45-130						



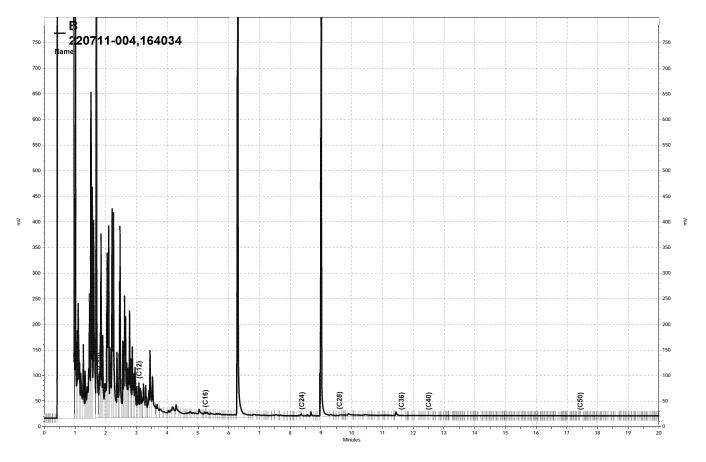
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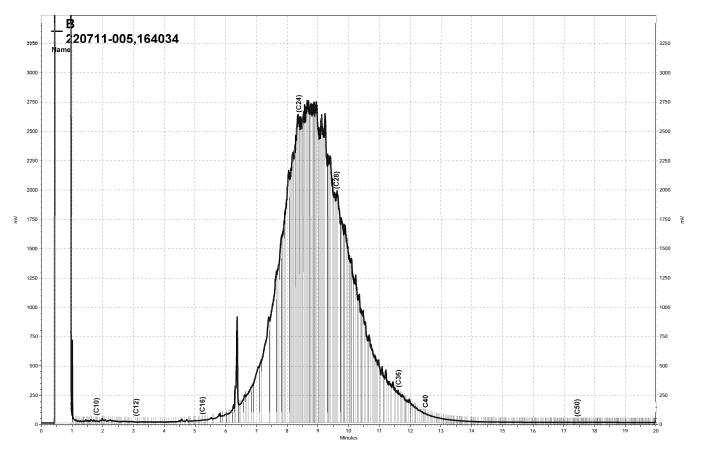


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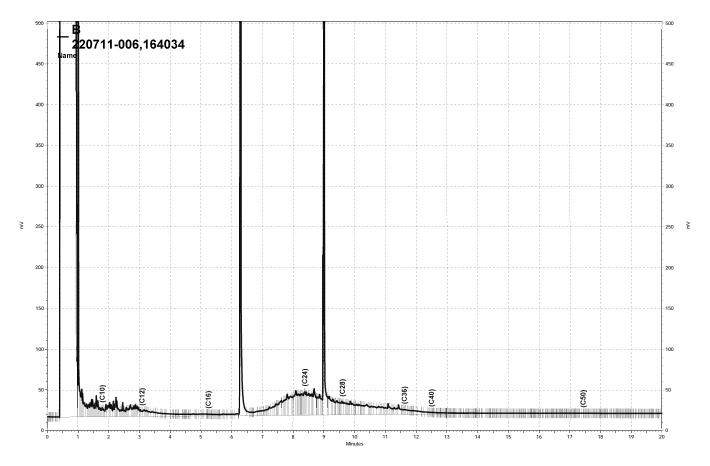


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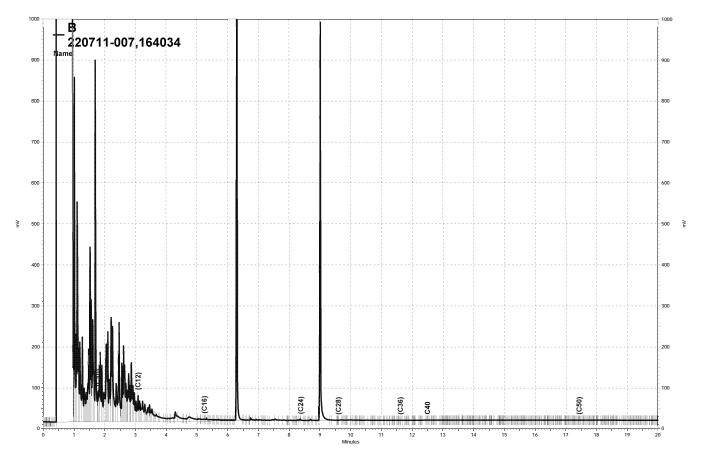




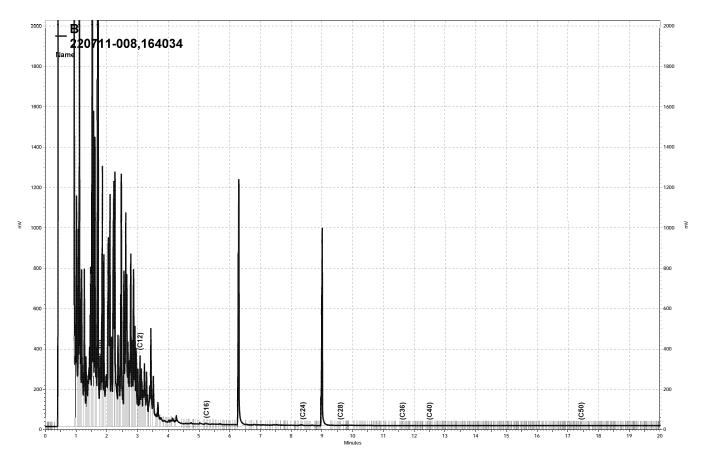
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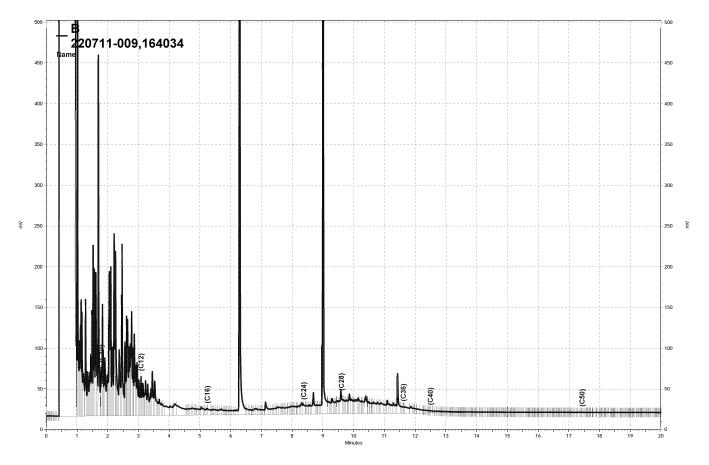
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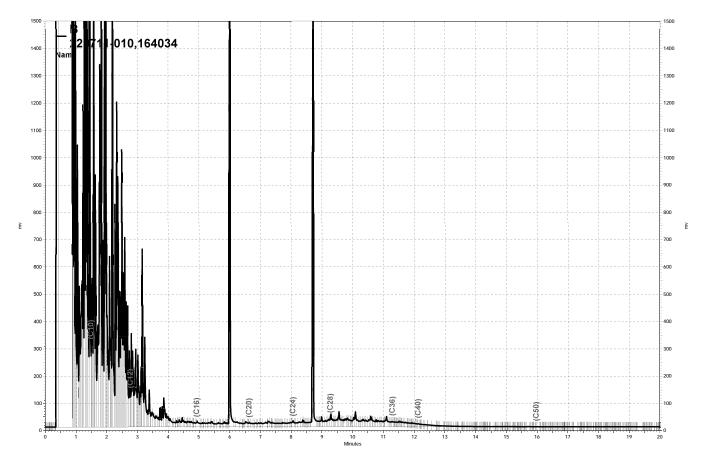
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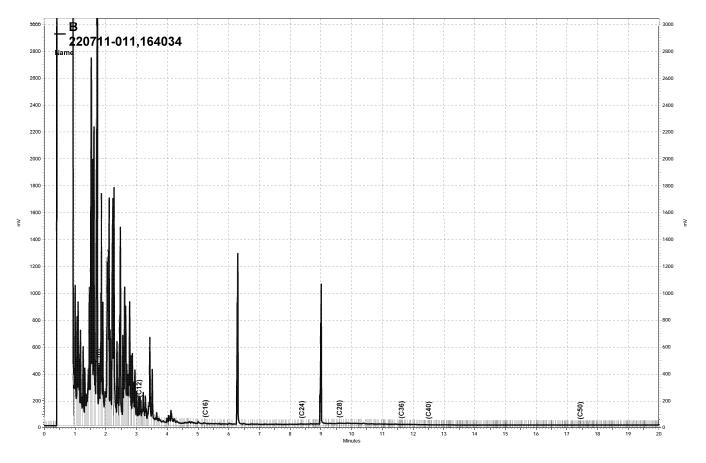
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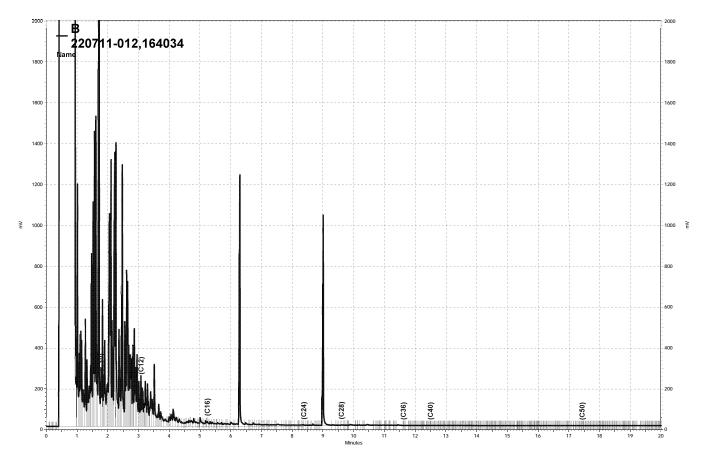
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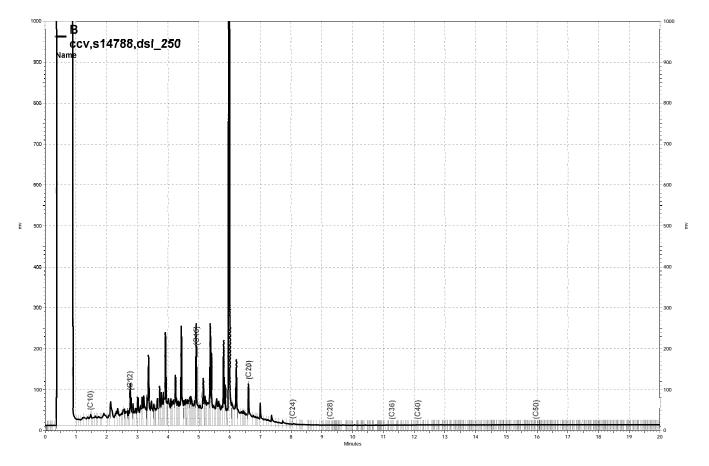


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\\Lims\gdrive\ezchrom\Projects\GC14B\Data\166b032, B





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Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8260B
Field ID:	E-1@10'	Diln Fac:	50.00
Lab ID:	220711-001	Batch#:	164172
Matrix:	Soil	Sampled:	06/10/10
Units:	ug/Kg	Received:	06/11/10
Basis:	as received	Analyzed:	06/18/10

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	5,000	
MTBE	ND	250	
Isopropyl Ether (DIPE)	ND	250	
Ethyl tert-Butyl Ether (ETBE)	ND	250	
1,2-Dichloroethane	ND	250	
Benzene	ND	250	
Methyl tert-Amyl Ether (TAME)	ND	250	
Toluene	570	250	
1,2-Dibromoethane	ND	250	
Ethylbenzene	1,200	250	
m,p-Xylenes	1,300	250	
o-Xylene	2,300	250	

Surrogate	%REC	Limits
Dibromofluoromethane	83	78-122
1,2-Dichloroethane-d4	83	68-152
Toluene-d8	92	80-120
Bromofluorobenzene	92	76-132
Trifluorotoluene (MeOH)	131	60-150



Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Field ID:	E-2@10'	Diln Fac:	0.9709	
Lab ID:	220711-002	Batch#:	164172	
Matrix:	Soil	Sampled:	06/11/10	
Units:	ug/Kg	Received:	06/11/10	
Basis:	as received	Analyzed:	06/18/10	

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	97	
MTBE	ND	4.9	
Isopropyl Ether (DIPE)	ND	4.9	
Ethyl tert-Butyl Ether (ETBE)	ND	4.9	
1,2-Dichloroethane	ND	4.9	
Benzene	ND	4.9	
Methyl tert-Amyl Ether (TAME)	ND	4.9	
Toluene	ND	4.9	
1,2-Dibromoethane	ND	4.9	
Ethylbenzene	ND	4.9	
m,p-Xylenes	ND	4.9	
o-Xylene	ND	4.9	

Surrogate	%REC	Limits
Dibromofluoromethane	103	78-122
1,2-Dichloroethane-d4	96	68-152
Toluene-d8	97	80-120
Bromofluorobenzene	105	76-132



Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Field ID:	E-3@10'	Diln Fac:	0.9009	
Lab ID:	220711-003	Batch#:	164172	
Matrix:	Soil	Sampled:	06/11/10	
Units:	ug/Kg	Received:	06/11/10	
Basis:	as received	Analyzed:	06/18/10	

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	90	
MTBE	ND	4.5	
Isopropyl Ether (DIPE)	ND	4.5	
Ethyl tert-Butyl Ether (ETBE)	ND	4.5	
1,2-Dichloroethane	ND	4.5	
Benzene	ND	4.5	
Methyl tert-Amyl Ether (TAME)	ND	4.5	
Toluene	ND	4.5	
1,2-Dibromoethane	ND	4.5	
Ethylbenzene	ND	4.5	
m,p-Xylenes	ND	4.5	
o-Xylene	ND	4.5	

Surrogate	%REC	Limits
Dibromofluoromethane	104	78-122
1,2-Dichloroethane-d4	99	68-152
Toluene-d8	95	80-120
Bromofluorobenzene	98	76-132



Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Field ID:	E-4@9.5'	Diln Fac:	9.615	
Lab ID:	220711-004	Batch#:	164172	
Matrix:	Soil	Sampled:	06/11/10	
Units:	ug/Kg	Received:	06/11/10	
Basis:	as received	Analyzed:	06/18/10	

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	960	
MTBE	ND	48	
Isopropyl Ether (DIPE)	ND	48	
Ethyl tert-Butyl Ether (ETBE)	ND	48	
1,2-Dichloroethane	ND	48	
Benzene	74	48	
Methyl tert-Amyl Ether (TAME)	ND	48	
Toluene	ND	48	
1,2-Dibromoethane	ND	48	
Ethylbenzene	440	48	
m,p-Xylenes	540	48	
o-Xylene	150	48	

Surrogate	%REC	Limits	
Dibromofluoromethane	99	78-122	
1,2-Dichloroethane-d4	96	68-152	
Toluene-d8	88	80-120	
Bromofluorobenzene	94	76-132	



Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Field ID:	E-5@10'	Diln Fac:	0.9560	
Lab ID:	220711-005	Batch#:	164172	
Matrix:	Soil	Sampled:	06/09/10	
Units:	ug/Kg	Received:	06/11/10	
Basis:	as received	Analyzed:	06/18/10	

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	96	
MTBE	ND	4.8	
Isopropyl Ether (DIPE)	ND	4.8	
Ethyl tert-Butyl Ether (ETBE)	ND	4.8	
1,2-Dichloroethane	ND	4.8	
Benzene	ND	4.8	
Methyl tert-Amyl Ether (TAME)	ND	4.8	
Toluene	10	4.8	
1,2-Dibromoethane	ND	4.8	
Ethylbenzene	5.1	4.8	
m,p-Xylenes	7.8	4.8	
o-Xylene	4.9	4.8	

Surrogate	%REC	Limits	
Dibromofluoromethane	98	78-122	
1,2-Dichloroethane-d4	94	68-152	
Toluene-d8	101	80-120	
Bromofluorobenzene	119	76-132	



Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Field ID:	E-6@10'	Diln Fac:	0.9843	
Lab ID:	220711-006	Batch#:	164172	
Matrix:	Soil	Sampled:	06/09/10	
Units:	ug/Kg	Received:	06/11/10	
Basis:	as received	Analyzed:	06/18/10	

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	98	
MTBE	ND	4.9	
Isopropyl Ether (DIPE)	ND	4.9	
Ethyl tert-Butyl Ether (ETBE)	ND	4.9	
1,2-Dichloroethane	ND	4.9	
Benzene	ND	4.9	
Methyl tert-Amyl Ether (TAME)	ND	4.9	
Toluene	ND	4.9	
1,2-Dibromoethane	ND	4.9	
Ethylbenzene	ND	4.9	
m,p-Xylenes	ND	4.9	
o-Xylene	ND	4.9	

Surrogate	%REC	Limits
Dibromofluoromethane	90	78-122
1,2-Dichloroethane-d4	88	68-152
Toluene-d8	99	80-120
Bromofluorobenzene	100	76-132



Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Field ID:	E-7@9.5'	Diln Fac:	0.9862	
Lab ID:	220711-007	Batch#:	164229	
Matrix:	Soil	Sampled:	06/10/10	
Units:	ug/Kg	Received:	06/11/10	
Basis:	as received	Analyzed:	06/22/10	

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	99	
MTBE	ND	4.9	
Isopropyl Ether (DIPE)	ND	4.9	
Ethyl tert-Butyl Ether (ETBE)	ND	4.9	
1,2-Dichloroethane	ND	4.9	
Benzene	ND	4.9	
Methyl tert-Amyl Ether (TAME)	ND	4.9	
Toluene	32	4.9	
1,2-Dibromoethane	ND	4.9	
Ethylbenzene	97	4.9	
m,p-Xylenes	330	4.9	
o-Xylene	100	4.9	

Surrogate	%REC	Limits	
Dibromofluoromethane	123 *	78-122	
1,2-Dichloroethane-d4	129	68-152	
Toluene-d8	85	80-120	
Bromofluorobenzene	124	76-132	

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit
Page 1 of 1



Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Field ID:	E-8@10'	Diln Fac:	9.615	
Lab ID:	220711-008	Batch#:	164172	
Matrix:	Soil	Sampled:	06/10/10	
Units:	ug/Kg	Received:	06/11/10	
Basis:	as received	Analyzed:	06/18/10	

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	960	
MTBE	ND	48	
Isopropyl Ether (DIPE)	ND	48	
Ethyl tert-Butyl Ether (ETBE)	ND	48	
1,2-Dichloroethane	ND	48	
Benzene	ND	48	
Methyl tert-Amyl Ether (TAME)	ND	48	
Toluene	49	48	
1,2-Dibromoethane	ND	48	
Ethylbenzene	300	48	
m,p-Xylenes	1,000	48	
o-Xylene	200	48	

Surrogate	%REC	Limits	
Dibromofluoromethane	94	78-122	
1,2-Dichloroethane-d4	86	68-152	
Toluene-d8	90	80-120	
Bromofluorobenzene	96	76-132	



Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8260B
Field ID:	E-9@9'	Diln Fac:	0.9881
Lab ID:	220711-009	Batch#:	164172
Matrix:	Soil	Sampled:	06/09/10
Units:	ug/Kg	Received:	06/11/10
Basis:	as received	Analyzed:	06/18/10

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	99	
MTBE	ND	4.9	
Isopropyl Ether (DIPE)	ND	4.9	
Ethyl tert-Butyl Ether (ETBE)	ND	4.9	
1,2-Dichloroethane	ND	4.9	
Benzene	18	4.9	
Methyl tert-Amyl Ether (TAME)	ND	4.9	
Toluene	ND	4.9	
1,2-Dibromoethane	ND	4.9	
Ethylbenzene	58	4.9	
m,p-Xylenes	84	4.9	
o-Xylene	22	4.9	

Surrogate	%REC	Limits	
Dibromofluoromethane	98	78-122	
1,2-Dichloroethane-d4	96	68-152	
Toluene-d8	91	80-120	
Bromofluorobenzene	94	76-132	



Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Field ID:	E-10@10'	Diln Fac:	9.804	
Lab ID:	220711-010	Batch#:	164172	
Matrix:	Soil	Sampled:	06/10/10	
Units:	ug/Kg	Received:	06/11/10	
Basis:	as received	Analyzed:	06/18/10	

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	980	
MTBE	ND	49	
Isopropyl Ether (DIPE)	ND	49	
Ethyl tert-Butyl Ether (ETBE)	ND	49	
1,2-Dichloroethane	ND	49	
Benzene	100	49	
Methyl tert-Amyl Ether (TAME)	ND	49	
Toluene	1,200	49	
1,2-Dibromoethane	ND	49	
Ethylbenzene	950	49	
m,p-Xylenes	2,700	49	
o-Xylene	1,800	49	

Surrogate	%REC	Limits	
Dibromofluoromethane	95	78-122	
1,2-Dichloroethane-d4	98	68-152	
Toluene-d8	83	80-120	
Bromofluorobenzene	104	76-132	



Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8260B
Field ID:	E-11@10'	Diln Fac:	50.00
Lab ID:	220711-011	Batch#:	164172
Matrix:	Soil	Sampled:	06/10/10
Units:	ug/Kg	Received:	06/11/10
Basis:	as received	Analyzed:	06/18/10

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	5,000	
MTBE	ND	250	
Isopropyl Ether (DIPE)	ND	250	
Ethyl tert-Butyl Ether (ETBE)	ND	250	
1,2-Dichloroethane	ND	250	
Benzene	ND	250	
Methyl tert-Amyl Ether (TAME)	ND	250	
Toluene	260	250	
1,2-Dibromoethane	ND	250	
Ethylbenzene	1,300	250	
m,p-Xylenes	1,400	250	
o-Xylene	1,200	250	

Surrogate	%REC	Limits
Dibromofluoromethane	83	78-122
1,2-Dichloroethane-d4	80	68-152
Toluene-d8	90	80-120
Bromofluorobenzene	92	76-132
Trifluorotoluene (MeOH)	126	60-150



Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Field ID:	E-12@10'	Diln Fac:	9.434	
Lab ID:	220711-012	Batch#:	164172	
Matrix:	Soil	Sampled:	06/10/10	
Units:	ug/Kg	Received:	06/11/10	
Basis:	as received	Analyzed:	06/18/10	

Analyte	Resul	lt RL
tert-Butyl Alcohol (TBA)	ND	940
MTBE	ND	47
Isopropyl Ether (DIPE)	ND	47
Ethyl tert-Butyl Ether (ETBE)	ND	47
1,2-Dichloroethane	ND	47
Benzene	ND	47
Methyl tert-Amyl Ether (TAME)	ND	47
Toluene	ND	47
1,2-Dibromoethane	ND	47
Ethylbenzene	480	D 47
m,p-Xylenes	560	D 47
o-Xylene	ND	47

Surrogate	%REC	Limits
Dibromofluoromethane	90	78-122
1,2-Dichloroethane-d4	90	68-152
Toluene-d8	87	80-120
Bromofluorobenzene	100	76-132



Lab #:	220711	Location:	Paco Pumps
Client:	The Source Group, Inc.	Prep:	EPA 5030B
Project#:	04-PFT-003	Analysis:	EPA 8260B
Field ID:	MW-8@17'	Diln Fac:	1.000
Lab ID:	220711-013	Batch#:	164172
Matrix:	Soil	Sampled:	06/11/10
Units:	ug/Kg	Received:	06/11/10
Basis:	as received	Analyzed:	06/18/10

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	100
MTBE	ND	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Toluene	6.2	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits	
Dibromofluoromethane	85	78-122	
1,2-Dichloroethane-d4	83	68-152	
Toluene-d8	97	80-120	
Bromofluorobenzene	98	76-132	



BTXE & Oxygenates				
Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Туре:	BLANK	Diln Fac:	1.000	
Lab ID:	QC549163	Batch#:	164172	
Matrix:	Soil	Analyzed:	06/18/10	
Units:	ug/Kg			

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	100	
MTBE	ND	5.0	
Isopropyl Ether (DIPE)	ND	5.0	
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	
1,2-Dichloroethane	ND	5.0	
Benzene	ND	5.0	
Methyl tert-Amyl Ether (TAME)	ND	5.0	
Toluene	ND	5.0	
1,2-Dibromoethane	ND	5.0	
Ethylbenzene	ND	5.0	
m,p-Xylenes	ND	5.0	
o-Xylene	ND	5.0	

Surrogate	%REC	Limits
Dibromofluoromethane	92	78-122
1,2-Dichloroethane-d4	92	68-152
Toluene-d8	96	80-120
Bromofluorobenzene	103	76-132

ND= Not Detected RL= Reporting Limit Page 1 of 1



BTXE & Oxygenates				
Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Туре:	LCS	Diln Fac:	1.000	
Lab ID:	QC549164	Batch#:	164172	
Matrix:	Soil	Analyzed:	06/18/10	
Units:	ug/Kg			

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	114.9	92	55-139
MTBE	25.00	24.48	98	66-124
Isopropyl Ether (DIPE)	25.00	22.98	92	60-131
Ethyl tert-Butyl Ether (ETBE)	25.00	23.03	92	66-126
1,2-Dichloroethane	25.00	23.05	92	71-140
Benzene	25.00	26.19	105	80-125
Methyl tert-Amyl Ether (TAME)	25.00	24.36	97	74-120
Toluene	25.00	24.24	97	80-128
1,2-Dibromoethane	25.00	21.35	85	80-122
Ethylbenzene	25.00	24.64	99	80-129
m,p-Xylenes	50.00	50.60	101	80-129
o-Xylene	25.00	24.36	97	80-125

Surrogate	%REC	Limits	
Dibromofluoromethane	98	78-122	
1,2-Dichloroethane-d4	98	68-152	
Toluene-d8	96	80-120	
Bromofluorobenzene	95	76-132	



	BTXE & Oxygenates				
Lab #:	220711	Location:	Paco Pumps		
Client:	The Source Group, Inc.	Prep:	EPA 5030B		
Project#:	04-PFT-003	Analysis:	EPA 8260B		
Field ID:	E-2@10'	Batch#:	164172		
MSS Lab ID:	220711-002	Sampled:	06/11/10		
Matrix:	Soil	Received:	06/11/10		
Units:	ug/Kg	Analyzed:	06/19/10		
Basis:	as received				

Type: Lab ID:

MS QC549186

Analyte	MSS	Result	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	<	15.14	245.6	156.1	64	44-140
MTBE		<1.463	49.12	35.75	73	58-122
Isopropyl Ether (DIPE)		<1.248	49.12	34.12	69	56-125
Ethyl tert-Butyl Ether (ETBE)		<0.9410	49.12	31.83	65	60-123
1,2-Dichloroethane		<0.9047	49.12	31.43	64	58-135
Benzene		1.277	49.12	42.83	85	71-125
Methyl tert-Amyl Ether (TAME)		<0.6129	49.12	37.25	76	65-120
Toluene		4.709	49.12	46.48	85	64-128
1,2-Dibromoethane		<0.5822	49.12	33.06	67	65-123
Ethylbenzene		2.070	49.12	38.54	74	58-134
m,p-Xylenes		2.655	98.23	73.44	72	57-133
o-Xylene		2.086	49.12	35.13	67	56-131
Surrogate	%REC	Limits				
Dibromofluoromethane	93	78-122				
1,2-Dichloroethane-d4	85	68-152				
Toluene-d8	96	80-120				

1,2-Dichloroethane-d4	85	68-152	
Toluene-d8	96	80-120	
Bromofluorobenzene	96	76-132	

Type: Lab ID:

MSD QC549187

Diln Fac: 0.9709

Diln Fac: 0.9823

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	242.7	144.6	60	44-140	6	47
MTBE	48.54	32.34	67	58-122	9	31
Isopropyl Ether (DIPE)	48.54	34.49	71	56-125	2	24
Ethyl tert-Butyl Ether (ETBE)	48.54	31.70	65	60-123	1	25
1,2-Dichloroethane	48.54	32.32	67	58-135	4	26
Benzene	48.54	45.88	92	71-125	8	33
Methyl tert-Amyl Ether (TAME)	48.54	37.27	77	65-120	1	24
Toluene	48.54	48.31	90	64-128	5	34
1,2-Dibromoethane	48.54	33.35	69	65-123	2	30
Ethylbenzene	48.54	40.96	80	58-134	7	38
m,p-Xylenes	97.09	79.75	79	57-133	9	40
o-Xylene	48.54	38.36	75	56-131	10	38
<u>▶</u>						

Surrogate	%REC	Limits		
Dibromofluoromethane	94	78-122		
1,2-Dichloroethane-d4	84	68-152		
Toluene-d8	98	80-120		
Bromofluorobenzene	96	76-132		



BTXE & Oxygenates				
Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Type:	BLANK	Diln Fac:	1.000	
Lab ID:	QC549405	Batch#:	164229	
Matrix:	Soil	Analyzed:	06/21/10	
Units:	ug/Kg			

Analyte	Result	RL	
tert-Butyl Alcohol (TBA)	ND	100	
MTBE	ND	5.0	
Isopropyl Ether (DIPE)	ND	5.0	
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	
1,2-Dichloroethane	ND	5.0	
Benzene	ND	5.0	
Methyl tert-Amyl Ether (TAME)	ND	5.0	
Toluene	ND	5.0	
1,2-Dibromoethane	ND	5.0	
Ethylbenzene	ND	5.0	
m,p-Xylenes	ND	5.0	
o-Xylene	ND	5.0	

Surrogate	%REC	Limits
Dibromofluoromethane	94	78-122
1,2-Dichloroethane-d4	96	68-152
Toluene-d8	100	80-120
Bromofluorobenzene	110	76-132

ND= Not Detected RL= Reporting Limit Page 1 of 1



BTXE & Oxygenates				
Lab #: Client: Project#:	220711 The Source Group, Inc. 04-PFT-003	Location: Prep: Analysis:	Paco Pumps EPA 5030B EPA 8260B	
Matrix: Units: Diln Fac:	Soil ug/Kg 1.000	Batch#: Analyzed:	164229 06/21/10	

Type: BS		Lab ID: QC	549406	
Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	100.0	84.60	85	55-139
MTBE	20.00		97	66-124
Isopropyl Ether (DIPE)	20.00		102	60-131
Ethyl tert-Butyl Ether (ETBE)	20.00	19.80	99	66-126
1,2-Dichloroethane	20.00	17.15	86	71-140
Benzene	20.00	19.11	96	80-125
Methyl tert-Amyl Ether (TAME)	20.00	20.22	101	74-120
Toluene	20.00	19.29	96	80-128
1,2-Dibromoethane	20.00		88	80-122
Ethylbenzene	20.00		102	80-129
m,p-Xylenes	40.00	43.64	109	80-129
o-Xylene	20.00	19.86	99	80-125
Surrogate	%REC Limits			
Dibromofluoromethane	101 78-122			
1,2-Dichloroethane-d4	96 68-152			
Toluene-d8	101 80-120			
Bromofluorobenzene	102 76-132			

Type: BSD			Lab ID:	QC549	407			
Analyte		Spiked		Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)		100.0		84.89	85	55-139	0	32
MTBE		20.00		19.32	97	66-124	0	21
Isopropyl Ether (DIPE)		20.00		21.50	108	60-131	6	20
Ethyl tert-Butyl Ether (ETBE)		20.00		19.20	96	66-126	3	20
1,2-Dichloroethane		20.00		18.96	95	71-140	10	20
Benzene		20.00		20.72	104	80-125	8	20
Methyl tert-Amyl Ether (TAME)		20.00		19.62	98	74-120	3	20
Toluene		20.00		20.46	102	80-128	6	20
1,2-Dibromoethane		20.00		19.79	99	80-122	12	21
Ethylbenzene		20.00		21.93	110	80-129	7	20
m,p-Xylenes		40.00		45.11	113	80-129	3	20
o-Xylene		20.00		20.85	104	80-125	5	20
Gummogato	%DEC	Timita						
Surrogate	%REC	Limits						
Dibromofluoromethane	97	78-122						
1,2-Dichloroethane-d4	93 105	68-152						
Toluene-d8	105	80-120						
Bromofluorobenzene	98	76-132						



BTXE & Oxygenates				
Lab #:	220711	Location:	Paco Pumps	
Client:	The Source Group, Inc.	Prep:	EPA 5030B	
Project#:	04-PFT-003	Analysis:	EPA 8260B	
Field ID:	ZZZZZZZZZ	Batch#:	164229	
MSS Lab ID:	220815-003	Sampled:	06/16/10	
Matrix:	Soil	Received:	06/17/10	
Units:	ug/Kg	Analyzed:	06/22/10	
Basis:	as received			

Type: Lab ID: MS QC549420 Diln Fac:

Analyte	MSS	Result	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)		<15.22	242.7	155.2	64	44-140
MTBE		<1.472	48.54	37.06	76	58-122
Isopropyl Ether (DIPE)		<1.256	48.54	40.20	83	56-125
Ethyl tert-Butyl Ether (ETBE)		<0.9465	48.54	37.40	77	60-123
1,2-Dichloroethane		<0.9100	48.54	36.76	76	58-135
Benzene		<0.9442	48.54	48.29	99	71-125
Methyl tert-Amyl Ether (TAME)		<0.6165	48.54	44.39	91	65-120
Toluene		<1.274	48.54	49.15	101	64-128
1,2-Dibromoethane		<0.5856	48.54	41.42	85	65-123
Ethylbenzene		<1.172	48.54	50.05	103	58-134
m,p-Xylenes		<0.6011	97.09	102.6	106	57-133
o-Xylene		<1.098	48.54	47.64	98	56-131
Surrogate	%REC	Limits				
Dibromofluoromethane	89	78-122				
1,2-Dichloroethane-d4	82	68-152				

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Dibromofluoromethane	89	78-122	
1,2-Dichloroethane-d4	82	68-152	
Toluene-d8	102	80-120	
Bromofluorobenzene	99	76-132	

Type: Lab ID: MSD QC549421

Diln Fac

Diln Fac: 0.9940

0.9709

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	248.5	207.3	83	44-140	26	47
MTBE	49.70	42.11	85	58-122	10	31
Isopropyl Ether (DIPE)	49.70	44.42	89	56-125	8	24
Ethyl tert-Butyl Ether (ETBE)	49.70	40.31	81	60-123	5	25
1,2-Dichloroethane	49.70	41.02	83	58-135	9	26
Benzene	49.70	52.30	105	71-125	6	33
Methyl tert-Amyl Ether (TAME)	49.70	47.80	96	65-120	5	24
Toluene	49.70	50.58	102	64-128	1	34
1,2-Dibromoethane	49.70	46.64	94	65-123	9	30
Ethylbenzene	49.70	52.79	106	58-134	3	38
m,p-Xylenes	99.40	106.8	107	57-133	2	40
o-Xylene	49.70	52.14	105	56-131	7	38
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Surrogate	%REC	Limits	
Dibromofluoromethane	93	78-122	
1,2-Dichloroethane-d4	84	68-152	
Toluene-d8	104	80-120	
Bromofluorobenzene	100	76-132	

ASSOCIATED LABORATORIES 806 North Batavia - Orange, California 92868 - 714/771-6900

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FAX 714/538-1209

CLIENT	Calclean	(9977)	LAB REQUE	ST 256668
	ATTN: Noel Shenoi			
	3002 Dow Ave.		REPORTED	06/30/2010
	#142			
	Tustin, CA 92780		RECEIVED	06/18/2010
PROJEC	Г Расо Pumps			

SUBMITTER Client

COMMENTS Global ID: T0600101592

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

<u>Order No.</u>	Client Sample Identification
1087987	E-I
1087988	E-2
1087989	E-3
1087990	E-7
1087991	E-10
1087992	E-11
1087993	MW-3
1087994	ASMW-2S
1087995	SVE-1
1087996	TOTAL INLET
1087997	STACK

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by. Edward Bettard. Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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TESTING & CONSULTING Chemical Microbiological Environmental

Lab request 256668 cover, page 1 of 1

Analyte

Client:	Calclean
Client Sa	mple ID: E-1

8021B BTEX/MTBE in Air - (Vppm & ug/L)

Benzene	23	13	0.125	Vppm	06/21/10	SW
Ethyl benzene	3.9	13	0.125	Vppm	06/21/10	SW
Methyl t - butyl ether	29	13	1.25	Vppm	06/21/10	SW
Toluene	11	13	0.125	Vppm	06/21/10	SW
Xylene (total)	7.6	13	0.375	Vppm	06/21/10	S₩

Result

DF

DLR

Units

<u>8015B - Gasoline in Air - (Vppm & ug/L)</u>

Gasoline	732	13	62.5	Vppm	06/21/10	SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



Date/Analyst

ASSOCIATED LABORATORIES

Client:	Calclean
Client Sa	mple ID: E-2

Analyte

Result	DF	DLR	Units	Date/Analyst
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8021B BTEX/MTBE in Air - (Vppm & ug/L)

Benzene	4.7	3	0.025	Vppm	06/22/10	SW
Ethyl benzene	2.1	3	0.025	Vppm	06/22/10	SW
Methyl t - butyl ether	1.1	3	0.25	Vppm	06/22/10	SW
Toluene	3.9	3	0.025	Vppm	06/22/10	S₩
Xylene (total)	4.5	3	0.075	Vppm	06/22/10	SW

<u>8015B - Gasoline in Air - (Vppm & ug/L)</u>

Gasoline	274	3	12.5	Vppm	06/22/10	SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1087989	Client: Calclean
Matrix: AIR	Client Sample ID: E-3
Date Sampled: 06/16/2010	
Time Sampled: 17:25	
Sampled By:	

Analyte	Result	DF	DLR	Units	Date/Analyst	

8021B BTEX/MTBE in Air - (Vppm & ug/L)

Велгепе	2.3	3	0.025	Vppm	06/22/10	SW
Ethyl benzene	3.1	3	0.025	Vppm	06/22/10	SW
Methyl t - butyl ether	1.4	3	0.25	Vppm	06/22/10	SW
Тоluеле	4.8	3	0.025	Vppm	06/22/10	SW
Xylene (total)	5.8	3	0.075	Vppm	06/22/10	SW

<u>8015B - Gasoline in Air - (Vppm & ug/L)</u>

Gasoline	152	3	12.5	Vppm	06/22/10	SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1087990	Client: Calclean
Matrix: AIR	Client Sample ID: E-7
Date Sampled: 06/16/2010	
Time Sampled: 18:05	
Sampled By:	

Analyte	Result	DF	DLR	Units	Date/Analyst	
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8021B BTEX/MTBE in Air - (Vppm & ug/L)

Benzene	1.8	3	0.025	Vppm	06/22/10	SW
Ethyl benzene	1.1	3	0.025	Vppm	06/22/10	SW
Methyl t - butyl ether	3.3	3	0.25	Vppm	06/22/10	SW
Toluene	1.2	3	0.025	Vppm	06/22/10	SW
Xylene (total)	2.7	3	0.075	Vppm	06/22/10	SW

8015B - Gasoline in Air - (Vppm & ug/L)

					-	
-Gasoline	203	3	12.5	Vppm	06/22/10	SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Analyte	Result	DF	DLR	Units	Date/Analyst	
8021B BTEX/MTBE in Air - (Vppm & ug/L)						
Benzene	50	25	0.25	Vnnm	06/22/10 SW	

Benzene	50	25	0.25	Vppm	06/22/10	SW
Ethyl benzene	5.0	25	0.25	Vppm	06/22/10	SW
Methyl t - butyl ether	127	25	2.5	Vppm	06/22/10	SW
Toluene	19	25	0.25	Vppm	06/22/10	SW
Xylene (total)	11	25	0.75	Vppm	06/22/10	SW

8015B - Gasoline in Air - (Vppm & ug/L)

	1 1					
Gasoline	18-70	25	125.0	Vppm	-06/22/10	SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1087992	Client: Calclean
Matrix: AIR	Client Sample ID: E-11
Date Sampled: 06/16/2010	
Time Sampled: 18:50	
Sampled By:	

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Analyte	Result	DF	DLR	Units	Date/Ana	alys
)21B BTEX/MTBE in Air - (Vppm & ug/L)						
Benzene	29	10	0.1	Vppm	06/22/10	SW
Ethyl benzene	1.7	10	0.1	Vppm	06/22/10	SW
Methyl t - butyl ether	34	10	1.0	Vppm	06/22/10	SW
Toluene	10	10	0.1	Vppm	06/22/10	SW
Xylene (total)	4.0	10	0.3	Vppm	06/22/10	SW

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8015B - Gasoline in Air - (Vppm & ug/L)

Gasoline	 1340	10	50.0	Vppm	06/22/10	SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1087993	Client: Calclean
Matrix: AIR	Client Sample ID: MW-3
Date Sampled: 06/16/2010	
Time Sampled: 19:10	
Sampled By:	

Analyte	Result	DF	DLR	Units	Date/Ana	alyst
8021B BTEX/MTBE in Air - (Vppm & ug/L)						
Benzene	104	100	1.0	Vppm	06/22/10	SW

Benzene	104	100	1.0	vppm	06/22/10	SW
Ethyl benzene	12	100	1.0	Vppm	06/22/10	SW
Methyl t - butyl ether	198	100	10.0	Vppm	06/22/10	SW
Toluene	60	100	1.0	Vppm	06/22/10	SW
Xylene (total)	26	100	3.0	Vppm	06/22/10	SW

Gasoline	7140	100	500.0	-Vppm	06/22/10	SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1087994	Client: Calclean
Matrix: AIR	Client Sample ID: ASMW-2S
Date Sampled: 06/16/2010	
Time Sampled: 19:30	
Sampled By:	

Sampled By:					
Analyte	Result	: DF	DLR	Units	Date/Analyst
<u>8021B BTEX/MTBE in Air - (Vppm & ug/L)</u>					
Benzene	193	125	1 25	Vppm	06/22/10 SW

Benzene	192	125	1.25	Vppm	06/22/10	SW
Ethyl benzene	11	125	1.25	Vppm	06/22/10	SW
Methyl t - butyl ether	361	125	12.5	Vppm	06/22/10	SW
Toluene	86	125	1.25	Vppm	06/22/10	SW
Xylene (total)	20	125	3.75	Vppm	06/22/10	SW

Gasoline	11600	125	625.0	Vppm	06/22/10	SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1087995	Client: Calclean
Matrix: AlR	Client Sample ID: SVE-1
Date Sampled: 06/16/2010	
Time Sampled: 19:50	
Sampled By:	

Analyte	Result DF			Units	Date/Analyst	
<u>1B BTEX/MTBE in Air - (Vppm & ug/L)</u>						
Benzene	194	125	1.25	Vppm	06/22/10	SW
Ethyl benzene	23	125	1.25	Vppm	06/22/10	SW
Methyl t - butyl ether	266	125	12.5	Vppm	06/22/10	SW
Toluene	146	125	1.25	Vppm	06/22/10	SW
Xylene (total)	43	125	3.75	Vppm	06/22/10	SW

Gasoline	 13200	125	625.0	Vppm	06/22/10	SW
Gueenne	 15200	120	025.0	* ppm	00/22/10	5 11

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #:	1087996					
Matrix: All	<u></u>					
Date Sampled: 06/16/2010						
Time Sampled: 20:30						
Sampled By	:					

Client: Calclean Client Sample ID: TOTAL INLET

Analyte

Result	DF	DLR	Units	Date/Analyst

8021B BTEX/MTBE in Air - (Vppm & ug/L)

Benzene	204	125	1.25	Vppm	06/22/10	SW
Ethyl benzene	7.3	125	1.25	Vppm	06/22/10	SW
Methyl t - butyl ether	349	125	12.5	Vppm	06/22/10	SW
Toluene	51	125	1.25	Vppm	06/22/10	SW
Xylene (total)	17	125	3.75	Vppm	06/22/10	SW

8015B - Gasoline in Air - (Vppm & ug/L)

Gasoline	91-20	12-5	625.0	Vppm	06/22/10	SW
	I	·				

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1087997	Client: Calclean
Matrix: AlR	Client Sample ID: STACK
Date Sampled: 06/16/2010	
Time Sampled: 20:35	
Sampled By:	

8021B BTEX/MTBE in Air - (Vppm & ug/L)

Benzene	ND	1	0.01	Vppm	06/21/10	SW
Ethyl benzene	0.01	1	0.01	Vppm	06/21/10	SW
Methyl t - butyl ether	ND	1	0.10	Vppm	06/21/10	SW
Toluene	0.03	1	0.01	Vppm	06/21/10	SW
Xylene (total)	0.07	1	0.03	Vppm	06/21/10	SW

8015B - Gasoline in Air - (Vppm & ug/L)

	Gasoline		ND	1	5.0	Vppm	06/21/10	SW
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DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

ASSOCIATED LABORATORIES QA REPORT FORM

QC Sample:	256669-000
Matrix:	AIR
Prep. Date :	June 21, 2010
Analysis Date:	June 21, 2010
Lab ID#'s in Batch:	256646, 256669, 256668, 256636

REPORTING UNITS = Vppm

SAMPLE DUPLICATE RESULT

		Sample	Sample	
Test	Method	Result	Duplicate	%RPD
Gas	8015M	845.79	851.26	1
Benzene	8021B	6.61	6.65	1
Toluene	8021B	16.99	16.98	0
Ethylbenzene	8021B	13.28	13.26	0
Xylenes	8021B	23.93	23.92	0

ND = "U" - Not Detected

RPD = Relative Percent Difference of Sample Result and Sample Duplicate

RPD LIMITS = 20%

ASSOCIATED LABORATORIES QA REPORT FORM

QC Sample:	256668-988
Matrix:	AIR
Prep. Date :	June 22, 2010
Analysis Date:	June 22, 2010
Lab ID#'s in Batch:	256668, 256751, 256727

REPORTING UNITS = Vppm

SAMPLE DUPLICATE RESULT

		Sample	Sample	
Test	Method	Result	Duplicate	%RPD
Gas	8015M	274.01	276.45	1
Benzene	8021B	4.67	4.81	3
Toluene	8021B	3.91	4.02	3
Ethylbenzene	8021B	2.12	2.17	2
Xylenes	8021B	4.54	4.59	1

ND = "U" - Not Detected

RPD = Relative Percent Difference of Sample Result and Sample Duplicate

RPD LIMITS = 20%

ASSOCIATED LABORATORIES

806 North Batavia • Orange, CA 92868 Phone: (714) 771-6900 • Fax: (714) 538-1209



Chain	of	Custody	Record
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0.01	20	D		ш.я	40

Company	Tustin, CA 92				Phone	(714) 7	734-91	37		A.L.	Job No.			2	-560	668	Page _	1of
Project Manager	NOEL SH	HENC)	Fax (714) 734-9138					Analysis Requested					_	Test Instruction	s & Comments		
Project Name	°A CO	PU	MPS		Project	Ħ		-		5)	121	(A)						_
Site Name			LEAN	DRO						(8015)	Ξ (B((826						
Address	+KLAr									3) (3	ИТВІ	E						
				-		Conta	ainer			TPH-G	BTEX/MTBE (8021	BTEX/OXYS (2260B)						
Sample ID	Lab ID		Date	Time	Matrix	Numbe	r/Size	Pr	res.	臣	BT	BAE						
E-1	_	6	16/10	(700	AIR	TEDL	AR	NO	NE	X	X							
2 E-2			1	1715	- 1					1	1							
DE-3				1725	-													
E-7				1805	-													
5 E-10				1840														
6 E-11				1850														
MW-3				1910														
ASMW-2				1930														
SVE-1				1950														
TOTAL INL	ET			2030														
STACK			\checkmark	2035	- 1	\downarrow	-	\backslash	\mathbf{k}	\checkmark	\checkmark							
12																	(EDF)	
13																	T060010	01592
14													•				AIR=PPM\	/
15							1											
Sa	ample Receipt	t - To E	-				Relinquis Sampler:				1.		inquishe	ed by		2.	Relinguished by	3.
Total Number of Contain				Signature	Ń	bel!	she	no		nature:				Signature:				
Custody Seals Y / N /			Samples Intact			Printed Name:						ited Nan	ne:			Printed Name:		
Received in Good Condition Y N Samples Accepted Y N			Date: 6	18	/ 10	Time:	15:3				Time:		Date:	Time:				
Turn Around Time				Received		As	じ	1.	_	eived B	y:		2.	Received By:	3.			
			🖸 Same	Dav		3 hrs.	Signature	1	ln				nature:				Signature:	
Normal	🔾 Ru	ish	🖵 Same	-		2 hrs.	Printeg N	1	n	Mo	atorg		ited Nan	ne:			Printed Name:	
							Date:	5-19	8-10	Time:	(5:3	گ ^{Dat}	e:		Time:		Date:	Time:

Distribution: White - Laboratory Canary - Laboratory Pink - Project/Account Manager Goldenrod - Sampler/Originator

ASSOCIATED LABORATORIES 806 North Batavia - Orange, California 92868 - 714/771-6900

FAX 714/538-1209

CLIENT	Calclean ATTN: Noel Shenoi	(9977)	LAB REQUES	ST 257219
	3002 Dow Ave. #142		REPORTED	07/12/2010
	Tustin, CA 92780		RECEIVED	06/30/2010
PROJEC	Г Расо Pumps			
SUBMIT	TER Client			

COMMENTS Global ID: T0600101592

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
1091622	TOTAL INLET 6/21/10
1091623	E-10
1091624	E-4
1091625	MW-3
1091626	ASMW-2S
1091627	E-1
1091628	E-11
1091629	E-7
1091630	E-2
1091631	E-3
1091632	TOTAL INLET 6/25/10

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by, Edward/S. Behare Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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Lab request 257219 cover, page 1 of 1

Client: Calclean
Client Sample ID: TOTAL INLET 6/21/10

Order #: 1091622 Matrix: AlR Date Sampled: 06/21/2010 Time Sampled: 09:00 Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8021B BTEX/MTBE in Air - (Vppm & ug/L)						
		100	1.0	Maran	07/01/10 011	

Benzene	69	100	1.0	Vppm	07/01/10	SW_
Ethyl benzene	18	100	1.0	Vppm	07/01/10	SW
Methyl t - butyl ether	177	100	10.0	Vppm	07/01/10	SW
Toluene	33	100	1.0	Vppm	07/01/10	SW
Xylene (total)	38	100	3.0	Vppm	07/01/10	SW

<u>8015B - Gasoline in Air - (Vppm & ug/L)</u>

	Gasoline		3430	100	500.0	Vppm	07/01/10	SW	_
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DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1091623	Client: Calclean
Matrix: AIR	Client Sample ID: E-10
Date Sampled: 06/25/2010	
Time Sampled: 13:30	
Sampled By:	

Analyte	Result	DF	DLR	Units	Date/Analyst	
<u>8021B BTEX/MTBE in Air - (Vppm & ug/L)</u>						
Benzene	98	50	0.5	Vppm	07/01/10 SW	
Ethyl benzene	12	50	0.5	Vppm	07/01/10 SW	
Methyl t - butyl ether	177	50	5.0	Vppm	07/01/10 SW	
Toluene	59	50	0.5	Vppm	07/01/10 SW	
Xylene (total)	25	50	1.5	Vppm	07/01/10 SW	

<u>8015B - Gasoline in Air - (Vppm & ug/L)</u>

Gasoline	4700	50	250.0	Vppm	07/01/10	SW
			200.0	• • • • • • • • • • • • • • • • • • • •	07701710	0 11

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #:	1091624					
Matrix: All	C C					
Date Sampled: 06/25/2010						
Time Sampled: 14:00						
Sampled By						

Client:	Calclear	1
Client Sa	mple ID:	É-4

Analyte

Benzene	57	100	1.0	Vppm	07/01/10	SV
Ethyl benzene	18	100	1.0	Vppm	07/01/10	S۷
Methyl t - butyl ether	56	100	10.0	Vppm	07/01/10	SV
Toluene	44	100	1.0	Vppm	07/01/10	SV
Xylene (total)	39	100	3.0	Vppm	07/01/10	SV

Result

DF

DLR Units Date/Analyst

8015B - Gasoline in Air - (Vppm & ug/L)

Gasoli	1e		2750	100	500.0	Vppm	07/01/10	SW
	•	 •						

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1091625	Client: Calclean	<u>.</u>	,	:. [*]
Matrix: AIR	Client Sample ID: MW-3			
Date Sampled: 06/25/2010				
Time Sampled: 14:30				
Sampled By:				

Analyte Result DF DLR Units Date/Analyst

8021B BTEX/MTBE in Air - (Vppm & ug/L)

Benzene	83	50	0.5	Vppm	07/01/10	SW
Ethyl benzene	13	50	0.5	Vppm	07/01/10	SW
Methyl t - butyl ether	192	50	5.0	Vppm	07/01/10	SW
Toluene	59	50	0.5	Vppm	07/01/10	SW
Xylene (total)		.50	1.5	Vppm	07/01/10	SW

8015B - Gasoline in Air - (Vppm & ug/L)

•	Gasoline	•						4460	30	250.0	Vppm	07/01/10	SW
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DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1091626	Client: Calclean
Matrix: AIR	Client Sample ID: ASMW-2S
Date Sampled: 06/25/2010	
Time Sampled: 15:00	
Sampled By:	

Analyte	Result	DF	DLR	Units	Date/Ana	alyst
8021B BTEX/MTBE in Air - (Vppm & ug/L)						
Benzene	106	50	0.5	Vppm	07/01/10	SW
Ethyl benzene	15	50	0.5	Vppm	07/01/10	SW
Methyl t - butyl ether	302	100	10.0	Vppm	07/01/10	SW
Toluene	71	50	0.5	Vppm	07/01/10	SW

<u>8015B - Gasoline in Air - (Vppm & ug/L)</u>

Xylene (total)

Gasoline	5880	50	250.0	Vppm	07/01/10	SW

29

50

1.5

Vppm

07/01/10

SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1091627					
Matrix: AlR					
Date Sampled: 06/25/2010					
Time Sampled: 15:30					
Sampled By:					

Client:	Calclear	1
Client Sa	mple ID:	E-1

Analvte

Analyte	Result	DF	DLR	Units	Date/Analyst	
<u>8021B BTEX/MTBE in Air - (Vppm & ug/L)</u>						
Benzene	11	5	0.05	Vppm	07/02/10 SW	-

Benzene	I L	2	0.03	vppm	07/02/10	<u> 5 w</u>
Ethyl benzene	5.4	5	0.05	Vppm	07/02/10	SW
Methyl t - butyl ether	5.4	5	0.5	Vppm	07/02/10	SW
Toluene	13	5	0.05	Vppm	07/02/10	SW
Xylene (total)	10	5	0.15	Vppm	07/02/10	SW

8015B - Gasoline in Air - (Vppm & ug/L)

. .

Gasoline-	434	5	25.0	Vppm	07/02/10	SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1091628	Client: Calclean
Matrix: AIR	Client Sample ID: E-11
Date Sampled: 06/25/2010	
Time Sampled: 16:00	
Sampled By:	

Analyte	Result	DF	DLR	Units	Date/Analyst
021B BTEX/MTBE in Air - (Vppm & ug/L)					
Benzene	36	25	0.25	Vppm	07/01/10 SW
Ethyl benzene	3.]	25	0.25	Vppm	07/01/10 SW
Methyl t - butyl ether	123	25	2.5	Vppm	07/01/10 SW

<u>8015B - Gasoline in Air - (Vppm & ug/L)</u>

Toluene

Xylene (total)

	Gasoline		1980	25	125.0	Vppm	07/01/10 SW
--	----------	--	------	----	-------	------	-------------

18

7.2

25

25

0.25

0.75

Vppm

Vppm

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



SW

SW

07/01/10

07/01/10

ASSOCIATED LABORATORIES

Order #: 1091629	Client: Calclean
Matrix: AIR	Client Sample ID: E-7
Date Sampled: 06/25/2010	
Time Sampled: 16:30	
Sampled By:	

Analyte	Result	DF	DLR	Units	Date/Ana	alyst
8021B BTEX/MTBE in Air - (Vppm & ug/L)						
Benzene	6.4	10	0.1	Vppm	07/01/10	SW
Ethyl honzono	1 2	10	0.1	Vnnm	07/01/10	CW

Ethyl benzene	4.8	10	0.1	Vppm	07/01/10	SW
Methyl t - butyl ether	12	10	1.0	Vppm	07/01/10	SW
Toluene	12	10	0.1	Vppm	07/01/10	SW
Xylene (total)	13	10	0.3	Vppm	07/01/10	SW

<u>8015B - Gasoline in Air - (Vppm & ug/L)</u>

Gasoline	54	10 10	50.0	Vppm	07/01/10	SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1091630	Client: Calclean
Matrix: AIR	Client Sample ID: E-2
Date Sampled: 06/25/2010	
Time Sampled: 17:00	
Sampled By:	

Analyte	Result	DF	DLR	Units	Date/An	alyst
8021B BTEX/MTBE in Air - (Vppm & ug/L)						
Benzene	27	50	0.5	Vppm	07/01/10	SW
Ethyl benzene	5.7	50	0.5	Vppm	07/01/10	SW
Methyl t - butyl ether	38	50	5.0	Vppm	07/01/10	SW
Toluene	28	50	0.5	Vppm	07/01/10	SW
Xylene (total)	13	50	1.5	Vppm	07/01/10	SW

Gasoline	1560	50	250.0	Vppm	07/01/10	SW
	······					

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #: 1091631	Client: Calclean
Matrix: AIR	Client Sample ID: E-3
Date Sampled: 06/25/2010	
Time Sampled: 17:30	
Sampled By:	

Analyte	Result	DF	DLR	Units	Date/Analyst
8021B BTEX/MTBE in Air - (Vppm & ug/L)					

Benzene	48	100	1.0	Vppm	07/01/10	SW
Ethyl benzene	6.9	100	1.0	Vppm	07/01/10	SW
Methyl t - butyl ether	103	100	10.0	Vppm	07/01/10	SW
Toluene	36	100	1.0	Vppm	07/01/10	SW
Xylene (total)	17	100	3.0	Vppm	07/01/10	SW

<u>8015B - Gasoline in Air - (Vppm & ug/L)</u>

	Gasoline	2620	-100	500.0	Vppm	07/01/10	SW
--	----------	------	------	-------	------	----------	----

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

Order #:	1091632							
Matrix: Alf	٤							
Date Sampled: 06/25/2010								
Time Sampled: 18:00								
Sampled By	:							

Analyte

Client: Calclean Client Sample ID: TOTAL INLET 6/25/10

8021B BTEX/MTBE in Air - (Vppm & ug/L)

Benzene	133	100	1.0	Vppm	07/01/10	SW
Ethyl benzene	6.0	100	1.0	Vppm	07/01/10	SW
Methyl t - butyl ether	246	100	10.0	Vppm	07/01/10	SW
Toluene	53	100	1.0	Vppm	07/01/10	SW
Xylene (total)	17	100	3.0	Vppm	07/01/10	SW

Result

DF

DLR Units Date/Analyst

8015B - Gasoline in Air - (Vppm & ug/L)

Gasoline 4770 100 500.0 Vppm 07/01/10 SW							
	Gasoline	4770	100	500.0	Vppm	07/01/10	SW

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor



ASSOCIATED LABORATORIES

ASSOCIATED LABORATORIES QA REPORT FORM

QC Sample:	257219-623
Matrix:	AIR
Prep. Date :	July 1, 2010

Analysis Date: July 1, 2010

Lab ID#'s in Batch: 257219,

REPORTING UNITS = Vppm

SAMPLE DUPLICATE RESULT

		Sample	Sample	
Test	Method	Result	Duplicate	%RPD
Gas	8015M	4,695.38	4,910.17	4
Benzene	8021B	97.88	100.66	3
Toluene	8021B	58.80	60.22	2
Ethylbenzene	8021B	12.48	12.47	0
Xylenes	8021B	25.48	25.09	2

ND = "U" - Not Detected

RPD = Relative Percent Difference of Sample Result and Sample Duplicate

RPD LIMITS = 20%

ASSOCIATED LABORATORIES

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Chain of Custody Record

Company	(114) 134-9151						A.L. Job No.						72	19	Page of					
Project Manager	NOEL SH	IENOI		Fax (714) 734-9138					Analysis Requested							Test Instructions	& Com	ments		
Project Name	PACO	PUN	NPS	Project #					2)	021)	:	<u>g</u>				-				
Site Name		AN	LEAN	JAC 2					801	E (8(Jun	2								
Address	AKLAN		CA	,						TPH-G (8	MTBI									
Sample ID	Lab ID		Date	Time	Matrix	Matrix Container Pr Number/Size Pr			ainer er/Size Pres.		BTEX/MTBE (8021)									
TOTAL IN	ET	6	/21/10	0900	AIR	TEDI	DLAR NONE			X	X									
E-10		6/	25/10	1330				1		1	1									
E = -4			1	1400																
4 MW-3				1430																
5 A SMW -25				1500																
E-1				1530																
E-11				1600																
E-7				1630	,															
E-2				1700																
10) E - 3				1730																
TOTAL INC	-		\downarrow	1800	\downarrow	V			/	\Rightarrow	\mathbf{V}									
12																		(EDF)		
13	-																	T060010)154	92
14																		AIR=PPM∨	i	
15																				
Sample Receipt - To Be Filled By Laboratory				Relinquished by 1. Sampler:					Relinquis	-			2.	Relinquished by		3.				
Total Number of Containers				Signature: Nocla			she	no	>	Signature					Signature:					
Custody Seals Y / N / NA Samples Intact / Y / N / NA				Printed Name:			-		1	Printed N	ame:				Printed Name:					
Received in Good Condition Y/N Samples Accepted Y/N				Date: 6 /30/ 10 T					1	Date:		Tir	ne:		Date:	Time:				
	Turn Around Time				Received By:				1.	•	Received	By:			2.	Received By:		З.		
				_			Signatur	~	N	~	_	!	Signature	:	_			Signature:		
Normal	🗋 Ru	sh	🖵 Same	•		3 hrs. 2 hrs.	Printed	Tria	N	No	nto.	B	Printed N	ame:				Printed Name:		
$\square 24 \text{ hrs.} \square 72 \text{ hrs.}$					Date: 6-30-(0"12:3					33	Date:		Tin	ne:		Date:	Time:			

Distribution: White - Laboratory Canary - Laboratory Pink - Project/Account Manager Goldenrod - Sampler/Originator





06/22/10

Technical Report for

The Source Group

9201 San Leandro Street, Oakland CA

Paco Pumps

Accutest Job Number: C11491

Sampling Date: 06/21/10

Report to:

The Source Group

jphilipp@thesourcegroup.net

ATTN: Jon Philipp

Total number of pages in report: 8



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Lunie Alter Muphy

Laurie Glantz-Murphy Laboratory Director



Certifications: CA (08258CA) DoD/ISO/IEC 17025:2005 (L2242) This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories. Test results relate only to samples analyzed.





Northern California • 2105 Lundy Ave. • San Jose, CA 95131 • tel: 408-588-0200 • fax: 408-588-0201 • http://www.accutest.com



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2.1: C11491-1: COMBINED INLET INFLUENT	
Section 3: Misc. Forms	6
3.1: Chain of Custody	7



Sample Summary

The Source Group

Job No: C11491

9201 San Leandro Street, Oakland CA Project No: Paco Pumps

Sample			Matrix			Client
Number	Date	Time By	Received	Code	Туре	Sample ID
C11491-1	06/21/10	12:30 GG	06/21/10	AQ	Water	COMBINED INLET INFLUENT





Sample Results

Report of Analysis



Client Sa Lab Sam Matrix: Method: Project:	ple ID: (A	C11491-1 AQ - Water SW846 8260B	NLET INFLUEN dro Street, Oaklar		Date Sample Date Receive Percent Solic	ed: 06/21/10	
Run #1 Run #2	File ID W13986.	DF D 50	Analyzed 06/22/10	By BD	Prep Date n/a	Prep Batch n/a	Analytical Batch VW490
Run #1 Run #2	Purge Vo 10.0 ml	olume					

Report of Analysis

Purgeable Aromatics, MTBE and GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7 1634-04-4	Benzene Toluene Ethylbenzene Xylene (total) Methyl Tert Butyl Ether TPH-GRO (C6-C10)	326 545 163 541 ND 10400	50 50 50 100 50 2500	15 25 15 35 25 1300	ug/l ug/l ug/l ug/l ug/l ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7 2037-26-5 460-00-4	Dibromofluoromethane Toluene-D8 4-Bromofluorobenzene	98% 107% 104%		60-1 60-1 60-1	30%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound





Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

ω



Northern California		AIN ULUNDY AVE, S				01	ΟY		Ĩ	FED-EX 1	Fracking	#				Bottle Q	rder Conta	C11491: Chain of Custody	•			
Malu i Es I.	(408)	588-0200	FAX: (408) 58	8-0201				7	Accutest	Quote #	-				Accute	est NC J	Job #: (C 11	49	Biench -	
Client / Reporting Information		Project	t Informa	tion											Poguo	ctod A	nalysis					
Company Name	Project Na	~	tco		JM	14	5				_ 0		٥		Reque		naiysis				ix Codes W- Wastewater	
Address 451 C VINCENT 20	Street							~		2	/ EtBE / as Gas	+TICs	ra	RCRA-8	609	BTEX-MtBE-TPH as Gasoline by GC/PID-FID					- Ground Water - Surface Water	
City State Zip	City	201 5	2AN	EA	NO(State	20	3	51	_	TPH as Gasoline	TPH TPH	+	· Diesei - Motor Oil - Other eanup 🛛	RCR		C/PID-	_				SO- Sat	
PLEASANTHILL 9452	3 Ox	Kibor	Ω		CA	~				H as	MIBE	625 E	otor O	LUFT-50	PCBs-8082 🛛	e by G	20				OI-Oil WP-Wipe	
JOHN PHICHP	Project #										TEX/		N. D		PCBs	asolla	$\frac{3}{2}$			LIQ - I	ion-aqueous Liquid	
Phone # 925 451-5262	EMAIL:									624	8260Petro (Includes BTEX / MIBE / DIPE / TAME / 1,2-DCA / EDBID	PAHs only	e - Diesel Cleanup	CAM-17D		l as G					AIR	
Samplers's Name GABE GEORGESCU		chase Order #								-ist a	(Inclu	РАН	Gel	ş	-8081	1d1-3	5			DW (P	- Drinking Water erchlorate Only)	
Accutest Sample	Collectio	2n	Ī.	≠ of	TT	1	T	d Bottle	S	3260 Full List	Petro E / TAI		TPH-Extractable - With Silica Gel Ch	METALS: PPM-13CI	Pesticides-8081 🗆	X-MtB	80					
ID Sample ID / Field Point / Point of Collection Dat			Matrix bo	ottles 🤤		1082	NOM	NEDH	ENCO	826(826(DIP1	8270 🗆	TPH Wath	PPU	Pes	вте	3				B USE ONLY	
-1 COMBINED INVET 9/4	10 1230	<u>6</u> G		3 3	2		++		_								\ge			_		
INFLOEN					++	+	+						257 X			\square		<u>A</u>				
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					11	1	$\uparrow \uparrow$	-++	1										<u> </u>	-		
					TT																	
Turnaround Time (Business days) Standard TAT 15 Business Days Approved By	/ Date:		oata Delive			1										ments /			- 1			
10 Day (Workload dependent)		Commer	rciat "B" -	Results	with QC						E	M	4/L	Co	en in	4	ΓU	Ar	WE			
5 Day (Workload dependent) 3 Day (125% markup)			rical "B+" Level 4 da			d chro	matog	rams														
2 Day (150% markup) 1 Day (200% markup)		EDF for	Geotracke	r 🗆	 	Form	at															
Same Day (300% markup)		Provide E Provide E							Ą	-	-											
Emergency T/A data available VIA Lablink					/				<i>;</i>													
Relinquished by Sampler:	documented	below each	time sam	ples et	fange p	Reli	ssion, Inquishe	includir d By	مور	urier c	lelivery	Date Tin	ie:			Received	d By:		\sim			
Relinguished by: Date Ti	1 [10 1405	1	14	<u> </u>		2		\square	\geq	$\mathbf{\Sigma}$		6/2	ilio	14	30	2	2		n	m	γ	
Charlen Date Ti	ne:	Received By:	Ľ		>	Reli	inquishe	id Sy:		~		Daté Tin	ie:			Rocolye	By:		- / ~			
Relinquished by: Date Ti	me:	S Received By:				Cus	stody Se	al# 🗸	ľ		ate 8ottie			Head	ipaoe	2		On Ice	<u>GN</u>		Temp.	
5		5							ľ	abels m	atch Coc	<u>O' n</u>		Separate	Receipt	ί∞(γ)r	4		3.2-1	2123	1°C	

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Accutest Laboratories Northern California Sample Receiving Check List <u>Review Chain of Custody</u> Chain of Custody is to be complete and legib <u>l</u> e.	Jop#: C Page 2 of 2 Page 2 of 2 Page 2 of 2
Are these regulatory (NPDES) samples? CWA	<i>V</i>
pds pH requested? Yes /No	Client Sample ID pH Check Other Comments/Issues
Was Client informed that hold time is 15 min? Yes / No Continue Yes / No	
Was ortho-Phosphate filtered with in 15 min? Yes / No Continue Yes / No	
GAre sample within hold time?	
Are sample in danger of exceeding hold-time Yes (No	
Existing Client? Yes / No Existing Project? (Yes) / No	×
If No: Is Report to info complete and legible, including;	
□ deliverable □ Name □ Address □ phone □ e-mail	
Is Bill to info complete and legible, including;	
□ PO# □ Credit card □ Contact □address □ phone □ e-mail	
Is Contact and/or Project Manager identified, including;	
□ phone □ e-mail	
Project name / number □ Special requirements?	
Sample IDs / date & time of collection provided?	
A Is Matrix listed and correct?	
Analyses listed we do or client has authorized a subcontract?	
Chain is signed and dated by both client and sample custodian? (Yes) No	
à TAT requested available? Yes / No Approved by D M	
Review Coolers:	
wwere Coolers temperatures measured at ≤6°C? Cooler # Temp <u>3.1</u> °C	
• If cooler is outside the $\leq 6^{\circ}$ C; note down below the affected bottles in that cooler	
 Note that ANC does NOT accept evidentiary samples. (We do not lock refrigerators) 	
Shipment Received Method ROV	
Custody Seals: Present: Yes / No If Yes; Unbroken: Yes / No	
Review of Sample Bottles: If you answer no, explain to the side	
Chain matches bottle labels? (Yes / No Sample bottle intact? (Yes / No	
Is there enough sample volume in proper bottle for requested analyses? (ves) / No	
Proper Preservatives? (Yes / No Check pH on preserved samples except 1664,	
625, 8270 and VOAs.	
Veadspace-VOAs? Greater than 6mm in diameter Yes (No)	
List sample ID and affected container	

Non-Compliance issues and discrepancies on the COC are forwarded to Project Management

\\Anc-srv-file1\d\$\Entech-Data\Laboratory\SOPs\SOP_CompleteListing\SC001F1_1_Form1_SampleControl_SampleReceivingChecklist_2010-02-15.doc



Laboratory Job Number 220785 ANALYTICAL REPORT

The Source Group, Inc. 3451C Vincent Road Pleasant Hill, CA 94523 Project : 04-PFT-003 Location : Paco Pumps Level : II

<u>Sample ID</u>	<u>Lab ID</u>
E-12	220785-001
E-11	220785-002
E-1	220785-003
E-2	220785-004
E-7	220785-005

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

Signature: _/hult

NELAP # 01107CA

Project Manager

Date: <u>06/25/2010</u>



CASE NARRATIVE

Laboratory number: Client: Project: Location: Request Date: Samples Received: 220785 The Source Group, Inc. 04-PFT-003 Paco Pumps 06/17/10 06/16/10

This data package contains sample and QC results for five water samples, requested for the above referenced project on 06/17/10. The samples were received cold and intact.

Volatile Organics by GC/MS (EPA 8260B):

E-1 (lab # 220785-003) had pH greater than 2. No other analytical problems were encountered.

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	CI		CUSTOD	(1 3
CUT Curtis & Tom ENVIRONMENTAL ANA	pkins Laborato	ories			Page Chain of Custody #	of
2323 Fifth Street Berkeley, CA 94710	in Business S Phone (510) 48 Fax (510) 48	6-0900 6-0532	ogin # 220785		LYTICAL REQUEST	
Project No: O4-PFT-00 Project Name: PACO Pum EDD Format: Report Level: Turnaround Time: RUSH	II III IV Company	<u>:500569 (</u> :925-944-	Scorb Inc	(8415 Jr 8260) (8260) 0xygenates (8260) 5cevensers (8260)		
Lab Sample ID. No.	SAMPLING	MATRIX outginets		ox 2		
E-12 E-11 E-1 E-2 E-7	6/16/10 07: 1000 1000 1000 1000 1000 1000		н НСІ Н2S04 Н2S04 НN03 Nd0H None	X X X X X X X X X X X X X X X X X X X		
Notes:						
Noles:	SAMPLE RECEIPT	RELINQU L. Whith		<u>o</u> <i>Ost I.</i>	RECEIVED BY: DATE: DATE: DATE:	e TIME: <u>1440</u> IIME: TIME:

COOLER RECEIPT CHECKLIST

cb	Curtis & Tompkins, Ltd.
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.

Login # 220785 Date Received <u>6-16-10</u> Num	mber of coolers_/
Client THE Source Chorp Project Atto fump	.5
Date Opened 6-16-10 By (print) S. EVANS (sign)	mly .
Date Logged in 6-17-10 By (print) Elms TSadie (sign) CC	in Tradie
1. Did cooler come with a shipping slip (airbill, etc) Shipping info	YES NO
How many Name , D	a samples 🛛 🖾 NO Date
2B. Were custody seals intact upon arrival?	VES NONIA
3. Were custody papers dry and intact when received?	TES NO
4. Were custody papers filled out properly (ink, signed, etc)?	NO
 Is the project identifiable from custody papers? (If so fill out top of f Indicate the packing in cooler: (if other, describe) 	torm) <u>(TES</u>) NO
Bubble Wrap Foam blocks Bags Cloth material Cardboard Styrofoam 7. Temperature documentation:	□ None □ Paper towels
Type of ice used: 🗡 Wet 🗌 Blue/Gel 🗌 None Ter	mp(°C)
Samples Received on ice & cold without a temperature blank	
☐ Samples received on ice directly from the field. Cooling proc	
8. Were Method 5035 sampling containers present? If YES, what time were they transferred to freezer?	YES NO
9. Did all bottles arrive unbroken/unopened?	YES NO
10. Are samples in the appropriate containers for indicated tests?	VES NO
11. Are sample labels present, in good condition and complete?	NO
12. Do the sample labels agree with custody papers?	
13. Was sufficient amount of sample sent for tests requested?	VES NO
14. Are the samples appropriately preserved?	NO N/A
15. Are bubbles > 6mm absent in VOA samples?	TES NO N/A
16. Was the client contacted concerning this sample delivery?	YES NO
	Date:
COMMENTS	

SOP Volume:Client ServicesSection:1.1.2Page:1 of 1



Gasoline by GC/MS Lab #: 220785 Location: Paco Pumps Client: The Source Group, Inc. Prep: EPA 5030B Project#: 04 - PFT - 003Analysis: EPA 8260B Field ID: E-12 Batch#: 164317 Lab ID: 220785-001 Sampled: 06/16/10 Matrix: Received: 06/16/10 Water Units: ug/L Analyzed: 06/23/10 Diln Fac: 3.333

Analyte	Result	RL	
Gasoline C7-C12	4,300	170	
tert-Butyl Alcohol (TBA)	ND	33	
Isopropyl Ether (DIPE)	ND	1.7	
Ethyl tert-Butyl Ether (ETBE)	ND	1.7	
Methyl tert-Amyl Ether (TAME)	ND	1.7	
MTBE	ND	1.7	
1,2-Dichloroethane	2.0	1.7	
Benzene	190	1.7	
Toluene	15	1.7	
1,2-Dibromoethane	ND	1.7	
Ethylbenzene	43	1.7	
m,p-Xylenes	45	1.7	
o-Xylene	4.2	1.7	

Surrogate	%REC	Limits
Dibromofluoromethane	111	80-122
1,2-Dichloroethane-d4	103	71-140
Toluene-d8	96	80-120
Bromofluorobenzene	99	80-121



Gasoline by GC/MS Lab #: 220785 Location: Paco Pumps Client: The Source Group, Inc. Prep: EPA 5030B Project#: 04 - PFT - 003Analysis: EPA 8260B Field ID: E-11 Batch#: 164317 Lab ID: 220785-002 Sampled: 06/16/10 Matrix: Received: 06/16/10 Water Units: ug/L Analyzed: 06/23/10 Diln Fac: 25.00

Analyte	Result	RL	
Gasoline C7-C12	25,000	1,300	
tert-Butyl Alcohol (TBA)	ND	250	
Isopropyl Ether (DIPE)	ND	13	
Ethyl tert-Butyl Ether (ETBE)	ND	13	
Methyl tert-Amyl Ether (TAME)	ND	13	
MTBE	ND	13	
1,2-Dichloroethane	ND	13	
Benzene	1,800	13	
Toluene	1,500	13	
1,2-Dibromoethane	ND	13	
Ethylbenzene	480	13	
m,p-Xylenes	420	13	
o-Xylene	560	13	

Surrogate	%REC	Limits	
Dibromofluoromethane	107	80-122	
1,2-Dichloroethane-d4	100	71-140	
Toluene-d8	104	80-120	
Bromofluorobenzene	97	80-121	

ND= Not Detected RL= Reporting Limit Page 1 of 1

5.0



Gasoline by GC/MS Lab #: 220785 Location: Paco Pumps Client: The Source Group, Inc. Prep: EPA 5030B Project#: 04 - PFT - 003Analysis: EPA 8260B Field ID: E-1 Batch#: 164317 Lab ID: 220785-003 Sampled: 06/16/10 Matrix: Received: 06/16/10 Water Units: ug/L Analyzed: 06/23/10 50.00 Diln Fac:

Analyte	Result	RL
Gasoline C7-C12	36,000	2,500
tert-Butyl Alcohol (TBA)	ND	500
Isopropyl Ether (DIPE)	ND	25
Ethyl tert-Butyl Ether (ETBE)	ND	25
Methyl tert-Amyl Ether (TAME)	ND	25
MTBE	ND	25
1,2-Dichloroethane	ND	25
Benzene	3,200	25
Toluene	2,300	25
1,2-Dibromoethane	ND	25
Ethylbenzene	750	25
m,p-Xylenes	770	25
o-Xylene	1,400	25

Surrogate	%REC	Limits
Dibromofluoromethane	106	80-122
1,2-Dichloroethane-d4	97	71-140
Toluene-d8	104	80-120
Bromofluorobenzene	96	80-121



Gasoline by GC/MS Lab #: 220785 Location: Paco Pumps Client: The Source Group, Inc. Prep: EPA 5030B Project#: 04 - PFT - 003Analysis: EPA 8260B Field ID: E-2 Batch#: 164260 Lab ID: 220785-004 Sampled: 06/16/10 Matrix: Received: 06/16/10 Water Units: ug/L Analyzed: 06/22/10 Diln Fac: 1.000

Analyte	Result	RL	
Gasoline C7-C12	72	50	
tert-Butyl Alcohol (TBA)	ND	10	
Isopropyl Ether (DIPE)	ND	0.50	
Ethyl tert-Butyl Ether (ETBE)	ND	0.50	
Methyl tert-Amyl Ether (TAME)	ND	0.50	
MTBE	2.1	0.50	
1,2-Dichloroethane	0.68	0.50	
Benzene	5.3	0.50	
Toluene	5.9	0.50	
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	0.89	0.50	
m,p-Xylenes	2.6	0.50	
o-Xylene	2.3	0.50	

Surrogate	%REC	Limits	
Dibromofluoromethane	103	80-122	
1,2-Dichloroethane-d4	120	71-140	
Toluene-d8	101	80-120	
Bromofluorobenzene	101	80-121	



Gasoline by GC/MS Lab #: 220785 Location: Paco Pumps Client: The Source Group, Inc. Prep: EPA 5030B Project#: 04 - PFT - 003Analysis: EPA 8260B Field ID: E-7 Batch#: 164317 Lab ID: 220785-005 Sampled: 06/16/10 Matrix: Received: 06/16/10 Water Units: ug/L Analyzed: 06/23/10 Diln Fac: 1.429

Analyte	Result	RL	
Gasoline C7-C12	780	71	
tert-Butyl Alcohol (TBA)	ND	14	
Isopropyl Ether (DIPE)	ND	0.71	
Ethyl tert-Butyl Ether (ETBE)	ND	0.71	
Methyl tert-Amyl Ether (TAME)	ND	0.71	
MTBE	5.2	0.71	
1,2-Dichloroethane	1.9	0.71	
Benzene	100	0.71	
Toluene	73	0.71	
1,2-Dibromoethane	ND	0.71	
Ethylbenzene	20	0.71	
m,p-Xylenes	53	0.71	
o-Xylene	27	0.71	

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-122
1,2-Dichloroethane-d4	93	71-140
Toluene-d8	102	80-120
Bromofluorobenzene	107	80-121



	Gasoline	by GC/MS	
Lab #: Client: Project#:	220785 The Source Group, Inc. 04-PFT-003	Location: Prep: Analysis:	Paco Pumps EPA 5030B EPA 8260B
Matrix: Units: Diln Fac:	Water ug/L 1.000	Batch#: Analyzed:	164260 06/22/10

Type: BS	Lab	ID: QC549	534	
Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	100.0	85.81	86	45-152
Isopropyl Ether (DIPE)	20.00	20.62	103	56-134
Ethyl tert-Butyl Ether (ETBE)	20.00	18.97	95	60-124
Methyl tert-Amyl Ether (TAME)	20.00	17.57	88	66-120
MTBE	20.00	16.83	84	66-120
1,2-Dichloroethane	20.00	21.58	108	70-135
Benzene	20.00	21.14	106	80-122
Toluene	20.00	20.88	104	80-120
1,2-Dibromoethane	20.00	19.21	96	80-120
Ethylbenzene	20.00	21.55	108	80-123
m,p-Xylenes	40.00	41.82	105	80-126
o-Xylene	20.00	21.27	106	80-122
Surrogate	%REC Limits			
Dibromofluoromethane	101 80-122			
1,2-Dichloroethane-d4	115 71-140			
Toluene-d8	100 80-120			
Bromofluorobenzene	105 80-121			

Type: BSD	La	ab ID: QC5495	535			
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	100.0	86.65	87	45-152	1	30
Isopropyl Ether (DIPE)	20.00	19.83	99	56-134	4	20
Ethyl tert-Butyl Ether (ETBE)	20.00	18.54	93	60-124	2	20
Methyl tert-Amyl Ether (TAME)	20.00	17.80	89	66-120	1	20
MTBE	20.00	16.74	84	66-120	1	20
1,2-Dichloroethane	20.00	21.04	105	70-135	3	20
Benzene	20.00	20.26	101	80-122	4	20
Toluene	20.00	20.17	101	80-120	3	20
1,2-Dibromoethane	20.00	19.81	99	80-120	3	20
Ethylbenzene	20.00	20.94	105	80-123	3	20
m,p-Xylenes	40.00	41.20	103	80-126	1	20
o-Xylene	20.00	20.21	101	80-122	5	20
Surrogate	%REC Limits					
Dibromofluoromethane	99 80-122					
1 2 Dichlementhere d4	110 71 140					

%REC	Limits	
99	80-122	
116	71-140	
101	80-120	
103	80-121	
	99 116 101	99 80-122 116 71-140 101 80-120

9.0



Gasoline by GC/MS						
Lab #:	220785	Location:	Paco Pumps			
Client:	The Source Group, Inc.	Prep:	EPA 5030B			
Project#:	04-PFT-003	Analysis:	EPA 8260B			
Matrix:	Water	Batch#:	164260			
Units:	ug/L	Analyzed:	06/22/10			
Diln Fac:	1.000					

Type:

BS

Lab ID:

QC549536

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	750.0	845.8	113	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-122
1,2-Dichloroethane-d4	116	71-140
Toluene-d8	102	80-120
Bromofluorobenzene	102	80-121

Type:	BSD			Lab ID:	QC	549537			
	Analyte		Spiked		Result	%REC	Limits	RPD	Lim
Gasoline C	7-C12		750.0		814.2	109	80-120	4	20
	Surrogate	%REC	Limits						
Dibromoflu	oromethane	99	80-122						
1,2-Dichlo	roethane-d4	118	71-140						
Toluene-d8		101	80-120						
Bromofluor	obenzene	101	80-121						

10.0



Gasoline by GC/MS						
Lab #:	220785	Location:	Paco Pumps			
Client:	The Source Group, Inc.	Prep:	EPA 5030B			
Project#:	04-PFT-003	Analysis:	EPA 8260B			
Type:	BLANK	Diln Fac:	1.000			
Lab ID:	QC549737	Batch#:	164260			
Matrix:	Water	Analyzed:	06/22/10			
Units:	ug/L					

Analyte	Result	RL	
Gasoline C7-C12	ND	50	
tert-Butyl Alcohol (TBA)	ND	10	
Isopropyl Ether (DIPE)	ND	0.50	
Ethyl tert-Butyl Ether (ETBE)	ND	0.50	
Methyl tert-Amyl Ether (TAME)	ND	0.50	
MTBE	ND	0.50	
1,2-Dichloroethane	ND	0.50	
Benzene	ND	0.50	
Toluene	ND	0.50	
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-122
1,2-Dichloroethane-d4	120	71-140
Toluene-d8	100	80-120
Bromofluorobenzene	100	80-121



Gasoline by GC/MS						
Lab #:	220785	Location:	Paco Pumps			
Client:	The Source Group, Inc.	Prep:	EPA 5030B			
Project#:	04-PFT-003	Analysis:	EPA 8260B			
Type:	BLANK	Diln Fac:	1.000			
Lab ID:	QC549759	Batch#:	164317			
Matrix:	Water	Analyzed:	06/23/10			
Units:	ug/L					

Analyte	Result	RL	
Gasoline C7-C12	ND	50	
tert-Butyl Alcohol (TBA)	ND	10	
Isopropyl Ether (DIPE)	ND	0.50	
Ethyl tert-Butyl Ether (ETBE)	ND	0.50	
Methyl tert-Amyl Ether (TAME)	ND	0.50	
MTBE	ND	0.50	
1,2-Dichloroethane	ND	0.50	
Benzene	ND	0.50	
Toluene	ND	0.50	
1,2-Dibromoethane	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits	
Dibromofluoromethane	110	80-122	
1,2-Dichloroethane-d4	105	71-140	
Toluene-d8	99	80-120	
Bromofluorobenzene	107	80-121	



	Gasoline	by GC/MS	
Lab #: Client: Project#:	220785 The Source Group, Inc. 04-PFT-003	Location: Prep: Analysis:	Paco Pumps EPA 5030B EPA 8260B
Matrix: Units: Diln Fac:	Water ug/L 1.000	Batch#: Analyzed:	164317 06/23/10

Type: BS		Lab ID: QC5	549760	
Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	130.9	105	45-152
Isopropyl Ether (DIPE)	25.00	26.24	105	56-134
Ethyl tert-Butyl Ether (ETBE)	25.00	25.89	104	60-124
Methyl tert-Amyl Ether (TAME)	25.00	22.73	91	66-120
MTBE	25.00	24.53	98	66-120
1,2-Dichloroethane	25.00	25.00	100	70-135
Benzene	25.00	25.92	104	80-122
Toluene	25.00	26.77	107	80-120
1,2-Dibromoethane	25.00	25.53	102	80-120
Ethylbenzene	25.00	27.27	109	80-123
m,p-Xylenes	50.00	54.53	109	80-126
o-Xylene	25.00	27.10	108	80-122
Surrogate	%REC Limits			
Dibromofluoromethane	107 80-122			
1,2-Dichloroethane-d4	102 71-140			
Toluene-d8	104 80-120			
Bromofluorobenzene	96 80-121			

Type: BSD		Lab ID: Q	C549761			
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	128.8	103	45-152	2	30
Isopropyl Ether (DIPE)	25.00	26.19		56-134	0	20
Ethyl tert-Butyl Ether (ETBE)	25.00	26.51		60-124	2	20
Methyl tert-Amyl Ether (TAME)	25.00	23.97		66-120	5	20
MTBE	25.00	23.10	92	66-120	6	20
1,2-Dichloroethane	25.00	25.36	101	70-135	1	20
Benzene	25.00	27.15	109	80-122	5	20
Toluene	25.00	25.02	100	80-120	7	20
1,2-Dibromoethane	25.00	24.68	99	80-120	3	20
Ethylbenzene	25.00	25.86	103	80-123	5	20
m,p-Xylenes	50.00	53.82	108	80-126	1	20
o-Xylene	25.00	26.66	107	80-122	2	20
Gumpagaha	%REC Limits					
Surrogate Dibromofluoromethane	108 80-122					
1,2-Dichloroethane-d4						
Toluene-d8	98 80-120					
Bromofluorobenzene	94 80-121					

14.0



Gasoline by GC/MS									
Lab #:	220785	Location:	Paco Pumps						
Client:	The Source Group, Inc.	Prep:	EPA 5030B						
Project#:	04-PFT-003	Analysis:	EPA 8260B						
Matrix:	Water	Batch#:	164317						
Units:	ug/L	Analyzed:	06/23/10						
Diln Fac:	1.000								

Type:

BS

Lab ID: QC549777

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	750.0	823.6	110	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	107	80-122
1,2-Dichloroethane-d4	106	71-140
Toluene-d8	102	80-120
Bromofluorobenzene	97	80-121

Туре:	BSD			Lab ID:	QC	2549778			
	Analyte		Spiked		Result	%REC	Limits	RPD	Lim
Gasoline C7	-C12		750.0		894.1	119	80-120	8	20
S	urrogate	%REC	Limits						
Dibromofluo	romethane	105	80-122						
1,2-Dichlor	oethane-d4	98	71-140						
Toluene-d8		100	80-120						
Bromofluoro	benzene	103	80-121						

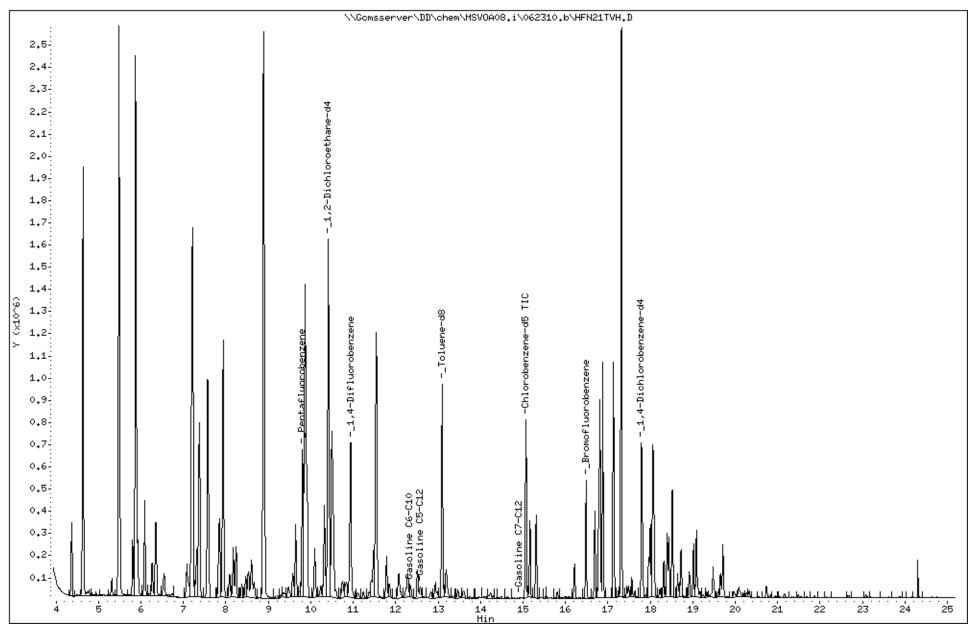
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Instrument: MSV0A08.i

Operator: VOC

Column diameter: 2.00



Page 2

Column phase:

Client ID: DYNA P&T Instrument: MSVOA08.i Sample Info: S,220785-002 Operator: VOC Column phase: Column diameter: 2.00 \\Gcmsserver\DD\chem\MSVOA08.i\062310.b\HFN22TVH.D 2,3-1,2-Dichloroethane-d4 2,2-2,1-2.0-1,9-1,8-1.7-1.6-1.5-1.4oluene-d8 4-Dichlorobenzene-d4 Ë 1,3-Y (x10^6) -Chlorobenzene-d5 _1,4-Difluorobenzene 1,2-1.1-<u>Penta</u>fluorobenzene Bromofluorobenzene 1.0-0.9-H 0.8-0.7-0.6-0.5-0.4-C7-C12 0.3-Gasoline 0.2-0,1-

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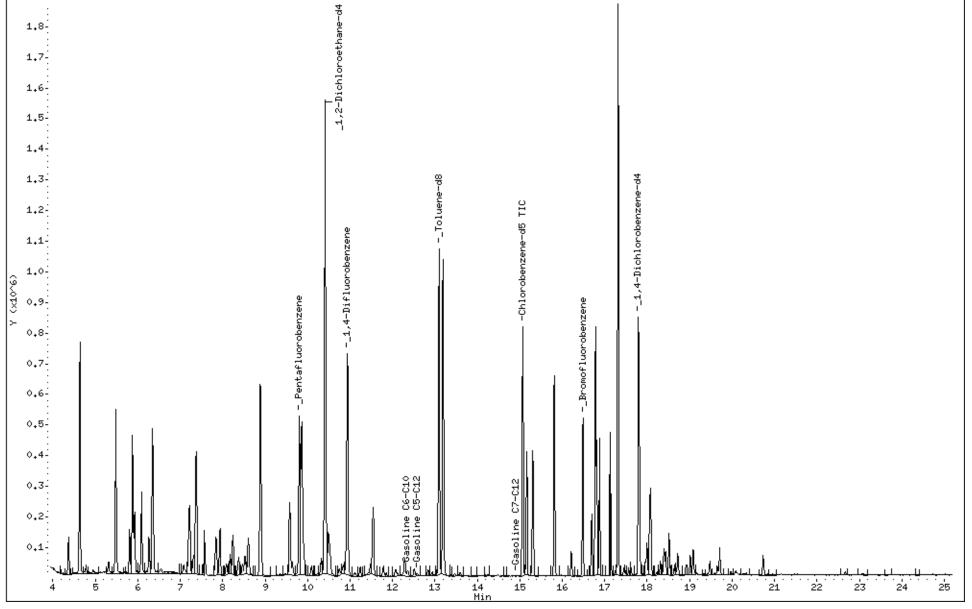
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Date : 23-JUN-2010 22:28
Client ID: DYNA P&T Instrument: MSVOA08.i
Sample Info: S,220785-003
Operator: VOC
Column phase:
Column diameter: 2.00
\\Gomsserver\DD\chem\MSVOA08.i\062310.b\HFN23TVH.D
\\Gomsserver\DD\chem\MSVOA08.i\062310.b\HFN23TVH.D
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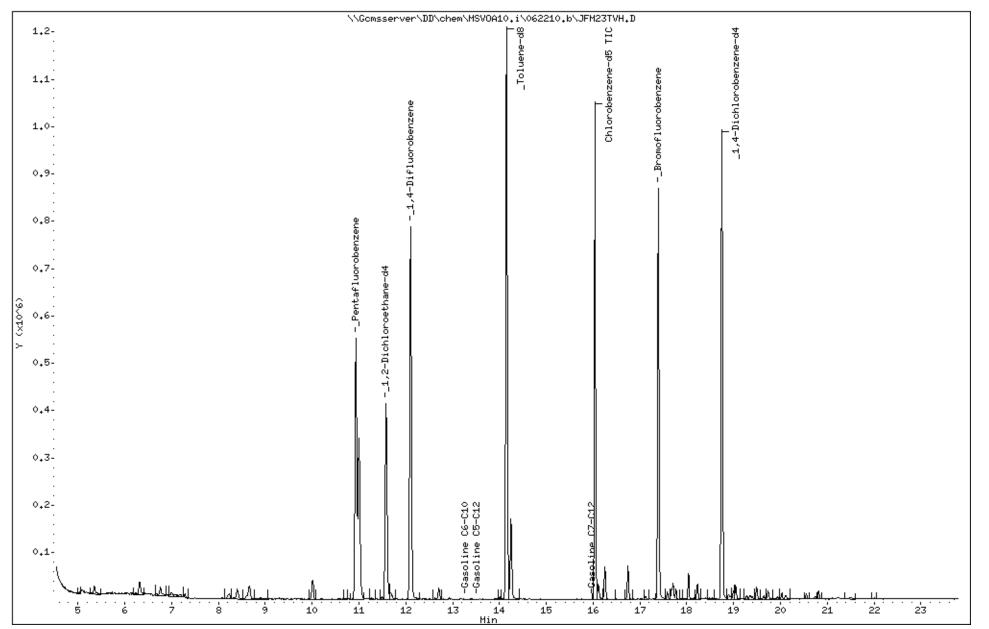
Sample Info: 5,220785-004

Column phase:

Instrument: MSVOA10.i

Operator: VOA

Column diameter: 2.00



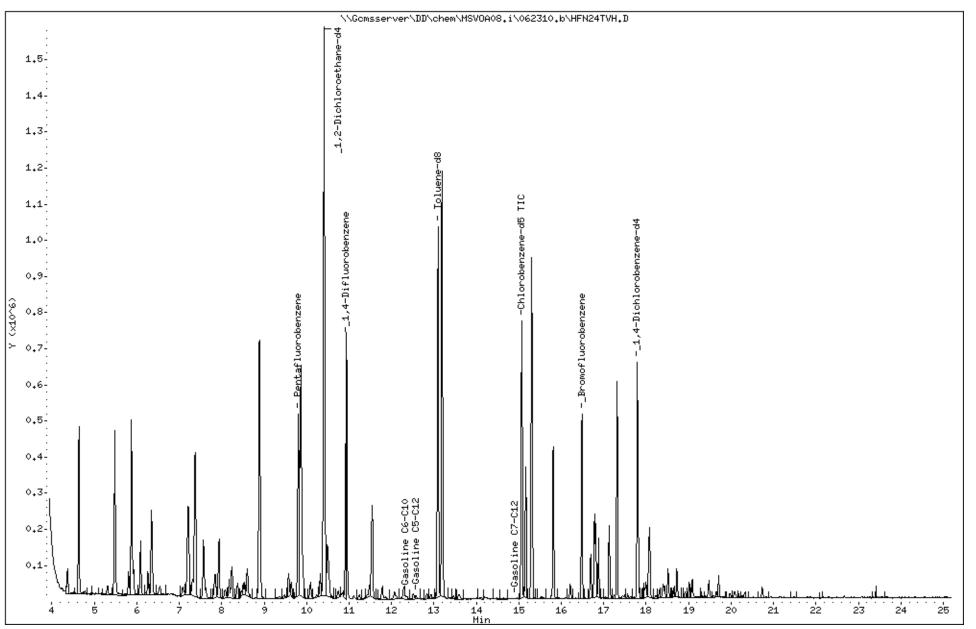
19 of 21

Data File: \\Comsserver\DD\chem\MSVOA08.i\062310.b\HFN24TVH.D Date : 23-JUN-2010 23:06 Client ID: DYNA P&T Sample Info: S,220785-005

Instrument: MSV0A08.i

Operator: VOC

Column diameter: 2.00



Page 2

Column phase:

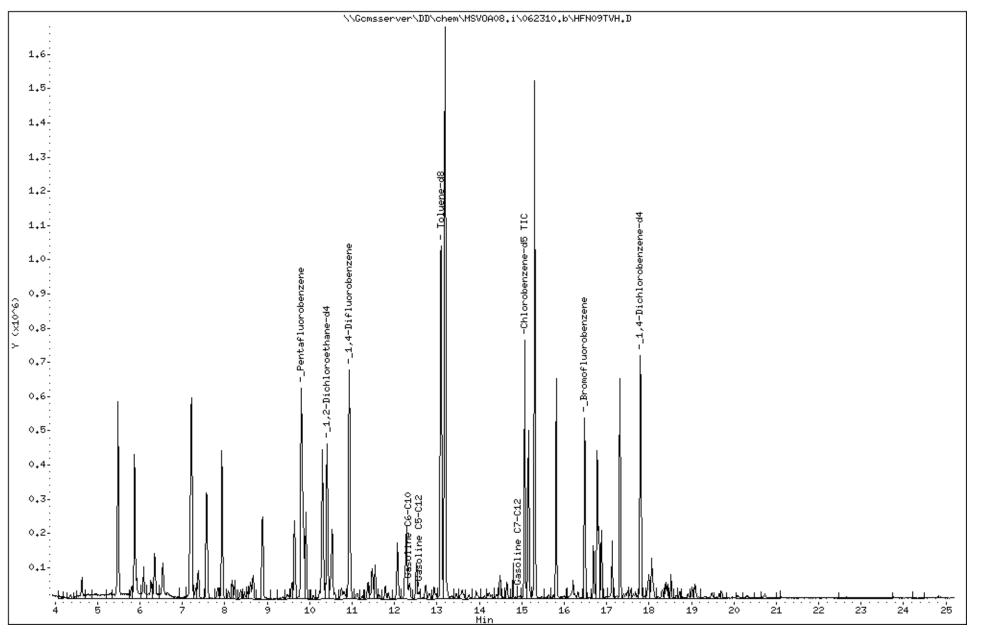
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Date : 23-JUN-2010 13:45
Client ID: DYNA P&T
Sample Info: CCV/BS,QC549777,164317,S14540,7500X

Column phase:

Instrument: MSV0A08.i

Operator: VOC

Column diameter: 2.00



21 of 21





07/15/10

Technical Report for

The Source Group

9201 San Leandro Street, Oakland CA

PACO PUMPS

Accutest Job Number: C11612

Sampling Date: 06/30/10

Report to:

The Source Group 3451C Vincent Road Pleasant Hill, CA 94523 jphilipp@thesourcegroup.net; ktidwell@thesourcegroup.net

ATTN: Jon Philipp

Total number of pages in report: 22



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference

Laurie Elen Muphy

Laurie Glantz-Murphy Laboratory Director



and/or state specific certification programs as applicable.

Client Service contact: Anne Kathain 408-588-0200

Certifications: CA (08258CA) DoD/ISO/IEC 17025:2005 (L2242) This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories. Test results relate only to samples analyzed.



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Sample Summary

The Source Group

Job No: C11612

9201 San Leandro Street, Oakland CA Project No: PACO PUMPS

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
C11612-1	06/30/10	08:40 HN	06/30/10	AQ	Ground Water	E-2
C11612-2	06/30/10	08:50 HN	06/30/10	AQ	Ground Water	E-7
C11612-3	06/30/10	09:00 HN	06/30/10	AQ	Ground Water	E-11
C11612-4	06/30/10	09:10 HN	06/30/10	AQ	Ground Water	E-1
C11612-5	06/30/10	09:20 HN	06/30/10	AQ	Ground Water	E-12





Sample Results

Report of Analysis



Lab Sam Matrix: Method: Project:	AQ - SW84	Ground Wa 6 8260B	ater 10 Street, Oaklar	nd CA	Date Receive	Date Sampled:06/30/10Date Received:06/30/10Percent Solids:n/a		
Run #1 Run #2	File ID M16025.D	DF 1	Analyzed 07/02/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM522	
Run #1 Run #2	Purge Volum 10.0 ml	e						

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	0.50	1.0	0.30	ug/l	J
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.0	1.0	0.50	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	102%		60-1	30%	
2037-26-5	Toluene-D8	104%		60-1	30%	
460-00-4	4-Bromofluorobenzene	102%		60-1	30%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Lab Sam Matrix: Method: Project:	AQ - SW84	Ground W 6 8260B	ater ro Street, Oaklar	nd CA	Date Sample Date Receive Percent Solid	d: 06/30/10	
Run #1 Run #2	File ID W14236.D	DF 5	Analyzed 07/07/10	By BD	Prep Date n/a	Prep Batch n/a	Analytical Batch VW498
Run #1 Run #2	Purge Volum 10.0 ml	e					

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	207	5.0	1.5	ug/l	
108-88-3	Toluene	258	5.0	2.5	ug/l	
100-41-4	Ethylbenzene	63.8	5.0	1.5	ug/l	
1330-20-7	Xylene (total)	360	10	3.5	ug/l	
106-93-4	1,2-Dibromoethane	ND	5.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	2.5	5.0	1.5	ug/l	J
108-20-3	Di-Isopropyl ether	ND	25	2.5	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	25	2.5	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3.8	5.0	2.5	ug/l	J
994-05-8	Tert-Amyl Methyl Ether	ND	25	2.5	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	50	25	ug/l	
	TPH-GRO (C6-C10)	3460	250	130	ug/l	
CACNO	Suma acto Decoverias	D# 1	D# 2	T inc	:4	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	88%		60-1	30%	
2037-26-5	Toluene-D8	98%		60-1	30%	
460-00-4	4-Bromofluorobenzene	95%		60-1	30%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound





Client Sa Lab Sam Matrix: Method: Project:	AQ - SW84	E-11 C11612-3 AQ - Ground Water SW846 8260B 9201 San Leandro Street, Oakland CA			Date Sampled Date Received Percent Solid	d: 06/30/10	
Run #1 Run #2	File ID W14237.D	DF 40	Analyzed 07/07/10	By BD	Prep Date n/a	Prep Batch n/a	Analytical Batch VW498
Run #1 Run #2	Purge Volum 10.0 ml	e					

CAS No.	Compound	Result	RL	MDL	Units	Q	
71-43-2	Benzene	268	40	12	ug/l		
108-88-3	Toluene	509	40	20	ug/l		
100-41-4	Ethylbenzene	473	40	12	ug/l		
1330-20-7	Xylene (total)	1140	80	28	ug/l		
106-93-4	1,2-Dibromoethane	ND	40	8.0	ug/l		
107-06-2	1,2-Dichloroethane	ND	40	12	ug/l		
108-20-3	Di-Isopropyl ether	ND	200	20	ug/l		
637-92-3	Ethyl Tert Butyl Ether	ND	200	20	ug/l		
1634-04-4	Methyl Tert Butyl Ether	ND	40	20	ug/l		
994-05-8	Tert-Amyl Methyl Ether	ND	200	20	ug/l		
75-65-0	Tert-Butyl Alcohol	ND	400	200	ug/l		
	TPH-GRO (C6-C10)	15300	2000	1000	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
1868-53-7	Dibromofluoromethane	87%	60-130%		30%		
2037-26-5	Toluene-D8	98%	% 6		-130%		
460-00-4	4-Bromofluorobenzene	96%	60-130%				

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Lab Sam Matrix: Method: Project:	AQ - SW84	Ground Wa 6 8260B	ater 10 Street, Oaklar	nd CA	Date Sampled Date Received Percent Solids	l: 06/30/10	
Run #1 Run #2	File ID M16026.D	DF 1	Analyzed 07/03/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM522
Run #1	Purge Volum 10.0 ml	2					

CAS No.	Compound	Result	RL	MDL	Units	Q	
71-43-2	Benzene	11.7	1.0	0.30	ug/l		
108-88-3	Toluene	9.4	1.0	0.50	ug/l		
100-41-4	Ethylbenzene	1.5	1.0	0.30	ug/l		
1330-20-7	Xylene (total)	7.7	2.0	0.70	ug/l		
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l		
107-06-2	1,2-Dichloroethane	0.31	1.0	0.30	ug/l	J	
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l		
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l		
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l		
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l		
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l		
	TPH-GRO (C6-C10)	124	50	25	ug/l		
CAS No.	Sumagata Deservation	Run# 1	Run# 2	Lim	ta		
CAS NO.	Surrogate Recoveries	KUN# 1	KUN# 2	LIIII	lts		
1868-53-7	Dibromofluoromethane	104%	60-130%				
2037-26-5	Toluene-D8	104%	60-130%				
460-00-4	4-Bromofluorobenzene	103%		60-1	30%		

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Lab Samj Matrix: Method:	AQ -	12-5 Ground Wa 6 8260B	ter		Date Sample Date Receive Percent Solic	ed: 06/30/10	
Project:	9201	San Leandro	o Street, Oaklar	nd CA			
	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 Run #2	M16029.D	3.33	07/03/10	XB	n/a	n/a	VM522
	Purge Volum	e					
Run #1	10.0 ml						

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	130	3.3	1.0	ug/l	
108-88-3	Toluene	6.6	3.3	1.7	ug/l	
100-41-4	Ethylbenzene	ND	3.3	1.0	ug/l	
1330-20-7	Xylene (total)	24.2	6.7	2.3	ug/l	
106-93-4	1,2-Dibromoethane	ND	3.3	0.67	ug/l	
107-06-2	1,2-Dichloroethane	ND	3.3	1.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	17	1.7	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	17	1.7	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	3.3	1.7	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	17	1.7	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	33	17	ug/l	
	TPH-GRO (C6-C10)	1570	170	83	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	102%		60-1	30%	
2037-26-5	Toluene-D8	103%		60-1	30%	
460-00-4	4-Bromofluorobenzene	103%		60-1	30%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound





Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

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(MP)				C	HA	IN 2235 R						OI)Y									
BACCUTES						32-329-						480	FED-EX	Tracking	#				Bottle Orde	r Control #		
Laboratori	~~~~~					11	a.		, bill	0 0 0 1	- 11		Accutes	l Quote #					Accutest Jo	^{b#} C	116	2
Client / Reporting Information				Pro	ect info	rmatio	<u>56</u> k	(PC)	1447	2 80 <u>9</u>	2							Requ	ested Ana	lysis	L .	Matrix Codes
Company liame Source Group C	nc		0 Project N	49 ^{:eme:}	100	R	Jw	ر به ک	5					П Ш 19		326	000					DW- Drinking Water GW- Ground Water
	x R	Э	Street	K01	<u>.</u> Se,					5	£		Π	ARS DI MTBE (STARSD	34 Jenertes	r S	23				WW- Water SW- Surface Water SO- Soil
	קעודי	ĩς		~K\c	~~~~)		<u>_</u>	7				02 D I NAP	L 🗆 STARS	L = 5 +TICs= 5	ene ene	301505	Caler yes				SU-Ski SL-Skidge OF-Oil
Pleasent Will CA Project Contact Krijshene Tidwell Phone 15-944-2356	E-mail Kt-dwe	110son	Project #	9-Ec	キマ	- 00	4						21 🗖 602 TBAD	1 -15 D	PAHO PPL	3	50	7,0				LIQ- Other Liquid
		9	Fax #	25-6	241	1 - 1	ΓŠ	5	٩				<mark>п 3021</mark>	+ 2 2 4 4 4	다 미		~	14				AIR- Air
Samplers's Name Harlow Newton	\sim	-	Client Pu	rcnase Orde	r#			ahar :	.f. n.e.		Datt!-		🖌 624 🛛	0 0 624 0	625 🗆 AEO	1724	5 T	3				SOL-Other Solid
Sample # Field ID / Point of Collection	SUMMA #	A Date	Collecti Time	Sampled b	Matrix	# of bottles		mber of	1.	1 1	Bottle FOSH HOBY	S NCORE	8260 BTEX	8260 D (TBA D N	8270 0 625 C ABND AED	ir 15	101	ý.				WP-Wipe
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5 Day RUSH					duced	-		NYAS	SP Cat	egory E									<u></u>	• 70	>	
3 Day EMERGENCY 2 Day EMERGENCY			_	NJ Fu Other					Forms													
1 Day EMERGENCY			_			_		200	1 0/1/1													
Other			-	Comm	ercial "A'	' = Resu	its On	ty			^	/	1									
Emergency T/A data available VIA Lablin Sample Cust		e docum	ented belo	w each tim	e samp	es cha	nge p	osses	sion,	includ	ing den	urier o	deliver	у.								
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3 Refinguished by:		Date Time:		3 Received By			L		4 Cust	lady Sea	u# [′]			Preserve	d where a	ppEcabl	e	/	4	On I		oler Temp.
5				5											V					۶	1,60	01=1.5%

C11612: Chain of Custody Page 1 of 2



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Accutest Laboratories Northern California Sample Receiving Check List

Job#:	C11612
Sample Control Rep. Initial:	EK JM

<u>Review Chain of Custody</u> Chain of Custody is to be complete and le	egible.			SGRPCAPH2805
Are these regulatory (NPDES) samples? GUA	(Yes) / No	Client Sample ID	pH Check	Other Comments/Issues
cals pH requested?	Yes / (No			
Was Orthon Phosphate filtered with in 15 min? Yes / No Continue	Yes / No			
was officer nosphate intered with in 15 min? Test no Continue	Yes / No			
,⊿ Are sample within hold time?	(Yes / No			
Are sample in danger of exceeding hold-time	Yes / No			
erÉxisting Client? Yes / No Existing Project?	(Yes/No			
If No: Is Report to info complete and legible, including;	-			
🗆 deliverable 🗆 Name 🛛 Address 💷 phone 🖄 🗆 e-mail	F			
Is Bill to info complete and legible, including;	-			
□ PO# □ Credit card □ Contact □address □ phone □ e-mail				
Is Contact and/or Project Manager identified, including;				
🗆 phone 🛛 e-mail				
	Nes / No			
Sample IDs / date & time of collection provided?	(Yes) / No			
, Is Matrix listed and correct?	(Yes) / No			
Analyses listed we do or client has authorized a subcontract?	Yes / No			
Chain is signed and dated by both client and sample custodian?	(Yes) / No			
TAT requested available? Yes) No Approved by <u>PW1</u>				
Review Coolers:				
√Were Coolers temperatures measured at ≤6°C? Cooler # Temp	p <u>1.5</u> ℃			
 If cooler is outside the ≤6°C; note down below the affected bottles in the 	at cooler			
 Note that ANC does NOT accept evidentiary samples. (We do not lock 	<pre>refrigerators)</pre>			
Shipment Received Method AL	-			
ي Custody Seals: Present: Yes / المن If Yes; Unbroken:	Yes / No			
Review of Sample Bottles: If you answer no, explain to the side	-			
	Yes / No		· · · · · · · · · · · · · · · · · · ·	
It's there enough sample volume in proper bottle for requested analyses?	(res) No			
Proper Preservatives? / Yes / No Check pH on preserved samples e: 625, 8270 and YOAs)	xcept 1664,			
Headspace-VOAs? Greater than 6mm in diameter Yes (No)				
List sample ID and affected container				

Non-Compliance issues and discrepancies on the COC are forwarded to Project Management

\Anc-srv-file1\d\$\Entech-Data\Laboratory\SOPs\SOP_CompleteListing\SC001F1_1_Form1_SampleControl_SampleReceivingChecklist_2010-02-15.doc

C11612: Chain of Custody Page 2 of 2



ω



Section 4

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary

Job Number:	C11612
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

Sample	File ID	DF	Analyzed 07/02/10	By	Prep Date	Prep Batch	Analytical Batch
VM522-MB2	M16011.D	1		XB	n/a	n/a	VM522

The QC reported here applies to the following samples:

Method: SW846 8260B

C11612-1, C11612-4, C11612-5

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2	Benzene	ND	1.0	0.30	ug/l
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l
108-88-3	Toluene	ND	1.0	0.50	ug/l
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l
	TPH-GRO (C6-C10)	ND	50	25	ug/l
CAS No.	Surrogate Recoveries		Limits		
1868-53-7	Dibromofluoromethane	103%	60-130	%	
2037-26-5	Toluene-D8	103%	60-130	%	
460-00-4	4-Bromofluorobenzene	101%	60-130	%	



4.1.1 4

Method Blank Summary

Job Number:	C11612
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

Sample	File ID	DF	Analyzed 07/07/10	By	Prep Date	Prep Batch	Analytical Batch
VW498-MB	W14226.D	1		BD	n/a	n/a	VW498

The QC reported here applies to the following samples:

Method: SW846 8260B

C11612-2, C11612-3

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2 106-93-4 107-06-2 108-20-3 100-41-4	Benzene 1,2-Dibromoethane 1,2-Dichloroethane Di-Isopropyl ether Ethylbenzene	ND ND ND ND ND	1.0 1.0 5.0 1.0	0.30 0.20 0.30 0.50 0.30	ug/l ug/l ug/l ug/l ug/l
637-92-3 1634-04-4 994-05-8 75-65-0 108-88-3 1330-20-7	Ethyl Tert Butyl Ether Methyl Tert Butyl Ether Tert-Amyl Methyl Ether Tert-Butyl Alcohol Toluene Xylene (total) TPH-GRO (C6-C10)	ND ND ND ND ND ND	5.0 1.0 5.0 10 1.0 2.0 50	$\begin{array}{c} 0.50 \\ 0.50 \\ 0.50 \\ 5.0 \\ 0.50 \\ 0.70 \\ 25 \end{array}$	ug/l ug/l ug/l ug/l ug/l ug/l ug/l
CAS No.	Surrogate Recoveries		Limits		
1868-53-7 2037-26-5 460-00-4	Dibromofluoromethane Toluene-D8 4-Bromofluorobenzene	89% 98% 93%	60-130 60-130 60-130	%	



Method Blank Summary

Job Number:	C11612
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

Sample	File ID	DF	Analyzed 07/02/10	By	Prep Date	Prep Batch	Analytical Batch
VM522-MB	M16003.D	1		XB	n/a	n/a	VM522

The QC reported here applies to the following samples:

Method: SW846 8260B

VM522-BS

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2	Benzene	ND	1.0	0.30	ug/l
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l
108-88-3	Toluene	ND	1.0	0.50	ug/l
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l
	TPH-GRO (C6-C10)	ND	50	25	ug/l
CAS No.	Surrogate Recoveries		Limits		
1868-53-7	Dibromofluoromethane	104%	60-130	%	
2037-26-5	Toluene-D8	103%	60-130	%	
460-00-4	4-Bromofluorobenzene	101%	60-130	%	



4.1.3 4

Blank Spike Summary Job Number: C11612

Account: Project:	SGRPCAPH T 9201 San Lean						
Sample VM522-BS	File ID M16001.D	DF 1	Analyzed 07/02/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM522
The QC repo	rted here applies	to the fo	llowing samples	s:		Method: SW84	6 8260B

60-130%

C11612-1, C11612-4, C11612-5

CAS No.	Compound	Spike ug/l	BS ug/		BSP %	Limits
71-43-2	Benzene	20	19.	8	99	60-130
106-93-4	1,2-Dibromoethane	20	20.	8	104	60-130
107-06-2	1,2-Dichloroethane	20	21.	2	106	60-130
108-20-3	Di-Isopropyl ether	20	21.	5	108	60-130
100-41-4	Ethylbenzene	20	20.	3	102	60-130
637-92-3	Ethyl Tert Butyl Ether	20	21.	2	106	60-130
1634-04-4	Methyl Tert Butyl Ether	20	20.	4	102	60-130
994-05-8	Tert-Amyl Methyl Ether	20	21.	1	106	60-130
75-65-0	Tert-Butyl Alcohol	100	103	3	103	60-130
108-88-3	Toluene	20	20.	1	101	60-130
1330-20-7	Xylene (total)	60	60.	4	101	60-130
CAS No.	Surrogate Recoveries	BSP		Lim	its	
1868-53-7 2037-26-5	Dibromofluoromethane Toluene-D8	105% 100%			30% 30%	
2001 20-0		10070		00.1	2070	

Toluene-D8 2037-26-5 460-00-4 4-Bromofluorobenzene 101%



4.2.1 4



Blank Spike Summary

1868-53-7

2037-26-5

460-00-4

Account: Project:	SGRPCAPH TH 9201 San Leand		-					
Sample VM522-BS	File ID M16002.D		nalyzed 7/02/10	By XB		Prep Date n/a	Prep Batch n/a	Analytical Batch VM522
	eported here applies C11612-4, C11612-5		ıg sampl	es:			Method: SW846	5 8260B
CAS No.	Compound	Sp ug		SP g/l	BSP %	Limits		
	TPH-GRO (C6-C10)) 12	5 12	20	96	60-130		
CAS No.	Surrogate Recover	ies BS	SP	Lim	its			

60-130%

60-130%

60-130%

103%

102%

101%

Job Number:	C11612
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

Dibromofluoromethane

4-Bromofluorobenzene

Toluene-D8



4.2.2

4

Blank Spike Summary Job Number: C11612

Account: Project:	SGRPCAPH T 9201 San Leand		1				
Sample VW498-BS	File ID W14222.D	DF 1	Analyzed 07/07/10	By BD	Prep Date n/a	Prep Batch n/a	Analytical Batch VW498
The QC repo	rted here applies	to the fo	llowing samples	s:		Method: SW84	6 8260B

The QC reported here applies to the following samples:

4-Bromofluorobenzene

C11612-2, C11612-3

460-00-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	18.2	91	60-130
106-93-4	1,2-Dibromoethane	20	19.0	95	60-130
107-06-2	1,2-Dichloroethane	20	18.0	90	60-130
108-20-3	Di-Isopropyl ether	20	15.7	79	60-130
100-41-4	Ethylbenzene	20	18.6	93	60-130
637-92-3	Ethyl Tert Butyl Ether	20	14.6	73	60-130
1634-04-4	Methyl Tert Butyl Ether	20	14.6	73	60-130
994-05-8	Tert-Amyl Methyl Ether	20	14.8	74	60-130
75-65-0	Tert-Butyl Alcohol	100	88.2	88	60-130
108-88-3	Toluene	20	18.2	91	60-130
1330-20-7	Xylene (total)	60	56.6	94	60-130
CAS No.	Surrogate Recoveries	BSP	Li	mits	
1868-53-7	Dibromofluoromethane	90%	60	-130%	
2037-26-5	Toluene-D8	96%	60	-130%	

97%

60-130%



Blank Spike Summary

1868-53-7

2037-26-5

460-00-4

Account: Project:	SGRPCAPH Th 9201 San Leand	-					
Sample VW498-BS	File ID W14225.D		alyzed 07/10	By BD	Prep Date n/a	Prep Batch n/a	Analytical Batch VW498
The QC re C11612-2,	ported here applies t	o the following	samples:			Method: SW846	5 8260B
CAS No.	Compound	Spik ug/l	e BSP ug/l		Limits		
	TPH-GRO (C6-C10)) 125	98.8	79	60-130		
CAS No.	Surrogate Recoveri	es BSP]	Limits			

60-130%

60-130%

60-130%

89%

98%

95%

Job Number:	C11612
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

Dibromofluoromethane

4-Bromofluorobenzene

Toluene-D8





Matrix Spike/Matrix Spike Duplicate Summary

Job Number:	C11612
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C11585-12MS	M16031.D	1	07/03/10	XB	n/a	n/a	VM522
C11585-12MSD	M16032.D	1	07/03/10	XB	n/a	n/a	VM522
C11585-12	M16007.D	1	07/02/10	XB	n/a	n/a	VM522

The QC reported here applies to the following samples:

Method: SW846 8260B

C11612-1, C11612-4, C11612-5

CAS No.	Compound	C11585 ug/l	-12 Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	0.81	J	20	20.2	97	22.8	110	12	60-130/25
106-93-4	1,2-Dibromoethane	ND		20	19.1	96	22.7	114	17	60-130/25
107-06-2	1,2-Dichloroethane	ND		20	20.1	101	23.0	115	13	60-130/25
108-20-3	Di-Isopropyl ether	ND		20	19.7	99	22.3	112	12	60-130/25
100-41-4	Ethylbenzene	0.41	J	20	20.2	99	23.7	116	16	60-130/25
637-92-3	Ethyl Tert Butyl Ether	ND		20	20.7	104	23.2	116	11	60-130/25
1634-04-4	Methyl Tert Butyl Ether	0.62	J	20	19.6	95	22.0	107	12	60-130/25
994-05-8	Tert-Amyl Methyl Ether	ND		20	19.6	98	22.3	112	13	60-130/25
75-65-0	Tert-Butyl Alcohol	ND		100	91.6	92	110	110	18	60-130/25
108-88-3	Toluene	1.3		20	20.3	95	23.8	113	16	60-130/25
1330-20-7	Xylene (total)	1.6	J	60	59.4	96	70.2	114	17	60-130/25
CAS No.	Surrogate Recoveries	MS		MSD	C1	1585-12	Limits			

1868-53-7	Dibromofluoromethane	105%	101%	106%	60-130%
2037-26-5	Toluene-D8	98%	100%	105%	60-130%
460-00-4	4-Bromofluorobenzene	101%	102%	101%	60-130%



4.3.1 4

Matrix Spike/Matrix Spike Duplicate Summary

Job Number:	C11612
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C11646-7MS	W14241.D	1	07/07/10	BD	n/a	n/a	VW498
C11646-7MSD	W14242.D	1	07/07/10	BD	n/a	n/a	VW498
C11646-7	W14227.D	1	07/07/10	BD	n/a	n/a	VW498

The QC reported here applies to the following samples:

Method: SW846 8260B

C11612-2, C11612-3

CAS No.	Compound	C11646 ug/l	-7 Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	19.6	5 98	21.8	109	11	60-130/25
106-93-4	1,2-Dibromoethane	ND		20	19.8	99	22.3	112	12	60-130/25
107-06-2	1,2-Dichloroethane	0.64	J	20	19.7	95	22.0	107	11	60-130/25
108-20-3	Di-Isopropyl ether	0.84	J	20	18.5	88	20.6	99	11	60-130/25
100-41-4	Ethylbenzene	ND		20	19.8	99	22.1	111	11	60-130/25
637-92-3	Ethyl Tert Butyl Ether	ND		20	16.7	84	18.5	93	10	60-130/25
1634-04-4	Methyl Tert Butyl Ether	ND		20	16.1	81	17.8	89	10	60-130/25
994-05-8	Tert-Amyl Methyl Ether	ND		20	16.8	8 84	18.4	92	9	60-130/25
75-65-0	Tert-Butyl Alcohol	ND		100	91.4	91	96.5	97	5	60-130/25
108-88-3	Toluene	ND		20	19.4	97	21.7	109	11	60-130/25
1330-20-7	Xylene (total)	ND		60	60.6	5 101	67.0	112	10	60-130/25
CAS No.	Surrogate Recoveries	MS		MSD		C11646-7	Limits			
1868-53-7	Dibromofluoromethane	91%		91%		89%	60-1309	6		
2037-26-5	Toluene-D8	96%		97%		98%	60-1309	6		
460-00-4	4-Bromofluorobenzene	97%		97%		93%	60-1309	6		









07/09/10

Technical Report for

The Source Group

9201 San Leandro Street, Oakland CA

PACO PUMPS

Accutest Job Number: C11585



Sampling Date: 06/28/10

Report to:

The Source Group 3451C Vincent Road Pleasant Hill, CA 94523 jphilipp@thesourcegroup.net; ktidwell@thesourcegroup.net

ATTN: Jon Philipp

IN ACCOR

Total number of pages in report: 46



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Launie Elen Muphy

Laurie Glantz-Murphy Laboratory Director

Client Service contact: Anne Kathain 408-588-0200

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Sample Summary

The Source Group

Job No: C11585

9201 San Leandro Street, Oakland CA Project No: PACO PUMPS

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
C11585-1	06/28/10	11:30 BTS	06/28/10	AQ	Ground Water	AS-1D
C11585-2	06/28/10	10:05 BTS	06/28/10	AQ	Ground Water	AS-1S
C11585-3	06/28/10	11:55 BTS	06/28/10	AQ	Ground Water	ASMW-2D
C11585-4	06/28/10	11:30 BTS	06/28/10	AQ	Ground Water	ASMW-2S
C11585-5	06/28/10	09:30 BTS	06/28/10	AQ	Ground Water	MW-1
C11585-6	06/28/10	11:05 BTS	06/28/10	AQ	Ground Water	MW-2
C11585-7	06/28/10	09:40 BTS	06/28/10	AQ	Ground Water	MW-3
C11585-8	06/28/10	09:45 BTS	06/28/10	AQ	Ground Water	MW-3-DUP
C11585-9		12:30 BTS	06/28/10		Ground Water	MW-4
C11585-10		10:00 BTS	06/28/10		Ground Water	MW-5
C11585-11		10:35 BTS	06/28/10		Ground Water	MW-6
C11585-12		11:35 BTS	06/28/10		Ground Water	MW-8
C11585-13	06/28/10	09:30 BTS	06/28/10	AQ	Trip Blank Water	TB-1





Sample Results

Report of Analysis



Lab Samj Matrix: Method: Project:	AQ SW	585-1 - Ground W 346 8260B I San Leandi	ater o Street, Oaklar	nd CA	Date Sampled:06/28/10Date Received:06/28/10Percent Solids:n/a				
Run #1 Run #2	File ID M15982.D	DF 1	Analyzed 07/01/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM521		
Run #1 Run #2	Purge Volu 10.0 ml	ne							

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	102%		60-1	30%	
2037-26-5	Toluene-D8	103%		60-1	30%	
460-00-4	4-Bromofluorobenzene	100%		60-1	30%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client San Lab Samp Matrix: Method: Project:	le ID: C11585 AQ - G SW846	round Wa 8015B M	ter SW846 35100 Street, Oaklar		Date Sample Date Receive Percent Solic	d: 06/28/10	
Run #1 Run #2	File ID HH7077.D	DF 1	Analyzed 06/30/10	Ву ЈН	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volume 1060 ml	Final Vo 1.0 ml	olume				
TPH Extra CAS No.	actable Compound		Result	RL	MDL Units	5 Q	

	TPH (C10-C28)	ND	0.094	0.047 mg/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	82%		45-140%

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client Sa Lab Sam Matrix: Method: Project:	AQ - SW84	85-2 Ground Wa 46 8260B	ter o Street, Oaklar	nd CA	Date Sampled:06/28/10Date Received:06/28/10Percent Solids:n/a				
Run #1 Run #2	File ID M15987.D	DF 3.33	Analyzed 07/01/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM521		
Run #1 Run #2	Purge Volum 10.0 ml	e							

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	202	3.3	1.0	ug/l	
108-88-3	Toluene	26.2	3.3	1.7	ug/l	
100-41-4	Ethylbenzene	9.1	3.3	1.0	ug/l	
1330-20-7	Xylene (total)	25.4	6.7	2.3	ug/l	
106-93-4	1,2-Dibromoethane	ND	3.3	0.67	ug/l	
107-06-2	1,2-Dichloroethane	3.1	3.3	1.0	ug/l	J
108-20-3	Di-Isopropyl ether	ND	17	1.7	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	17	1.7	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.1	3.3	1.7	ug/l	J
994-05-8	Tert-Amyl Methyl Ether	ND	17	1.7	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	33	17	ug/l	
	TPH-GRO (C6-C10)	1630	170	83	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	106%		60-1	30%	
2037-26-5	Toluene-D8	104%			30%	
460-00-4	4-Bromofluorobenzene	106%			30%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client Sam Lab Samp Matrix: Method: Project:	le ID: C11585 AQ - G SW846	round Wa 8015B M	ter SW846 35100 Street, Oaklar	-	Date Sample Date Receive Percent Solic	ed: 06/28/10	
Run #1 Run #2	File ID HH7078.D	DF 1	Analyzed 06/30/10	Ву ЈН	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volume 1000 ml	Final Vo 1.0 ml	olume				
TPH Extra	actable						
CAS No.	Compound		Result	RL	MDL Unit	s Q	

	ТРН (С10-С28)	0.214	0.10	0.050 mg/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	50%		45-140%

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Lab Sam Matrix: Method: Project:	AQ - SW8	585-3 Ground Wa 46 8260B San Leandi	ater 10 Street, Oaklar	nd CA	Date Sampled:06/28/10Date Received:06/28/10Percent Solids:n/a		
Run #1 Run #2	File ID M15983.D	DF 1	Analyzed 07/01/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM521
Run #1 Run #2	Purge Volum 10.0 ml	ne					

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
1868-53-7	Dibromofluoromethane	107%		60-1	30%	
2037-26-5	Toluene-D8	104%		60-1	30%	
460-00-4	4-Bromofluorobenzene	102%		60-1	30%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client Sam Lab Samp Matrix: Method: Project:	le ID: C1158 AQ - C SW846	5-3 Fround Wa 5 8015B M	ter SW846 35100 Street, Oaklar	-	Date Sample Date Receive Percent Solic	ed: 06/28/10	
Run #1 Run #2	File ID HH7079.D	DF 1	Analyzed 06/30/10	Ву ЈН	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volume 1060 ml	Final V 1.0 ml	olume				
TPH Extra	actable						
CAS No.	Compound		Result	RL	MDL Unit	s Q	

	I I I I I I I I I I I I I I I I I I I				
	TPH (C10-C28)	ND	0.094	0.047 mg/l	
					
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	

ND = Not detected MDL - Method Detection Limit RL = Reporting Limit E = Indicates value exceeds calibration range

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client Sa Lab Sam Matrix: Method: Project:	ple ID: C115 AQ - SW8	Ground Wa 46 8260B	ter 5 Street, Oaklar	nd CA	Date Sampled Date Received Percent Solid	1: 06/28/10	
Run #1 Run #2	File ID M16023.D	DF 33.3	Analyzed 07/02/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM522
Run #1	Purge Volum 10.0 ml	ie					

Report of Analysis

Run #2

BTEX, Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	416	33	10	ug/l	
108-88-3	Toluene	434	33	17	ug/l	
100-41-4	Ethylbenzene	151	33	10	ug/l	
1330-20-7	Xylene (total)	583	67	23	ug/l	
106-93-4	1,2-Dibromoethane	ND	33	6.7	ug/l	
107-06-2	1,2-Dichloroethane	ND	33	10	ug/l	
108-20-3	Di-Isopropyl ether	ND	170	17	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	170	17	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	33	17	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	170	17	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	330	170	ug/l	
	TPH-GRO (C6-C10)	8330	1700	830	ug/l	
a.a		-			•	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	103%		60-1	30%	
2037-26-5	Toluene-D8	105%		60-1		
460-00-4	4-Bromofluorobenzene	101%		60-1		

- $J = \ Indicates \ an \ estimated \ value$
- $B = \ Indicates \ analyte \ found \ in \ associated \ method \ blank$
- N = Indicates presumptive evidence of a compound



Client San Lab Samp Matrix: Method: Project:	le ID: C11585 AQ - G SW846	-4 round Wate 8015B M	er SW846 35100 Street, Oaklan	-	Date Sampled: Date Received: Percent Solids:	06/28/10	
Run #1 Run #2	File ID HH7099.D	DF 5	Analyzed 06/30/10	Ву ЈН	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volume 980 ml	Final Vo 1.0 ml	blume				
TPH Extra	actable						
CAS No.	Compound		Result	RL	MDL Units	Q	

	TPH (C10-C28)	4.79	0.51	0.26 mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
630-01-3	Hexacosane	58%		45-140%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Lab Sam Matrix: Method: Project:	AQ - SW84					Date Sampled:06/28/10Date Received:06/28/10Percent Solids:n/a			
Run #1 Run #2	File ID M15984.D	DF 1	Analyzed 07/01/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM521		
Run #1 Run #2	Purge Volum 10.0 ml	e							

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	107%		60-1	30%	
2037-26-5	Toluene-D8	104%		60-1	30%	
460-00-4	4-Bromofluorobenzene	100%		60-130%		

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client San Lab Samp Matrix: Method: Project:	le ID: C11585 AQ - G SW846	round Wat 8015B M	ter SW846 35100 Street, Oaklar	-	Date Sample Date Receive Percent Solie	ed: 06/28/10	
Run #1 Run #2	File ID HH7081.D	DF 1	Analyzed 06/30/10	By JH	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volume 1060 ml	Final V 1.0 ml	olume				
TPH Extra	actable						
CAS No.	Compound		Result	RL	MDL Unit	s Q	

0110110.	compound	Rebuit	RL	MIDE	emis	Y
	TPH (C10-C28)	0.0568	0.094	0.047	mg/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 2 Limits		
630-01-3	Hexacosane	64%		45-1	40%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Lab Samj Matrix: Method: Project:	AQ SW8	C11585-6 AQ - Ground Water SW846 8260B 9201 San Leandro Street, Oakland CA			Date Sampled:06/28/10Date Received:06/28/10Percent Solids:n/a		
Run #1 Run #2	File ID M15985.D	DF 1	Analyzed 07/01/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM521
Run #1 Run #2	Purge Volum 10.0 ml	ne					

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	106%		60-1	30%	
2037-26-5	Toluene-D8	106%		60-1	30%	
460-00-4	4-Bromofluorobenzene	101%		60-1	30%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound





Client San Lab Samp Matrix: Method: Project:	le ID: C1158 AQ - C SW840	5-6 Ground Wa 5 8015B M	ter SW846 35100 Street, Oaklar	-	Date Sampled: Date Received: Percent Solids:	06/28/10	
Run #1 Run #2	File ID HH7082.D	DF 1	Analyzed 06/30/10	By JH	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volume 990 ml	Final Vo 1.0 ml	olume				
TPH Extra	actable						
CAS No.	Compound		Result	RL	MDL Units	Q	

	TPH (C10-C28)	0.534	0.10	0.051 mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
630-01-3	Hexacosane	68%		45-140%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Lab Sam	mple ID: MW- ple ID: C115				Date Sampled: 06/28/10			
Matrix:	•	Ground W	ater		Date Received: 06/28/10 Percent Solids: n/a			
Method:	SW84	46 8260B						
Project:	9201	San Leand	ro Street, Oaklar	nd CA				
	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch	
Run #1	M15988.D	50	07/01/10	XB	n/a	n/a	VM521	
Run #2								
	Purge Volum	e						
Run #1	10.0 ml							
Run #2								

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1740	50	15	ug/l	
108-88-3	Toluene	2100	50	25	ug/l	
100-41-4	Ethylbenzene	318	50	15	ug/l	
1330-20-7	Xylene (total)	1060	100	35	ug/l	
106-93-4	1,2-Dibromoethane	ND	50	10	ug/l	
107-06-2	1,2-Dichloroethane	ND	50	15	ug/l	
108-20-3	Di-Isopropyl ether	ND	250	25	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	250	25	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	50	25	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	250	25	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	500	250	ug/l	
	TPH-GRO (C6-C10)	22200	2500	1300	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	105%		60-1	30%	
2037-26-5	Toluene-D8	104%		60-1	30%	
460-00-4	4-Bromofluorobenzene	103%		60-1	30%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client San Lab Samp Matrix: Method: Project:	le ID: C1 AQ SW	0.00000	Vater M SW846 35100 dro Street, Oaklar	-	Date Sampled Date Receive Percent Solid	d: 06/28/10	
Run #1 Run #2	File ID HH7100.D	DF 5	Analyzed 06/30/10	By JH	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volu 990 ml	i me Final 1.0 m	Volume ll				
TPH Extra CAS No.	actable Compoun	d	Result	RL	MDL Units	5 Q	

	TPH (C10-C28)	6.99	0.51	0.25	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2 Limits		ts	
630-01-3	Hexacosane	97%		45-14	0%	

ND = Not detected MDL - Method Detection Limit RL = Reporting Limit E = Indicates value exceeds calibration range

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Lab Sam Matrix: Method: Project:	ple ID: C11 AQ SW	MW-3-DUP C11585-8 AQ - Ground Water SW846 8260B 9201 San Leandro Street, Oakland CA			Date Sampled:06/28/10Date Received:06/28/10Percent Solids:n/a		
Run #1 Run #2	File ID M15989.D	DF 50	Analyzed 07/01/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM521
Run #1 Run #2	Purge Volu 10.0 ml	ne					

Report of Analysis

BTEX, Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1560	50	15	ug/l	
108-88-3	Toluene	2210	50	25	ug/l	
100-41-4	Ethylbenzene	380	50	15	ug/l	
1330-20-7	Xylene (total)	1240	100	35	ug/l	
106-93-4	1,2-Dibromoethane	ND	50	10	ug/l	
107-06-2	1,2-Dichloroethane	ND	50	15	ug/l	
108-20-3	Di-Isopropyl ether	ND	250	25	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	250	25	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	50	25	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	250	25	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	500	250	ug/l	
	TPH-GRO (C6-C10)	31000	2500	1300	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its	
1868-53-7	Dibromofluoromethane	106%		60-1	30%	
2037-26-5	Toluene-D8	102%		60-1	30%	
460-00-4	4-Bromofluorobenzene	102%		60-1	30%	

- $J = \ Indicates \ an \ estimated \ value$
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client Sam Lab Sampl Matrix: Method: Project:	le ID: C11585 AQ - Gi SW846	-8 round Wat 8015B M	er SW846 35100 Street, Oaklan	-	Date Sample Date Receive Percent Solid	d: 06/28/10	
Run #1 Run #2	File ID HH7092.D	DF 10	Analyzed 06/30/10	Ву ЈН	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volume 990 ml	Final V o 1.0 ml	lume				
TPH Extra	actable						
CAS No.	Compound		Result	RL	MDL Units	5 Q	

	TPH (C10-C28)	7.22	1.0	0.51 mg/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	81%		45-140%

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Report of Analysis

Lab Samj Matrix: Method: Project:	AQ - SW84	Ground W 6 8260B	ater o Street, Oaklar	nd CA	Date Sampled Date Received Percent Solids		
Run #1 Run #2	File ID M15986.D	DF 1	Analyzed 07/01/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM521
Run #1 Run #2	Purge Volum 10.0 ml	e					

BTEX, Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	12.3	1.0	0.30	ug/l	
108-88-3	Toluene	0.85	1.0	0.50	ug/l	J
100-41-4	Ethylbenzene	5.9	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	2.3	2.0	0.70	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l	
	TPH-GRO (C6-C10)	186	50	25	ug/l	
~ . ~					•	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	106%		60-1	30%	
2037-26-5	Toluene-D8	104%		60-1		
460-00-4	4-Bromofluorobenzene	103%		60-1		

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound





Client San Lab Samp Matrix: Method: Project:	le ID: C11585 AQ - G SW846	round Wa 8015B M	ter SW846 3510 5 Street, Oaklar	-	Date Sampled Date Received Percent Solids	: 06/28/10	
Run #1 Run #2	File ID HH7085.D	DF 1	Analyzed 06/30/10	By JH	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volume 1000 ml	Final V 1.0 ml	olume				
TPH Extra CAS No.	actable Compound		Result	RL	MDL Units	Q	

	TPH (C10-C28)	ND 0.10		0.050 mg/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	74%		45-140%

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client San Lab Samp Matrix: Method: Project:	AQ - SW84	85-10 Ground Wa 46 8260B	ater 10 Street, Oaklar	nd CA	Date Sample Date Receive Percent Solie		
Run #1 Run #2	File ID M16020.D	DF 1	Analyzed 07/02/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM522
Run #1 Run #2	Purge Volum 10.0 ml	e					

BTEX, Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	2 Limits		
1868-53-7	Dibromofluoromethane	106%		60-1	30%	
2037-26-5	Toluene-D8	104%	60-130%			
460-00-4	4-Bromofluorobenzene	100%		60-1	30%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client Sam Lab Sampl Matrix: Method: Project:	le ID: C11585 AQ - Gi SW846	round Wat 8015B M	er SW846 35100 Street, Oaklar		Date Sample Date Receive Percent Solic	d: 06/28/10	
Run #1 Run #2	File ID HH7093.D	DF 1	Analyzed 06/30/10	Ву ЈН	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volume 1060 ml	Final Vo 1.0 ml	olume				
TPH Extra CAS No.	actable Compound		Result	RL	MDL Units	s Q	

	TPH (C10-C28)	0.289	0.047 mg/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
630-01-3	Hexacosane	70%		45-140%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Lab Sam Matrix: Method:	AQ - SW84	Ground Wale 8260B		1.0.1	Date Sampled:06/28/10Date Received:06/28/10Percent Solids:n/a			
Project: Run #1 Run #2	9201 File ID M16022.D	DF 10	O Street, Oaklar Analyzed 07/02/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM522	
Run #1 Run #2	Purge Volum 10.0 ml	e						

BTEX, Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	484	10	3.0	ug/l	
108-88-3	Toluene	284	10	5.0	ug/l	
100-41-4	Ethylbenzene	78.7	10	3.0	ug/l	
1330-20-7	Xylene (total)	233	20	7.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	10	2.0	ug/l	
107-06-2	1,2-Dichloroethane	20.8	10	3.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	50	5.0	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	50	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	10	5.0	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	50	5.0	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	100	50	ug/l	
	TPH-GRO (C6-C10)	3810	500	250	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1969 52 7	Dibromofluoromethane	1050/		60.1	200/	
1868-53-7		105%		60-1		
2037-26-5	Toluene-D8	104%	60-130%			
460-00-4	4-Bromofluorobenzene	101%		60-1	30%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client San Lab Samp Matrix: Method: Project:	le ID: C11585 AQ - G SW846	round Wa 8015B M	tter SW846 35100 o Street, Oaklar	-	Date Sample Date Receive Percent Solic	ed: 06/28/10	
Run #1 Run #2	File ID HH7086.D	DF 1	Analyzed 06/30/10	By JH	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volume 1060 ml	Final V 1.0 ml	folume				
TPH Extra CAS No.	actable Compound		Result	RL	MDL Unit	s Q	

	TPH (C10-C28)		0.094	0.047 mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
630-01-3	Hexacosane	80%		45-140%	

ND = Not detected MDL - Method Detection Limit RL = Reporting Limit E = Indicates value exceeds calibration range

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Client Sa Lab Samj Matrix: Method: Project:	AQ SW8	MW-8 C11585-12 AQ - Ground Water SW846 8260B 9201 San Leandro Street, Oakland CA			Date Sampled:06/28/10Date Received:06/28/10Percent Solids:n/a		
Run #1 Run #2	File ID M16007.D	DF 1	Analyzed 07/02/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM522
Run #1 Run #2	Purge Volur 10.0 ml	ne					

BTEX, Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.81	1.0	0.30	ug/l	J
108-88-3	Toluene	1.3	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	0.41	1.0	0.30	ug/l	J
1330-20-7	Xylene (total)	1.6	2.0	0.70	ug/l	J
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.62	1.0	0.50	ug/l	J
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its	
	8					
1868-53-7	Dibromofluoromethane	106%		60-1	30%	
2037-26-5	Toluene-D8	105%	60-130%		30%	
460-00-4	4-Bromofluorobenzene	101%		60-130%		

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound





Client San Lab Samp Matrix: Method: Project:	le ID: C11585 AQ - G SW846	round Wa 8015B M	ter SW846 35100 5 Street, Oaklar	-	Date Sampled Date Received Percent Solid	d: 06/28/10	
Run #1 Run #2	File ID HH7094.D	DF 1	Analyzed 06/30/10	Ву ЈН	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307
Run #1 Run #2	Initial Volume 960 ml	Final V 1.0 ml	olume				
TPH Extra	actable						
CAS No.	Compound		Result	RL	MDL Units	Q	

	ТРН (С10-С28)		0.10	0.052 mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2 Limits		
630-01-3	Hexacosane	71%		45-140%	

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Lab Samj Matrix: Method: Project:	AQ - SW8	85-13 Trip Blank 46 8260B	Water to Street, Oaklar	nd CA	Date Sampled:06/28/10Date Received:06/28/10Percent Solids:n/a			
Run #1 Run #2	File ID M16012.D	DF 1	Analyzed 07/02/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM522	
Run #1 Run #2	Purge Volum 10.0 ml	ie						

BTEX, Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q		
71-43-2	Benzene	ND	1.0	0.30	ug/l			
108-88-3	Toluene	ND	1.0	0.50	ug/l			
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l			
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l			
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l			
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l			
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l			
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l			
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l			
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l			
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l			
	TPH-GRO (C6-C10)	ND	50	25	ug/l			
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its			
1868-53-7	Dibromofluoromethane	106%		60-1	30%			
2037-26-5	Toluene-D8	105%		60-1	30%			
460-00-4	4-Bromofluorobenzene	101%		60-130%				

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound







Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody

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					"	SGRF	CAPH2	805 "	_			
BLAINE 1680 ROGERS AVEN SAN JOSE, CALIFORNIA 95112-1 TECH SERVICES INC FAX (408) 573-7	105 771	ec) telle		DUCT	ANAL	YSIS	TO DETEC	т <u> </u>	LAB ALL ANALYSES MUST LIMITS SET BY CALIFO	RNIA DHS ANI	D	
		ALC: NO	ţ						☐ EPA ☐ LIA ☐ OTHER	L	RWQCB RE	GION
CHAIN OF CUSTODY BTS # 100628 - 201	18	ØE.	6									
The Source Group		25	Γ						SPECIAL INSTRUCTIO	NS		
SITE 9201 San Leandro St.	CONTAINERS	*							Invoice and Report	t to: The S	Source Gro	up
Oakland, CA		1 N N		6	ES	EDB			Attn: Kristene Tie	dwell		
MATRIX CONTAINERS	= COMPOSITE ALL	TPH-GAS - 8260 * AMIC	BTEX (8260)	TPH-D (8015)	OXYGENATES	DCA & E			C11 5%	35		
SAMPLE I.D. DATE TIME 방법 TOTAL	C = CON)-HdT	BTEX	I-HAT	охус	1,2 D(ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
AS-10 6-28-10 1130 W 6 mixed		\times	\succ	\sum	Ŕ	V						-1
AS-15 1005 1 1		$\left \right\rangle$	$\left<\right.$	K	×	ト			Det the Ambers 15 Labled AS-1A time 15 1005 pp			-2
ASMW-20 1155		\mathbf{k}	×	5	2	\star						-3
45 MW - 25 1130		×	×	X	\sim	~						-4
MW-1 0930		\times	と	\mathbf{x}	\mathcal{R}	r						-5
MW-2 1105		X	×	\succ	X	\succ		_				-6
MW-30140		$\left \right\rangle$	\times	1	X	ト		_				~ 7
MW-3. DUD 0945		×	X	\leq	\times	بح			-			- 8
MW-4 1230		$\left \right\rangle$	K	\succ	\succ	4						-9
MW-5 0 1000 b V		K	K	$\left \right\rangle$	λ	\times						-10
SAMPLING DATE TIME SAMPLING COMPLETED 6.28.10 1230 PERFORMED BY J. 0-7	r.ž.	I	B. Ŧ	an	011			(RESULTS NEEDED	Standard TA	т	
RELEASED BY	DA		- 1	TIME	145	4	RECEIVE	DBY	Uhm		DATE 6 88 1	
REVEASED BY	DA	TE		TIME	\sim		RECEIVE	D BY			DATE	TIME
RELEASED BY	DA	TE		TIME		1	RECEIVE	D BY	<u></u>		DATE	TIME
SHIPPED VIA DEOP OFF From Blane Tech	DA	TE SEN	17	TIME	SENT		COOLER	# 1 2	1.9-0.121.	<u>४७८</u> ७°८	- Zvials (1	en (aller) (x12) olha) (x1) Ambers N/p (x12)

page 10f2

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C11585: Chain of Custody Page 1 of 3



					OGERS AVEN		L Z	20M	DUCT	ANAL	YSIS	'O DE1	ECT		LAB			DHS #
BLAII			I JOSE, (FA	RNIA 95112-1 X (408) 573-7 IE (408) 573-0	771	L) L							<u></u>	ALL ANALYSES MUST LIMITS SET BY CALIFO	ORNIA DHS AN		
SITE	ODY The Soun 9201 Sar Oakland,	n Leand , CA	up ro St. MATRIX	62 <u>9</u> -	لَّلَ NTAINERS	COMPOSITE ALL CONTAINERS	TPH-GAS-BZ60 # ANN2K-	BTEX (8260)	TPH-D (8015)	OXYGENATES	DCA & EDB				SPECIAL INSTRUCTION Invoice and Repo Attn: Kristene Ti	nt to : The s dwell		
SAMPLE I.D.	DATE	TIME	S= SOIL W=H ₂ 0	TOTAL		ů U		BT	TP I	XO	1,2				ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
Mw-6	6-28-10	1035	\mathcal{U}	6	invied		$\left \right. \right. $	\succ	$\left \right. \right. $	X	4							- 11
mw-8	þ	1135	6	V	V		7	ナ	Ł	\mathbf{x}	×							-12
13~(<u> </u>	0930	W.	3	JOUS		X	×		×	4							-13
			-															
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	DATE 6-28-10	TIME 130	SAMPLI PERFOR		y s.ort		,	<u></u> \$,	Pai	rey	•			$\left(\right)$	RESULTS NEEDED	Standard TA		
RELEASED BY	<					DA1 6 ~	е 28-		ТІМЕ 14				VED B	ð	hun		DATE 62810	
RELEASED BY	Y					DAT	E		TIME			RECE	IVED B	Y			DATE	TIME
RELEASED BY	-					DAT	E		TIME			RECE	VED B	Y			DATE	TIME
shipped via	- F.	DE	· 7	Ca (1)		DAT	E SEN	т	TIME	SENT		COOL	ER #					

page 2 of 2

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C11585: Chain of Custody Page 2 of 3



Accutest Laboratories Northern California Sample Receiving Check List

	Job# :	C <u>1158</u>	,5
Sample Control Rep	. Initial:	ΕK	TM

SARPCAPH2805

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Review Chain of Custody Chain of Custody is to be complete and le	egible.			SGRPCAPH2805
Are these regulatory (NPDES) samples? CWA	Yes)/No	Client Sample ID	pH Check	Other Comments/Issues
a∕ls pH requested?	Yes / No			Other Comments/Issues
ψ Was Client informed that hold time is 15 min? Yes / No Continue	Yes / No			
Was ortho-Phosphate filtered with in 15 min? Yes / No Continue	Yes / No			
tg∕Are sample within hold time?	Yes / No			
Are sample in danger of exceeding hold-time	Yes / (No)			
	Yes)/No			1
If No: Is Report to info complete and legible, including;	\mathcal{O}			
🗆 deliverable 🗆 Name 🗖 Address 🗖 phone 🖄 e-mail				
Is Bill to info complete and legible, including;				
□ PO# □ Credit card □ Contact □address □ phone □ e-mail				
Is Contact and/or Project Manager identified, including;				
□ phone □ e-mail				190
p∕Project name / number □ Special requirements?	Yes / No			
Sample IDs / date & time of collection provided?	(Yes)/No			
s Matrix listed and correct?	Yes) No			
a Analyses listed we do or client has authorized a subcontract?	(Yes) / No			
Chain is signed and dated by both client and sample custodian?	Yes/ No			
TAT requested available? Yes / No Approved by Am	<u>e</u>			
Review Coolers: 2 - coolers Reivid.				
Were Coolers temperatures measured at ≤6°C? Cooler # Temp	0 ℃			Cooler #1 1.9-0.1 = 1.82
 If cooler is outside the ≤6°C: note down below the affected bottles in the 	t opplar			Cooler #2 1.1 - 0.1 = 1.0°C
 Note that ANC does NOT accept evidentiary samples. (We do not lock 	refrigerators)			
Shipment Received Method walk In (Brs)				
Custody Seals: Present: Yes / No If Yes; Unbroken:	Yes/No			
Review of Sample Bottles: If you answer no, explain to the side				
Chain matches bottle labels? Yes)/ No vo Sample bottle intact?	Yes)/No			·····
rts there enough sample volume in proper bottle for requested analyses?	Yes / No			·····
Proper Preservatives? (Yes) / No Check pH on preserved samples ex 625, 8270 and VOAs.	cept 1664,			
Headspace-VOAs? Greater than 6mm in diameter Yes (No)				7 - <u></u>
List sample ID and affected container				

 $\label{eq:listing} \label{eq:listing} \label{eq:l$

C11585: Chain of Custody Page 3 of 3





Section 4

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary Job Number: C11585

Account: Project:	· · · · · · · · · · · · · · · · · · ·									
Sample VM521-MB	File ID M15973.D	DF 1	Analyzed 07/01/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM521			
The QC repo	rted here applies	to the fo	ollowing samples	s:		Method: SW84	6 8260B			

C11585-1, C11585-2, C11585-3, C11585-5, C11585-6, C11585-7, C11585-8, C11585-9

CAS No.	Compound	Result	RL	MDL	Units Q	
71-43-2	Benzene	ND	1.0	0.30	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.30	ug/l	
108-20-3	Di-Isopropyl ether	ND	5.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	5.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	5.0	0.50	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	5.0	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	
CAS No.	Surrogate Recoveries		Limits			
CAS NO.	Surrogate Recoveries		Linnts			
1868-53-7	Dibromofluoromethane	105%	60-130	%		
2037-26-5	Toluene-D8	105%	60-130%			
460-00-4	4-Bromofluorobenzene	103%	60-130%			



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C11585

Page 1 of 1

Method Blank Summary

Job Number:	C11585
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

The QC reported here applies to the following samples:

Sample	File ID	DF	Analyzed 07/02/10	By	Prep Date	Prep Batch	Analytical Batch
VM522-MB	M16003.D	1		XB	n/a	n/a	VM522

C11585-12

CAS No.	Compound	Result	RL	MDL	Units (Q
71-43-2 106-93-4 107-06-2 108-20-3 100-41-4 637-92-3 1634-04-4 994-05-8 75-65-0 108-88-3 1330-20-7	Benzene 1,2-Dibromoethane 1,2-Dichloroethane Di-Isopropyl ether Ethylbenzene Ethyl Tert Butyl Ether Methyl Tert Butyl Ether Tert-Amyl Methyl Ether Tert-Butyl Alcohol Toluene Xylene (total) TPH-GRO (C6-C10)	ND ND ND ND ND ND ND ND ND ND ND	$ \begin{array}{c} 1.0\\ 1.0\\ 5.0\\ 1.0\\ 5.0\\ 1.0\\ 5.0\\ 1.0\\ 2.0\\ 50\\ \end{array} $	$\begin{array}{c} 0.30\\ 0.20\\ 0.30\\ 0.50\\ 0.30\\ 0.50\\ 0.50\\ 0.50\\ 5.0\\ 0.50\\ 0.70\\ 25 \end{array}$	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	
CAS No.	Surrogate Recoveries		Limits			
1868-53-7 2037-26-5 460-00-4	Dibromofluoromethane Toluene-D8 4-Bromofluorobenzene	104%60-130%103%60-130%101%60-130%				



4.1.2 4

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Method: SW846 8260B



Method Blank Summary

Job Number:	C11585
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

The QC reported here applies to the following samples:

Method: SW846 8260B

C11585-4, C11585-10, C11585-11, C11585-13

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2 106-93-4 107-06-2 108-20-3 100-41-4 637-92-3 1634-04-4 994-05-8 75-65-0 108-88-3 1330-20-7	Benzene 1,2-Dibromoethane 1,2-Dichloroethane Di-Isopropyl ether Ethylbenzene Ethyl Tert Butyl Ether Methyl Tert Butyl Ether Tert-Amyl Methyl Ether Tert-Butyl Alcohol Toluene Xylene (total) TPH-GRO (C6-C10)	ND ND ND ND ND ND ND ND ND ND	$ \begin{array}{c} 1.0\\ 1.0\\ 5.0\\ 1.0\\ 5.0\\ 1.0\\ 5.0\\ 1.0\\ 5.0\\ 10\\ 1.0\\ 2.0\\ 50\\ \end{array} $	$\begin{array}{c} 0.30\\ 0.20\\ 0.30\\ 0.50\\ 0.50\\ 0.50\\ 0.50\\ 5.0\\ 0.50\\ 0.50\\ 0.70\\ 25 \end{array}$	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l
CAS No. 1868-53-7 2037-26-5 460-00-4	Surrogate Recoveries Dibromofluoromethane Toluene-D8 4-Bromofluorobenzene	103% 103% 101%	Limits 60-130 60-130 60-130	% %	



4.1.3 4

Blank Spike Summary Job Number: C11585

Account: Project:	SGRPCAPH The Source Group 9201 San Leandro Street, Oakland CA						
Sample VM521-BS	File ID M15971.D	DF 1	Analyzed 07/01/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM521
The QC report	ted here applies	to the fo	llowing sample	5:		Method: SW84	6 8260B

C11585-1, C11585-2, C11585-3, C11585-5, C11585-6, C11585-7, C11585-8, C11585-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	20.4	102	60-130
106-93-4	1,2-Dibromoethane	20	21.2	106	60-130
107-06-2	1,2-Dichloroethane	20	22.3	112	60-130
108-20-3	Di-Isopropyl ether	20	22.0	110	60-130
100-41-4	Ethylbenzene	20	20.4	102	60-130
637-92-3	Ethyl Tert Butyl Ether	20	21.6	108	60-130
1634-04-4	Methyl Tert Butyl Ether	20	21.3	107	60-130
994-05-8	Tert-Amyl Methyl Ether	20	21.3	107	60-130
75-65-0	Tert-Butyl Alcohol	100	110	110	60-130
108-88-3	Toluene	20	20.7	104	60-130
1330-20-7	Xylene (total)	60	60.2	100	60-130
CAS No.	Surrogate Recoveries	BSP	Lim	nits	
1868-53-7	Dibromofluoromethane	104%	60-1	130%	
2037-26-5	Toluene-D8	100%	60-1	130%	
460-00-4	4-Bromofluorobenzene	100%	60-1	130%	



4.2.1



Blank Spike Summary Job Number: C11585

Account: Project:	SGRPCAPH The Source Group 9201 San Leandro Street, Oakland CA						
Sample VM521-BS	File ID M15972.D	DF 1	Analyzed 07/01/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM521
The QC repor	ted here applies	to the fo	llowing samples	5:		Method: SW84	6 8260B

C11585-1, C11585-2, C11585-3, C11585-5, C11585-6, C11585-7, C11585-8, C11585-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	125	122	98	60-130
CAS No.	Surrogate Recoveries	BSP	Lin	nits	
1868-53-7	Diknomoflygnomothong	1020/	60	200/	
1000 00 /	Dibromofluoromethane	103%		130%	
2037-26-5	Toluene-D8	104%	60-1	130%	
460-00-4	4-Bromofluorobenzene	101%	60-2	130%	

Page 1 of 1

4.2.2 4



Blank Spike Summary

Job Number:	C11585
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM522-BS	M16001.D	1	07/02/10	XB	n/a	n/a	VM522
The QC repor	ted here applies	to the fo	llowing samples	5:]	Method: SW84	6 8260B

C11585-4, C11585-10, C11585-11, C11585-12, C11585-13

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	19.8	99	60-130
106-93-4	1,2-Dibromoethane	20	20.8	104	60-130
107-06-2	1,2-Dichloroethane	20	21.2	106	60-130
108-20-3	Di-Isopropyl ether	20	21.5	108	60-130
100-41-4	Ethylbenzene	20	20.3	102	60-130
637-92-3	Ethyl Tert Butyl Ether	20	21.2	106	60-130
1634-04-4	Methyl Tert Butyl Ether	20	20.4	102	60-130
994-05-8	Tert-Amyl Methyl Ether	20	21.1	106	60-130
75-65-0	Tert-Butyl Alcohol	100	103	103	60-130
108-88-3	Toluene	20	20.1	101	60-130
1330-20-7	Xylene (total)	60	60.4	101	60-130
CAS No.	Surrogate Recoveries	BSP	Lin	nits	
1868-53-7	Dibromofluoromethane	105%	60-	130%	
2037-26-5	Toluene-D8	100%	60-	130%	
460-00-4	4-Bromofluorobenzene	101%	60-	130%	

ch 2.3



Blank Spike Summary Job Number: C11585

Sample VM522-BS	File ID M16002.D	DF 1	Analyzed 07/02/10	By XB	Prep Date n/a	Prep Batch n/a	Analytical Batch VM522

C11585-4, C11585-10, C11585-11, C11585-12, C11585-13

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	125	120	96	60-130
CAS No.	Surrogate Recoveries	BSP	Lim	its	
1868-53-7	Dibromofluoromethane	103%	60-1	30%	
2037-26-5	Toluene-D8	102%		30%	
460-00-4	4-Bromofluorobenzene	101%	60-1	30%	



4.2.4 4



Matrix Spike/Matrix Spike Duplicate Summary

Job Number:	C11585
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C11602-5MS	M15991.D	1	07/01/10	XB	n/a	n/a	VM521
C11602-5MSD	M16030.D	1	07/03/10	XB	n/a	n/a	VM521
C11602-5	M15975.D	1	07/01/10	XB	n/a	n/a	VM521

The QC reported here applies to the following samples:

Method: SW846 8260B

C11585-1, C11585-2, C11585-3, C11585-5, C11585-6, C11585-7, C11585-8, C11585-9

CAS No.	Compound	C11602-5 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	20.2	101	20.4	102	1	60-130/25
106-93-4	1,2-Dibromoethane	ND	20	21.9	110	20.6	103	6	60-130/25
107-06-2	1,2-Dichloroethane	ND	20	21.8	109	21.6	108	1	60-130/25
108-20-3	Di-Isopropyl ether	ND	20	21.1	106	20.2	101	4	60-130/25
100-41-4	Ethylbenzene	ND	20	21.5	108	20.4	102	5	60-130/25
637-92-3	Ethyl Tert Butyl Ether	ND	20	21.7	109	21.3	107	2	60-130/25
1634-04-4	Methyl Tert Butyl Ether	ND	20	19.9	100	20.1	101	1	60-130/25
994-05-8	Tert-Amyl Methyl Ether	ND	20	21.3	107	20.8	104	2	60-130/25
75-65-0	Tert-Butyl Alcohol	ND	100	97.5	98	108	108	10	60-130/25
108-88-3	Toluene	ND	20	21.1	106	19.9	100	6	60-130/25
1330-20-7	Xylene (total)	ND	60	63.7	106	60.2	100	6	60-130/25
CAS No.	Surrogate Recoveries	MS	MSD	C1	1602-5	Limits			
1868-53-7	Dibromofluoromethane	106%	103%	104	1%	60-1309	6		
2037-26-5	Toluene-D8	102%	99%	102	2%	60-1309	6		
460-00-4	4-Bromofluorobenzene	102%	99%	999	%	60-130%	6		



Matrix Spike/Matrix Spike Duplicate Summary

Job Number:	C11585
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C11585-12MS	M16031.D	1	07/03/10	XB	n/a	n/a	VM522
C11585-12MSD	M16032.D	1	07/03/10	XB	n/a	n/a	VM522
C11585-12	M16007.D	1	07/02/10	XB	n/a	n/a	VM522

The QC reported here applies to the following samples:

Method: SW846 8260B

C11585-4, C11585-10, C11585-11, C11585-12, C11585-13

2037-26-5

460-00-4

Toluene-D8

4-Bromofluorobenzene

CAS No.	Compound	C11585 ug/l	-12 Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	0.81	J	20	20.2	97	22.8	110	12	60-130/25
106-93-4	1,2-Dibromoethane	ND		20	19.1	96	22.7	114	17	60-130/25
107-06-2	1,2-Dichloroethane	ND		20	20.1	101	23.0	115	13	60-130/25
108-20-3	Di-Isopropyl ether	ND		20	19.7	99	22.3	112	12	60-130/25
100-41-4	Ethylbenzene	0.41	J	20	20.2	99	23.7	116	16	60-130/25
637-92-3	Ethyl Tert Butyl Ether	ND		20	20.7	104	23.2	116	11	60-130/25
1634-04-4	Methyl Tert Butyl Ether	0.62	J	20	19.6	95	22.0	107	12	60-130/25
994-05-8	Tert-Amyl Methyl Ether	ND		20	19.6	98	22.3	112	13	60-130/25
75-65-0	Tert-Butyl Alcohol	ND		100	91.6	92	110	110	18	60-130/25
108-88-3	Toluene	1.3		20	20.3	95	23.8	113	16	60-130/25
1330-20-7	Xylene (total)	1.6	J	60	59.4	96	70.2	114	17	60-130/25
CAS No.	Surrogate Recoveries	MS		MSD			Limits			
1868-53-7	Dibromofluoromethane	105%		101%	10	6%	60-130%	6		

100%

102%

105%

101%

60-130%

60-130%

98%

101%



4.3.2 4



GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary Job Number: C11585 Account: SGRPCAPH The So

Account: Project:		SGRPCAPH The Source Group 9201 San Leandro Street, Oakland CA									
Project: Sample OP2328-MB The QC repor	File ID HH7074.D	DF 1	Analyzed 06/30/10	Ву JH	Prep Date 06/29/10	Prep Batch OP2328	Analytical Batch GHH307				
The QC repor	ted here applies	to the fo	llowing samples	s:		Method: SW84	6 8015B M				
C11585-1, C11	1585-2, C11585-3	s, C1158	5-4, C11585-5, (С11585-е	5, C11585-7, C11	585-8, C11585-9	9, C11585-10, C1158				

11, C11585-12

CAS No.	Compound	Result	RL	MDL	Units Q
	ТРН (С10-С28)	ND	0.10	0.050	mg/l
CAS No.	Surrogate Recoveries		Limits		
630-01-3	Hexacosane	82%	45-140	%	

Page 1 of 1

5.1.1 5



Blank Spike/Blank Spike Duplicate Summary

Job Number:	C11585
Account:	SGRPCAPH The Source Group
Project:	9201 San Leandro Street, Oakland CA

Sample OP2328-BS OP2328-BSD	File ID HH7075.D HH7076.D	DF 1 1	Analyzed 06/30/10 06/30/10	Ву ЈН ЈН	Prep Date 06/29/10 06/29/10	Prep Batch OP2328 OP2328	Analytical Batch GHH307 GHH307
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The QC reported here applies to the following samples:

Method: SW846 8015B M

C11585-1, C11585-2, C11585-3, C11585-4, C11585-5, C11585-6, C11585-7, C11585-8, C11585-9, C11585-10, C11585-11, C11585-12

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	1	0.689	69	0.628	63	9	45-140/30
CAS No.	Surrogate Recoveries	BSP	BS	SD Limits				
630-01-3	Hexacosane	76%	70%	70%		6		

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Laboratory Job Number 221764 ANALYTICAL REPORT

The Source Group, Inc. 3451C Vincent Road Pleasant Hill, CA 94523 Project : 04-PFT-003 Location : Paco Pumps Level : II

<u>Sample ID</u>	<u>Lab ID</u>
ASMW-25	221764-001
MW-3	221764-002
AS-15	221764-003
MW-6	221764-004

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

Signature: _/hult

Project Manager

Date: <u>08/17/2010</u>

NELAP # 01107CA



CASE NARRATIVE

Laboratory number: Client: Project: Location: Request Date: Samples Received: 221764 The Source Group, Inc. 04-PFT-003 Paco Pumps 08/10/10 08/10/10

This data package contains sample and QC results for four water samples, requested for the above referenced project on 08/10/10. The samples were received cold and intact.

Volatile Organics by GC/MS (EPA 8260B):

Low recovery was observed for trichloroethene in the MSD for batch 165889; the parent sample was not a project sample, the LCS was within limits, and the associated RPD was within limits. No other analytical problems were encountered.

12.0

-			CHA	IN	OF	C	U	STC	DD	Y									`
ct	Curtis & Tompk Environmental analyti	INS LOD		ƏS RY	CRTIC	27 Dgin #		64	_						n of C	ustody			
Berkele Project Project Project EDD For		Phone (Fax (Business Since 10 (510) 486-09 (510) 486-09 (510) 486-09 (510) 486-09 (500) (500) (510) 486-09 (500) (510) 486-09 (510) 486-09	00 32 	Ne <u>arm</u> <u>G</u> 5 14-7	ent: 00p 185	n iev Tr	،ر	et y	Suns stans (Cro con	60 <i>6X</i>	AN	ALYT		REG	UEST			
Lab No.	Sample ID.	SAM Date Collected	PLING Time I Collected		of Conta	PRES	EMIC ERVA SONH	TIVE	TPH. 600 VO		820								
/ Z 3 Y	Asmw-25 mw-3 AS-15 mw-6	8/10/17		≥ŏ X	3	Ξ Υ Ι		ŽŽ											
Notes:		SAMPLE RECEIPT	4A.	RELI MM		SHED B		-(b TIME:	1430		\pm		R	ECEIN	/ED BY	Êlin	1-	E: /4	
		Con Ice Ambient			·	DAT DAT		TIME: TIME:		-						ATE:	TIM	E:	

COOLER RECEIPT CHECKLIST		Curtis & Tompkins, Ltd.
Login # <u>721764</u> Date Received <u>4</u> Client <u>Source</u> Char Proje		of coolers_/
Date Opened <u>Hidio</u> By (print) <u>SEVAN</u> Date Logged in <u>+</u> By (print)	S(sign) (sign)	the second secon
1. Did cooler come with a shipping slip (airbill, etc) Shipping info		YES NO
 2A. Were custody seals present? □ YES (circle How many Name Name Name Name Name 2B. Were custody seals intact upon arrival? 3. Were custody papers dry and intact when receiver 4. Were custody papers filled out properly (ink, sign 5. Is the project identifiable from custody papers? (6. Indicate the packing in cooler: (if other, describe) 	Date d? led, etc)? If so fill out top of form)	YES NO NA YES NO YES NO
	☐ Bags □ □ Styrofoam □	None Paper towels
Type of ice used: 🖄 Wet 🗌 Blue/Gel	□None Temp(°C	C)
Samples Received on ice & cold without	a temperature blank	
□ Samples received on ice directly from the	field. Cooling process h	ad begun
8. Were Method 5035 sampling containers present?		YES NO
If YES, what time were they transferred to fr	eezer?	
9. Did all bottles arrive unbroken/unopened?		YES NO
10. Are samples in the appropriate containers for in	licated tests?	
11. Are sample labels present, in good condition and	complete?	CYES NO
12. Do the sample labels agree with custody papers?		YES NO
13. Was sufficient amount of sample sent for tests re	quested?	YES NO
14. Are the samples appropriately preserved?	and a second	VES NO N/A
15. Are bubbles > 6mm absent in VOA samples?	1.1' 0	STES NO N/A
16. Was the client contacted concerning this sample If YES, Who was called?	delivery?	YES NO _Date:
COMMENTS		

SOP Volume:Client ServicesSection:1.1.2Page:1 of 1

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	Gasolin	e by GC/MS	
Lab #: Client: Project#:	221764 The Source Group, Inc. 04-PFT-003	Location: Prep: Analysis:	Paco Pumps EPA 5030B EPA 8260B
Field ID: Lab ID: Matrix: Units: Diln Fac:	ASMW-25 221764-001 Water ug/L 6.250	Batch#: Sampled: Received: Analyzed:	165889 08/10/10 08/10/10 08/13/10

Analyte	Rea	sult	RL
Gasoline C7-C12		200	310
Freon 12	ND ND		6.3
tert-Butyl Alcohol (TBA)	ND		63
Chloromethane	ND		6.3
Isopropyl Ether (DIPE)	ND		3.1
Vinyl Chloride	ND		3.1
Bromomethane	ND		6.3
Ethyl tert-Butyl Ether (ETBE)	ND		3.1
Chloroethane	ND		6.3
Methyl tert-Amyl Ether (TAME)	ND		3.1
Trichlorofluoromethane	ND		6.3
Acetone	ND		63
Freon 113	ND		13
1,1-Dichloroethene	ND		3.1
Methylene Chloride	ND		63
Carbon Disulfide	ND		3.1
MTBE	ND		3.1
trans-1,2-Dichloroethene	ND		3.1
Vinyl Acetate	ND		63
1,1-Dichloroethane	ND		3.1
2-Butanone	ND		63
cis-1,2-Dichloroethene	ND		3.1
2,2-Dichloropropane	ND		3.1
Chloroform	ND		3.1
Bromochloromethane	ND		3.1
1,1,1-Trichloroethane	ND		3.1
1,1-Dichloropropene	ND		3.1
Carbon Tetrachloride	ND		3.1
1,2-Dichloroethane	ND	3.4	3.1
Benzene	4	120	3.1
Trichloroethene	ND	120	3.1
1,2-Dichloropropane	ND		3.1
Bromodichloromethane	ND		3.1
Dibromomethane	ND		3.1
4-Methyl-2-Pentanone	ND		63
cis-1,3-Dichloropropene	ND		3.1
Toluene	ND	69	3.1
trans-1,3-Dichloropropene	ND	09	3.1
1,1,2-Trichloroethane	ND		3.1
2-Hexanone	ND		63
1,3-Dichloropropane	ND		3.1
Tetrachloroethene	ND		3.1
Dibromochloromethane	ND		3.1
1,2-Dibromoethane	ND		3.1
Chlorobenzene	ND		3.1
1,1,1,2-Tetrachloroethane	ND		3.1
Ethylbenzene		61	3.1
m,p-Xylenes		77	3.1
o-Xylene		53	3.1
Styrene	ND	22	3.1
Bromoform	ND		6.3
Isopropylbenzene		14	3.1
1,1,2,2-Tetrachloroethane	ND	± +	3.1
1,2,3-Trichloropropane	ND		3.1
1,2,5 iffenteropropane			↓ • ⊥

ND= Not Detected RL= Reporting Limit Page 1 of 2



	Gaso	line by GC/MS	
Lab #: 221764		Location: Paco Pumps	
Client: The Source Gro	oup, Inc.	Prep: EPA 5030B	
Project#: 04-PFT-003		Analysis: EPA 8260B	
Field ID: ASMW-25		Batch#: 165889	
Lab ID: 221764-001		Sampled: 08/10/10	
Matrix: Water		Received: 08/10/10	
Units: ug/L		Analyzed: 08/13/10	
Diln Fac: 6.250			
Analyte	Resul	lt RL	
Propylbenzene	32	3.1	
Bromobenzene	ND	3.1	
1,3,5-Trimethylbenzene	38	3.1	
2-Chlorotoluene	ND	3.1	
4-Chlorotoluene	ND	3.1	
tert-Butylbenzene		3.4 3.1	
1,2,4-Trimethylbenzene	370		
sec-Butylbenzene	ND	3.1	
para-Isopropyl Toluene	ND	3.1	
1,3-Dichlorobenzene	ND	3.1	
1,4-Dichlorobenzene	ND	3.1	
n-Butylbenzene	ND	3.1	
1,2-Dichlorobenzene	ND	3.1	
1,2-Dibromo-3-Chloropropane	ND	13	
1,2,4-Trichlorobenzene	ND	3.1	
Hexachlorobutadiene	ND 41	13	
Naphthalene		13 3.1	
1,2,3-Trichlorobenzene	ND	3.1	
Surrogate	%REC Limi	its	
Dibromofluoromethane	89 80-1		
1,2-Dichloroethane-d4	81 71-1		
Toluene-d8	96 80-1	L20	
Bromofluorobenzene	98 80-1	121	

3.2



	Gasolin	e by GC/MS	
Lab #: Client: Project#:	221764 The Source Group, Inc. 04-PFT-003	Location: Prep: Analysis:	Paco Pumps EPA 5030B EPA 8260B
Field ID: Lab ID: Matrix: Units: Diln Fac:	MW-3 221764-002 Water ug/L 25.00	Batch#: Sampled: Received: Analyzed:	165889 08/10/10 08/10/10 08/13/10

Analyte	Result	RL	
Gasoline C7-C12	12,000	1,300	
Freon 12	ND ND	25	
tert-Butyl Alcohol (TBA)	ND	250	
Chloromethane	ND	25	
Isopropyl Ether (DIPE)	ND	13	
Vinyl Chloride	ND	13	
Bromomethane	ND	25	
Ethyl tert-Butyl Ether (ETBE)	ND	13	
Chloroethane	ND	25	
Methyl tert-Amyl Ether (TAME)	ND	13	
Trichlorofluoromethane	ND	25	
Acetone	ND	250	
Freon 113	ND	50	
1,1-Dichloroethene	ND	13	
Methylene Chloride	ND	250	
Carbon Disulfide	ND	13	
MTBE	ND	13	
trans-1,2-Dichloroethene	ND	13	
Vinyl Acetate	ND	250	
1,1-Dichloroethane	ND	13	
2-Butanone	ND	250	
cis-1,2-Dichloroethene	ND	13	
2,2-Dichloropropane	ND	13	
Chloroform	ND	13	
Bromochloromethane	ND	13	
1,1,1-Trichloroethane	ND	13	
1,1-Dichloropropene	ND	13	
Carbon Tetrachloride	ND	13	
1,2-Dichloroethane	ND	13	
Benzene	1,400	13	
Trichloroethene	ND 100	13	
1,2-Dichloropropane	ND	13	
Bromodichloromethane	ND	13	
Dibromomethane	ND	13	
4-Methyl-2-Pentanone	ND	250	
cis-1,3-Dichloropropene	ND	13	
Toluene	1,200	13	
trans-1,3-Dichloropropene	ND	13	
1,1,2-Trichloroethane	ND	13	
2-Hexanone	ND	250	
1,3-Dichloropropane	ND	13	
Tetrachloroethene	ND	13	
Dibromochloromethane	ND	13	
1,2-Dibromoethane	ND	13	
Chlorobenzene	ND	13	
1,1,1,2-Tetrachloroethane	ND	13	
Ethylbenzene	190	13	
m,p-Xylenes	290	13	
o-Xylene	350	13	
Styrene	ND	13	
Bromoform	ND	25	
Isopropylbenzene	40	13	
1,1,2,2-Tetrachloroethane	ND	13	
1,2,3-Trichloropropane	ND	13	
-,-,-,- illomioropropune		15	

ND= Not Detected RL= Reporting Limit Page 1 of 2



	Gas	soline by GC/MS	S	
Lab #: 221764 Client: The Sourc	e Group, Inc.	Location: Prep:	EPA 5030B	
Project#: 04-PFT-00 Field ID: MW-3 Lab ID: 221764-00		Analysis: Batch#: Sampled:	165889 08/10/10	
Matrix: Water Units: ug/L Diln Fac: 25.00		Received: Analyzed:		
	_		~~	
Analyte	Re	sult	RL	
Propylbenzene	ND	84	13	
Bromobenzene	ND	100	13	
1,3,5-Trimethylbenzene		190	13 13	
2-Chlorotoluene 4-Chlorotoluene	ND ND		13	
	ND ND		13	
tert-Butylbenzene 1,2,4-Trimethylbenzene		000	13	
sec-Butylbenzene	ND ¹ ,	000	13	
para-Isopropyl Toluene	ND		13	
1,3-Dichlorobenzene	ND		13	
1,4-Dichlorobenzene	ND		13	
n-Butylbenzene	ND		13	
1,2-Dichlorobenzene	ND		13	
1,2-Dibromo-3-Chloropropan			50	
1,2,4-Trichlorobenzene	ND		13	
Hexachlorobutadiene	ND		50	
Naphthalene		160	50	
1,2,3-Trichlorobenzene	ND		13	
Surrogate	%REC L	imits		
Dibromofluoromethane		0-122		
1,2-Dichloroethane-d4		1-140		
Toluene-d8		0-120		
Bromofluorobenzene	99 8	0-121		



	Gasoli	ne by GC/MS	
Lab #: Client: Project#:	221764 The Source Group, Inc. 04-PFT-003	Location: Prep: Analysis:	Paco Pumps EPA 5030B EPA 8260B
Field ID: Lab ID: Matrix: Units: Diln Fac:	AS-15 221764-003 Water ug/L 5.000	Batch#: Sampled: Received: Analyzed:	165889 08/10/10 08/10/10 08/13/10

Analyte	Res	ult	RL
Gasoline C7-C12	1,2		250
Freon 12	ND		5.0
tert-Butyl Alcohol (TBA)	ND		50
Chloromethane	ND		5.0
Isopropyl Ether (DIPE)	ND		2.5
Vinyl Chloride	ND		2.5
Bromomethane	ND		5.0
Ethyl tert-Butyl Ether (ETBE)	ND		2.5
Chloroethane	ND		5.0
Methyl tert-Amyl Ether (TAME)	ND		2.5
Trichlorofluoromethane	ND		5.0
Acetone	ND		50
Freon 113	ND		10
1,1-Dichloroethene			2.5
Methylene Chloride	ND ND		50
Carbon Disulfide	ND		2.5
MTBE	ND		2.5
trans-1,2-Dichloroethene	ND		2.5
Vinyl Acetate	ND		50
1,1-Dichloroethane	ND		2.5
2-Butanone	ND		50
cis-1,2-Dichloroethene	ND		2.5
2,2-Dichloropropane	ND		2.5
Chloroform	ND		2.5
Bromochloromethane	ND		2.5
1,1,1-Trichloroethane	ND		2.5
1,1-Dichloropropene	ND		2.5
Carbon Tetrachloride	ND		2.5
1,2-Dichloroethane	_	2.6	2.5
Benzene		370	2.5
Trichloroethene	ND		2.5
1,2-Dichloropropane	ND		2.5
Bromodichloromethane	ND		2.5
Dibromomethane	ND		2.5
4-Methyl-2-Pentanone	ND		50
cis-1,3-Dichloropropene	ND		2.5
Toluene		44	2.5
trans-1,3-Dichloropropene	ND		2.5
1,1,2-Trichloroethane	ND		2.5
2-Hexanone	ND		50
1,3-Dichloropropane	ND		2.5
Tetrachloroethene	ND		2.5
Dibromochloromethane	ND		2.5
1,2-Dibromoethane	ND		2.5
Chlorobenzene	ND		2.5
1,1,1,2-Tetrachloroethane	ND		2.5
Ethylbenzene		34	2.5
m,p-Xylenes		16	2.5
o-Xylene		18	2.5
Styrene	ND		2.5
Bromoform	ND		5.0
Isopropylbenzene		8.1	2.5
1,1,2,2-Tetrachloroethane	ND		2.5
1,2,3-Trichloropropane	ND		2.5
, , ,			

ND= Not Detected RL= Reporting Limit Page 1 of 2

5.1



	Gas	soline	by GC/MS		
Lab #: 221764			Location:	Paco Pumps	
Client: The Source Gr	oup, Inc.		Prep:	EPA 5030B	
Project#: 04-PFT-003			Analysis:	EPA 8260B	
Field ID: AS-15			Batch#:	165889	
Lab ID: 221764-003			Sampled:	08/10/10	
Matrix: Water			Received:	08/10/10	
Units: ug/L			Analyzed:	08/13/10	
Diln Fac: 5.000					
Analyte	Re	sult		RL	
Propylbenzene Bromobenzene	ND	17		2.5 2.5	
1,3,5-Trimethylbenzene	ND	2.6		2.5	
2-Chlorotoluene	ND	2.0		2.5	
4-Chlorotoluene	ND ND			2.5	
tert-Butylbenzene	ND	3.8		2.5	
1,2,4-Trimethylbenzene		83		2.5	
sec-Butylbenzene	ND	05		2.5	
para-Isopropyl Toluene	ND			2.5	
1,3-Dichlorobenzene	ND			2.5	
1,4-Dichlorobenzene	ND			2.5	
n-Butylbenzene	ND			2.5	
1,2-Dichlorobenzene	ND			2.5	
1,2-Dibromo-3-Chloropropane	ND			10	
1,2,4-Trichlorobenzene	ND			2.5	
Hexachlorobutadiene	ND			10	
Naphthalene		16		10	
1,2,3-Trichlorobenzene	ND			2.5	
Surrogate		imits			
Dibromofluoromethane		0-122			
1,2-Dichloroethane-d4		1-140			
Toluene-d8		0-120			
Bromofluorobenzene	100 8	0-121			

5.1



	Gasoli	ne by GC/MS	
Lab #: Client: Project#:	221764 The Source Group, Inc. 04-PFT-003	Location: Prep: Analysis:	Paco Pumps EPA 5030B EPA 8260B
Field ID: Lab ID: Matrix: Units: Diln Fac:	MW-6 221764-004 Water ug/L 12.50	Batch#: Sampled: Received: Analyzed:	165889 08/10/10 08/10/10 08/13/10

AnalyteResultRLGasoline C7-Cl24,600630Freon 12ND13tert-Butyl Alcohol (TBA)ND130ChloromethaneND13Isopropyl Ether (DIPE)ND6.3Vinyl ChlorideND13BromomethaneND13Ethyl tert-Butyl Ether (ETBE)ND6.3ChloroethaneND13Ethyl tert-Amyl Ether (TAME)ND6.3TrichlorofluoromethaneND13AcetoneND130Freon 113ND251,1-DichloroetheneND6.3Methylene ChlorideND130	
Freon 12ND13tert-Butyl Alcohol (TBA)ND130ChloromethaneND13Isopropyl Ether (DIPE)ND6.3Vinyl ChlorideND6.3BromomethaneND13Ethyl tert-Butyl Ether (ETBE)ND6.3ChloroethaneND13Methyl tert-Amyl Ether (TAME)ND6.3TrichlorofluoromethaneND13AcetoneND130Freon 113ND251,1-DichloroetheneND6.3Methylene ChlorideND130	
ChloromethaneND13Isopropyl Ether (DIPE)ND6.3Vinyl ChlorideND6.3BromomethaneND13Ethyl tert-Butyl Ether (ETBE)ND6.3ChloroethaneND13Methyl tert-Amyl Ether (TAME)ND6.3TrichlorofluoromethaneND13AcetoneND130Freen 113ND251,1-DichloroetheneND6.3Methylene ChlorideND130	
ChloromethaneND13Isopropyl Ether (DIPE)ND6.3Vinyl ChlorideND6.3BromomethaneND13Ethyl tert-Butyl Ether (ETBE)ND6.3ChloroethaneND13Methyl tert-Amyl Ether (TAME)ND6.3TrichlorofluoromethaneND13AcetoneND130Freen 113ND251,1-DichloroetheneND6.3Methylene ChlorideND130	
Vinyl ChlorideND6.3BromomethaneND13Ethyl tert-Butyl Ether (ETBE)ND6.3ChloroethaneND13Methyl tert-Amyl Ether (TAME)ND6.3TrichlorofluoromethaneND13AcetoneND130Freon 113ND251,1-DichloroetheneND6.3Methylene ChlorideND130	
Vinyl ChlorideND6.3BromomethaneND13Ethyl tert-Butyl Ether (ETBE)ND6.3ChloroethaneND13Methyl tert-Amyl Ether (TAME)ND6.3TrichlorofluoromethaneND13AcetoneND13Freon 113ND251,1-DichloroetheneND6.3Methylene ChlorideND130	
Ethyl tert-Butyl Ether (ETBE)ND6.3ChloroethaneND13Methyl tert-Amyl Ether (TAME)ND6.3TrichlorofluoromethaneND13AcetoneND130Freon 113ND251,1-DichloroetheneND6.3Methylene ChlorideND130	
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TrichlorofluoromethaneND13AcetoneND130Freon 113ND251,1-DichloroetheneND6.3Methylene ChlorideND130	
TrichlorofluoromethaneND13AcetoneND130Freon 113ND251,1-DichloroetheneND6.3Methylene ChlorideND130	
Freon 113ND251,1-DichloroetheneND6.3Methylene ChlorideND130	
1,1-DichloroetheneND6.3Methylene ChlorideND130	
Methylene Chloride ND 130	
Carbon Disulfide ND 6.3	
MTBE ND 6.3	
trans-1,2-Dichloroethene ND 6.3	
Vinyl Acetate ND 130	
1,1-Dichloroethane ND 6.3	
2-Butanone ND 130	
cis-1,2-Dichloroethene ND 6.3	
2,2-Dichloropropane ND 6.3	
Chloroform ND 6.3	
Bromochloromethane ND 6.3	
1,1,1-Trichloroethane ND 6.3	
1,1-Dichloropropene ND 6.3	
Carbon Tetrachloride ND 6.3	
1,2-Dichloroethane 12 6.3	
Benzene 800 6.3	
Trichloroethene ND 6.3	
1,2-Dichloropropane ND 6.3	
Bromodichloromethane ND 6.3	
Dibromomethane ND 6.3	
4-Methyl-2-Pentanone ND 130	
cis-1,3-Dichloropropene ND 6.3	
Toluene 160 6.3	
trans-1,3-Dichloropropene ND 6.3	
1,1,2-Trichloroethane ND 6.3	
2-Hexanone ND 130	
1,3-Dichloropropane ND 6.3	
Tetrachloroethene ND 6.3	
Dibromochloromethane ND 6.3	
1,2-Dibromoethane ND 6.3	
Chlorobenzene ND 6.3	
1,1,1,2-Tetrachloroethane ND 6.3	
Ethylbenzene 160 6.3	
m,p-Xylenes 130 6.3	
o-Xylene 80 6.3	
Styrene ND 6.3	
Bromoform ND 13	
Isopropylbenzene 24 6.3	
1,1,2,2-Tetrachloroethane ND 6.3	
1,2,3-Trichloropropane ND 6.3	

ND= Not Detected RL= Reporting Limit Page 1 of 2



	G	asoline	by GC/MS	
Lab #: 221764			Location:	Paco Pumps
Client: The Source Grou	up, Inc		Prep:	EPA 5030B
Project#: 04-PFT-003			Analysis:	EPA 8260B
Field ID: MW-6			Batch#:	165889
Lab ID: 221764-004			Sampled:	08/10/10
Matrix: Water			Received:	08/10/10
Units: ug/L			Analyzed:	08/13/10
Diln Fac: 12.50				
Analyte	F	Result		RL
Propylbenzene	115	54		6.3
Bromobenzene	ND	22		6.3
1,3,5-Trimethylbenzene	NTD	23		6.3
2-Chlorotoluene 4-Chlorotoluene	ND			6.3 6.3 6.3 6.3
	ND ND			6.3 C 3
tert-Butylbenzene	ИD	490		6.3 6.3 6.3
1,2,4-Trimethylbenzene sec-Butylbenzene	ND	490		
para-Isopropyl Toluene	ND			6.3
1,3-Dichlorobenzene	ND			6.3
1,4-Dichlorobenzene	ND			6.3
n-Butylbenzene	ND			6.3
1,2-Dichlorobenzene	ND			6.3
1,2-Dibromo-3-Chloropropane	ND			25
1,2,4-Trichlorobenzene	ND			6.3
Hexachlorobutadiene	ND			25
Naphthalene	112	60		25
1,2,3-Trichlorobenzene	ND			6.3
	2			
Surrogate	%REC	Limits		
	1	80-122		
	'8	71-140		
	6	80-120		
Bromofluorobenzene 9)7	80-121		

6.2



Gasoline by GC/MS					
Lab #:	221764	Location:	Paco Pumps		
Client:	The Source Group, Inc.	Prep:	EPA 5030B		
Project#:	04-PFT-003	Analysis:	EPA 8260B		
Field ID:	ZZZZZZZZZ	Batch#:	165889		
MSS Lab ID:	221655-023	Sampled:	08/04/10		
Matrix:	Water	Received:	08/04/10		
Units:	ug/L	Analyzed:	08/13/10		
Diln Fac:	6.250	-			

Туре: М	S		Lab ID:	QC555971		
Analyt	e MSS	Result	Spiked	Result	%REC	Limits
tert-Butyl Alcoho	1 (TBA)	<9.112	781.3	655.9	84	57-142
Isopropyl Ether (DIPE)	<0.6250	156.3	143.0	91	70-122
Ethyl tert-Butyl	Ether (ETBE)	<0.6250	156.3	135.4	87	71-120
Methyl tert-Amyl	Ether (TAME)	<0.6250	156.3	133.9	86	75-120
1,1-Dichloroethen	e	<0.6250	156.3	164.9	106	80-134
Benzene		<0.6250	156.3	150.1	96	80-121
Trichloroethene		432.9	156.3	556.6	79	77-126
Toluene		<0.6250	156.3	163.1	104	80-120
Chlorobenzene		<0.7101	156.3	163.2	104	80-120
Surroga		Limits				
Dibromofluorometh		80-122				
1,2-Dichloroethan		71-140				
Toluene-d8	99	80-120				
Bromofluorobenzen	e 98	80-121				

Type: MSD		Lab ID:	QC55	5972			
Analyte	Spike	ed	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	781	3	650.6	83	57-142	1	32
Isopropyl Ether (DIPE)	156	5.3	136.0	87	70-122	5	20
Ethyl tert-Butyl Ether (ETBE)	156	5.3	133.3	85	71-120	2	20
Methyl tert-Amyl Ether (TAME)	156	5.3	133.3	85	75-120	0	20
1,1-Dichloroethene	156		153.8	98	80-134	7	20
Benzene	156		146.9	94	80-121	2	20
Trichloroethene	156		545.9	72 *	77-126	2	20
Toluene	156		159.5	102	80-120	2	20
Chlorobenzene	156		156.9	100	80-120	4	20
Surrogate	%REC Limi	ts					
Dibromofluoromethane	90 80-1						
1,2-Dichloroethane-d4	84 71-1						
Toluene-d8	102 80-1						
Bromofluorobenzene	100 80-1						

*= Value outside of QC limits; see narrative RPD= Relative Percent Difference Page 1 of 1

7.0



Gasoline by GC/MS					
Lab #: Client: Project#:	221764 The Source Group, Inc. 04-PFT-003	Location: Prep: Analysis:	Paco Pumps EPA 5030B EPA 8260B		
Type: Lab ID: Matrix: Units:	BLANK QC555973 Water ug/L	Diln Fac: Batch#: Analyzed:	1.000 165889 08/13/10		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Freon 12	ND	1.0
tert-Butyl Alcohol (TBA)	ND	10
Chloromethane	ND	1.0
	ND	0.5
Isopropyl Ether (DIPE) Vinyl Chloride	ND ND	0.5
Bromomethane	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Chloroethane	ND	1.0
Methyl tert-Amyl Ether (TAME)	ND	0.5
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND ND	1.0
	ND ND	0.5
Isopropylbenzene	ND ND	0.5
1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane	ND ND	0.5
	UU	0.5

ND= Not Detected RL= Reporting Limit Page 1 of 2



Gasoline by GC/MS					
Lab #: Client: Project#:	221764 The Source Group, Inc. 04-PFT-003	Location: Prep: Analysis:	Paco Pumps EPA 5030B EPA 8260B		
Type: Lab ID: Matrix: Units:	BLANK QC555973 Water ug/L	Diln Fac: Batch#: Analyzed:	1.000 165889 08/13/10		

Analyte	Rea	sult RL
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5
Surrogate		imits
Dibromofluoromethane		0-122
1,2-Dichloroethane-d4		1-140
Toluene-d8		0-120
Bromofluorobenzene	106 80	0-121

ND= Not Detected RL= Reporting Limit Page 2 of 2

8.0



Gasoline by GC/MS					
Lab #:	221764	Location:	Paco Pumps		
Client:	The Source Group, Inc.	Prep:	EPA 5030B		
Project#:	04-PFT-003	Analysis:	EPA 8260B		
Matrix:	Water	Batch#:	165889		
Units:	ug/L	Analyzed:	08/13/10		
Diln Fac:	1.000				

Type:

BS

Lab ID: QC555974

Analyte	Spiked	Result	%REC	Limits	
Gasoline C7-C12	1,000	1,035	103	70-130	

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-122
1,2-Dichloroethane-d4	105	71-140
Toluene-d8	105	80-120
Bromofluorobenzene	101	80-121

Type: BSD			Lab ID:	QC!	555975			
Analyte		Spiked		Result	%REC	Limits	RPD	Lim
Gasoline C7-C12		1,000		999.0	100	70-130	3	20
Surrogate	%REC	Limits						
Dibromofluoromethane	99	80-122						
1,2-Dichloroethane-d4	103	71-140						
Toluene-d8	106	80-120						
Bromofluorobenzene	98	80-121						



Gasoline by GC/MS					
Lab #:	221764	Location:	Paco Pumps		
Client:	The Source Group, Inc.	Prep:	EPA 5030B		
Project#:	04-PFT-003	Analysis:	EPA 8260B		
Type:	LCS	Diln Fac:	1.000		
Lab ID:	QC556043	Batch#:	165889		
Matrix:	Water	Analyzed:	08/13/10		
Units:	ug/L				

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	115.3	92	45-152
Isopropyl Ether (DIPE)	25.00	24.14	97	56-134
Ethyl tert-Butyl Ether (ETBE)	25.00	23.02	92	60-124
Methyl tert-Amyl Ether (TAME)	25.00	22.27	89	66-120
1,1-Dichloroethene	25.00	27.21	109	72-138
Benzene	25.00	25.04	100	80-122
Trichloroethene	25.00	22.98	92	80-122
Toluene	25.00	26.51	106	80-120
Chlorobenzene	25.00	25.90	104	80-120

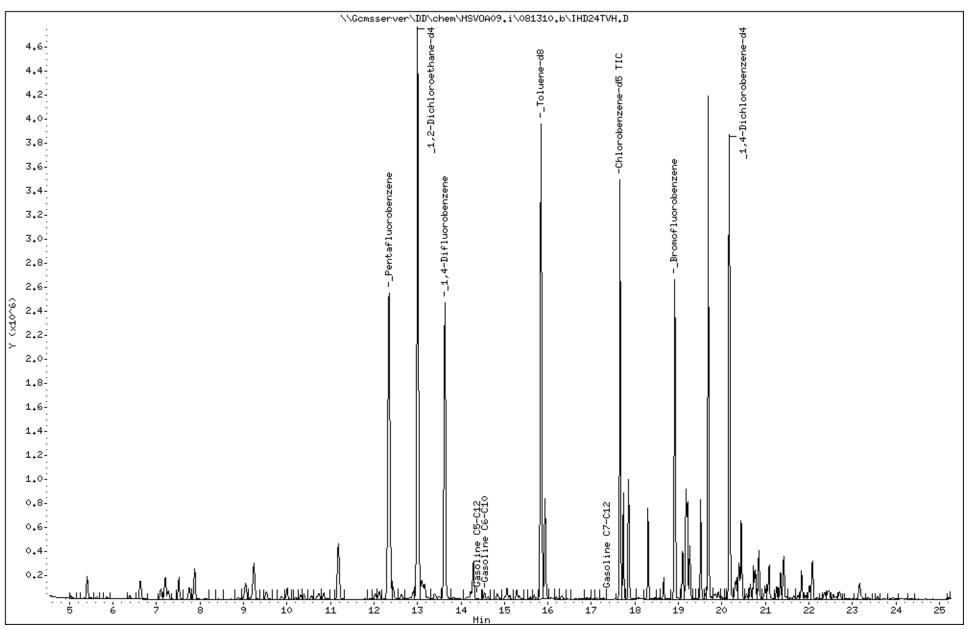
Surrogate	%REC	Limits	
Dibromofluoromethane	96	80-122	
1,2-Dichloroethane-d4	91	71-140	
Toluene-d8	102	80-120	
Bromofluorobenzene	99	80-121	

Data File: \\Gcmsserver\DD\chem\MSVOA09.i\081310.b\IHD24TVH.D
Date : 13-AUG-2010 21:11
Client ID: DYNA P&T
Sample Info: \$,221764-001,

Instrument: MSVOA09.i

Operator: VOC

Column diameter: 2.00



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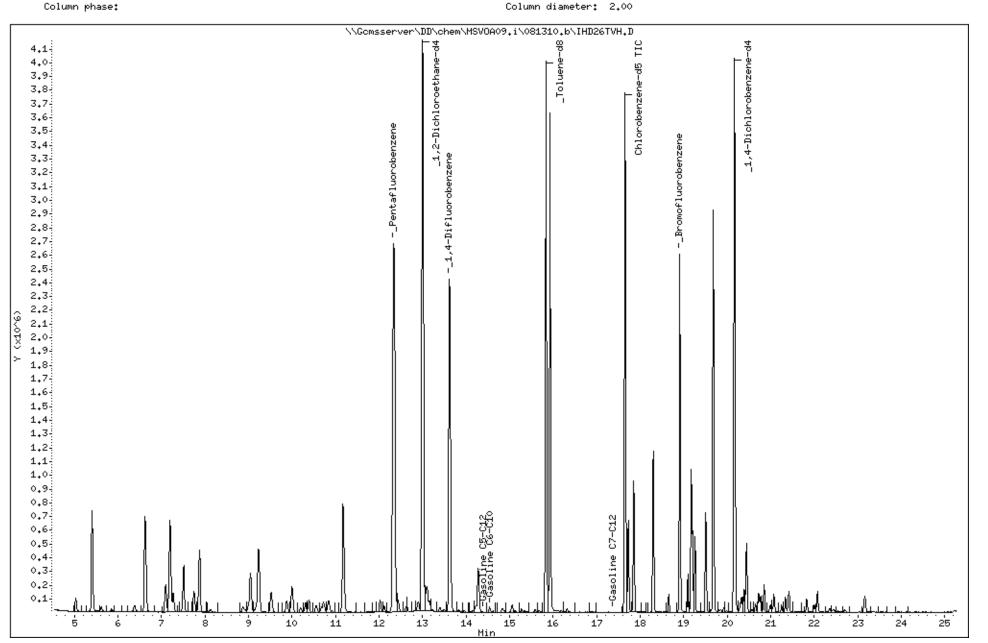
Column phase:

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Instrument: MSVOA09.i

Operator: VOC

Column diameter: 2.00



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Data File: \\Comsserver\DD\chem\MSV0A09.i\081310.b\IHD23.D Date : 13-AUG-2010 20:36 Client ID: DYNA P&T Sample Info: S,221764-003, Purge Volume: 5.0 Column phase: RTx Volatiles

Instrument: MSVOA09.i

Operator: VOC

Column diameter: 0.25

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4.6-			
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4.2-			
4.0-			
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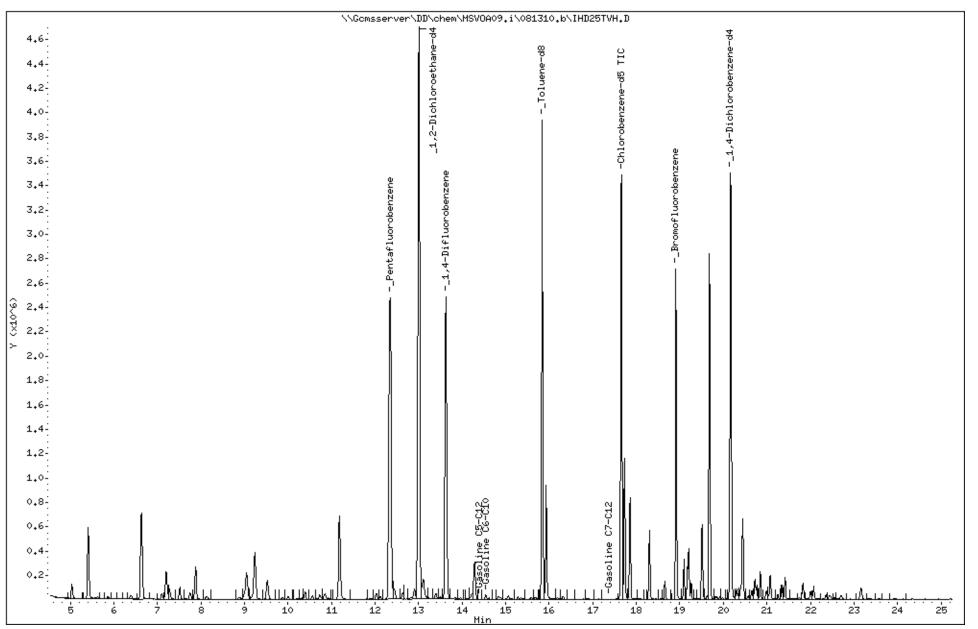
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Date : 13-AUG-2010 21:45
Client ID: DYNA P&T
Sample Info: \$,221764-004,

Column phase:

Instrument: MSVOA09.i

Operator: VOC

Column diameter: 2.00



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Date : 13-AUG-2010 10:17 Client ID: DYNA P&T Instrument: MSVOA09.i Sample Info: CCV/BS,QC555794,165889,S14540, Operator: VOC Column phase: Column diameter: 2.00 \\Gcmsserver\DD\chem\MSVOA09.i\081310.b\IHD05TVH.D 6.2-6.0-5,8-5.6-5.4-5.2-5.0-4.8-4.6-4.4-<u>4</u> TIC 4.2-4-Dichlorobenzene ទ 4.0-3,8-Chlorobenze 3.6-3,4-Bromofluorobenzene (×10^6) 3.2-Pentafluorobenzene 3.0-2-Dichloroethane-d4 -Difluorob∈ ⊳ 2,8-2,6-2.4-2,2-2.0-1,8-1.6-1.4-1,2soline C5-C12 asoline C6-C10 C7-C12 1.0-0.8-Gasoline 0.6-0.4-0,2-10°h <u>վետիկինը, թար</u> ահերհ . 17 18 20 6 13 14 19 25 5 ÷ 11 12 15 16 22 23 έ ģ 10 21 24 Min

Page 2

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Data File: \\Gcmsserver\DD\chem\MSVOA09.i\081310.b\IHD05TVH.D

APPENDIX E

WELL DEVELOPMENT FORMS

C			171.00	u.		DAILY				151		2 9	() (a)
WDC	-		1. 13101	Y	LOCATIO	DN: 241		-			DATE	e 11	10
ROM	TO	TOTAL	1 1		19-6	1250	DESC	RIPTION	OF ACTIVITIES				1000
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April and	ints.	Bucket/Feet	12	Talamon ⁴ ruos	10000 MH	-			DECODD.	ar its array	A COLORING	
entority Pre	-d-t	Sack/Forr		Foreid	Job tera	-		-	HECOND	DE INGURY	ACCIDENT/	IEAR M
landon de 121		Sack/Feet		Furkhel	JAD Hay	-		-	-			-
netas área		Sack/Faci	1 T	Companies	JSD 114	-			-	_		_
Ser-0 Grout		TarthFinst		Gritgianus	250.455				-			27
Exhanced Gr	gu ^a	Sack/Foor	1	Sheer.	-190 -1-9					DAILY SA	FETY TOPIC	
adultation.	-	Each		Mull Party	250.414					STRIE / STR	LIT IONO	-
Invested Car		Fueld		Must Parage	PhD 14-9				-			31
Sec Cap		Each		Calmitter	250 the							
Expansion Pr	Nag.	Each		Wellertäes.	100-415							
	MORUMAN	£atr.	1.00	Generossener	Pully rites.			Section 1				
	Plan Cover	Ten			BAFET	TY & MECH	ANICAL INSPE	CTION	DAYS V	VO LOST T	TIME IN 2009	-
inger-sait		Sada			Circle ne	niscas un Nexus	of Hepair or Ana	lacament		DRILLING	STATISTICS	
Concrete		Sada		distant 1	tes Gaug	and Lagree	Skrigt Cables	Games Imme	Hore #	e-1800	Tu	Total
Report Set Ser	-	Sare		Piel Ad No.	Fet Device	Series inc	man Selvy us	hate Conversions where		1000		-
-454		E ₁₀₇ +		Feeting G	antis Dat	a lay Alarma	Saley Shitting	us.				
V_ Ukovisi		Pas		Parter Values	Holiado	10345 65	der Process Milut I	Polas Ar South				
IVAR SUB	-	Eath		Ballet - D	qi Por e	menotes G	nar Torqs. Dop	Lotar Statilions	-	-		
Sample Liner	-	fact			1.200.0	1000		s Salero Mersuo		-		
Cine Brives		6.00*						unal Fue fremater true	-	1		_
		Earth			ne: Sampl	e riammer	and the second second	Tucking Bk Sube	1000	COM	MENTS	-
		34/41		Equip. 4			Action Needer	1	-			-
	_								1			
Unimis Visitueen									-			
									-			1
									-			
Vstueen			Behadula	Dismeter	Fault	Mire	III O		Ļ		4	
Casing		ype	Schedula	Diameter	Feet	Mise.		-		Pin 1	e.s	
Vstueen	PVC MS		Schedula h 10 40 at	Diameter	Feet	Miso. Per Dam	Unit Que Pres Day	D. D. BY AND ADD		-	6. s	

e

DAILY TOUR REPORT

WOO JOB # 1 20-141 LOCATION: Delta 1 BIG #: 1/2-1 DATE: 1/1/1-

		WOC JUS	-	1. 1. 1. 1. 2	COUNTR			-				12 4 11	
FROM	TO	TOTAL					DESCRI	TION	OF ACTIVITIES				100
34	700	-	N.6 11									_	
7,4	10	51	De	E E?	E	i to 1	p.	1.6	11 2				
1.1	11 6		Jane	- q r .	Sec. 1	1.77	the free	-					
-				4				G					
-				_				_					
-		-				1.1.1				-	2		
				1 24		+6 + 1	. 1			_			_
								-					-
						_		-					
				-	_			- 22			_		
								_					
14 A T	MA	TERIALS		-	EQU	IPMENT 8	ERVICE R	ECOR	D	Ð	PLANATIO	N OF STAND	BY
a provide the same of the		nd by WDC Its	ploration & Wells		and the second second second	and the second se	et At The Boat	_					-
ite		Unit	Quantity	Description		Equip 1	Last Ser	nce	Hours/Miles	<u> </u>			_
Stave Parx 5		Back/Foot	1	Came Ingra				_		-			
I spropringer (Sar		2304,4304	1	Date Engry	2901-012	-		_		-			
iertonne Pal	Hels.	Bucket/Feel	/	Filg Tentier	-(05/05. sally			-					
when		Stick/Food	1	Happelet 7 (selfs	NORD Mil.			_		RECORD	OF INJURY	ACCIDENTA	SEAR M
Jemanite Pow		Sackit bol	7	Ponet	250 Hes	-		-		-			
Rentantia Che /oksky Grout		SaceFoot		Family	250 Hes	-							
Savin Group		SackFam VadiFun	<i>1</i> <i>†</i>	Compressor	250 Hits	-		_			-		
retanced Gr	Dud.	Sack/T mi	1	Dhakei	250115			_		-	DARVEA	FETY TOPIC	12.22
Canadizant		Each		Main Purry	2301256	-					PONIC I SH	LIT IOPIC	_
Throughout Con		Eacn	1	Must Parm	Più Pra		-			-	- 12.12		
Silp Cag		Earth		Generation	290 mg			1		-			
Expension Pa	uų:	Each		Westantian	1,00 1914					-			
	Monument	tian	S	Steamsteamer	*30 Hes.				and the state				
+	Flush Gover	East		1	SAFET	TY & MECH	ANICAL INS	PECTI	ON	DAYS	VO LOST T	IME IN 2009	
المراجعة		lecr.			Churchel Inte	intraj in Manual	t of Repeir or I	Replace	reant		DRILLING	STATISTICS	2.12
Lissenatie		Tests		Widow	ma mang	as Lights	Barga Cat	nii S	arnos Branes	Hole #	From	15	Fami
Paper See Cry	9,1	Sada	2	Are NO.	fal Owner	Leiry ris	irrana Latery	LIGHT	Operating Labels			1.1.1.1.1.1	_
.pc*		East		144-4-10	eurte Bec	n lar Aventes	Balany Shuke				-		
PvC Georgy)	Par.		Rallel Volume	49.000.00	three Mit	ale himen W		no. Na horinge		-		
Parts South		Fath		1	D			1.5	tar Dokflewin		-		
Sample Lines		Ee/F			0.101		ners MISUE e			-	+		
Core Romen Drilleps		Last	5	1					Fuel Traider Puese		COM	MENTS	
Viagradu		Ear-		-	ser starrige	a Henrich	Mino Coumpetier	-	ing sit bucs		COM	MENTS	-
and and				Equip 7	-	_	Action Nee	ded		+			_
							_			-			
-										-		_	
				1						+ -			
							11-10						100
Casing	T	VDe	Schedule	Dismeter	End	ALC: NOT THE OWNER OF	1 Unit 1 -	A DECKS	A LIENT REP.		and the second		
Casing		SS HOP	Schedule	Diameter	Feet	Misc.		Juan.	CLIENT ADB #		1846-		-
Casing Net-	PVC MS	SS HOPS		Diameter	Feel	Per Den	Print Day Print Day	Juan.	CUENT ADB #		Constantion of the second		_



WELL OR LOCATION E. I

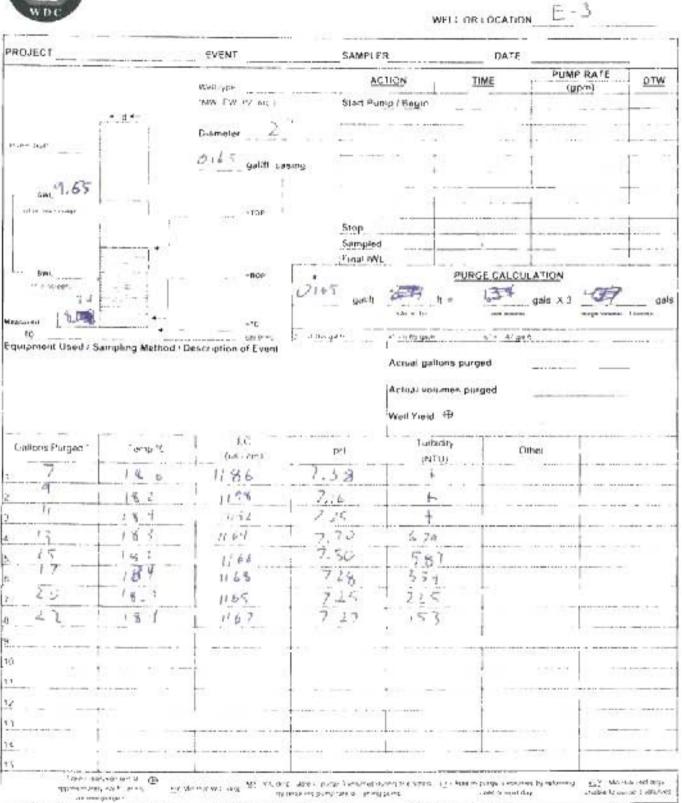
PROJECT		EVENT		SAMPLER	2	C	DATE _	6-14	-10	-
				ACI		TIME			PRATE	WTO
		Well type						(g	pm)	=
	→ d •-	(MW, EW, PZ, etc.)		Start Pum	p / Begin					
		Diameter								
Intake depth					Carlos Carlos					
		gal/ft. ca	sing							
- SWL 0,40										
(if above screen)		=TOP							_	
(i above screen)		10P		Stop						
				Sampled						
				Final IWL						
SWL		=BOP				PURGE C		24		
(if in screen)			165	gal/ft.*	<u>5:6</u> 29 ft	= 1.	43 0	jals. X 3		gals
Measured 145.06	■	=TD			SWL to TD	on	e volume		purge volume -	3 casings
TD	•	(as built)	2" = 0.165 ga	si/ft	4" = 0.65 gal/ft	6" =	1.47 gal/ft.			
Equipment Used / S		escription of Event:			Actual gallo	ne nurand				
213-223 5~	, ge				Actual yand	as purgeo	-			2
					Actual volu	mes purged	2-			-
					Well Yield	⊕	_			
		EC	-	15	Turbic	lity				
Gallons Purged *	Temp °C	(us / cm)		pН	(NTL		Oth	er		
1. 1	24.5	1637	71	2	+		Ball		257	a.
2. 5-5	20.8	1108	7.0	9	÷					
3. 7	20-2	1311	7.0	-	+					
115	19.3	1160	7.0		4					
10	19.1	1227	7.0	-	+					
5. 10 11 r	19.0	1149			+					
6. 11.5	19.0	1106	7.0						251	
7. ()	<u> </u>	and the second s		2	362				4.20	
8. 14.5	18.9	1136	1.0	2	546			00		
9. 16	195.9	1073	7.0	>(904					
10. 12-5	19.9	1057	7.1		4372	s				
11. 19	18.8	1059	7. 1	0	809					
12. 20.5	14.6	1065	7.0	2	678					
13. 22	19.9	1025	20		419					
14. 23-5	18-3	1039	7.0	>	455					
15. 25	14.9	1035	201, 19(1) 0	01	373				3:05	
*Take mea approximate		nimal W.L. drop MY - WL dro	pp - able to purg reducing pump	ge 3 volumes du rate or cycling p	ring one sitting	<u>Y</u> - Able to purge	3 volumes or next day	by returning	t <u>VLY</u> - Minim	ial recharge - ige 3 volumes



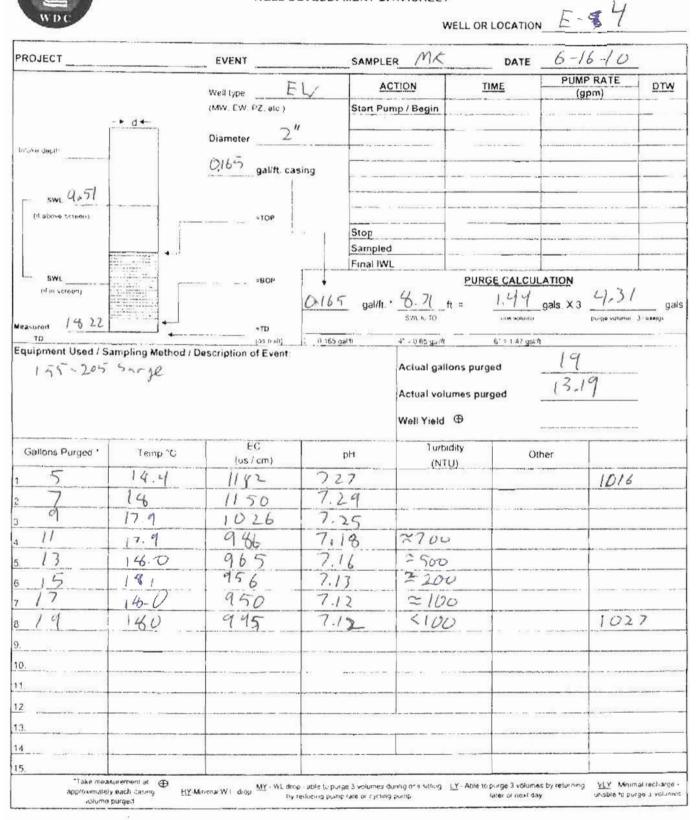
WELL OR LOCATION E- Z

PROJECT	EVENT		SAMPLER	ł	DA	TE 6 -13	-10	
	Well type (MW, EW, PZ.	etc.)	AC1 Start Pum	rION p / Begin	TIME		P RATE Ipm)	DTW
Inlake depth	Diameter							
- SWL 9,60	ga	II/ft. casing						
(if above screen)	=Ţ.	OP	Stop Sampled					
(if in screen)	=B	OP T	Final IWL			LCULATION		
Measured 18.30	=T	D buil() 2* = 0.165	gal/ft. •	29 SWL lo TD 4" = 0.65 gal/ft	one	gals. X 3	purge volume -	gals. 3 caskings
Equipment Used / Sampling Method /	Description of f			Actual gal	lons purged umes purged			
Gallons Purged • Temp °C	EC (us / cr	n)	рН	Turb (NT		Other		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	179		96 03 02	75				
5.12 13.4% 6.14 18.3%	146		99	177	6			
7.16 18.58	n 132	a 6.	99	42.	69			
9.								
11.					-			an shirebar s
12. 13.								
14								
15. 'Take measurement at approximately each casing volume purged.	Minimal W L drop M	(- WL drop - able to p by reducing pur	urge 3 volumes du np rate or cycling p	nng one sitting pump	LY - Able to purge 3 fater or	volumes by returning next day.	y <u>VLY</u> - Minim unable to pur	nal recharge - Irge 3 volumes.











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WDC EXPLORATION WELLS WELL DEVELOPMENT DATASHEET

WELL OR LOCATION E - 5

6-15-10 PROJECT EVENT DATE SAMPLER PUMP RATE ACTION TIME DIW WAIL 1ype (gpm) DAW I'W PY HC -Start Pump / Begin -+ d+-Diameter Inclusion stations gal/ft casing 5m 7.60 1.200-0 12788FL ---01 Stop Sampled Final IWL PURGE CALCULATION -80P (die geragen) Galt 3.3 _____29 tt = nal@t.* gais 5000, p. 183 page cares. Transpo 1831 Measurert -10. . F ... If sails juin tanilij P + H 18h gall 2 :0.65 Lalin d1 Equipment Used / Sampling Method / Description of Event Actual gallons purged Actual volumes purged Well vield B ŦC. Furthering, Gallore Purged * Temp 'C Other pri fore " same (NTH) 2 5 12 14 2 18. 6 1 0 S 3 2 V Z 0 ł, ١ 3 4 ٦ 4 ŝ 3 2 9 63 ŝ, 4 14 5 2 2 U é ap. 15 14 SJ. 10 6 2 .30 6 65 10 . 4.13 ŝ 35 20 9 -1 8 З 63 ġ, 0 20 30 2 1ċ £. 6 95 1.3 5 58 11 2.14 ï 10 14 12 11 14 15 алын талар талар талар , унан талар та ng Minister M. 1918. 🗠 185. Bits aller is suige if utures during the stifting 🔔 Aller is using it values by recurring . 1917. Minister in harge properties on promper 5, sold that THE REPORT OF THE SECOND SHOPS 1001 11 1011 1011 -----



WDC EXPLORATION WELLS WELL DEVELOPMENT DATA SHEET

2

WELL OR LOCATION + - 6

PROJECT		EVENT		SAMPLER	2			-15-10	
		Well type	8	ACT		TIME		PUMP RATE (gpm)	DTW
		(MW, EW, PZ, etc.)		Start Pum	p / Begin				
	→ d ←	Biologia							
Intake depth		Diameter		1					
11 1012012012007		gal/ft. cas	ing						
- SWL 4.50				-					
(if above screen)		=TOP		-					
The poore screenly		=10P		Stop					
	•			Sampled					
				Final IWL					
(if in screen)		=BOP	+				ALCULAT		
				gal/ft.*	<u>29</u> ff		43 ga	s. X 3	gals.
Measured 14.17	••••••••••••••••••••••••••••••••••••••	=1D			SWL to TD	Or	e volume	purge volume -	3 casings
TD	ampling Method / De	(as built)	2" = 0 165	cal/fi	4* = 0 65 <u>cal/ft</u>	6* =	1 47 gal/ft		
933- 49 3	amping method / De	escription of Event.			Actual galle	ons purged			
()) 473					100	5 153 			
					Actual volu	mes purged			15
					Well Yield	\oplus	-		5
Gallons Purged *	Temp °C	EC (us / cm)		рН	Turbio (NTI		Other		
1.3.5	18.64	1438	-, -	24		4	Bailes		
2. 5	13.28	1432	7.1	21					
3.	18.14	1132	٦.	03					
4. 9	13.3A	1115	7	15					
5.	13.40	1099		a S	27	O	8 - D		
6. 1 3	15.2%	1087	1	12	92	``			
7. 15	18.1.2	1681 -	7.	10	16	2			
8.			520						
9.									
10.	tor.								
			-				1.1.1		
12.									
13.				-					
14.				-					
15.		·			· ·····				land -
*Take mea approximate	Issurement at ⊕ Iveach casing <u>HY</u> -Mir spurged	himał W.L. drop MY - WL drop by re	- able to pu educing pum	nge 3 volumes du Ip rate or cycling s	ing one sitting sump	LY - Able to purge	a 3 volumes by or next day	returning <u>YLY</u> - Minim unable to pur	nal racharge - rge 3 volumes.



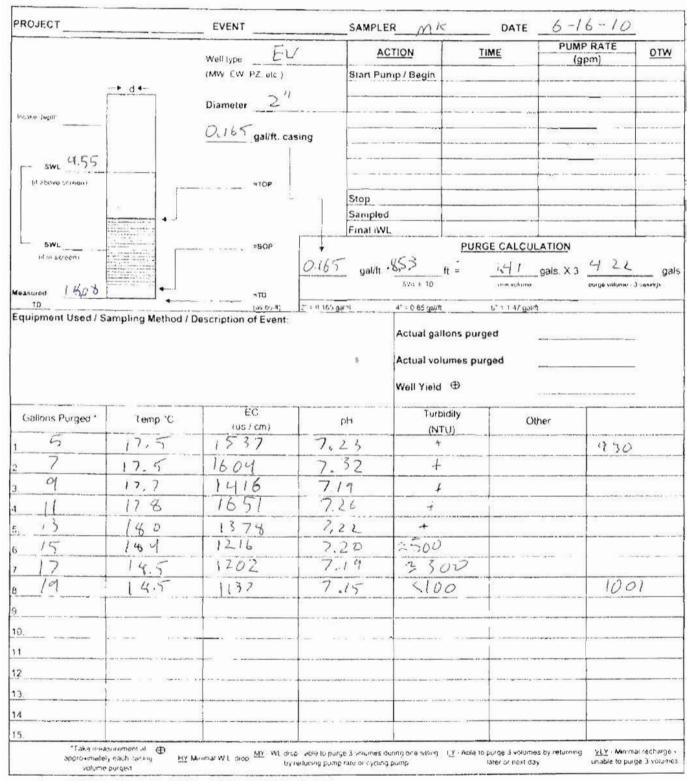
WELL OR LOCATION E-7

PROJECT	and the state of t	EVENT	SAMP	LER MS	DATE	6-16	
		Well lyon EL	/	ACTION	TIME	PUMP RATE	DTW
		Well type EU (MW, EW, PZ atc.)		Pump / Begin		(gpm)	
3	+ d	2					
have dept		Diameter 2					
		0-165 galift. ca	ising				
- SWL 4165							
[if above screen)		«TOP					
			Stop	·····			
	•		Samp				
SWL		=80P		strange of a bulk of strange and a second strange as a second strange	URGE CALCUL	ATION	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
(if in screen)			Q165 0al	H . 254 H =	1.41	gals. X 3 4.23) gal
Measurod 1419				57/1 K. TO	ane wohine	Smoo volume	
<u></u>	• •	sto (as ball)	2" = 0 165 galm	J" = 0.65 gal/k	6 - 1 47 gald		
Equipment Used / S	ampling Method /	Description of Event		A sheet as the set		21	
				Actual gailons	purgeo	14.89	
				Actual volumes	purged		
				Well Yield 🕀			
Gallons Purged *	Temp °C	EC (us / cm)	pH	Turbidity	Or	her	
1 3	17.8	2070	7.25	(NTU) <i>t</i> -			
5	17.8	2074	7.36	4			
7	17.9		7.27				
1 9	17.9	2018	7.12				
5. 11	18.0	1347	7.04				
6 13	140	1616	7.19	<u> </u>			
7. 15	16.1	1364	7.15	Ment my	CSF S	100	nursharin thu 🖛
8 17	143	11450	7,10	×400			and a second second contract
10	14.3	1165	7.10	11		mentes and a second second	
9. 71 10. 21	14 3	1130	7.07	<100			
11							
12							
13.	and the second	· · · · · · · · · · · · · · · · · · ·					
14							*
			•				
15 Take mea	isuremential 🕀 Iy each caseg 🛛 🖞	Minimal W.L. drop MY With dr	op lable to purge 3 volum y reducing pump rate or cy	es during one witting LY A	bie to purge 3 volume later or next da	s by relurning VIY . Min	imal recharge wige 3 volume



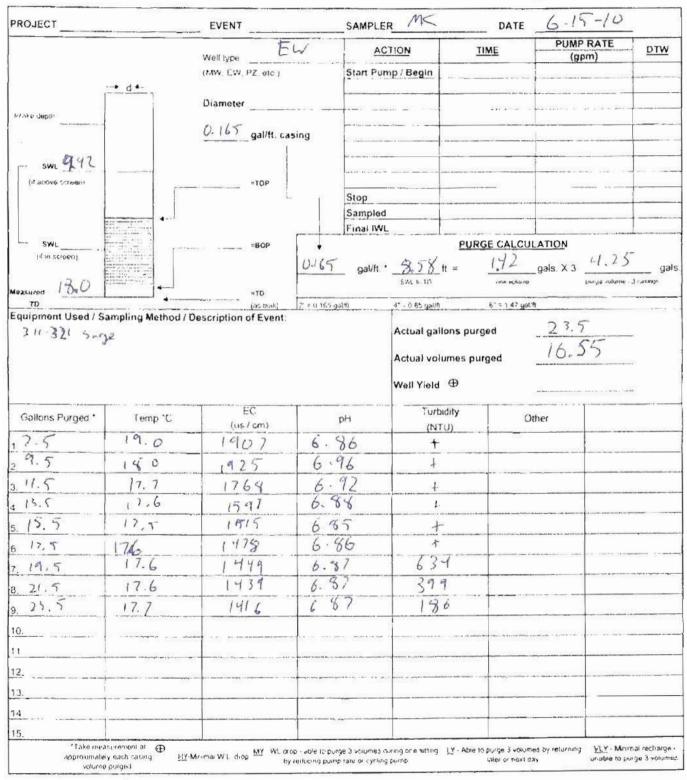
WELL OR LOCATION

E-8





WELL OR LOCATION E-9





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3

ROJECT		EVENT		SAMPLER	MK	DATE	6-1"	1-10	
		Wall type		ACT	ION	TIME		P RATE	DTW
		Well type (MW, EW, PZ, etc.))	Start Pum	p / Begin		(9	p,	
	→ d ←	~							
ntake depth	20	Diameter							
		0.165 gal/ft.	casing						
- swl 9.58			6000						
(il above screen)		=TOP							
1			L	Stop				-	
				Sampled	_				
				Final IWL					
(if in screen)		=BOP	+			URGE CALCU			
			.165	gal/ft. •	<u> 8.52 -289</u> ft. =	1.41	gals. X 3	-	gal
easured 18-10		=1D			SWL to TD	one volume		purge volume - 3	casings
TD	ampling Method / [(as built)		181/1	4" = 0.65 gal/ft	6" = 1 47 gal/	1		
353.343	amping method / I	Jescription of Ever	ης.		Actual gallons	purged			
					Actual volumes	purged			
					Well Yield 🕀	•			
Gallons Purged *	Temp °C	EC (us / cm)	in the second	рН	Turbidity	0	ther		
3	24.0	1997	6.9	5	(NTU) +-		_	3:55	
4.5	20-9	2186	6.0	19	+				
6	19.7	1972	6	97	+				
7-5	19.4	1961	6	ŶĨ	+				
9	19.4	1926	6.0	19	4				
10.5	19.9	1567	6.0	- 7	t				
12	19.5	1367		13	817			409	
13.5	19.5	1351	6.4	15	755				
. '5	19.5	1302	6.0	16	316				
0.16.5	19.6	1269	6.	15	63				
1. 19	125	1253	6.	15	335				-
10 5	19.6	1249	6.4		197				
2 1 1	19.6	1236	6.	1/	57				k atomatica
01									11 -
3 21 4 225	19.5	1230	6.2	1	22				42



WELL OR LOCATION E-11

PROJECT		EVENT	SAMPLE	<u>r M<</u>	DATE6~/	4-10
		VAL-11 Auro	AC	TION		MP RATE DTV
		Well type (MW, EW, PZ, etc.)	Start Pur	np / Begin		(gpm)
	→ d ←					
		Diameter 2"				
Intake depth		0.165 gal/ft. ca				
		gaint. ca	sing			
- SWL 9.09						
(if above screen)		=TOP				
		L	Stop			
	──		Sampled Final IWL			
SWL		=80P	•		GE CALCULATION	
(if in screen)			165 gal/ft.	45 15 men =	1.48 gals. X	3 g
Measured 14-1)4			guite	SWL IO TD	one volume	purge volume - 3 casings
Measured <u>4-17</u>	•	=TD (as built)	2" = 0 165 gat/ft	4" = 0.65 gal/fl	6" = 1.47 gal/ft.	
	ampling Method /	Description of Event:				
10:20-				Actual gallons pur	ged	
				Actual volumes pu	irged	_
				Well Yield 🕀		
Gallons Purged *	Temp °C	EC	рH	Turbidity	Other	
	14	(us / cm) (280	713	(NTU) 	Brike	11:00
. 4.5	18.1	1548	~101	4	DAKE	
2. /		1526	17	7		11:10
3. 4. 7	16.9		715	T		
4. 10.0	18.6	14.37	7,15	+		
5. 11.5	14.7	1345	7.11	t		
6. ' 3. Ú	146.6	1229	7.04	+		
7.14.5	14.6	1211	7.06	÷		
_{8.} 16	18.0	1135	7.05	739		[[:[9
9. 17.5	20.5	1270	6-99	4		1137
10. (°]	19.3	(033	6.96	F		
	19.0	10 57	6.96	804		
11. 22.5			6-46	502		
11. 205 12. 22	19-0	1047	01.			MATCHINE &
12. 22	19.0	10 21	7.0.0	290		1148
12. 22				240		1148



WELL OR LOCATION 5-12

PROJECT				SAMPLER	M<	DATE	6-14-10)
		Well type		ACTI	ON	TIME	PUMP RA (gpm)	TE DTW
		(MW, EW, PZ, etc.)		Start Pump	/ Begin			
2	-▶ d ←	0	1 1					
Infake depth		Diameter 2						
		gal/ft.	casing					
- SWL 43.76								
(if above screen)		=TOP						
				Stop				
				Sampled				
SWL		=BOP		Final IWL		PURGE CALCU		
(if in screen)			0165		a 2 700 0		gals. X 3	
17 110			010)	gal/π. • _	9. 2.229 ft. =	one volume		gals e volume - 3 casings
Measured <u>17 19</u> TD	-	=TD (as built)	2" = 0,165 g		" = 0.65 gal/ft	6" = 1 47 gal	<i>A</i>	
Equipment Used / S					5 04 M04		u	
12.47 -1257	Shirge			4	Actual gallon:	s purged		
				4	Actual volum	es purged		
				v	Well Yield ∉	•	2	<u>1</u>
Gallons Purged *	Temp °C	EC (us / cm)		рН	Turbidity	/ o	ther	(I)
. 1	22,1	Error	7	27	(NTU) +	Brile	21 1	10
2. 4.5	20.2	1295	7.		4		0	
3. 6	11.1	1237	7.1		+			
4. 7.5	19.9	1210	7,1	4	ł			
5 9	19.7	1132	7.0		+			
6. 10.5	19.6	1179	7.	11	Ŧ			
7. 12	19.5	1125	7.		t			
8. 13-5	19.6	1150	7.	15	+			
9. 15	14.7	1177	7	.14	761			
10. 16. 5	19.7	1145		.13	518			
11. 18	1 9.7	1218		08	312			
12. 19.5	19.7	1150	7.	09	303			
13. 21	19.7	1188		.07	247			1.35
14.								
15.								
approximate	asurement at ⊕ ly each casing <u>HY</u> ·M⊮ ≥ purged	nimal W.L. drop MY - WL		rge 3 volumes durin p rate or cycling pu		Able to purge 3 volum later or next d		LY - Minimal recharge - able to purge 3 volumes





ROJECT		EVENT	SAMP	LER	DAT	те <u>614</u> -	10	
		Well type MV	\sim .	ACTION	TIME		P RATE	DTW
		(MW, EW. PZ, etc.)		ump / Begin		(9)	>	
	→ d ←			vt	500			
		Diameter 4"			i			
itake depth		0.65 gal/ft.ca	sing					
- SWL 7.42								
		=TOP					-	
(if above screen)		=10P	Stop					
			Sampl	ed				
			Final I	WL				
(if in screen)		=80P		121	PURGE CAL			
(ii iit screen)		32	OLT gal	n * <u>1007</u> 29ft	= 6.9	gals X 3	20.8	∠gal
asured 1404	-	=TD		SWL to TD	one vol	ume	purge volume - 3	casings
סז	· · · · · · · · · · · · · · · · · · ·	(as built)	2" = 0 165 gaVft.	4" = 0 65 gal/ft	6" = 1 47	gal/ft		
15 125 Saye	ampling Method / I	Description of Event:		Actual gallor	is ourged	7	0	
	1. 11				(2) TD			
Low	rield			Actual volum	les purged	10.	08	
	_			rocae roca				
		0		Well Yield	_	1		
Gallons Purged *	Temp °C	EC	рН	Well Yield	Ð		1	
Gallons Purged *	Temp °C	(us/ cm)	рн	Well Yield G Turbidit (NTU)	Ð	Other	(1:7)	
3	14.6	(us/cm) 1325	7.64	Well Yield G Turbidit (NTU)	Ð		4:37	
9 16	14.6	(us/cm) 1325 1662	7.64	Well Yield G Turbidit (NTU) +	Ð	Other	9.40	
Gallons Purged • 3 16 20	14.6	(us/cm) 1325 1662 (722	7.64 7.48 7.36	Well Yield G Turbidit (NTU) + + +	Þ y ß		9:40	۶
9 16 20 25	14.6 163 183 19.1	(us/cm) 1325 1662 (722 985	7.64 7.48 7.34 7.16	Well Yield G Turbidit (NTU) + + +	P y ß	Other	9.40	۶
9 16 20 25 30	14.6 1463 1463	(us/cm) 1325 1662 (722	7.64 7.48 7.36	Well Yield (NTU) + - - - - - - - - - - - - -	B B B B C C C C C C C C C C C C C C C C	Other	9:40	۶
9 16 20 25 30 35	14.6 163 183 19.1	(us/cm) 1325 1662 (722 985	7.64 7.48 7.34 7.16	Well Yield $\stackrel{(NTU)}{+}$	B B B B C C S	Other	9.40 9.45 507	۶
9 16 20 25 30 35	14.6 163 183 19.1 187 147	(us) cm) 1325 1662 1722 985 1034 1034 1098	7.64 7.48 7.34 7.16 7.22	Well Yield $\stackrel{\text{(NTU)}}{+}$ $\frac{+}{7}$ $\frac{-}{7$	B B B C C S C S	Other	9:40 9:45 907 511 515	۶
9 16 20 25 30 35 40	14.6 163 183 183 187 187 148 148	(us/cm) 1325 1662 1722 985 1034 1034 1098 1028	7.64 7.48 7.34 7.16 7.22 7.22 7.22	Well Yield $\stackrel{\text{(NTU)}}{+}$ $\stackrel{+}{-}$ $\stackrel{+}{-}$ $\stackrel{-}{-$	B B B C C S C S	Other	9:40 9:45 707 511 515 519	
9 16 20 25 30 35 40 45	14.6 163 183 19.3 19.1 187 14.7 14.4 14.8 17.5	(us/cm) 1325 1662 1722 985 1034 1034 1028 355	7.64 7.48 7.36 7.16 7.22 7.22 7.22 7.21 7.21	Well Yield $\stackrel{\text{(NTU)}}{+}$ $\frac{+}{7}$ $\frac{-}{7$	B B B C C S C S	Other 1. bet . 09 OTH 25 OTH 	9:40 9:45 907 511 515	
9 16 20 25 30 35 40 40 45 50	14.6 163 183 183 19.1 187 14.8 148 148 17.5 14.0	(us/cm) 1325 1662 (722 985 1037 1037 1098 1028 835 956	7.64 7.48 7.38 7.16 7.22 7.22 7.22 7.21 7.21 7.21 7.21	Well Yield (NTU) Turbidit (NTU) + - - - - - - - - - - - - -	B B 3 75 P	Other 1. bet . 09 OTH 25 OTH 	9:40 9:45 707 511 515 519	
$ \begin{array}{r} 9 \\ \hline 16 \\ \hline 20 \\ \hline 25 \\ \hline 30 \\ \hline 35 \\ \hline 40 \\ \hline 45 \\ \hline 50 \\ \hline 50 \\ \hline 55 \\ \hline 50 $	14.6 163 183 183 187 187 187 188 188 17.5 18.8 17.5 18.0 18.4	(us/cm) 1325 1662 1722 985 1034 1034 1028 355 956 912	7.64 7.48 7.36 7.16 7.22 7.22 7.22 7.21 7.21	Well Yield (NTU) Turbidit (NTU) T	B B B 15 D	Other 1. bet . 09 OTH 25 OTH 	9:40 9:45 707 511 515 519	
$ \begin{array}{r} 9 \\ 16 \\ 20 \\ 25 \\ 30 \\ 35 \\ 40 \\ 45 \\ 50 \\ 40 \\ 45 \\ 50 \\ 1. 60 \\ 1- 60 \\ $	14.6 14.5 14.3 14.3 14.3 14.7 14.4 14.8 17.5 14.2 14.2 14.4 14.8 17.5 14.2 14.2 14.4 14.4 14.5	(us) cm) 1325 1662 1722 985 1034 1034 1028 355 956 956 912 435	7.64 7.48 7.36 7.16 7.22 7.22 7.22 7.21 7.21 7.21 7.21 7.21	Well Yield (NTU) Turbidit (NTU) + i 325 503 394 589 90 er er er er er est 6	B B B 15 D	Other 1. b.1 . 09 prw 23 prw 	9:40 9:45 707 511 515 519	
$ \begin{array}{r} 9 \\ \hline 16 \\ \hline 20 \\ \hline 25 \\ \hline 30 \\ \hline 35 \\ \hline 40 \\ \hline 45 \\ \hline 50 $	14.6 14.5 14.3 14.3 14.3 14.3 14.4 14.8 17.5 14.8 17.5 14.2 14.2 14.5	(us) cm) 1325 1662 1722 985 1034 1034 1028 835 956 956 912 676 870	7.64 7.48 7.38 7.16 7.22 7.22 7.22 7.21 7.21 7.21 7.21 7.21	Well Yield (NTU) Turbidit (NTU) T	B B B 15 D	Other 1. b.1 . 09 prw 23 prw 	9:40 9:45 507 511 515 519 7:47	
$ \begin{array}{c} 9 \\ 16 \\ 20 \\ 25 \\ 30 \\ \overline{55} \\ 40 \\ \overline{45} \\ 50 \\ 55 \\ 50 \\ 55 \\ 60 \\ 265 \\ \overline{55} \\ $	14.6 14.5 14.3 14.3 14.3 14.7 14.4 14.8 17.5 14.2 14.2 14.4 14.8 17.5 14.2 14.2 14.4 14.4 14.5	(us) cm) 1325 1662 1722 985 1034 1034 1028 355 956 956 912 435	7.64 7.48 7.36 7.16 7.22 7.22 7.22 7.21 7.21 7.21 7.21 7.21	Well Yield (NTU) Turbidit (NTU) + i 325 503 394 589 90 er er er er er est 6	B B B 15 D	Other 1. b.1 . 09 prw 23 prw 	9:40 9:45 707 511 515 519	
9 16 20 25 30 35 40 45 50 0. 55 1. 60 2. 65	14.6 14.5 14.3 14.3 14.3 14.3 14.4 14.8 17.5 14.8 17.5 14.2 14.2 14.5	(us) cm) 1325 1662 1722 985 1034 1034 1028 835 956 956 912 676 870	7.64 7.48 7.38 7.16 7.22 7.22 7.22 7.21 7.21 7.21 7.21 7.21	Well Yield (NTU) Turbidit (NTU) + i 325 503 394 589 90 er er er er er er er 11	B B B 15 D	Other 1. b.1 . 09 prw 23 prw 	9:40 9:45 507 511 515 519 7:47	

Project No		
Project Nat	1)e:	
Date	Data Entry	
Category		Daily Field Log
Site:	Pace Pumps	Project #: _04 · [CT - (03
Date:	6910	Page of
Weathe	er: Claudy Overc	est
Field A	activities: Well Insta	ll
Report	Prepared By: J. Thulip	p) K Tide-ill
	ersonnel on Site: <u>k</u>	I duell, J thilipp , hoc prilling

Notes: 7'00 Onsite Sate Tingestion of daller. Service Wast associate approves annappince with number of WDC Trucks 7:20 Ste Salaty meeting 7:25 Service West says its dray to king touts back 0750 I (Enstere) arrive onsite, meet Jor 0850 Begin Julling E.S. nside blog 0910 notice exhaust buildup in blogtell Jun we decide to stop work - there them pik up vert/timet to attach to exhaust 1030 equipment arrives resume work 1100 Sumple ES @ 10' - Fretty Visual'é Hactury endence of hydricarbon _____ likpachs = strong adar + stanning 1200 Frish well except grout- will grout. timorran per Vicky Humlin & County 1215-B-Lunch 1510 will not tower up for E-3, need to more get wellingte to ES. Call John to get wellingte Jocution for Je-2 The Source Group, Inc.

Project No					
Project Name					
DateData Entry	Number 2012 Construction of all const				
Calegony	Daily Field Log				
Site:	Project #: UY-PCT-OUS				
Date: 6/9/10	Page 2 of 2				
Weather:	ast				
Field Activities: 155 th	eé vells				
Report Prepared By:					
Field Personnel on Site:					

Notes: 1330 start location E-6 -NUSTINK Sal- Mary looks like all silly brn or black 1415 e Suit Sample EGO Lak Wu kydno carbon odor 1945 Finish building E-G 1450 try to mosup on E-7. bly acecss Nonnere in that 190 Call Jon-let Verbica him know alou E-7 15.30 start E-9 Hund Filly concrete preses @)2. Encounter 1615 Frush Atand angenzy 1630 Drill hove - leave angens in surplies give ground & to build well in morning-1700 heave site 1800 anive Pleasant Hill

Project No			
Project Name			
Date	Data Lotry		
Category		Daily Field Log	Ĭ.

Site: Paco Pumps	Project #: 64-967-003
Date: (0/16/10	Page of
Weather:	
Field Activities: Tustall wisels	
Report Prepared By: K. Tiducell	
Field Personnel on Site: K-Tiduelly (

Notes: 0 (040 leave PH 0730 annue site - Inillows setting E9, meet Bon 0740 Jon Jeanes 0500 Bust Frish Sand /bearton SUMP E-9, E-5, E-6 0830 start HA E-10, 0400 the obstruct of 3' would to finish they more over thy another hok 0903 Vicky Harmlin from county cimico) Grant E-9, E-5, E-6 (1930 Vicky leavet Site 5990 start HA second hole E-10, of ge 1000 when duiling, obstruction @ 0 possibly det tank or same thing like 1/1 ave CNPA start. HA third bole E-10 10101020 Duil _ E-110 Sample EIU @ 10 Stinky @ 8-10 lay

S \TSG Forms\Daily_Field_Log doc

The Source Group, Inc.

hojeet Name		
Yale	Data Entry	
alegon		Daily Field Log

Site:	Project #:
Date: 6/10/10	Page of
Weather:	
Field Activities:	
Report Prepared By:	
Field Personnel on Site:	

Notes: @ 1110 Start F. I - Hand thight 1130 Firsh E-1 Hand Anger - second George <u>GIO, 10 Sample</u> 1210 Take Turk buckfull to 10', a estremely smelly, strong he udor 10, day MAR Aake 1215 Geophice crew starts E-7 1240 take sample E-70 9.5 Strong Hydrix arbon ador 13 15 & start hand auger E-12 1310 Start Juill E-12 1400 take sample 010' - strong 1440 Frish E-12 ou growting 1500 move to E-11 1505 Take sample from E-8-010' strong the octor, clay

Project No	
Date Data Entry Data Entry Datily Field Log	
Site: <u>Paio Pump</u> Project #:	
Date: 6/10/10 Page 3 of 3	
Field Activities:	
Report Prepared By:	
Field Personnel on Site:	
Notes: '30 upstruction ~ 2ft - Looks like flot not move over thy again 1555 Fire the second hole 75', stort Inille	201
1610 Take Suil Sumple E-11010 Strong hydrocombon ador @ 10', clay 1630 growt welly set bares 1705 Leave Site	

Project No. Project Name Date Data Lintry **Daily Field Log** Category Caludar Pace Roups Project #: 64-PCT-00:3 Site: Page of / 6/11/10 Date: Weather: <u>POANY</u> Field Activities: Tripiel Ext. wells Report Prepared By: K. Tidenel Field Personnel on Site: K Tidwell, Wpc pulling Notes: 0530 amive office, plu paperment, TS 0615 leave pleasant Hill 0700 arrives, 0730 Finish E-12, toy + sample Min-8 dran-he odier Hole Second of 0830 dult tinsall Mrs. &, Creoprote Mouries to E-4 160900 move to E-2 - drill to 10 (to pre-cleared 1015 The Soil Suple E-10 little to rohydrocerbon 1120 Finish E-Z day 1200 Dr E-3 1215 1250 Take soil sample E-3010 500 hydrocarbon odor, not as strong clay 1300 trust buells, set baces, cleanup. Converta aller of the surp

The Source Group, Inc.

Project No	-
Project Name	
DateData_Entry	
Category	Daily Field Log
Site: <u>PACO Pum</u> Date: <u>6-14-10</u>	$Project #: 04 - PFT - 003$ $Page \ l of \ l$
Weather: Smy	- for
Weather:	develop menot
Report Prepared By: $_\downarrow\downarrow\downarrow$, \land	Jewton
Field Personnel on Site:	Nenton, K. T: Jwell, Max (WDC)

Notes: 0715 Jeave for SAR 0750 acreve on size 9472 NO Z: 20W 6080 0930 Start well development take lunch 1200 1230 back thom bunch 1235 continue well development 1745 Leave site for the 9-1830 beck home

	6	-			
Project No.		-			
Project Name	1				
Date	Data i ntry				
Category		Daily Field	d Log		
		1			
	Aco Pun	~ e 5	Project #: 🐚	4-987-00	3
Date: 6	-12-10		Page of	<u> </u>	
Weather:	m		111)-11		
Field Activitie	es: well	2-ev-elopw	-en-f		
	red By: 12. N				
Field Personr	nel on Site: 14,	Newto.	n, m_{c}	~ (~ o c)	

Notes: 0550 Yeare for Site 0625 assive on Sit 0630 Max from WDC : 5 NO 217 0635 <u>Se</u> up rig and hang pla across to keep light al from plants wells prigdened that fait offer 1140 Run pump for inpl 1215 lun 1245 which trov was is on 1345 2196 top when development for 1430 1600 e du 1630 leave te for the de 50 1700 ack at office

Project No Project Name Date Category	Data Lotry	Daily Field	Log	
Site:	Paro pom	5	Project#: 04-9年丁-003	
Date:	6-16-10	Pa	ge <u>\</u> of <u>\</u>	
Weather:	row			
Field Act	ivities: well a	evelopmen	+, grab samples	Celetean
Report P	repared By: 14. N	enton		4
Field Per	sonnel on Site: $\underline{\mathcal{H}}$	Jewton		

Notes: 0615 iceve for Site 0645 arrive on SAC oto was on stre 2050 WDC continue well development 0900 Calchen on stre 1230 WOC 15 found with wel development and der SAR 1345 Heave Store for the da 1440 corre and Croyish Tomptins 1600 beck home

APPENDIX F

WELL SURVEY REPORT

Virgil Chavez Land Surveying 721 Tuolumne Street Vallejo, California, 94590 (707) 553-2476 • Fax (707) 553-8698

July 26, 2010 Project No.: 2999-06

Kristene Tidwell The Source Group, Inc. 3451-C Vincent Rd. Pleasant Hill, CA 94523

Subject: Monitoring Well Survey 9201 San Leandro Street Oakland, CA

Dear Kristene:

This is to confirm that we have proceeded at your request to survey the monitoring wells at the above referenced location. The survey was completed on June 30, 2010. The benchmark for this survey was a PK nail and shiner in the median island on Hegenberger Ave., approximately 100 feet south of Coliseum Way. The latitude, longitude and coordinates are for top of casings and are based on the Calif. State Coordinate System, Zone III (NAD83). Benchmark Elev. =13.455 feet (NAVD 88).

Latitude	Longitude	<u>Northing</u>	Easting	Elev.	Desc.
				19.76	RIM E-1
37.7419813	-122.1855089	2097022.86	6074328.32	19.35	TOC E-1
				19.81	RIM E-2
37.7419347	-122.1857693	2097007.25	6074252.70	19.56	TOC E-2
27 7410714	100 105 (00 (2007020 10		19.84	RIM E-3
37.7419714	-122.1856906	2097020.19	6074275.71	19.52 19.85	TOC E-3 RIM E-4
37.7420236	-122.1855061	2097038.25	6074329.38	19.85	TOC E-4
07.7420200	122.1000001	209,000.20	0074020.00	19.83	RIM E-5
37.7419435	-122.1857268	2097010.24	6074265.07	19.53	TOC E-5
				19.83	RIM E-6
37.7419042	-122.1857449	2096996.03	6074259.57	19.46	TOC E-6
				19.78	RIM E-7
37.7418612	-122.1857095	2096980.21	6074269.51	19.59	TOC E-7
00 010000				19.76	RIM E-8
37.7418128	-122.1856693	2096962.35	6074280.82	19.59	TOC E-8
37.7418812	-122.1856039	2096986.91	6074300.18	19.84 19.49	RIM E-9 TOC E-9
5/./410012	-122.1000000	2090900.91	00/4300.10	19.49	RIM E-10
37.7418895	-122.1855154	2096989.49	6074325.83	19.30	TOC $E-10$
				19.45	RIM E-11
37.7419561	-122.1854306	2097013.27	6074350.76	19.19	TOC E-11
				19.35	RIM E-12
37.7420032	-122.1854066	2097030.31	6074358.03	18.89	TOC E-12

Virgil Chavez Land Surveying 721 Tuolumne Street Vallejo, California, 94590 (707) 553-2476 • Fax (707) 553-8698

July 26, 2010 Project No.: 2999-06 Page 2

Latitude	Longitude	Northing	Easting	Elev.	Desc.
37.7419429	-122.1851593	2097007.07	6074429.14	20100	RIM MW-8 TOC MW-8



Sincerely,

Ma Virgil D. Chavez, PLS 6323

APPENDIX G

DETAILED HVDPE SYSTEM OPERATIONAL DATA AND FIELD NOTES FROM CALCLEAN

						J.	EX	TRAC	TION	WEL	LS	S				OBSE	RVAT	TON V	VELL	<u> </u>			
		Well I.D.			MW-			A.C.	6		ASM	W-2	<u>s</u>	0-20				sum a		SVE			T
			From-To (9		,	3			5.76 17.00		3.82		33.00		Dry 9.00		5.75		Water Meter Readings		
Time	Unitial D Unit	epth Ta V Air	Vater DTV TOX	V (ft) Vepor inlet		2.25 DTW	Stinger	Off/On		Stinger			Stinger	Vacuum		Vacuum	DTW	Vacuum		Vacuum	-	rusaoings	┦
1 1.110		Flowrate	Temp.	Conc.			Depth			Depth			Depth	"H₂O	(ft)	"H ₂ O	(ft)	"H ₂ O	(ft)	"H ₂ O	(ft)	`~~ units	
	("Hg.)	(cfm)	(degF)	(ppmv)	(ppmv)	(ft)	<u> </u>	(ppmv)	(ft) _	(feet)	(ppmv)	(ft)	(feet)				· · · · · · · ·	~		<u> </u>			ł
					ØN	(19 *									,					•	88 320	1
500	23	57	1402	737	,				0.00	8.35		0.00	4,74	0.00	4,82	0.01	9.66	0.00	DGY	1.00	5.75	1	╞
1530	23	39	1404	714		,			0.00	8.40		0.00	4.74	9.00	8.82	0.01			1	aar			Ļ
	23	32	1410	708					0.00	4.46		0.01	8.69	0.00	8.81	0.01	8.60	0.01	Dry	0.00	5.67	88.445	I
6	23	36	1408	200					0.00	8.54		0.01	\$.67	0.00	8A1	0.02	4.60	0.01	Dry	0.00	and the second		
100	23	35	MID	698					0.00	8.66		0.01	8.65	0.00	S #1	0,02	<u> </u>	0.01	Dry	0.00	5.50	88,444	
750		32	1406	690					0.00	8.60		0.01	\$.66	0.00	4,40	0.02	8.60	0.01	Dry	0.00	5.49		Γ
1400	23	-	1408	688						8.70		0.01	4.67	0.01	4.92	0.02	8.60	0.81		0.04	5.30	÷.	Γ
1900	22	33	1408	710					000	-		0.01	8:69			0.02·			1			88694	T
2000		37	1402	709			 			8.74	, jr	0.01	8.71			0.02		1.3		0.01		. L	T
200		34		673			 		0.01	B-19		0.0	8.72	1		0.02		بنيخه		00			
200	22	39	1400	(A4					0.01	8.81		0.01	Q-12	0.01			8.71	0.01				89.071	T
2300		36	1402	652	· ·					8.83		0.01	ATU			0.03			+	0.00			t
2-100			1403				-		0.01			0.01	kn			0.02			+			89319	┢
240	12	01		100					0.01	WU1	۰ <u>.</u>	<u>uvi</u>	<u>D: 11</u>			C.CL	<u>6 10</u>	0.01		0.07	1.12		ł
4"		* , .	·				ļ						2									┨────┙	╋
							<u> </u>														<u> </u>	<u> </u>	+
				*.									<u> </u>									┠────	╞
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								 			 				ļ					L	ļ	<u> </u>	Ļ
																						L	
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Comme	ents: 7		6	150	VAPOI	2 64	MPL	EDF	MW	-3.5	STAC	ks	AM	246	5151	5							

		ſ		HI	GH VA	CUU	M		6VE	or	X	DPE	1	FIEL	.D DA	TA	SHEE	т					LCLEAN IN	
	-		: 9201 8 URCE GF		NDRO ST	REET		City: C	OAKLA	ND Operatg	r (8):	Site #: VAL	PACO	PUMPS	AN			10	Dete: _	4,9	/ 2010	(,,	4) 7 34-9 137 Pa ga <u>2</u>	of <u>2_</u>
							EXTRACTION WELLS												OBSERVATION WELLS					
			Well I.D.	1		M	W~3		ASIS			-	N-1	25	ASMI	N-20	16-VD		SVM.	2-2	5V5			Curnof.
		· · · · · · · · · · · · · · · · · · ·		From-To (<u>r.76</u>	-		35_		8			3390		0.60		9.00		5		Water Meter	Water
Г	Time	Initial D Unit	epth To V Air	Vater DTV TOX	V (ft) Vapor Inlet	Off/On	0.25 DTW	Stinger	<u>`</u>	.67 -dtw-	Stinger		DTW	Stinger	33 · Vacuum		33 Vacuum		Vacuum		Ø.* Vacuum	DTW	Readings	Extracted
			Flowrate	Temp.	Conc.			Depth		VAC.	Depth (feet)			Depth	"H₂O	(ft)	"H₂O	(ft)	"H ₂ O	(ft)	"H ₂ O	(ft)	units	gals
ł		("Hg.)	(cfm)	(degF)	(ppmv)	(ppmv) ON	(ft)	(feet) 191	(ppmv)	(ft)	(1991)	(ppmv)	(ft)	(feet)							<u> </u>		· #	
,		22	33	1400	645			11		0.01	a Q1		6.01	8.79	0.01	003.	0 .07	270	6.01	1	0.00	463		
- E))))))))	22	36		63					0.02			0.01				0.02					4.54	· · · · · ·	
. Г		22	39	1400				- · ·		0.02			0.01	886			0.02	_			T	4.51		
Г	YID				622		· · ·				0.99		0.01	896		1.	0,02				0.00		1152	
Г	En		85	1403						i	8.90		0.01	881	0.01		0.02		1			4.42		
	XeD	22	æ	1401	680			/		0.01	6.90		0.01	840	0.01	9.04	002	8.81	0.01	∇	0.02	4.40		
	100	22	34		699					0.92	8.42						0.02				200			
	HO)									602	84	,	001	8.94	0.03	1 .01	0.02	8.87	0.01	DRY	0:00	431	-	
	RO	A	.5		and a	SFF .	50		DN	120	16'												899990	1670
	7930	23	*8	102	MD		τ ο ("-		, i															
	000	23	42	1401	13100				off	290		ON	15100	16'										
- 6	030	23	40		12300	_								.					ļ					
ļ	1100	23	39		10290																			
	1130	23	3 9	1407	9730				<i>.</i>			OFF	9730						1510	8'				
	10	23	39		9360														<u> </u>		(h			
┟	1230	23		1401	9170														Ι\	i ų	1 ·	2	L	
	1300	23	37	1402	9020														OFF-	9020	430	8'	9,62	-
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[,				٩															10380	2,060
2	Comme	ents:																						

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ASSOCIATED LABORATORIES

806 North Batavia = Orange, CA 92868 Phone: (714) 771-6900 = Fax: (714) 538-1209



CalClean Inc. 3002 Dow, #142

Company	Tustin, CA 9	2780			Phone	(714) 7	734-91	37	AL	Job N	ю.							Page	1_of_1_
Project Manager	NOEL S	HENC)		Fax	(714)	734-91	138			4	naly	sis Ra	eque	sted			Test Instructions	& Comments
Project Name	PACO	PU	MPS		Project				2	021)	:	(B)							
Cite Manage	OAKLA								(8015)	E (8		(826							
Address									10	ATB		ΥS							
Sample ID	Lab ID		Date	Time	Matrix	Conta Numbe		Pres.	TPH-G	BTEX/MTBE (8021)		BTEX/OXYS (8260B)							
1 mw-3		4	19/10	1510	AIR	TEDL	AR	NONE	X	×									
2 STACK			ч	1515		1			1	1									
3 AS-15		4	1/10/10	0930						T				-					
ASMW-25			· 1	1000															
5 SVMW-2				1140															
SVE-1				1310			,		V	V	-								
7							_	<u> </u>	Ľ	 `									
8									1	1				-					
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12				-	1			1	—		<u> </u>	· · ·			÷			(EDF)	
13				-	-											- +	_	7060010	1592
14				1					1				•					AIR=PPMV	
15									1-			1							
. · S	ample Recei	ipt - To	Be Filied By L	aborato	ry i		Relinqui Samplei	shed by			1.	Rei	inquist	ed by	,		2	Relinquished by	3.
Total Number of Conta	iners		Property Coole	d Y/N/N	A		Signatur		She	مم	`	Sig	nature:					Signature:	
Custody Seals Y / N /	NA		Samples Intact	Y/N/NA			Printed 1	Name:				Prir	nted Na	me:	_			Printed Name:	
Received in Good Cor	dition Y/N		Samples Acce	pted Y/N			Date:	/12/10	Time	7	አን	ᆌᇔ	e:			Time:		Date:	Time:
		Turn An	ound Time				Receive	d By:		1	1.		ceived	By:			2	Received By:	3.
							stap	°. G . ()	١.	\mathbf{I}	,	Sig	nature:					Signature:	
Normal		lush	C Same	+		8 hrs.	Printed			7			nted Na	me:				Printed Name:	
ľ			🗋 24 hrs	5.	17	2 hrs.	Date:	112/15	Time	13	5.1	54	e:			Time:		Date:	Time:
						_		110/17	L		<u> </u>								

Distribution: White - I shorshow Canane - I shorstone Dink Declart/Annumt Mannaer Catdone & Canane - -----

			HI	GH VA	CUU	М		SVE	or	Х	DPE		FIEL	D DA	TA S	SHEE	T		<i>.</i>			LCLEAN IN(
•				NDRO ST	REET		City: C	DAKLA			Site #:	PACO	PUMPS	3				Date: _	<u>6 ,[[</u>	/ 2/ 2010	(71	(4) 734-9137 Page	, of <u>7</u>
Client: 1	HE SOU	JRCE GR	COUP				EV	TRAC		r (s):			· · · ·			OBGE		ION W	/6114	2		1	
					E-	1	E/	-	· 2	WEL		-3		E -			5		-6		-7	<u> </u>	Curnul.
		Well I.D. Interval: I	From-To (ft)	<u></u>	+			۲			-3					2		<u>- 0</u>	-	- 6	Water Meter	I
		epth To V	Vater DTV	V (ft)		<u>.45</u>			1.71			- 6		9-9	56	٩.	68		60			Readings	Extracted
Time	Unit Vacuum	Air Flownate	TOX Temp.	Vapor Inlet Conc.	Off/On	DTW	Stinger Depth	Off/On	DTW	Stinger Depth	Off/On	DTW	Stinger Depth	Vacuum "H ₂ O	DTW (ft)	Vacuum "H ₂ O	(ft)	Vacuum "H ₂ O	(ft)	Vacuum "H ₂ O	(ft)	units	gais
	("Hg.)	(cfm)	(degF)	(ppmv)	(ppmv)	(ft)	(feet)	(ppmv)	(ft)	(feet)	(ppmv)	(ft)	(feet)	PPMV		PPMV		PPMV		PMV	3		
																						147660	
1700 1715 1725 1735 1735 1745 1755 1805					730																		
215								207															
1725											231												
1735														114			b . Et						
1745																194							
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	ents:		<u>6-10</u>		<u> </u>	VA	OR	<u>e</u> 1	100,	(730	<u>) PP</u>	<u>WY</u>	<u> </u>	-20	7	15 (21	<u>p</u>	PMV)	<u> </u>	<u>3 @</u>	525	5 (23) P 188 PP	PMY).
	- 4 +	_	735	(114	PPM	<u>v).</u>	5	e 17	45 (144 1	YMY). E	-6	<u>e 17</u>	551	177 P	PMY). E ∵	•7 @	180	5 (188 PP	·MV).
	F F I	-•	WA1	ER	<u>e</u>	130	•					_	6										

			HI	GH VA	CUU	М]SVE	or	X	DPE]		FIEL	.D DA	TA	SHEE	т					LCLEAN IN	
				NDRO ST	REET		City: C	DAKLA	ND		Site #:	PACO	PUMPS	3				Date: _(618))/ 2010	(71	4) 734-9137 Page <u>Z</u>	or <u>7</u>
Client:	THE SOU	URCE OF	ROUP						Operato	r (s):					,							-	
							E)	(TRAC	TION	WEL	LS					OBSE	RVAT	TON W	/ELLS	S			
		Well I.D.			Ē	- 8			<u>- q</u>	I	Ē	-10)	E-1)	E-	12	ΜM	- 3	A S-	- 1 S		Cumul,
			From-To (_										Water Meter	Water
T		_	Vater DTV			9.6			1.62	2	9	1.4		9.2		8-1		9.5		9.1		Readings	Extracted
Time	Unit Vacuum	Ala Filowrate	TOX Temp.	Vapor Inlet Conc.	Off/On	DTW	Stinger Depth	Off/On	DTW	Sunger Depth	Off/On	DTW	Stinger Depth	Vacuum "H ₂ O	(ft)	Vacuum "H ₂ O	DTW (ft)	Vacuum "H ₂ O	DTW (ft)	Vacuum "H ₂ O	DTW (ft)	units	gals
	("Hg.)	(cfm)	(degF)	(ppmv)	(ppmv)	(ft)	(feet)	(ppmv)	(ft)	(feet)	(ppmv)	(ft)		PPMV	.,	PPMU		PPMV		PPMN	,		3
6/16																							
1820					52	_																	
1820 1830 1840 1850 1900					•			1024															
1840											B 870												
1850											-01-			1572									
1900														1-71 ~		Ÿ 8 7							
1910					· · · · - ·											1 (9 7)		9320					
920					· · ·													1520		ヒコー			
1120																				5 <u>75</u>			
							_																
														-									
				1/10.0	<u> </u>				<u></u>	• • •												/ = 6	
Comme	ents: (F-		-10		<u>אש</u>			Ť κΫc	<u>_ (15</u>	<u>2 PP</u>	MY	<u> •</u>	<u>- 4 (</u>	<u>e 18</u>	201	1024	<u>whw</u>	N/.	<u>= - C</u>		<u>840</u>	(3870 MN)-	PPMV
	<u> </u>		18	<u>50 ()</u> 9 192	512				-12	G	900	(म	<u>87 P</u>	PMV	<u>) </u>	<u>-WN</u>	30	9	0 (9	<u>320</u>	<u>PP</u>	MN)-	
		5-1	L	2 172	-0	5	<u>2 7 7</u>	NN.	-														

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SVE or XDPE

FIELD DATA SHEET

CAL	.CL	E/	N	IN	C
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ent: T	HE SOU	JRCE GR	OUP						Operato	r (s):								_					
	_						E)	TRAC	TION	WEL.	LS					OBSEI	RVAT	ION W	ELLS	3			
		Well I.D.			ASM	۱ W-	25	MY	N- 6	•	S٧	'E-	1	SYMV	V-2	SYMA	1-3						Cum
	Screen I	nterval: F	From-To (ft)				- 4														Water Meter	Wat
			ater DTV			<u>. 4</u>			• 5 8	3	3 Off/On	. 82		8.5 Vacuum		8 / Vacuum			DTH/	14	0.704	Readings;	Extract
I	Un ht Vacuum ("Hg.)	Air Flownste (cfm)	TOX Temp. (degF)	Vapor Inlet Conc. (ppmv)	Off/On (ppmv)	(ft)	Depth	Off/On (ppmv)	(ft)	Depth	(ppmv)	(ft)	Depth (feet)	"H ₂ O	(ft)	vacuum ⁼H ₂ O	(ft)	Vacuum "H ₂ O	DTW (ft)	Vacuum "H _z O	DTW (ft)	units	gal
í L	(1.6.7	()	(008.7	V -p7	(******		()	GF/		(49.007		(111)							_			
16 30					12310																		_
HD								5580															
40 50											9950												
)00														16650									
0																2920							
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SVE-1 @ 1950 (9950 PPMV). SVMW-2 @ 2000 (16650 PPMV). SVMW-3 @ 2010 (2920 PPMV)

1 AC

			HI	GH VA	CUU	M		SVE	or	Х	DPE		FIEL	.D DA	TAS	SHEE [.]	r		,				
Project l	ocation:	9201 S	BAN LEA	NDRO ST	REET		City: C	AKLA		_	Site #:			3	۲.			Date: _(<u>6 </u>	2/ 2010	{/1	14) 734-9137 Page	rof <u>7</u>
Client: 1	HE SOL	IRCE GF	ROUP					_			ERN	JAR	00	<u> </u>								1	
		-						TRAC		WEL.					7	OBSER	RVAT	ION W	ELLS	<u> </u>	_		
		Well I.D.	-	10.1	I MI	N-3		51	-1		ASN	\W-7	25	SVN	W-2							-	Cumul.
			From-To (Nater DTV		c	1.5	1	3	.82		-9	.43		B - 1	55							Water Meter Readings	Water Extracted
Time	Unit Vacuum	Air Flowrate	тох	Vapor Inlet Conc.	Off/On	DTW	Stinger Depth	Off/On		Stinger Depth	Off/On		Stinger Depth		DTW (ft)	Vacuum "H _z O	DTW (ft)	Vacuum "H ₂ O	DTW (ft)	Vacuum "H ₂ O	DTW (ft)		
	("Hg.)	(cfm)	(degF)	(ppmv)	(ppmv)	(ft)	(feet)	(ppmv)	(ft)	-	(ppmv)	(ft)	(feet)				()	1.20	(14)	120	(11)	147660	yais
6/16					ON		19'	ON		61	ON		16'	ON	B,								
2030	26	140	1510	5530				_										_					
2100	26	137	1493	14760																			\sim
2200	26	35	1471	13540																			
2300	26	140	1483	11270								,											
· · ·	.26																						
6/17						,																	
0001	26	138	1469	9670	•																		
1400	26			7560																			
0800	26			67 30		71		2750			7470			4150								148660	1000
200	25			5910							•												
1600		145	1450	5130																			
2000	25	44	1439	4750	3960			3110			6 50			4320								150800	2140
		-																		~			·
6/18																							
0001	25	146	1418	4960																			
0400	25	145	1426	4750																			
0600	25	146	1430	5030	3680			430			4790			3860								151750	4090
				4800																			
				5120																			;
2000	25	146	1435	3180				3660			4980			3420					,			154440	6780
Comme	ents:	6-1	6-10	C	TAL	_ 11	ILE.	r e	20	30	(15)	<u>530</u>	PPN	NY).	S	TACK	; @	202	5 (PPN	N).		

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7			H I	GH VA	CUU	M		915	or	X	UPE		FIEL	.U UA						,		LCLEAN IN(4) 734-9137	
Project l	ocation:	9201 S	AN LEA	NDRO ST	REET		City: C)AKLA	ND		Site #:	PACO	PUMPS	3				Date: _	<u>6 </u>	2⁄2 2010	•	4) 734-9137 Page 4	or <u>7</u>
Client: 1	THE SOU	JRCE GR	OUP						Operato														
		_					E)	TRAC	_	WEL	LS					_		ION V					
		Well I.D.			E-	9		Ē	-11		E	- 12		モ・	-]-	E	-2	TMV	1-8	ΜW	- 6		Cumul.
			From-To (9	.62		- 0	1.25		0	. 85		9.1		9.	41	7.	0/	٩،	16	Water Meter Readings	
Time	Unit	Air	ater DTV TOX	v (n) Vapor Inlet	Off/On	.02 DTW	Stinger	Off/On		Stinger	Off/On		Stinger	Vacuum		Vacuum		/ · Vacuum		Vacuum		readings	Extracted
	Vacuum ("Hg.)	Flowrate (cfm)	Temp. (degF)	Conc. (ppmv)	VAC (ppmv)	(ft)	Depth (feet)	VAC	(ft)	Depth (feet)	YAC	(ft)	Depth (feet)	°H2O	(ft)	"H ₂ O	(ft)	"H ₂ O	(ft)	"H₂O	(ft)	units	gals
6/16		(entry	(******		<u>.</u> ,			<u></u>															
2030																							
2100																							
2030 2100 2200					0.00	9.66	,	0.0	9.28		0.90	9.89		0.0	9.48	0.06	9.76	0.01	7.90	0.05	9.63		
2300																							
6/17																							
000				,																			
0400																5							
D BDD					0.00	9.90	·	D.05	9.32		0.04	<u>8.95</u>		0.04	956	0.00	9.85	0.03	7.96	0. 5	9.67		
1200																							
600																					<i></i>		
2000					000	10.01		0.04	9.3 7		<u>0.03</u>	9.02	:	0-05	9.71	0,02	<u>P.94</u>	0.03	8,02	0.27	9770		
6/18																							
000																_							
0400																							
0800					0.00	10.22		0.06	9.40		0.05	9.09		0.06	9.82	0.03	10.04	0.05	8.07	0.25	9 .8 4		
200 600 2000														Ŭ									
1600										•													
2000					0.31	10.16		0.04	9.56		0.00	9.18		0.00	9.92	0.04	10.16	0.90	8.14	0.24	0.00		
Comme	ents:																						

					<u> </u>	_	٤)	TRAC		_	ERNA	٠				ODOE						1	
					1	W-3			VE-	_			- 2 C	C) () A)	_		RVAI	TON W	ELL	s Г		 	
	Ścraen	Well I.D.	From-To ((ft)		W-,)	>	LE-	1	NA	MM.	-25	<u>sv</u> m'	<u> • • • •</u>								Cumu
			Vater DTV		2	.57			. 82	•	d	. 43	8	8.	55							Water Meter Readings	r Wate Extract
Time	Unit Vacuum ("Hg.)	Air Flowrate (cfm)	TOX Temp. (degF)	Vapor Inlet Conc. (ppmv)	Off/On (ppmv)	DTW (ft)	Stinger Depth (feet)	Off/On (ppmv)	DTW (ft)	Stinger Depth (feet)	Off/On (ppmv)	WTO (ft)	Stinger Depth (feet)	Vacuum "H ₂ O	DTW (ft)	Vacuum "H ₂ O	DTW (ft)	Vacuum "H ₂ O	DTW (ft)	Vacuum "H₂O	DTW (ft)		gals
19	(19.7	(with)	(009,7)	(pp)	ON	(47	191	ON		8'	ON		[13]	ON	8'							147660	
400								-14		- v			_ <u>.</u>										
		145	1416	3380	3360			3700			5540			2230								157650	000
				3140				-,00				·		2000								127020	1144
				3030																			<u> </u>
000	a5	143	1421		4020			३५ ७			7390			2920								160990	1333
5/20																							
400																							
800	25	1412	428	2790	4800			3223			8220			3610								163660	1600
	25	148		3240																			
00	25	141	14 28	3890																, ₁ ,			
000		136	1415	4480	5030			3130			9450			3280								166020	1836
21																						•	
400																							
		142	1418	3190	4120			3210			6690			2360								168990	21330
				4150											-	_		_			\neg		
600	25	146	1432	4080																	\neg		
000			1458	4050	4010			3180			6570			2890								171510	23850
	ents: 6			al in	Ļ		06						0PC										

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			HI	GH VA	CUU	M		SVE	or	Х	DPE		FIEL	D DA	TAS	SHEE	Т						
Project i	ocation:	: 9201 S	AN LEA	NDRO ST	REET		City: C	AKLA			Site #:		/					Date:	6 / 9	/ 2010	(7)	4) 734-9137 Page <u>5 R</u>	of _7
Cilent: 1	THE SO	URCE GF	OUP							_	<u> JERN</u>	IARD/	(Gat	<u>26 </u>							_	1	
		_					E)	TRAC		WEL				_		OBSE		_					
		Well I.D.			E	<u>_ 0</u>		Έ	- _		E	- 2		<u>-</u> -		E-	2	ΜW	- 8	WW	- 6		Cumul,
			From-To (Vater DTV			9.6	<u>,</u> ר	a	-25		R	- 85		9.4	15	9	71	7.84	2	9.6	60	Water Meter Readings	Water Extracted
Time	Unit	Atr	TOX	Vapor Inlet	Off/On	DTW	Stinger	Off/On		Stinger	Off/On	DTW	Stinger	Vacuum	DTW	Vacuum	DTW	Vacuum	DTW	Vacuum	DTW		
	Vacuum ("Hg.)		Temp. (degF)	Conc. (ppmv)	VAC (ppmr)	(ft)	Depth (feet)	VĄC (ppmv)	(ft)	Depth (feet)		(ft)	Depth (feet)	ъ	(ft)	°H₂O	(ft)	"H ₂ O	(ft)	"H _z O	(ft)	units	gals
6/19		(0)	((FP7						41 = 7												
0400		-																					
0800					0.76	10.05	,	0.05	9.79	•	0.00	9.36		0.0z	10.00	0.04	0.2	0.00	8.23	0.22	10.11		
0800 1200 1600																							
1600							N .																
2000					0.41	10.11		0.09 `	9.82		००७	9,34		0.00	12.08	<i>0</i> .05	0.31	0.00	8,27	0.25	1016		
6/20											;; <u>;</u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,												
0400																							
0800					0.50	10.06		0.04	9.785		D.00	9.30		0.00	0.01	0.03	1032	0.00	8:54	0.25	1010		
1200														•									
1600		•																					
2000					0.00	9.5 9		0,00	4.55	*	0.00	9.31		0.00	9.80	0,00	10.23	0.00	8.10	0.21	ю. 0 8		
6/21																				<u>`</u>		•	
0400		<u> </u>																					
0800					0.35	9.68		0.00	9.73		0,00	9.35		000	9.93	J.05	10.30	0.00	821	0.22	10.)3		
1200	_																						
600																							
2000					00.0	9.81		৶৵ঀ	٩.75		Ð.º0	9.38		٥.٥٥	9,99	0,00	1031	0.00	824	0.00	10.17		

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Comments:

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160°25 143 1630 473025 141	From-To (1 Water DTM TOX	ft) V (ft) Vapor Inlet Conc.	M) 9	N-3	E)	CTRAC	Operator			PACO	PUMPS	3				Date: _(6 12	2/ 2010	(7)	4) 734-9137 Page 6 A	of <u>7</u>
Well I.D. Screen Interval: I Initial Depth To V Time Unit Vacuum Flowrate (Hg.) (cfm) 6/22 (cfm) 0400 25 0400 1200 0800 25 1200 35 160° 35 1630 25 47.30 25	From-To (1 Water DTV TOX Tomp.	V (ft) Vapor Inlet Conc.	9			TRAC															
Screen Interval: Initial Depth To V Time Unit Air Vacuum Flowrate (cfm) 6/22 (cfm) (cfm) 0/22 0 0 0/20 25 142 1200 25 142 1200 25 143 160° 25 143 1630 25 143	From-To (1 Water DTV TOX Temp.	V (ft) Vapor Inlet Conc.	9						IS					OBSE	RVAT	ION W	/F119			1	
Screen Interval: Initial Depth To V Time Unit Vacuum Air (Hg.) (cfm) 6/22 (cfm) 0/100 0 0800 25 1200 25 1600 25 1600 25 1600 25 1630 25 143 143	From-To (1 Water DTV TOX Temp.	V (ft) Vapor Inlet Conc.	9						ASM	W- 2	2S	SUM	_	E-1		E-C		E-1	\		Cumul.
Time Unit Air Vacuum Flowrate (Hg.) (cfm) 6/22 (cfm) 0/22 0 0500 25 142 1200 25 143 1600 25 143 1600 25 143 1620 25 143	TOX Temp.	Vapor Inlet Conc.		5/			82		9.4			8.5		व.भ	G.	9.6		9.2		Water Meter Readings	Water Extracted
(Hg.) (cfm) 6/22 0400 0800 25 142 1200 25 142 1200 25 143 1609 25 143 1639 4730 25 141			Off/On	DTW	Stinger Depth		DTW	Stinger Depth	Off/On		Stinger Depth		DTW (ft)		DTW (ft)		DTW⊲ (ft)		DTW (ft)	units	gals
0400 0800 25 142 1200 25 139 1600 25 143 1630 4780 25 141		(ppmv)	(ppmv)	(ft)	(feet)	(ppmv).	(ft)	(feet)	(ppmv)	(ft)		ppmv		ppmv		ppmv	,	ppmv		147660	
0800 25 142 1200 25 139 1600 25 143 1630 4730 25 141			0N		19-	01		8-	or⁄		16-	ON	8-								
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1630		4030																			
473025 141	1123		OFF			OFF						OFF									
	1429	548º	- , , ,									,		N	16-	ON	19-	ON	16-		
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1/1/2																					
6/23 0400	4													,		·.					
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<u>├──</u> ┼── <u>┼</u> ──																					
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Comments: 6/22	 	Treate	ـــــــــــــــــــــــــــــــــــــ	3		ļ	L Wate														

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			HIG	GH VA	CUU	Μ		SVE	or	Х	DPE		FIEL	D DA	TAS	SHEE	Т					LCLEAN INC	
•		: 9201 S URCE GR		NDRO ST	REET		City: C	AKLAI	Operato		Site #: 1 Grade		PUMPS	6				Date: 🧕	2 ₁ ک	<u>4</u> 2010	(/1	4) 734-9137 Pa ge (<u>4 B</u>	or <u>-7</u>
							EX	TRAC								OBSE	RVAT	N NOF	/ELLS	3			
		Well I.D.			E-	9		E-	-11		E-	12		E-1		5-2	<u>א</u>	MW-	8 .	Mw-	6		Cumul.
			From-To (1 Vater DTV		9.	62		<u> </u>	25		8.	85		9.4	5	9.7	7	7.86		9.6		Water Meter Readi ngs	Water Extented
Time	Unit Vecuum	Air	TOX Temp.	Vepor Inlet Conc.	AND AV		Stinger Depth			Stinger Depth	JAC		Stinger Depth	Vacuum "H ₂ O		Vacuum "H ₂ O		Vacuum "H _z O		Vacuum "H ₂ O		units	gais
	("Hg.)	(cfm)	(degF)	(ppmv)	(ppm)	(ft)	(feet)	(ppm)	(ft)		(ppm)	(ft)	(feet)										
6/22 0400																							
0800					0.00	9.91		0,00	9.76		00,0	9.41		0,0 0	10.03	0,00	10.34	0,0 °	829	0.00	10,17		
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<u>6/2</u> 3 0400																						*	
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Comments:

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			H	GH VA	CUU	М]SVE	or	X]DPE		FIEL	D DA	TA	SHEE	T					LCLEAN IN	
-		: 9201 \$ URCE GI		NDRO ST	REET		City: C	DAKLA			sile # 1 Fabr		PUMPS	8				Date: 🦉	<u>,2</u>	<u>3</u> 2010	(7)	14) 734-9137 Page 7 <u>A</u>	
	1112 30						E)	TRAC								OBSE	RVA		VELLS	s .	_	33 0	
		Well I.D			MV	1-3		-		25	_	4		E-11		E-		E-!		E-	7	550	Cumul.
			From-To		a	57		0	.43		a	E/				675			· C			Water Meter	
Time	Unit	Air	Water DT	Vapor Inlet		- /	Stinger	Off/On		Stinger		.56 DTW	Stinger	9.41	DTW.	9.65	DTW	9.6	DTW	7.00	DTW	Readings	Extracted
	Vacuum ("Hg.)		(degF)	Conc. (ppmv)	(ppmv)	(ft)	Depth (feet)	(ppmv)	(ft)	Depth (feet)	(ppmv)	(ft)	Depth (feet)	RPMU	(ft)	PPmy	(ft)	2428 00~Y	(ft)	чне - Фртту	(ft)	units	gals
423	, ,,				ON		19-	ON		16-	ON		19-	ON	16-								* :
1100	25	143	1429	7980	4120			9190			3820			5210									
1200				8820																			
)600	25	141	1425	9930																			
2000	25	140	1438	11080	3740			8590			3670			4330								182230	3-1570
6/24																							8
0400																							
ത്യാ	25	145	1434		3680			8120			3410			4120								183750	36090
0900					off			OFF			OFF			off		ON	15-		15-		15-		· · · ·
1000																645		ON					
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1230				7460																OFF			
1600				6130 5640	U- 60			8130			101-											165 (5)	
4/25		1-10	19 56	5670	טקסר			8130			3910			4980								185650	37990
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	25	┢╼╼╼╉╍╍		6980							1000			P2-10								185850	<u>ss/10</u>
1300	25	135	1427	5440	47%0			6440			3150			4590									
1600					OFF			oFF			OFF			off								188550	40920
Comme	nts: 🕻	125	- To	DOK t	o + a)	inle			< <	amol		180			mul	Took	E-1	0 V 6+)o (Se	anda		50459	2 miner
							emy)	MW	3 10	per s	amet	@ 14	30/4	7800	pmv	ASM	W-25	Vapo	r san	plo (2150	0/6440	A A A A A A A A A A A A A A A A A A A
E-1(a 15	30/	3980	pmv), E	E-11 P	600	(4190	ppm)	1, E-	7@	1630	pan) E ⁻	2@j	70 0	1620	ppmr	E-3	<u>e</u> r	130/	3040	0(6440 ppmv) 4	oper 30

			HI	GH VA	CUU	M		SVE	or	X	DPE		FIEL	.D DA	TAS	SHEE	Ť						
•		9201 S JRCE GR		NDRO ST	REET		City: C	AKLA	ND One min		she#: 1 Tabe		PUMPS	•				Date:	, <u>,</u> 2	2/ 2010	(/1	4) 734-9137 Page 7 <u>B</u>	of <u>7</u>
	HE 30						EX	TRAC								OBSE	RVAT		/ELLS	3			
		Well I.D.			E-	9		E-			E-	12		E-1		E-'	<u>д</u>	mw	-8	m w	- 6		Cumul.
			From-To (ft)																		Water Meter	Water
			Vater DTV			62 DTW	04	9.		04		§5 ртw	Otheres	9.4		9.7 Vacuum	/ DTW	7. Vacuum	86 DTW	9.6		Readings	Extracted
Time	Unit Vacuum		TOX Temp.	Vapor Infet Conc.	VAC.		Stinger Depth	NAC		Stinger Depth	JAK		Stinger Depth	Vacuum "H ₂ O	(ft)	vacuum "H₂O	(ft)	"H ₂ O	(ft)	Vacuum "H₂O	(ft)	units	gais
6/23	("Hg.)	(cfm)	(degF)	(ppmv)	(ppmv)	(ft)	(feet)	(ppm+)	(ft)	(ieet)	(ppmv)	(ft)	(feet)										
6/23																							
1100																							
1200														ι.									
1600																							
1600 2000 6/24 2400					0,00	979		0.00	9.43		0.00	9,06		0.00	9.63	0.00	989	0.00	841	0.00	9.79		
6/24																							
อ่ฯดว																							
రాలు					0.00	9.84		0,00	1-51		0.00	9.13		0.00	9.71	0.00	9.93	0,00	8.15	0.00	983		
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1200 1230 1600						ļ														`			
1600						150			9.11.3			a . C			<u>a.</u> ,		6 () 4		~ 02	0.00			
6/25					Q.0 O	7.29		0.90	1.74		0.00	9.28		000	7.61	0,00	10-16	0,00	8.22	0.00	10.01		
0800					0.00	10.35		0,00	a dh		0.00	412		0.00	10.2/	0.00	0.20		82.7	030	10.31		
1200		· · · ·			0.00	10.00		0,00			0.00	1.00		0.00	10. V b	0.00	10.57		0.50	~	1 4.01		
1400		ł																					
2000					0.00	10.25		0.00	9.87		0.00	9.51		0.00	10.15	0.00	ю.341	0.00	8.23	0.00	10.04		
Comm																	, .,						L

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			HIC	GH VA	CUU	М		SVE	or	Х	DPE		FIEL	D DA	TAS	SHEE	т					LCLEAN IN	c.
Project l	ocation:	9201 S	AN LEAI	NDRO ST	REET		City: C	AKLAN	ID		Site #:	PACO I	PUMPS	6				Date:	_/	_/ 2010	(7)	/4) 734-9137 Page <u>்</u>	_of
Cilent: 1	'HE SOL	IRCE GR	OUP						Operato	r (8):	_								_		_		
							E	TRAC	TION	WEL	LS					OBSE	RVAT	ION W	ELLS	3	4		
		Well I.D.																					Cumul.
			From-To (1 /ater DTV																			Water Meter Readings	Water Extracted
Time	Unit	Air	тох	Vapor Inlet	Off/O n	DTW	Stinger	Off/On	DTW	Stinger	Off/O n	DTW	Stinger	Vacuum		Vacuum	DTW	Vacuum	DTW	Vacuum	DTW		
	Vecuum ("Hg.)	Flowrate (cfm)	Temp. (degF)	Conc. (ppmv)	(ppmv)	(ft)	(feet)	TDW (ppmv)	(ft)	Depth (feet)	(ppmv)	(ft)	Depth (feet)	'n₂O	(ft)	"H ₂ O	(ft)	"H ₂ O	(ft)	"H ₂ O	(ft)	units	gals
	()		MW	1		7.86		8.2															
2	E 12 B.85 18.03 E 11 9.25 18.08																						
3	E 12 B.85 18.03 E 11 9.25 18.08																						
4	E 11 9.25 18.08 E 10 9.41 18.15																						
2			È	9		9.62		8.05															
6			E	<u> </u>		9.68		18.12			×											· · ·	
7			E	7		7.00		18.53			•												
7 8 9			_ E -	6		7.6 0		18.72															
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11			Ē	3		9.65		8.35															
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5			MW.	6		9-56		1941						_									
16			<u>WW</u>	3		9.57	6	20.75															
<u>17</u> .			MAS:			9H5		6.64															
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18 19 20			(<u>.</u>															
20		sv	<u>ww</u>	2		B.55		8.98															
2)			MW					8.64											_		_		
Comm	ents:		SVE	-1		3.8	2	8.7	I			_											

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ASSOCIATED LABORATORIES

806 North Batavia • Orange, CA 92868 Phone: (714) 771-6900 • Fax: (714) 538-1209



Chain of Custody Record

CalClean Inc. 3002 Dow, #142

Company	Tustin, CA 92780)		Phone	(714) 7	34-91	37	AL.	job No	<u>).</u>			_			Page _ 1 of _ 1
Project Manager	NOEL SHE	NOI		Fax	(714) 7	34-91	38			An	alysi	s Req	ueste	d		Test Instructions & Comments
Project Name	PACO 1	PUMPS		Project #				5)	51			~	T			
Site Name		NLEAN	DRO					(8015)	ю ш		876			}	[
Address	AKLAN							С С	E E		E			l		
Sample ID	Lab 1D	Date	Time	Matrix	Contai Number		Pres.	TPH-G	BTEX/MTBE (8021		BREXIONNE (BIEID)					
2 E-1 E-2 E-3 E-7		6/1610	1700	AIR	TEDL	AR	NONE	X	X		>					
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E-3			1725	t /]												
E-7			1805	f												
5) = <u>e</u> -10			1840													
			1850													
A SMW-3			1910													
ASMW-2	\$		1930													
SVE-1			1950													
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14								I								AIR=PPMV
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Netribution: While - Laboratory Canary - Laboratory Pink - Project/Account Mananar Goldsowrd . Consultation

ASSOCIATED LABORATORIES

806 North Batavia = Orange, CA 92868 Phone: (714) 771-6900 = Fax: (714) 538-1209



Chain of Custody Record

3062 Dow, #142

Company	Tustin, CA 9278	80				Phone	(714)	734-91	37		. Job I	No.							Page	1of	۱
Project Manager	NOEL SH	ENO				Fax	(714)	734-9	138			1	Analy	sis Re	eques	sted		7	Test Instructions	& Comme	mts
Project Name	TACO 1	PU	MP	S		Project	1			5	៍ត្រី	ł	R								
Site Name	201 SF	_			DRO					801	8										
Address	AKLAN									-	Ē		ŝ								
Sámple ID	Lab ID]		te	Time	Matrix	Conta Númbe		Pres.	TPH-G	BTEX/MTBE (8021	-	BLEDONTS (2018)								
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5													-		+				· · · · · · · · · · · · · · · · · · ·		
·	Sample Receipt	- To E	Be Filk	ed By L	aborator	ער ער		Relinqui Semple	ished by			1.	Rei	inquish	ed by]		2,	Relinquished by		3.
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Custody Seals Y/1	~			(YI)N / NA			Printed I	<u>/ / / / / / / / / / / / / / / / / / / </u>				Pri	nted Nar	me:				Printed Name:			
Received in Good C					xed Y) N		-	Date: 4	/30/ 10	 ۱۳۳۰ C	e:		Dai	ie:		Π	me:		Date:	Time:	
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						Signatu	e:				Sig	nature:					Signature:				
Normal		sh		Same	-		8 hrs.	Printed	Name:			a	Pris	nted Na	me:				Printed Name:		
			(🗋 24 hrs		U 17	'2 hrs.	Date:	<u>-30-</u>	<u>ר אין אין אין אין אין אין אין אין אין אין</u>	<u>8</u> 12	10%	7 2 Dai	le:		Ti	me:		Date:	Time:	
								6	- 50-	0	6	۰ ۲ ۲	51								

								EXTR		/ELLS					VATION LLS		Page 4A
				Well ID		MW-3			SVE-1			ASMW-2S		SVN	IW-2	Water	Cumul.
		Initial	Depth to	Water DTW (feet)		9.57			3.82			9.43		8.	55	Meter Readings	Water Extracted
Time	Unit Vacuum	Air Flowrate	TOX Temp.	Vapor Inlet Concentration	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum	Depth to Water	Units	Gallons
	("Hg)	(cfm)	(degF)	(ppmv)	(ppmv)	(feet)	(feet)	(ppmv)	(feet)	(feet)	(ppmv)	(feet)	(feet)	("H ₂ O)	(feet)	147660	
June 16, 2	2010				ON		19	ON		8	ON		16	ON	8		
20:30	26	140	1510	15530													
21:00	26	137	1493	14760													
22:00	26	135	1471	13540													
23:00	26	140	1483	11270													
June 17, 2	2010																
0:01	26	138	1469	9670													
4:00	26	143	1453	7566													
8:00	26	140	1456	6730	4120			2750			7470			4150		148660	1000
12:00	25	143	1451	5910													
16:00	25	145	1450	5130													
20:00	25	144	1439	4750	3960			3110			6150			4320		150800	2140
June 18, 2	2010																
0:01	25	146	1418	4960													
4:00	25	145	1426	4750													
8:00	25	146	1430	5030	3680			430			4790			3860		151750	4090
12:00	25	144	1415	4800													
16:00	25	145	1436	5120													
20:00	25	146	1435	3180	3510			3660			4980			3420		154440	6780

								EXTR	ACTION W	/ELLS						0	BSERVAT		.S				Page 4B
				Well ID		E-9			E-11			E-12		E	-1	E	-2	MV	V-8	MV	V-6	Water	Cumul.
		Initia	Depth to	Water DTW (feet)		9.62			9.25			8.85		9.	45	9.	71	7.	86	9.	60	Meter Readings	Water Extracted
Time	Unit Vacuum	Air Flowrate	TOX Temp.	Vapor Inlet Concentration	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum	Depth to Water	Vacuum	Depth to Water	Vacuum	Depth to Water	Vacuum	Depth to Water	Units	Gallons
	("Hg)	(cfm)	(degF)	(ppmv)		(feet)	(feet)		(feet)	(feet)		(feet)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)		
June 16, 2	2010																						
20:30																							
21:00																							
22:00					0.00	9.66		0.01	9.28		0.00	8.88		0.01	9.48	0.00	9.76	0.01	7.90	0.05	9.63		
23:00																							
June 17, 2	2010																						
0:01																							
4:00																							
8:00					0.00	9.90		0.05	9.32		0.04	8.95		0.04	9.56	0.00	9.85	0.03	7.96	0.15	9.67		
12:00																							
16:00																							
20:00					0.00	10.01		0.04	9.37		0.03	9.02		0.05	9.71	0.02	9.94	0.03	8.02	0.27	9.70		
June 18, 2	2010																						
0:01																							
4:00																							
8:00					0.00	10.22		0.06	9.40		0.05	9.09		0.06	9.82	0.03	10.04	0.05	8.07	0.25	9.84		
12:00																							
16:00																							
20:00	1				0.31	10.16		0.04	9.56		0.00	9.17		0.00	9.92	0.04	10.16	0.00	8.14	0.24	10.00		

								EXTR	ACTION W	ELLS					VATION LLS		Page 5A
				Well ID		MW-3			SVE-1			ASMW-2S		SVN	IW-2	Water Meter	Cumul. Water
		Initial	Depth to \	Nater DTW (feet)		9.57			3.82			9.43		8.	55		Extracted
Time	Unit Vacuum	Air Flowrate	TOX Temp.	Vapor Inlet Concentration	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum	Depth to Water	Units	Gallons
	("Hg)	(cfm)	(degF)	(ppmv)	(ppmv)	(feet)	(feet)	(ppmv)	(feet)	(feet)	(ppmv)	(feet)	(feet)	("H ₂ O)	(feet)	147660	
June 19, 2	010				ON		19	ON		8	ON		16	ON	8		
4:00																	
8:00	25	145	1416	3380	3360			3700			5540			2230		157650	9990
12:00	25	141	1423	3140													
16:00	25	142	1431	3030													
20:00	25	143	1421	2880	4020			3410			7390			2920		160990	13330
June 20, 2	010																
4:00																	
8:00	25	142	1428	2790	4800			3220			8220			3510		163660	16000
12:00	25	148	1422	3240													
16:00	25	141	1428	3890													
20:00	25	136	1415	4480	5030			3930			9450			3280		166020	18360
June 21, 2	010																
4:00																	
8:00	25	142	1418	3190	4120			3210			6690			2360		168990	21330
12:00	25	145	1433	4150													
16:00	25	146	1432	4080													
20:00	25	143	1458	4050	4010			3180			6570			2890		171510	23850

								EXTR		/ELLS						0	BSERVAT	ION WELL	S				Page 5B
				Well ID		E-9			E-11			E-12		E	-1	E	-2	MV	V-8	MV	V-6	Water	Cumul.
		Initial	Depth to \	Nater DTW (feet)		9.62			9.25			8.85		9.	45	9.	71	7.	86	9.	60	Meter Readings	Water Extracted
Time	Unit Vacuum	Air Flowrate	TOX Temp.	Vapor Inlet Concentration	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum	Depth to Water	Vacuum	Depth to Water	Vacuum	Depth to Water	Vacuum	Depth to Water	Units	Gallons
	("Hg)	(cfm)	(degF)	(ppmv)		(feet)	(feet)		(feet)	(feet)		(feet)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)		
June 19, 2	2010																						
4:00																							
8:00					0.76	10.05		0.05	9.78		0.00	9.36		0.02	10.00	0.04	10.21	0.00	8.23	0.22	10.11		
12:00																							
16:00																							
20:00					0.61	10.11		0.00	9.82		0.03	9.34		0.00	10.8	0.05	10.31	0.00	8.27	0.23	10.16		
June 20, 2	2010																						
4:00																							
8:00					0.50	10.06		0.04	9.85		0.00	9.3		0.00	10.01	0.03	10.32	0.00	8.34	0.25	10.10		
12:00																							
16:00																							
20:00					0.00	9.59		0.00	9.55		0.00	9.31		0.00	9.80	0.00	10.23	0.00	8.10	0.21	10.08		
June 21, 2	2010																						
4:00																							
8:00					0.35	9.68		0.00	9.73		0.00	9.35		0.00	9.93	0.05	10.3	0.00	8.21	0.22	10.13		
12:00																							
16:00																							
20:00					0.00	9.81		0.04	9.75		0.00	9.38		0.00	9.99	0.00	10.31	0.00	8.24	0.00	10.17		

								EXTR	ACTION W	ELLS						0	BSERVAT	ION WELL	S				Page 6A
				Well ID		MW-3			SVE-1			ASMW-2S		SVN	IW-2	E	-1	E	-9	E-	11	Water	Cumul.
		Initial	Depth to	Water DTW (feet)		9.57			3.82			9.43		8.	55	9.	45	9.	62	9.	25	Meter Readings	Water Extracted
Time	Unit Vacuum	Air Flowrate	TOX Temp.	Vapor Inlet Concentration	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum on/off	Depth to Water	Vacuum on/off	Depth to Water	Vacuum on/off	Depth to Water	Vacuum on/off	Depth to Water	Units	Gallons
	("Hg)	(cfm)	(degF)	(ppmv)	(ppmv)	(feet)	(feet)	(ppmv)	(feet)	(feet)	(ppmv)	(feet)	(feet)	(ppmv)	(feet)	(ppmv)	(feet)	(ppmv)	(feet)	(ppmv)	(feet)	147660	
June 22, 2	2010				ON		19	ON		8	ON		16	ON	8								
4:00																							
8:00	25	142	1439	3860	3840			3460			9590			2660								175250	27590
12:00	25	139	1421	4030																			
16:00	25	143	1425	3740																			
16:30					OFF			OFF						OFF									
17:30	25	141	1429	5480												ON	16	ON	19	ON	16		
20:00	25	147	1438	5390							9780					617		830		893		178380	30720
June 23, 2	2010																						
4:00																							
8:00	25	140	1431	2310							9530					530		720		750		180730	33070
10:00																OFF		OFF		OFF			

								EXTR	ACTION W	ELLS						0	BSERVAT	ION WELL	S				Page 6B
				Well ID		E-9			E-11			E-12		E	-1	E	-2	MV	V-8	MV	V-6	Water	Cumul.
		Initial	Depth to	Water DTW (feet)		9.62			9.25			8.85		9.	45	9.	71	7.8	86	9.0	60	Meter Readings	Water Extracted
Time	Unit Vacuum	Air Flowrate	TOX Temp.	Vapor Inlet Concentration	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum	Depth to Water	Vacuum	Depth to Water	Vacuum	Depth to Water	Vacuum	Depth to Water	Units	Gallons
	("Hg)	(cfm)	(ppmv)		(feet)	(feet)		(feet)	(feet)		(feet)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)			
June 22, 2	010																						
4:00																							
8:00					0.00	9.91		0.00	9.76		0.00	9.41		0.00	10.03	0.00	10.34	0.00	8.29	0.00	10.17		
12:00																							
16:00																							
16:30																							
17:30																							
20:00											0.00	8.97				0.00	9.79	0.00	8.01	0.00	9.51		
June 23, 2	010																						
4:00																							
8:00	3:00										0.00	9.01				0.00	9.85	0.00	8.04	0.00	9.63		
10:00																							

					EXTRACTION WELLS										OBSERVATION WELLS								
		MW-3			ASMW-2S			E-4			E-10		E-3		E-5		E-7		Water	Cumul.			
Initial Depth to Water DTW (feet)					9.57		9.43			9.56			9.41		9.65		9.68		7.0		Meter Readings	Water Extracted	
Time	Unit Vacuum	Air Flowrate	TOX Temp.	Vapor Inlet Concentration	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum on/off	Depth to Water	Stinger Depth	Vacuum on/off	Depth to Water	Vacuum on/off	Depth to Water	Vacuum on/off	Depth to Water	Vacuum on/off	Depth to Water	Units	Gallons
	("Hg)	(cfm)	(degF)	(ppmv)	(ppmv)	(feet)	(feet)	(ppmv)	(feet)	(feet)	(ppmv)	(feet)	(feet)	(ppmv)	(feet)	(ppmv)	(feet)	(ppmv)	(feet)	(ppmv)	(feet)	147660	
June 23, 2010			ON		19	ON		16	ON		19	ON	16										
11:00	25	143	1429	7980	4120			9190			3820			5210									
12:00	25	145	1438	8820																			
16:00	25	141	1425	9930																			
20:00	25	140	1438	11080	3740			8590			3670			4330								182230	34570
June 24, 2	June 24, 2010																						
4:00																							
8:00	25	145	1434	8390	3680			8120			3410			4120								183750	36090
9:00					OFF			OFF			OFF			OFF		ON	15		15		15		
10:00																645		ON					
11:00																OFF		475		ON			
12:00					ON		16	ON		14	ON		16	ON	16			OFF		580			
12:30	25	147	1439	7460																OFF			
16:00	25	144	1428	6130																			
20:00	25	140	1436	5640	4080			8130			3910			4980								185650	37990
June 25, 2	2010																						
8:00	25	147	1439	7120	4930			8190			4830			6540								185850	38190
12:00	25	139	1428	6980																			
13:00	25	135	1437	5440	4780			6440			3150			4590									
16:00					OFF			OFF			OFF			OFF								188580	40920

					EXTRACTION WELLS										OBSERVATION WELLS								Page 7B
Well IE) E-9			E-11			E-12 8.85			E-1 9.45		E-2 9.71		MW-8 7.86		MW-6 9.60		Water Meter Readings	Cumul. Water
Initial Depth to Water DTW (feet)					9.62			9.25															
Time	Unit Vacuum	Air Flowrate	TOX Temp.	Vapor Inlet Concentration	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum/ Vapor Conc.	Depth to Water	Stinger Depth	Vacuum	Depth to Water	Vacuum	Depth to Water	Vacuum	Depth to Water	Vacuum	Depth to Water	Units	Gallons
	("Hg)	(cfm)	(degF)	(ppmv)		(feet)	(feet)		(feet)	(feet)		(feet)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)	("H ₂ O)	(feet)		
June 23, 2010																							
11:00																							
12:00																							
16:00																							
20:00					0.00	9.79		0.00	9.43		0.00	9.06		0.00	9.63	0.00	9.89	0.00	8.11	0.00	9.79		
June 24, 2	June 24, 2010																						
4:00																							
8:00					0.00	9.84		0.00	9.51		0.00	9.13		0.00	9.71	0.00	9.93	0.00	8.15	0.00	9.83		
9:00																							
10:00																							
11:00																							
12:00																							
12:30																							
16:00																							
20:00					0.00	9.89		0.00	9.42		0.00	9.28		0.00	9.61	0.00	10.16	0.00	8.22	0.00	10.01		
June 25, 2	June 25, 2010																						
8:00					0.00	10.35		0.00	9.98		0.00	9.62		0.00	10.26	0.00	10.39	0.00	8.30	0.30	10.31		
12:00																							
16:00																							
20:00					0.00	10.25		0.00	9.87		0.00	9.51		0.00	10.15	0.00	10.34	0.00	8.23	0.00	10.04		

APPENDIX H

FIRST SEMIANNUAL GROUNDWATER MONITORING FIELD DATA FROM BLAINE TECH

WELL GAUGING DATA

Project #	100628-4	21 Date	6.7	28-10	Client	The	Souvee	group
								V
Site <u>920</u>	1 Suy	Leandro	81.	Oaklad	CH-			

Thickness Volume of Survey Well Depth to of Immiscibles Point: Size Sheen / Immiscible Immiscible Removed Depth to water Depth to well TOB_or TOC Well ID Time bottom (ft.) (in.) Odor Liquid (ft.) Liquid (ft.) (ml) Notes (ft.) 4 20.10 0845 9(.35 MW-2 4 9.60 Mu-3 0848 20.20 4 18.07 MW-R M452 807 20.00 8.05 4 0858 Mu-4 2 9.90 3.2.90 0900 L AS-ID 16.60 2 0902 9.90 AS-15 2 ASMW-25 0904 16.97 10.30 9.20 2 33.28 ASMW - 20 0906 2 9.54 46.26 0845 AMW-6 4 8.42 MW-5 19.97 0902 4 8.77 MW-1 0906 20.05 Covered Unable ·to Access MW-7

Page \ of (

WELLHEAD INSPECTION CHECKLIST

Date <u>6</u>	28-10	_ Client	The	So.	we	1 roup		
Site Address	28-10 9201 Sau	q Lei	initro	51_	Ochla	nale	×4	
	100628-1			_ Te	chnician		BP	
Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed From Weilbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
MW-2							X	
MW-3				x			×	
mu-8						×		
Mw-4		1	1					
45-10	X		, 					
MS-15				 				
ASMW-2S								
ASMW-2P				· ·				
MW-6				<u> </u>				
MW-5					 		$\overline{\langle}$	
MW-1		Lo		- 6				
MW-7	Unable	<u> </u>	acce	5)	cover	ea.		
			-					
NOTES: M			٠	1	l		 [
Malust Duck	14/2 112 m.L.l.	Bolk m	155mg	5 1(1	<u>3 Cra</u> 2 Bo(K		ia mu-	8 rolat
212 BOHS	MUSS 4		1-11-00	<u> </u>		<u> </u>	100 : 00	<u></u>
								· • ,2
			·····					
BLAINE TECH SERVICE	es, NVC.	SAN JOSE	SACRAMENT	O LOS ANO	GELES SAN	I DIEGO		www.blainelech.com

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAM	NE 9201 SA	Demaisno sr		PROJECT NUMBER 100628-JU					
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS		
2100 P HACH Turbidimeter		G/28/10 0836	0.1, 20, 10C 800 NTUS		ges	and a start of the	Br		
MYRONC UL TRAMETER	8223839	6/28/10 0840	p4 7.00 10,00 4.00	7.10 10.08 ¥.06	yes	21.3	BP		
			cond 3900-45	389645	yes	21.2	BP		
mynne utra	0.000 0.000	6-13-16	PH 7,10,4 3900ms	7.02, 10.02, 4.0) 3086 ug	yes	21.2	50		
Huch torbdundy	0902204010	76-29-10 0836	\$1 50 (800	5148(8.02	yes	0000	È		

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					<u> </u>	
Project #:	100629	3-201		Client: The Source	e 9201 Sunc	landrost Oakking
Sampler:	BP			Date: 6/	28/10	
Well I.D.:	A5-1	D		Well Diameter	: 2 3 4	6 8
Total Well	Depth (TE): 3	2.90	Depth to Wate	r (DTW):	9.90
Depth to Fr	ee Product	t:		Thickness of F	ree Product (fe	et):
Referenced	to:	PVC) Grade	D.O. Meter (if	req'd):	YSI HACH
DTW with	80% Rech	arge [(H	leight of Water	Column x 0.20)) + DTW]:	4.50
Purge Method:	Bailer Disposable E Positive Air Electric Subr	Displaceme	Other	Waterra Peristaltic tion Pump 2 3.0 Well Diameter	Sampling Method Other er Multiplier Well	Bailer Disposable Bailer Extraction Port Dedicated Tubing New Fubing Diameter Multiplier
3.7 (1 Case Volume	Gals.) X Speci	<u>3</u> fied Volum	= //./	Gals.	$\begin{array}{c} 0.04 & 4" \\ \hline 0.16 & 6" \\ \hline 0.37 & \text{Other} \end{array}$	0.65
Time	Temp (°F or °C)	рн	Cond. (mS or(µS)	Turbidity (NTUs)	Gals. Removed	Observations
1107	20.0	7.26	840.1	42	3.7	
11 12	19.1	7.07	841.0	17	7.2	
11 19	19.5	7.04	844.5	11	11.1	
Did well de	water?	Yes (No	Gallons actuall	y evacuated:	//./
Sampling D	ate: 6/28	10	Sampling Time	e: 1/30	Depth to Wate	·
Sample I.D.		10		Laboratory:	Kiff CalScience	A
Analyzed fo	or: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other:	SEECOC
EB I.D. (if a	applicable)	•	@ Time	Duplicate I.D. ((if applicable):	
Analyzed fo	or: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other:	
D.O. (if req'	d): Pr	e-purge:	an far hallen son den sen en ^{mg} / _L P	ost-purge:	mg/L	
O.R.P. (if re	eq'd): Pr	e-purge:		mV . P	ost-purge:	mV

						£		
Project #:	100628	- Jo1		Client: The Source group				
G 1	10			Date:	6-28	() (
Well I.D.:	45-15	-		Well I	Diameter		4 6	8
Total Well): [6.1	60	Depth	to Wate	r (DTW):	9.90	
Depth to Fr			···	Thickr	ness of F	ree Product	(feet):	
Referenced		PVC	Grade	D.O. N	Aeter (if	req'd):	YSI	НАСН
DTW with	80% Rech	arge [(H	eight of Water	Colum	n x 0.20)) + DTW]:	Ι(.	24
Purge Method:	Bailer Disposable B Positive Air I Electric Subn	Displaceme	nt Extrac Other	Waterra Peristaltic ction Pump			nod: her:	Bailer Disposable Bailer Extraction Port Dedicated Tubing er Multiplier
1 Case Volume	Gals.) X Speci	3 fied Volum	$= \frac{\zeta_{i} O}{Calculated Vc}$	Gals.	1" 2" 3"	0.04 4 0.16 6	Dther	0.65 1.47 radius ² * 0.163
Time	Temp (°F or 🕐	pН	Cond. (mS or(µS))	l	bidity TUs)	Gals. Remov	ed	Observations
1000	18.9	7.62	1239	710	00	1.0	c	loudy
1002	19-0	7.58	1221	7100	90	20		
1004	18,9	7.57	1218	7100	90	3.0	C. O	
Did well dev	water?	Yes 🤇	No	Gallon	s actuall	y evacuated:		3.0
Sampling D	ate: 6-2	8-16	Sampling Tim	e: 100	5	Depth to Wa	ater:	10.92
Sample I.D.	: 45-1	5		Labora	tory:	Kiff CalScie	ence	Other Accutest
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygen	ates (5)	Other: Se	e c	CC
EB I.D. (if a	pplicable)		@ Time	Duplic	ate I.D. ((if applicable	:	
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygen	ates (5)	Other:	and the second se	
D.O. (if req'	d): Pr	e-purge:		mg/L	Р	ost-purge:		mg/L
O.R.P. (if re	q'd): Pr	e-purge:		mV	, P	ost-purge:		mV

Well MONITORING DATA SHEET

Project #:	1006-	7 07 -)/	<u> </u>	Client: The Se	Vie 970/ Sam	landorsh A.K. 1
Sampler:	<u>1006 :</u> 13 P	28-00	<i></i>		8/10	Candrost. Oukland
Well I.D.:	ASMW	1-71)		Well Diameter	\sim	6 8
Total Well			27.07	Depth to Wate		9,70
			0.78		Free Product (fe	
Depth to Fr Referenced		PVC	Grade	D.O. Meter (if		YSI HACH
		Character Street	eight of Water			14.51
Purge Method:	Bailer Disposable B Positive Air I Electric Subr	ailer Displaceme	nt Extrac Other	Waterra Peristaltic tion Pump	Sampling Method: Other:	: Bailer Disposable Bailer Extraction Port Dedicated Tubing
3, 9 (6) 1 Case Volume	Gals.) X Speci	<u>3</u> fied Volum	= //.7		ter <u>Multiplier</u> Well 0.04 4" 0.16 6" 0.37 Other	Diameter Multiplier 0.65 1.47 r radius ² * 0.163
Time	Temp (°F or C)) pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1140	19.7	7.15	884,0	27	3.9	
11 45	19.7	7.08	\$ 80.0	13	7.8	
11 50	19.6	7.05	881.1	/3	11.7	
Did well dev	water?	Yes (No	Gallons actual	ly evacuated:	11.7
Sampling D	ate: 6/2,8	2 [10	Sampling Time	: 1155	Depth to Wate	
Sample I.D.	ASMA	1- ZD		Laboratory:	Kiff CalScience	e Other <u>Accutest</u> SEE COC
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other:	SEECOC
EB I.D. (if a	pplicable)	:	@ Time	Duplicate I.D.	(if applicable):	
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other:	
D.O. (if req'	d): Pr	e-purge:		^{mg} /L	ost-purge:	mg/L
O.R.P. (if re	q'd): Pr	e-purge:		mV . I	Post-purge:	mV

Project #: 100629-Joy	Client: The Source	9000							
Sampler: 10	Date: 6-28-10								
Well I.D.: ASMW-2S	Well Diameter: 2 3 4 6 8								
Total Well Depth (TD): 16.97	Depth to Water (DTW): 10.30								
Depth to Free Product:	Thickness of Free Product (fe								
Referenced to: PVC Grade	D.O. Meter (if req'd):	YSI HACH							
DTW with 80% Recharge [(Height of Water	Column x 0.20) + DTW]: \\	.63							
Purge Method: Bailer Waterra Sampling Method: Bailer Disposable Bailer Peristaltic Disposable Bailer Disposable Bailer Positive Air Displacement Extraction Pump Extraction Port Electric Submersible Other									
$\frac{10}{1 \text{ Case Volume}} (\text{Gals.}) \times \frac{3}{\text{Specified Volumes}} = \frac{300}{\text{Calculated Volumes}}$	Gals. 1" 0.04 4" 2" 0.16 6" 3" 0.37 Other	0.65 1.47 radius ² * 0.163							
TempCond.Time(°F or C)pH(mS or uS)	Turbidity (NTUs) Gals. Removed	Observations							
1621 19.1 7.34 1038	71000 1.0	cloudy							
1023 19.1 7.33 1012	>10006 2.0	u 1							
1025 19.2 7.28 1009	71000 3.0	~~ · ·							
Did well dewater? Yes No	Gallons actually evacuated:	30							
Sampling Date: 6-28-16 Sampling Time	e: 1030 Depth to Wate	Mark Brown							
Sample I.D.: ASMW-25	Laboratory: Kiff CalScience								
	Oxygenates (5) Other: See	2 600							
EB I.D. (if applicable): @	Duplicate I.D. (if applicable):								
Analyzed for: TPH-G BTEX MTBE TPH-D	Oxygenates (5) Other:								
D.O. (if req'd): Pre-purge:	^{mg} / _L Post-purge:	mg/L							
O.R.P. (if req'd): Pre-purge:	mV Post-purge:	mV							

						· · · · · · · · · · · · · · · · · · ·		
Project #:	180GZ	8-10)/	Client:	The Sour	10 (1100 0)	01 San Cecadro St 1/2 land	
Sampler:	BP			Date:		28/10		
Well I.D.:	MW-1			Well I	Diameter	: 2 3 4) 6 8	
Total Well	*): Z(0.05	Depth to Water (DTW): 8,77				
Depth to Fr	ee Product	•	· · · · · · · · · · · · · · · · · · ·	Thickness of Free Product (feet):				
Referenced	to:	PVC	Grade	D.O. N	leter (if	req'd):	YSI HACH	
DTW with	80% Rech	arge [(H	leight of Water	Colum	n x <u>0.20</u>)) + DTW]:	11.02	
Purge Method:	Bailer Disposable B Positive Air I Electric Subn	Displaceme	Other	Waterra Peristaltic tion Pump		Sampling Metho Othe er <u>Multiplier</u> We	Disposable Bailer Extraction Port Dedicated Tubing	
7.3(1 Case Volume		 fied Volum	= 21.9	_Gals.	1" 2" . 3" .	0.04 4" 0.16 6" 0.37 Oth	0.65	
Time	Temp (°F or 🕥	pН	Cond. (mS or(uS))	1	bidity TUs)	Gals. Removed	l Observations	
0915	19.Z	7.31	853.8	4	7-1	7.3		
0918	18.4	7.03	\$81.1	4	352	14.6		
0920	18.1	6.96	869.3	7	469	21.9		
Did well de	water?	Yes	No	Gallon	s actuall	y evacuated:	21.9	
Sampling D	ate:6/22	8/10	Sampling Time	e: 09	30	Depth to Wat	er: 10.37	
Sample I.D.		- ·		Labora		Kiff CalScien	A	
Analyzed fo	or: TPH-G	BTEX	MTBE TPH-D	Oxygen	ates (5)	Other:	SEE COC	
EB I.D. (if a	upplicable)	* •	@ Time	Duplic	ate I.D. ((if applicable):		
Analyzed fo	or: TPH-G	BTEX	MTBE TPH-D	Oxygena	ates (5)	Other:	~	
D.O. (if req'	d): Pr	e-purge:		^{mg} /L	Р	ost-purge:	mg/L	
O.R.P. (if re	q'd): Pr	e-purge:		mV	. P	ost-purge:	mV	

WELL MONITORING DATA SHEET

Project #:	0062	9-10	7,	Client: The Source group				
Sampler:	50			Date: 6-28-10				
Well I.D.:	MW.7			Well Diameter: 2 3 4 6 8				
Total Well			D	Depth to Wat	er (DTW):	1.33		
Depth to Fr				Thickness of	Free Product (fe	et):		
Referenced	to:	PVC	Grade	D.O. Meter (i	f req'd):	YSI HACH		
DTW with	80% Rech	arge [(H	eight of Water	Column x 0.2	0) + DTW]:	11-48		
Purge Method:	Bailer Otsposable B Positive Air I Electric Subr	Displaceme		Waterra Peristaltic tion Pump	Sampling Method Other	: Bailer Disposable Bailer Extraction Port Dedicated Tubing		
7.6 1 Case Volume	Gals.) X Speci	3 fied Volum	$\underline{=} \frac{21.0}{\text{Calculated Vo}}$	_ Gals. lume	<u>eter Multiplier Well</u> 0.04 4" 0.16 6" 0.37 Othe	Diameter <u>Multiplier</u> 0.65 1.47 r radius ² * 0.163		
Time	Temp (°F or °C)	pH	Cond (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations		
1050	19.4	7.52	1270	COOK	1.0	Brrun (clardo,		
1055	12-2	7.58	1296	71000	14.0	a ce		
1100	19.3	7.57	1302	71008	21.8	2 4		
			~					
Did well dev	water?	Yes (Na	Gallons actua	lly evacuated:	21-0		
Sampling D	ate: 6-7	19-16	Sampling Time	" llos	Depth to Wate	r: 10.16		
Sample I.D.:	: Mw-	2		Laboratory:	Kiff CalScienc	e Other Accutest		
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other: Sole	Ca		
EB I.D. (if a	pplicable)	:	@ Time	Duplicate I.D	(if applicable):			
Analyzed for	r: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other:			
D.O. (if req'	d): Pr	e-purge:		^{mg} /L	Post-purge:	mg/L		
O.R.P. (if re	q'd): Pr	e-purge:		mV _	Post-purge:	mV		

Project #:	100628	3 - 101	,	Client	The	Source	e	grave	>	
Sampler:	90			Date:		28-10	(J 1		:
Well I.D.:	MW-3			Well I	Diameter		4	6 8	3	
Total Well 1): 2	0.20	Depth to Water (DTW): 9.60						
Depth to Fre	ee Product		n	Thick	ness of F	ree Produ				
Referenced	to:	QVE	Grade	D.O. N	Aeter (if	req'd):		YSI	HACH	[
DTW with 8	80% Rech	arge [(H	leight of Water	Colum	n x 0.20)) + DTW]	:	١١	7 Ζ	
Purge Method:	Bailer Disposable B Positive Air I Electric Subn	Displaceme	ent Extrac Other	Waterra Peristaltic ction Pump	;	Sampling	Method: Other:	Q I	Bailer isposable Ba Extraction P edicated Tul	ort
<u>6.9</u> (0 1 Case Volume	Gals.) X Speci	3 fied Volum	= 20.7 Calculated Volume		Well Diamete 1" 2" 3"	er Multiplier 0.04 0.16 0.37	Well I 4" 6" Other	Diameter	Multiplier 0.65 1.47 radius ² * 0.14	63
Time	Temp (°F or C)	pН	Cond. (mS or(µS)		bidity TUs)	Gals. Rei	moved	(Observatio	ns
0932	19.5	7.61	9775.0	40	22	6.9		G	lors-	
0933	19.4	7.64	932.0	5	07	13.B		а	٤(
0735	196	761	9.22.7	58)5	20.7	J			
Did well dev	water?	Yes (No	Gallon	s actuall	y evacuat	ed:	20	2.7	
Sampling Da	ate: 6 - 29	-16	Sampling Time	e: 094	.0	Depth to	Water	:: il	-00	
Sample I.D.:		~		Labora	itory:	Kiff Ca	lScience		her Acev	test
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygen	ates (5)	Other:	Sle	- <u>C</u>	ЭC	_
EB I.D. (if a	pplicable)		@ Time	Duplic	ate I.D. ((if applica			1-3- D	0000
Analyzed for	r: TPH-G	BTEX	MTBE TPH-D	Oxygen		Other:		ecou		Ť
D.O. (if req'o	d): Pr	e-purge:	annan tealanna ann an ann ann ann ann ann ann an	^{mg} /L	P	ost-purge:				^{mg} /L
O.R.P. (if re	q'd): Pr	e-purge:		mV	. P	ost-purge:		angi ili an Tanang may na pang ang ini	220154910200000000000000000000000000000000000	mV

Project #:	100628 -	SOL		Client: the source group				
Sampler:	12			Date: 6-28-10				
Well I.D.:	MW-4			Well Diameter: 2 3 4 6 8				
Total Well): 2	60.0	Depth to Water (DTW): \mathcal{Q}_{2} , \mathcal{O}_{2}				
Depth to Fr	ee Product			Thick	ness of F	ree Product	(feet):	
Referenced	to:	PVC .	Grade	D.O. N	Meter (if	req'd):	YSI	НАСН
DTW with	80% Rech	arge [(H	leight of Water	Colum	n x 0.20)) + DTW]:	10	.44
Purge Method:	Bailer Disposable B Positive Air I Electric Subn	Displaceme		Waterra Peristaltic tion Pump	Well Diameter	er <u>Multiplier</u>	her: Well Diame	
7.7 (1	Gals.) X	3	= 23.1	Gals.	1" 2" . 3"	0.16	f" 5" Other	0.65 1.47 radius ² * 0.163
1 Case Volume	Speci	fied Volun	nes Calculated Vo	olume		0.57		
Time	Temp (°F or C)	pH	Cond. (mS or(µS))	1	bidity TUs)	Gals. Remov	red	Observations
409	19.9	767	961.3	Ne	60	77		
1216	19.9	261	9641	7(6	600	15.4		
1285	19.9	7.58	970.2	710	ev	23.1		
Did well dev	water?	Yes (No	Gallon	s actuall	y evacuated:	Z	3./
Sampling D	ate: 6 - 29	-10	Sampling Time	e: (2	3D	Depth to W	ater: 0	2.22
Sample I.D.	Sample I.D.: MW-4 Laboratory: Kiff CalScience Other Accutest							
Analyzed fo	Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: See Cor							
EB I.D. (if a	pplicable)	:	@ Time	Duplic	ate I.D. ((if applicable		
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5) Other:				
D.O. (if req'	d): Pr	e-purge:	And an entering and an an an an an an an an an an an an an	^{mg} /L	Р	ost-purge:		mg/L
O.R.P. (if re	q'd): Pr	e-purge:		mV	_ P	ost-purge:		mV

						······································			
Project #:	00628	·-J01		Client: The Sour	re Group 920) Sun leandrost Oak kund			
Sampler:	BP	-		Date: 6/	28/10				
Well I.D.:	MW-5	•		Well Diameter	: 2 3 4) 6 8			
Total Well	Depth (TD): 19	97	Depth to Water (DTW): 8,42					
Depth to Fr	ee Product			Thickness of F	Free Product (fe				
Referenced	to:	PVC	> Grade	D.O. Meter (if	req'd):	YSI HACH			
DTW with	80% Rech	arge [(H	leight of Water	Column x 0.20)) + DTW]:	10.73			
Purge Method:	Bailer Disposable B Positive Air I Electric Subr	Displaceme	ent Extrac > Other	Waterra Peristaltic tion Pump	Sampling Method Other er Multiplier Well	Disposable Bailer Extraction Port Dedicated Tubing			
7.5 ((1 Case Volume	· · · · · · · · · · · · · · · · · · ·	<u>S</u> fied Volum	= 22.5	Gals.	0.04 4" 0.16 6" 0.37 Other	0.65 1.47			
Time	Temp (°F or °C)	рН	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations			
0950	19.8	6.90	446.5	169	7.5				
0952	18.9	7.05	486.0	71000	15.0				
0954	18.9	7.07	503. Z	349	22.5	· · · · · · · · · · · · · · · · · · ·			
Did well dev	water?	Yes 🄇	No	Gallons actuall	y evacuated:	ZZ.5			
Sampling D	ate: 6/2	\$/10	Sampling Time	: 1000	Depth to Wate				
Sample I.D.	: MW-5			Laboratory:	Kiff CalScience	4			
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other:	SEECO			
EB I.D. (if a	pplicable)	•	@ Time	Duplicate I.D.		•			
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other:				
D.O. (if req'	d): Pr	e-purge:		^{mg} / _L P	ost-purge:	^{mg} /L			
O.R.P. (if re	q'd): Pr	e-purge:		mV P	ost-purge:	mV			

CA St						
ø						
Well Diameter: 2 3 4 6 8						
НАСН						
))						
Bailer osable Bailer raction Port cated Tubing						
ultiplier 65 47 dius ² * 0.163						
servations						
der						
65						
Accutes +						
oc						
^{mg} /L						
mV						

Project #: 1006 28 - 301	Client: The Source Grap					
Sampler: BP	Date: $6/28/10$					
Well I.D.: MW-7	Well Diameter: 2 3 4 6 8					
Total Well Depth (TD):	Depth to Water (DTW):					
Depth to Free Product:	Thickness of Free Product (feet):					
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH					
DTW with 80% Recharge [(Height of Water	Column x 0.20) + DTW]:					
Purge Method: Bailer Disposable Bailer Positive Air Displacement Electric Submersible (Gals.) X = 1 Case Volume Specified Volumes Calculated V	Other:Well DiameterMultiplierWell DiameterMultiplier1" 0.04 4" 0.65 2" 0.16 6" 1.47 3" 0.37 Other $radius^2 * 0.163$					
$\begin{array}{c c} Temp & Cond.\\ Time & (^{\circ}F \text{ or }^{\circ}C) & pH & (mS \text{ or }\mu S) \end{array}$ $\begin{array}{c c} \mathcal{K} \mathcal{V} \mathcal{N} \mathcal{A} \mathcal{B} \mathcal{L} \mathcal{E} & TO & \mathcal{A} \mathcal{L} \mathcal{L} \mathcal{E} \mathcal{L} \\ \mathcal{C} \mathcal{O} \mathcal{V} \mathcal{E} \mathcal{R} \mathcal{E} \mathcal{D} & \mathcal{C} \end{array}$	Turbidity (NTUs) Gals. Removed Observations					
Did well dewater? Yes No	Gallons actually evacuated:					
Sampling Date: Sampling Tim	ne: Depth to Water:					
Sample I.D.:	Laboratory: Kiff CalScience Other <u>All utest</u>					
Analyzed for: TPH-G BTEX MTBE TPH-D	Oxygenates (5) Other: SEE CCX					
EB I.D. (if applicable): @	Duplicate I.D. (if applicable):					
Analyzed for: TPH-G BTEX MTBE TPH-D	Oxygenates (5) Other:					
D.O. (if req'd): Pre-purge:	^{mg} / _L Post-purge: ^{mg} / _L					
O.R.P. (if req'd): Pre-purge:	mV Post-purge: mV					

Project #: 100628 10	Client: The Source gran						
Sampler: JO	Date: $6 - 28 - 16$						
Well I.D.: MM-8	Well Diameter:	2 3 4) 6 8				
Total Well Depth (TD): 18.07	Depth to Water ((DTW): 8	.07				
Depth to Free Product:	Thickness of Fre	ee Product (fee	et):				
Referenced to: PVC Grade	D.O. Meter (if re	eq'd):	YSI HACH				
DTW with 80% Recharge [(Height of Wate	er Column x 0.20) -	+ DTW]: 10	7.07				
	Waterra Peristaltic raction Pump	Sampling Method:	Disposable Baiter Extraction Port Dedicated Tubing				
$\frac{6.6}{1 \text{ Case Volume}} (\text{Gals.}) \times \frac{3}{\text{Specified Volumes}} = \frac{19.6}{\text{Calculated}}$		Multiplier Well I 0.04 4" 0.16 6" 0.37 Other	Diameter <u>Multiplier</u> 0.65 1.47 radius ² * 0.163				
TempCond.Time(°F of °C)pH(mS or μ S)1(30199767937.4	Turbidity (NTUs)	Gals. Removed	Observations				
	= -(7)6	<u>6.5</u> 13.0					
	74	19.5					
1133 1969 7.60 974.5	36 (113					
Did well dewater? Yes No	Gallons actually	evacuated:	19.5				
Sampling Date: 6-28-6 Sampling Tim		Depth to Water	172				
Sample I.D.: MW-8	Laboratory: K	Kiff CalScience	e Other Accelest				
Analyzed for: TPH-G BTEX MTBE TPH-D	Oxygenates (5) C)ther: Ceo	Cue				
EB I.D. (if applicable):	Duplicate I.D. (if						
Analyzed for: TPH-G BTEX MTBE TPH-D	<i></i>	Other:					
D.O. (if req'd): Pre-purge:	^{mg} / _L Pos	st-purge:	mg/L				
O.R.P. (if req'd): Pre-purge:	mV , Pos	mV Post-purge: mV					

Well MONITORING DATA SHEET

Si . or Purge Water Drum Lo

Client: SGI						<u></u>				
Site Address: 9701 Se	N LOND	es Art	DALLANS	2, CA-						
STATUS OF DRUM(S) UPON ARRIVAL										
	11-6-00	6-28-16								
Number of drum(s) empty:	2	10								
Number of drum(s) 1/4 full:										
Number of drum(s) 1/2 full:										
Number of drum(s) 3/4 full:										
Number of drum(s) full:		10								
Total drum(s) on site:	2									
Are the drum(s) properly labeled?	NO	NO								
Drum ID & Contents:										
If any drum(s) are partially or totally filled, what is the first use date:		MA								

- If you add any SPH to an empty or partially filled drum, drum must have at least 20 gals. of Purgewater or DI Water.

-If drum contains SPH, the drum MUST be steel AND labeled with the appropriate label.

-All BTS drums MUST be labeled appropriately.

STATUS OF DRUM(S) UPON	DEPARTI	JRE				
Date	11-6-09	6-28-10				
Number of drums empty:	2	7				
Number of drum(s) 1/4 full:	1					
Number of drum(s) 1/2 full:						
Number of drum(s) 3/4 full:						
Number of drum(s) full:	2	13				
Total drum(s) on site:	5					
Are the drum(s) properly labeled?	yes	ots ges				
Drum ID & Contents:	Pune (20)	Projector				
LOCATION OF DRUM(S)						
Describe location of drum(s): NU	t -10 Bi	ildy In	alywor	7. aven	28-10 In Next to we	Starage
FINAL STATUS						
FINAL STATUS Number of new drum(s) left on site this event	3	0				
Number of new drum(s) left on site	3	0				
Number of new drum(s) left on site this event		<u> </u>				
Number of new drum(s) left on site this event Date of inspection:	11-6-01	6-28-10				

APPENDIX I

SOIL AND GROUNDWATER SAMPLING AND ANALYSIS (JONAS, 1997)



JONAS & ASSOCIATES INC.

Environmental Consultants

97 APR - 4 PM 2: 40 2815 Mitchell Drive, Suite 209 • Walnut Creek, CA 94598 • Tel: (510) 933-5360 • Fax: (510) 933-5362

April 1, 1997

Ms. Eva Chu Hazardous Materials Specialist Alameda County Environmental Health Services 1131 Harbor Bay Parkway, Second Floor Alameda, California 94502 (510) 567-6762; 337-9335 fax

Subject: Soil and Groundwater Sampling and Analysis. Project: Former PACO Pumps, 9201 San Leandro Street, Oakland, California. J&A #: PCO-220

Dear Ms. Chu:

In the December 12, 1996 letter titled "Soil Borings at 9201 San Leandro Street, Oakland, CA" Alameda County Environmental Health Services recommended further characterization of soil and groundwater at the former Paco Pumps Inc. (Paco Pumps) facility located at 9201 San Leandro Street, in Oakland, Califonria. In response to this request Paco Pumps and Jonas and Associates Inc. (J&A) submitted a January 22, 1997 "Work Plan for Soil and Groundwater Characterization." Approval of this Work Plan was provided in a January 27, 1997 letter from Alameda County Health Care Services Agency titled "Workplan Approval for 9201 San Leandro Street, Oakland, CA". In preparation for the scope of work, J&A submitted a Drilling Permit Application to the Zone 7 Water Agency (attached) on January 22, 1997 and contacted Underground Service Alert (1-800-642-2444). The drilling permit was approved on January 27, 1997 as permit number 97058. Drilling activities and sampling occurred at the former Paco Pumps facility on January 31, 1997. The following sections of this report presents drilling and sampling procedures and analytical results.

Drilling and Sampling Procedures

On January 31, 1997 two boreholes were drilled by Gregg Drilling inside a building at the 9201 San Leandro Street facility. Gregg Drilling performed the work using a Geoprobe. The boreholes were located within 10 to 20 feet downgradient from monitoring well 9MW3. Borehole locations are identified on the attached Figure 1.

The scope of work stated that at one borehole at a depth of approximately five feet one soil sample would be collected and analyze for bulk density, porosity, organic content, and moisture. At both borehole locations, a soil sample was to be collected from the capillary fringe and a water sample collected from below the groundwater table. All four of these samples were then to be analyzed for TPH-Gasoline and BTEX.

Jonas & Associates Inc.

To determine an estimated depth to water at the boreholes, a water level of 8.4 feet below ground surface (bgs) was measured in monitoring well 9MW3. Gregg Drilling started with Borehole B2 after mobilizing the Geoprobe. After punching through the concrete flooring Gregg Drilling removed the bit and replaced it with a rod and continued down to a depth of approximately 8 feet bgs. The rod was then removed and a sampling sleeve was attached. A soil sample of the capillary fringe was then collected from 8 to 8.5 feet bgs and labeled B2-8.5'. The sampling sleeve was then removed and the borehole continued down to 15 feet bgs. A PVC well screen was then placed into the borehole to capture sufficient groundwater for sampling. Gregg Drilling then moved the Geoprobe to Borehole B1. A soil samples was then collected from 5 to 5.5 feet bgs and labeled B1-5.5'. A second soil samples was then collected from 8 to 8.5 feet bgs and labeled B1-8.5'. The borehole was then completed to 15 feet bgs and a PVC well screen was placed into the borehole. All soil samples were placed into a ice chest chilled with blue ice and transported to ChromaLab for analysis. The samples were accompanied by a completed Chain-of-Custody record. ChromaLab is a California certified laboratory located in Pleasanton, California.

Groundwater samples were collected on February 3, 1997 from each of the borehole. These groundwater samples are identified as B1-GW and B2-GW. The screens were then pulled and the boreholes were filled with a bentonite/concrete mixture. The top of each borehole was then fill with concrete and finished to surface. These samples and the Chain-of-Custody record were transported to ChromaLab.

Analytical Results

The Chain-of-Custody records and laboratory data sheets are presented as attachments to the correspondence. Following is a summary of the analytical results:

			T .								
Sample I.D.	Moisture Content (%)	Dry Density (pcf)	Porosity (%)	Organic Content (%)	Specific Gravity						
B1-5.5'	25.3	95.4	42.8	2.9	2.67						
TPH-Gasoline and BTEX Soil Results											
Sample I.D.	TPH-Gasoline (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl Benzene (mg/Kg)	Total Xylenes (mg/Kg)						
B1-8.5'	ND(1.0)	0.012	ND(0.0050)	ND(0.0050)	ND(0.0050)						
B2-8.5'	9.5	0.042	0.014	0.035	0.058						

Soil Properties

Sample I.D.	TPH-Gasoline (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl Benzene (mg/L)	Total Xylenes (mg/L)
B1-GW	31.000	7.100	4.100	0.520	1.400
B2-GW	41.000	14.000	2.600	0.740	1.700

TPH-Gasoline and BTEX Groundwater Results

<u>Summary</u>

The sampling results indicate that groundwater downgradient from monitoring well 9MW3 and the former underground storage tank have detectable concentrations of TPH-Gasoline and BTEX. One soil sample (B2-8.5') from the capillary fringe had detectable concentrations of TPH-Gasoline and BTEX. The other soil sample (B1-8.5') only had a detectable concentration of benzene.

My recommendation is to meet with you and discuss possible regulatory closure for this site.

As always, it is a pleasure to work with you and Alameda County Health Care Services Agency. Please call anytime to discuss any technical aspects of this project.

Sincerely, JONAS & ASSOCIATES INC. Mark Jonas, R.G. Project Manager attachments: Drilling Permit, Figure 1 "Borehole Locations & Analytical Results", Chain-of-Custody Records, Laboratory Data Sheets.

cc: Distribution

Jonas & Associates Inc.

DOCUMENT DISTRIBUTION

Former Paco Pumps 9201 San Leandro Street, Oakland, California:

Small Business Administration District Counsel Small Business Administration 211 Main Street, 4th Floor San Francisco, California 94105

<u>Lender</u> Kathryn J. Sennott

Senior Loan Officer Heller First Capital Corporation 650 California Street, 23rd Floor San Francisco, California 94108

Borrower

Leonard M. Silvani GP Holding, LLC 9201 San Leandro Street Oakland, California 94603

BAEDC

James Baird Bay Area Employment Development Company 1801 Oakland Boulevard, Suite 300 Walnut Creek, California 94596

Indemnitor

Mr. John Lilla Paco Pumps, Inc. 301 Camp Craft Road, Suite 100 West Lake Hills Austin, Texas 78746 GEN

ESTIMATED STARTING DATE

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600 FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE!	FOR OFFICE USE
FOR AFFLICANT TO COMPLETE:	
LCCATION OF PROJECT FORMER PACO Fumps	PERMIT NUMBER 97058
9201 San Leandro Street	
Oakland, Galifornia 94603	
CLIENT .	
Name Mr. John Lilla Paco Pumps. Inc.	PERMIT CONDITIONS
Address 301 Camp Graft RD. Phone (512)314-8500	
City Austin, Texas Zo 94598	Circled Permit Requirements Apply
APPLICANT	
Name Jonas & Associates Inc.	A GENERAL
attn: Mark L. Jonas, R.G.	A nerroit application should be submitted so as to arrive at the
Address 2815 Mitchell Dr. su208hone (510)933-5360	Zone 7 office five days prior to proposed starting date.
City Walnut Creek, CA 1#20% Zp 94598	 Submit to Zone 7 within 50 cays after completion of permitted Submit to Zone 7 within 50 cays after completion of permitted
	work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs
TYPE OF PROJECT Well Construction Gestechnical Investigation	and location sketch for geotechnics projects.
Well Construction General Investigation Cathodic Protection General	3.) Permit is void it project not begun within 90 days of approval
Water Supply Contamination X	data.
Monitoring Weil Destruction	B. WATER WELLS INCLUDING PIEZOMETERS
	 Minimum surface seal thickness is two inches of cement grout
PROPOSED WATER SUPPLY WELL USE	nionari by tramin.
Domestic Industrial Other	2 Minimum seal death is 50 fast for municipal and industrial wens
Municipal Inigation	or 20 feet for comestic and impation wells unless a lesser
	depth is specially approved. Minimum seal depth for
ORILLING METHOD:	monitoring wells is the maximum depth practicable or 20 feet.
Mud Rotary Alger	C. GEOTECHNICAL. Backfill bors hele with compacted cuttings of
Cable Other <u>Bydropunch</u> or Ramset	heavy bentonite and upper two feet with compacted material. In areas of known or suspected comaningtion, trented cament graut
ORILLER'S UCENSE NO. 485165	enal he used in blace of compacted cuttings.
	D. CATHODIC. Fill hole above anoda zona with concrete placed by
WELL PROJECTS	tremio.
Dril Hole Diameter in. Meximum	E. WELL DESTRUCTION. See anached.
Casing Diameter In. Depth ft.	
Surface Seal Depth fL Number	
GEOTECHNICAL PROJECTS	
Number of Borings 2 Maximum	
Hole Diameter 2 in. Depth 12 ft.	

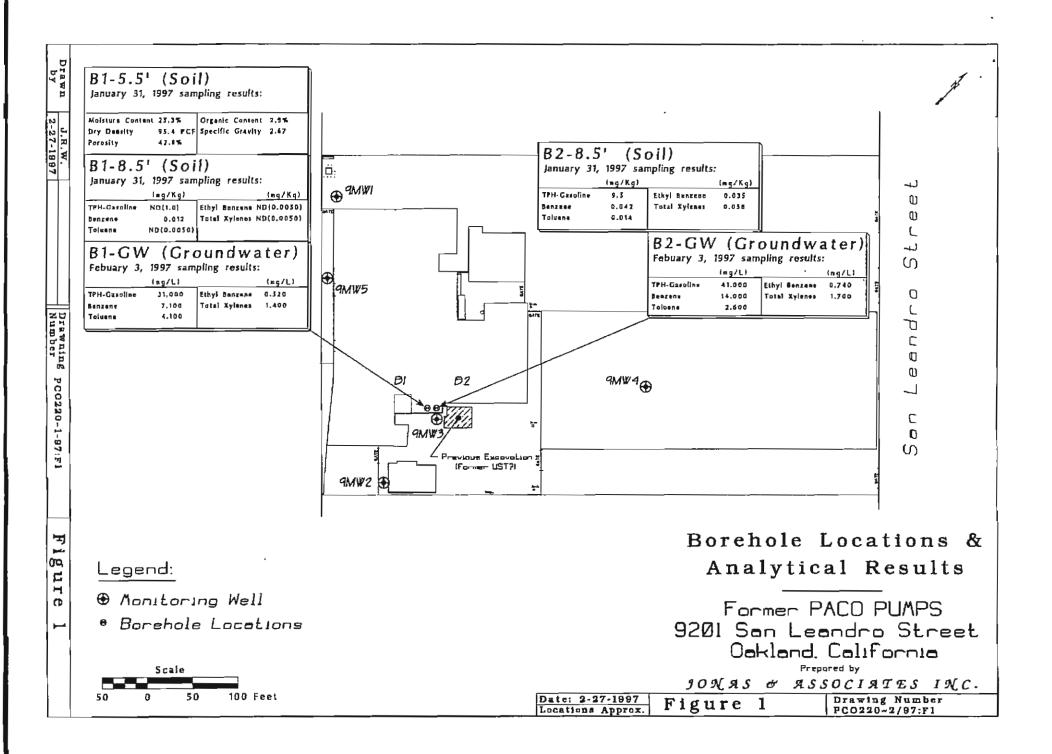
ESTIMATED COMPLETION DATE Jan 31, 1997 Approved I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 79-68.

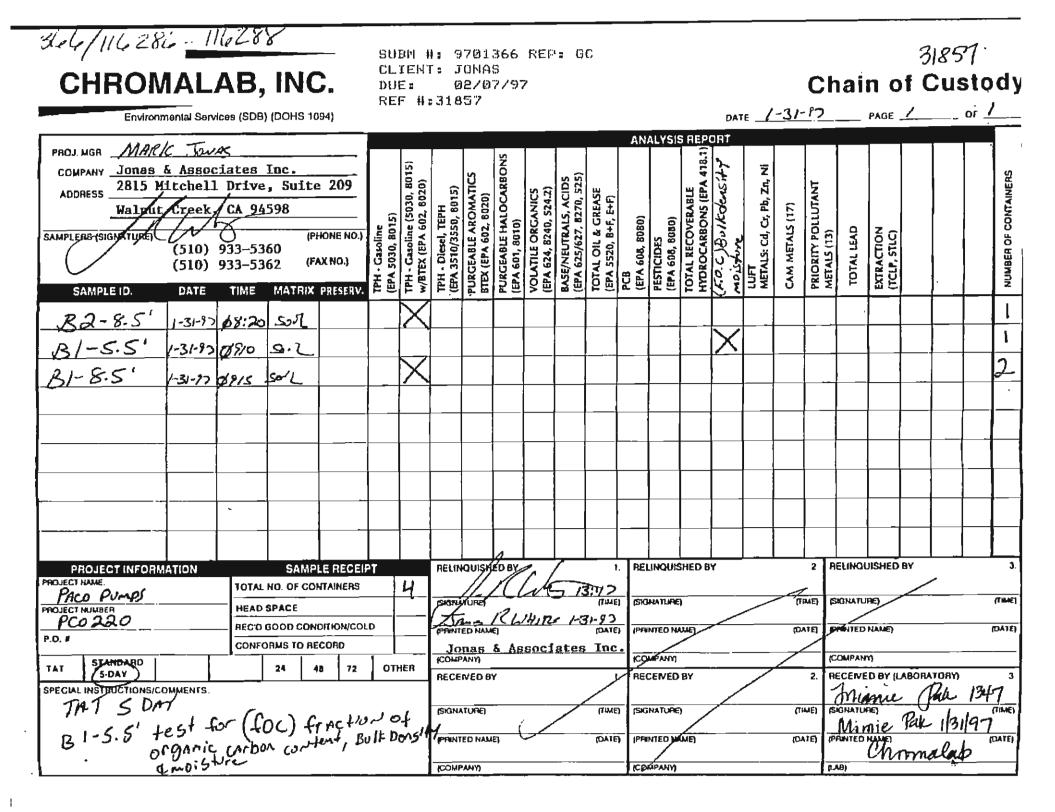
Jan 31, 1997

APPLICANT'S SIGNATURE Date 1/17 EAV (FID) 932.531-2 Mark L. Sonas. R.G.

Date 27 Jan 97 Wyman Hong

31992





007/ 116472 - 116173 CHROMALAB, INC. Environmental Services (SDB) (DOHS 1094)	SUBM CLIEN DUE: REF #	ዛፕ≱ ፓ ወ	0NAS 2/10/	7 REP 97	# GC				2-3						°9.1 t ody r_ <u></u>
PROJ MGR MAK/C Jones COMPANY JONAS & ASSOCIATES INC. ADDRESS 2815 Mitchell Drive, Suite 209 Walnut Creek CA 94598 SAMPLERS (SIGNATURE) (PHONE NO.) (510) 933-5360 (510) 933-5362 (FAX NO.) SAMPLE (D. DATE TIME MATRIX PRESERV.	TPH - Casoline (EPA 5030, 8015) TPH - Casoline (5030, 8015)	w/BTEX (EPA 602, 8020) TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURCEABLE AROMATICS BTEX (EPA 602, 8020) PURGEABLE HALOCARBONS	(EPA 601, 8010) VOLATILE ORCANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525) TOTAL OU: 1, CHELGE	I UI AL OIL & GREASE (EPA 5520, B+F, E+F) PCR	(EPA 608, 8080) PESTICIDES (EPA 608, 8080)	ABLE S (EPA 418.1)	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)		•	NUMBER OF CONTAINERS
B2.GW 2.3.57 9:50 WTR IKL B1.GW 2.3.97 10:00 WTR IKL															2
PROJECT INFORMATION SAMPLE RECEINANCE PROJECT HAME TOTAL NO. OF CONTAINERS PROJECT HUMBER TOTAL NO. OF CONTAINERS PROJECT HUMBER HEAD SPACE STANDARD 24 SPECIAL INSTRUCTIONS/COMMENTS. TAT SUMPS		PPENTI JO COMP RECEI	Leg I (I ED NAME) DABS & ANY VEO BY	Associa	<u>7-3-4</u> ates 1 /4/	50 (TIME) 57 (DATE) Inc.	RELINQUIS (SIGNATURE (PRINTED NU (COMPANY) RECEIVED (SIGNATURE (PRINTED/MA (PRINTED/MA	BY	(T	ME) (SI ATE) (PI Z. (FIE)		ma ma ma ma ma ma ma ma ma ma	BORAT Pak	lac 1 2/3	3. (TANE) (TANE) 57 (TANE) 540 (TANE) (TANE)

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CHF	RON	IAL	AB,	INC.

Environmental Services (SDB)

February 7, 1997

Submission #: 9701366

JONAS & ASSOCIATES, INC.

Atten: Mark Jonas

Project: PACO PUMPS Project#: PC0220 Received: January 31, 1997

re: 2 samples for Gasoline and BTEX compounds analysis. Method: EPA 8015M SW846 8020A Nov 1990

Matrix: SOIL Sampled: January 31, 1997 Run#: 5209

Analyzed: February 5, 1997

<u>Spl#CLIENT_SPL ID</u>	Gasoline (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl Benzene (mg/Kg)	Total Xylenes (mg/Kg)	_
116286 B2-8.5'	9.5	0.042	0.014	0.035	0.058	
Note: Surrogate r	ecovery was o	utside QA/QC	limits due t	o sample int	erference.	
See Surroga	te Summary pa	ge.				
<i>11628</i> 7 B1-8.5'	N.D.	0.012	N.D.	N.D.	N.D.	
Reporting Limits Blank Result Blank Spike Result (%	1.0 N.D.)	0.0050 N.D. 110	0.0050 N.D. 111	0.0050 N.D. 112	0.0050 N.D. 82.5	

Kayvan Kimyai Chemist

+ Gum

Marianne Alexander Gas/BTEX Supervisor



Environmental Services (SDB)

February 10, 1997

Submission #: 9702007

JONAS & ASSOCIATES, INC.

Atten: Mark Jonas

Project: PACO PUMPS Project#: PCO220 Received: February 3, 1997

re: 1 sample for Gasoline and BTEX compounds analysis. Method: EPA 8015M SW846 8020A Nov 1990

Matrix: WATER Sampled: February 3, 1997 Run#: 5226

Analyzed: February 7, 1997

Spl# CLIENT SPL ID	Gasoline (ug/L)	Benzene (uq/L)	Toluene (ug/L)	Sthyl Benzene (ug/L)	Total Xylenes (ug/L)
116473 B1-GW	31000	7100	4100	520	1400
Reporting Limits Blank Result Blank Spike Result (%	6200 N.D.) 109	62 N.D. 120	62 N.D. 116	62 N.D. 120	62 N.D. 114

Marianne Al ander

Gas/BTEX Supervisor

Chip Poalinell

Operations Manager

CHROMALAB, INC.

Environmental Services (SDB)

February 10, 1997

Submission #: 9702007

JONAS & ASSOCIATES, INC.

Atten: Mark Jonas

Project: PACO PUMPS Project#: PCO220 Received: February 3, 1997

re: 1 sample for Gasoline and BTEX compounds analysis. Method: EPA 8015M SW846 8020A Nov 1990

Matrix: WATER Sampled: February 3, 1997 Run#: 5226

Analyzed: February 8, 1997

<u>Spl#CLIENT SPL ID</u>	Gasoline (ug/L)	Benzene (uq/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
116472 B2-GW	41000	14000	2600	740	1700
Reporting Limits Blank Result Blank Spike Result (%	10000 N.D.) 109	100 N.D. 120	100 N.D. 116	100 N.D. 120	100 N.D. 114

Marianne Al

Gas/BTEX Supervisor

Chip Poalinell

. . .

February 26, 1997 File: 10-2305-49

Mr. Mike Vrona Chromalab 1220 Quarry Lane Pleasanton, California 94566-4756

Dear Mr. Vrona;

The Specific Gravity, Moisture Content, Dry Density, Organic Content and Porosity test results for the sample received February 3, 1997 for your project number 9701366 are shown below.

Stapleto					
B-1 at 5.5 feet	25.3	95.4	42.8	2.9	2.67

If you have any questions, please feel free to call. I look forward to working with you again in the near future.

Sincerely,

KLEINFELDER, INC.

Patricia Slavin Laboratory Manager

PS/mjt

10-2303-4910-2305-49 (107LL064.DOCYmjt

I

© 1996 Kleipfelder, Inc.

KLEINFELDER 7143 Koll Center Parkway, Suite 100, Pleasanton, CA. 94366-3101 (510) 484-1700 (510) 484-5838 fax

APPENDIX J

OUTPUT OF JOHNSON AND ETTINGER MODEL FOR SUBSURFACE VAPOR INTRUSION INTO BUILDINGS FROM GROUNDWATER

DATA ENTRY SHEET

GW-SCREEN Version 3 0, 04/03 Reset to Defaults		YES EMENTAL RISKS I	OR FROM ACTUAL GR	RATION (enler "X" in "YE OUNDWATER CONCEN v)	Vapor Intrusion Guidance Interim Final 12/04 (last modified 2/4/09)
		YES	Х		
	81816218	SMI SR Initial			
	Chemical	groundwaller			
	CAS NO.	conc.			
	(numbers only,	C _w			
	no dashes)	(µg/L)	С	hemical	
	71432	1 40E+03	9	enzene	
MORE	ENTER Depin	ENTER	ENTER	ENTER	
4	below grade			Average	ENTER
	to bottom	Depth		soil/	Average vapor
	of enclosed	below grade	SCS	groundwater	flow rate into bldg
	space floor	to water table.	soil type	lemperature,	(Leave blank (o calculate)
	LF	Lwt	directly above	Ts	O soli
	(cm)	(cm)	water table	(°C)	(L/m)
				91	
	15	274	C	24	5
					<u></u>

MORE ↓

ENTIN Vadose zone SCS soil type (used to estimate soil vapor permeability)	¢.p	ENTER User-defined vandose zone soil vapor permeability, K, (cm ²)	ENTER Vadose zone SCS Soli type Leokup Soli Parameters	≅NY≋R Vadose zone soil dry bulk density, p⊳ ^V (g/cm ³)	ENTER Vadose zone soil total porosity n ^V (unitless)	ENTER Vadose zone soil water-filled porosity, e,, ^V (cm ³ /cm ³)
		1 00E-08	с	1 53	0 428	0 387

MORE ↓

risk for	quotient for	ume for	time for	Exposure	Exposure
carcinogens	noncarcinogens,	carcinogens	noncarcinogens	duration,	frequency
TR	THQ	AT _c	AT _{NC}	ED	EF
(unitiess)	(unitless)	(yrs)	(yrs)	(yrs)	(days/yr)
1 0E-06	1	70	25	25	250

Unclassified Soil Screening Model

INTERMEDIATE CALCULATIONS SHEET

Source- building separation, L _T (cm)	Vadose zone soil air-filled porosity, θ _a [∨] (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S _{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k, (cm ²)	Vadose zone soii relative air permeability, k _{rg} (cm ²)	Vadose zone soil effective vapor permeability, k _v (cm ²)	Thickness of capillary zone, L _{cz} (cm)	Total porosity in capillary zone, n _{cz} (cm ³ /cm ³)	Air-filled porosity in capillary zone, ⁰ a.cz (cm ³ /cm ³)	Water-filled porosity in capillary zone, $ heta_{w,cz}$ (cm ³ /cm ³)	Floor- wali seam perimeter, X _{crack} (cm)	
259	0.041	#N/A	#N/A	#N/A	1.00E-08	81.52	0.459	0.047	0.412	4,000]
Bldg. ventilation rate, Q _{building} (crn ³ /s)	Area of enclosed space below grade, A _B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z _{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, △H _{v.⊺s} (cal/mol)	Henry's law constant at ave. groundwater temperature, H _{Ts} (atm-m ³ /mol)	Henry's law constant at ave. groundwater temperature, H' _{Ts} (unitless)	Vapor viscosity at ave. soil temperature, μ _{τs} (g/cm-s)	Vadose zone effective diffusion coefficient, D ^{eff} v (cm²/s)	Capillary zone effective diffusion coefficient, D ^{eff} _{c2} (cm ² /s)	Total overall effective diffusion coefficient, D ^{eff} T (cm ² /s)	
3.39E+04	1.00E+06	5.00E-03	15	7,977	5.29E-03	2.17E-01	1.80E-04	2.20E-05	2.71E-05	2.34E-05	1
Diffusion path length,	Convection path length,	Source vapor conc.,	Crack radius,	Average vapor flow rate into bldg.,	Crack effective diffusion coefficient,	Area of crack,	Exponent of equivalent foundation Peclet number,	Infinite source indoor attenuation coefficient,	Infinite source bldg, conc.,	Unit risk factor,	Reference conc.,
L _d	Lp	Csource	F crack	Q _{soil}	D ^{crack}	Acrack	exp(Pe')	α	Cbuilding	URF	RfC
(cm)	<u>(cm)</u>	(µg/m³)	(cm)	(cm ³ /s)	(cm²/s)	(cm²)	(unitless)	(unitless)	(µg/m³)	(µg/m ³) ⁻¹	(mg/m³)
259	15	3.04E+05	1.25	8.33E+01	2.20E-05	5.00E+03	#NUM!	2.66E-06	8.0 <u>9E-01</u>	2.9E-05	3.0E-02

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

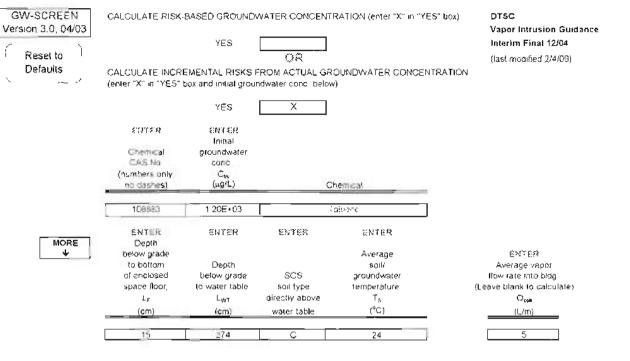
INCREMENTAL RISK CALCULATIONS:

=	Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (μg/L)	Final indoor exposure groundwater conc., (µg/L)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
[NA	NA	NA	1.79E+06	NA	5.7E-06	1.8E-02

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET



MORE

EXITER Valose zone SCS soil type (used to estimate soil vapor primeability)	ुष्ट	ExYER User-defined vandose zone soli vapor permeability, k, (om ²)	ENTER Vadose zone SCS soil type Looge Soil Parmeters	ENTER Vadose zone soli dry bulk density, of (g/cm ³)	ENTER Vadose zone soil total porosity, n ^Y (unifiess)	ENTER Vadose zone soil water filled porosity e _w * (cm ¹ /cm ³)
		1 00E-08	c	1 53	0.426	0.387

MORE

PRTER Targel risk for carcinogens TR (unitiess)	ENTER Target hazard quotient for noncarcinogens, THQ (unitiess)	EN FER Averaging time for carcinogens, AT _c (yrs)	ENTER Averaging time for noncarcinogens, AT _{NC} (yrs)	EXPOSURE duration ED (<u>yrs)</u>	ENTEP Exposure frequency EF (days/yr)
1 OE-06	1 1	70	25	25	250
	ulate risk-based concentration	DTSC Indeer Air (Guidance		

Unclassified Soil Screening Mindel

DTSC / HERD Last Update - 11/1/03 HERD_GW_Model_2009_Torixts 8/27/2010 5-02 PM

INTERMEDIATE CALCULATIONS SHEET

ς.

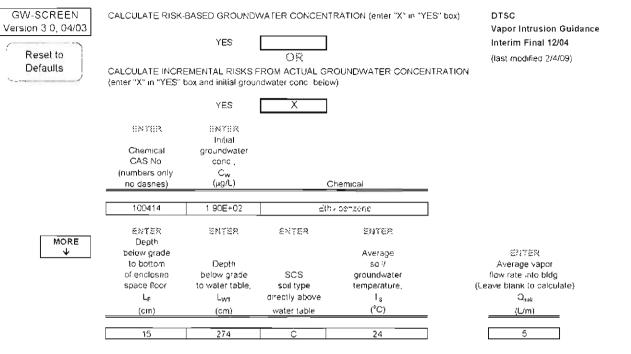
Source- building separation, L _T (cm)	Vadose zone soil air-filled porosity, θ _a [∨] (cm³/cm³)	Vadose zone effective total fluid saturation, S _{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k _i (cm ²)	Vadose zone soil relative air permeability, k _{rg} (cm ²)	Vadose zone soil effective vapor permeability, k _v (cm ²)	Thickness of capillary zone, L _{cz} (cm)	Total porosity in capillary zone, n _{cz} (cm ³ /cm ³)	Air-filled porosity in capillary zone, θ _{a.cz} (cm ³ /cm ³)	Water-filled porosity in capillary zone, θ _{w.cz} (cm ³ /cm ³)	Floor- wall seam perimeter, X _{crack} (cm)	-
259	0.041	#N/A	#N/A	#N/A	1.00E-08	81.52	0.459	0.047	0.412	4,000	1
Bldg. ventilation rate, Q _{bullding} (cm ³ /s)	Area of enclosed space below grade, A _B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z _{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H _{TS} (atm-m ³ /mol)	Henry's law constant at ave. groundwater temperature, H' _{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ _{Ts} (g/cm-s)	Vadose zone effective diffusion coefficient, D ^{eff} v (cm²/s)	Capillary zone effective diffusion coefficient, D ^{eff} _{cz} (cm ² /s)	Total overall effective diffusion coefficient, D ^{eff} T (cm ² /s)	
3.39E+04	1,00E+06	5.00E-03	15	9,001	6.29E-03	2.58E-01	1.80E-04	1.91E-05	2.40E-05	2.04E-05	
Diffusion path length,	Convection path length,	Source vapor conc.,	Crack radius,	Average vapor flow rate into bldg.,	Crack effective diffusion coefficient,	Area of crack,	Exponent of equivalent foundation Peclet number,	Infinite source indoor attenuation coefficient,	Infinite source bldg. conc.,	Unit risk factor,	Reference conc.,
La	L _p	C _{source}	Fcrack			A _{crack}	exp(Pe ^f)	CX.		URF	RfC
(cm)	(cm)	(μg/m ³)	(cm)	(cm ³ /s)	(cm²/s)	(cm²)	(unitless)	(unitless)	(µg/m³)	(µg/m ³) ⁻¹	(mg/m ³)
259	15	3.10E+05	1.25	8.33E+01	1.91E-05	5.00E+03	#NUM!	2.33E-06	7.20E-01	NA	3.0E-01

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

INCREMENTAL RISK CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (μg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (μg/L)	Final indoor exposure groundwater conc., (µg/L)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA	NA	5.26E+05	NA	NA	1.6E-03

MESSAGE SUMMARY BELOW:



MORE ↓

운사가 운영 Vadose zone SCS soil type (osed to estimate soil vapar permeability)	Ors	Els YEIR User-defined vandose zone soil vapor permeability, k _v (om ²)	ENTER Vadose zone SCS soil type Lookup Soil Parameters	ଅଧ୍ୟମଞ୍ଚନ Vadose zone soil dry bulk densily ୧୫ ^୯ (g/cm ³)	문산간원왕 Vadose zone soil lotal porosily, n ^v (unitless)	£N7£≷ Vacuse zone soil water-filled porosity ''w [°] (cm ³ /cm ³)
		1 COE-08	c	1 53	0 428	0 387

MORE ↓

IIN (IIIR Target risk for carcinogens, TR (unifless)	IINYIIN Target hazard quotient for noncarcinogens THQ (unitless)	ENTEN Averaging Time for carcinogens, AT _c (y(s)	ENTYER Averaging time for noncarcinogens AT _{NC} (yrs)	Exposure duration, ED (yrs)	Exposure Exposure frequency EF (days/yr)
1 0E-06	1	70	25	25	250
Used to calcu	ilate risk-based concentration	DTSC Indoor Air		2.5	200

Unclassified Soil Screening Model

HERD_GW_Model_2009_EB xls 8/27/2010 5.02 PM

Source- building separation, L _T (cm)	Vadose zone soił air-filled porosity, θ _a ^v (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S _{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k, (cm ²)	Vadose zone soil relative air permeability, k _{rg} (cm ²)	Vadose zone soil effective vapor permeability, k _v (cm ²)	Thickness of capillary zone, L _{cz} (cm)	Total porosity in capillary zone, n _{cz} (cm ³ /cm ³)	Air-filled porosity in capillary zone, θ _{a.cz} (cm ³ /cm ³)	Water-filled porosity in capillary zone, θ _{w.cz} (cm ³ /cm ³)	Floor- wall seam perimeter, X _{crack} (cm)	-
259	0.041	#N/A	#N/A	#N/A	1.00E-08	81.52	0.459	0.047	0.412	4,000]
Bidg. ventilation rate, Q _{building} (cm ³ /s)	Area of enclosed space below grade, A ₈ (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z _{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, ∆H _{v.TS} (cal/mol)	Henry's law constant at ave. groundwater temperature, H _{TS} (atm-m ³ /mol)	Henry's law constant at ave. groundwater temperature, H' _{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ _{Ts} (g/cm-s)	Vadose zone effective diffusion coefficient, D ^{eff} v (cm²/s)	Capillary zone effective diffusion coefficient, D ^{eff} cz (cm ² /s)	Total overall effective diffusion coefficient, D ^{eff} T (cm ² /s)	
3.39E+04	1.00E+06	5.00E-03	15	9,994	7.43E-03	3.05E-01	1.80E-04	1.58E-05	2.00E-05	1.69E-05]
Diffusion	Convection	Source		Average vapor	Crack effective		Exponent of equivalent foundation	Infinite source indoor	Infinite source	Unit	
path	path	vapor	Crack	flow rate	diffusion	Area of	Peclet	attenuation	bldg.	risk	Reference
length,	length,	conc.,	radius,	into bldg.,	coefficient,	crack,	number,	coefficient,	conc.,	factor,	conc.,
L _d	Lp	Csource	Г _{сгаск}	Qsoil	D ^{crack}	Acrack	exp(Pe ^f)	α	Cbuilding	URF	RfC
(cm)	(cm)	(µg/m³)	<u>(</u> cm)	(cm³/s)	(cm²/s)	(cm ²)	(unitless)	(unitless)	(µg/m³)	(µg/m³) ⁻¹	(mg/m ³)
259	15	5.79E+04	1.25	8.33E+01	1.58E-05	5.00E+03	#NUM!	1.92E-06	1.11E-01	2.5E-06	1.0E+00

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

INCREMENTAL RISK CALCULATIONS:

 Indoor exposure groundwater conc., carcinogen (μg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (μg/L)	Final indoor exposure groundwater conc., (µg/L)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA	NA	1.69E+05	NA	6.8E-08	7.6 E- 05

MESSAGE SUMMARY BELOW:

GW-SCREEN Version 3.0; 04/03 Reset to Defaults		YES EMENTAL RISKS I	CR FROM ACTUAL GR	RATION (enter "X" in "YE OUNDWATER CONCEN v)	Vapor Intrusion Guidance Interim Final 12/04 (last modified 2/4/09)
		YES	Х		
	IIN TIIR Chemical	비지기대자 Initial groundwater			
	CAS No.	conc.,			
	(numbers only, no dashes)	С _w (µg/L)		hemical	
	no uasnes)	(µg/c)			
	108383	6.40E+02	m	-Xylene	
MORE	ENTER Depth	ENTER	ENTER	enter	
↓	below grade			Average	ENTER
	to bottom	Depth		soil/	Average vapor
	of enclosed	below grade	SCS	groundwater	flow rate into bldg.
	space floor.	to water table,	soil type	temperature,	(Leave blank to calculate)
	L _F	L _{WT}	directly above	T _s	\mathbf{Q}_{soll}
	(cm)	(cm)	water table	(°C)	<u>(L/m)</u>
	45	074			
	15	274	С	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	User-defined vandose zone soil vapor permeability k _v (cm ²)	ENTER Vadose zone SCS soil type Lookup Soil Parameters	ଅଧ୍ୟୀଇନ Vadose zone soil dry bulk density, Pb ^V (g/cm ³)	EWTER Vadose zone soil total porosity, n ^v (unitless)	ENTER Vadose zone soil water-filled porosity, e _w ^V (cm ³ /cm ³)
		1 00E-08		1 53	0.428	0.387

MORE ↓

IINTIIR Target risk for carcinogens TR (unitless)	≝אזיינא Target hazard quotient for noncarcinogens, THQ (unitless)	ENTEX Averaging time for carcinogens, AT _c (yrs)	HNYHR Averaging time for noncarcinogens, AT _{NC} (vrs)	환환함환환 Exposure duration, ED (yrs)	Exposure frequency, EF (days/yr)
1 0E-06		70	25	25	250
	ulate risk-based concentration	DTSC Indoor Air	Guidance		

Unclassified Soil Screening Model

Source- building separation, L _⊤ (cm)	Vadose zone soil air-filled porosity, θ _a [∨] (cm³/cm³)	Vadose zone effective total fluid saturation, S _{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k _i (cm ²)	Vadose zone soil relative air permeability, k _{rg} (cm ²)	Vadose zone soil effective vapor permeability, k _v (cm ²)	Thickness of capillary zone, L _{cz} (cm)	Total porosity in capillary zone, n _{cz} (cm ³ /cm ³)	Air-filled porosity in capillary zone, ⁰ a.cz (cm ³ /cm ³)	Water-filled porosity in capillary zone, ⁰ w.cz (cm ³ /cm ³)	Floor- wall seam perimeter, X _{crack} (cm)	
259	0.041	#N/A	#N /A	#N/A	1.00E-08	81.52	0.459	0.047	0.412	4,000	1
Bldg. ventilation rate, Q _{buldng} (cm ³ /s)	Area of enclosed space below grade, A ₈ (cm ²)	Crack- to-total area ratio, ŋ (unitless)	Crack depth below grade, Z _{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, △H _{v.TS} (cal/mol)	Henry's law constant at ave. groundwater temperature, H _{TS} (atm-m ³ /mol)	Henry's law constant at ave. groundwater temperature, H' _{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ _{Ts} (g/cm-s)	Vadose zone effective diffusion coefficient, D ^{eff} √ (cm ² /s)	Capillary zone effective diffusion coefficient, D ^{eff} cz (cm ² /s)	Total overall effective diffusion coefficient, D ^{eff} _T (cm ² /s)	
3.39E+04	1.00E+06	5.00E-03	15	10,090	6.91E-03	2.84E-01	1.80E-04	1.55E-05	1.95E-05	1.66E-05	1
Diffusion path length, L _d	Convection path length,	Source vapor conc.,	Crack radius,	Average vapor flow rate into bldg., Q _{soll}	Crack effective diffusion coefficient, □ ^{crack}	Area of crack,	Exponent of equivalent foundation Peclet number, exp(Pe ^f)	Infinite source indoor attenuation coefficient, α	Infinite source bldg. conc.,	Unit risk factor, URF	Reference conc., RfC
(cm)	L _p (cm)	C _{source} (μg/m ³)	r _{crack} (cm)	(cm ³ /s)	(cm ² /s)	A _{crack} (cm ²)	(unitless)	(unitless)	С _{building} (µg/m ³)	(µg/m ³) ⁻¹	(mg/m ³)
			\$ Z	. ,	<u> </u>						
259	15	1.81E+05	1.25	8.33E+01	1.55E-05	5.00E+03	#NUM!	1.89E-06	3.43E-01	NA	1.0E-01

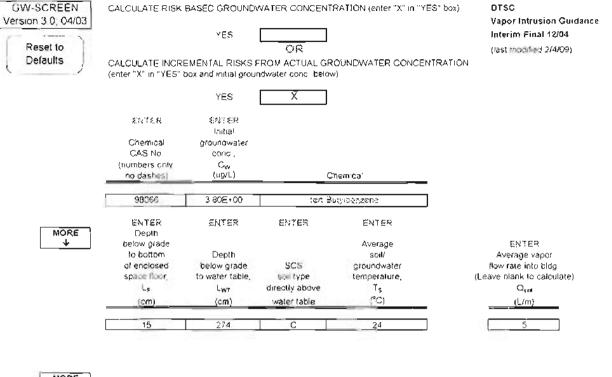
RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

INCREMENTAL RISK CALCULATIONS:

]

Indoor exposure groundwater conc., carcinogen (μg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (μg/L)	Final indoor exposure groundwater conc., (µg/L)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA	NA	1.61E+05	NA	NA	2.3E-03

MESSAGE SUMMARY SELOW:



MORE

HN11918 Vadose zone SCS soil type (uscolio estimate Soil vapor (remeability)	4.97	ENTER User-defined vandose zone soil vapor permaability K, (cm ²)	ENTER Vadose zone SCS Soli type Lookip Sim Parameters	SNTER Vadose zone soil dry bulk density ng [*] (giom ³)	ENTER Vadose zone soli total porosity n [¥] (unitess)	ENTER Vadose zone soil water-filled porosity r., * Iom ³ /cm ³)
		1 00E-08	c	1,53	0 428	C 367

MORE ↓

ENTER Target nsk for carcinogens IR (unitless)	ENFER Target hazard quotient for noncarchogens THO (unitiess)	EN I'EI Averaging time for carcinogens, ATe (yis)	ENTER Averaging time for noncaronogens Afric (ths)	Exposure duration ED (yrs)	EN 1'EP Exposure frequency EF (days/y)
1 0E-06	1	70	25	25	250

HERD_GW_Mode:_2009_18B xls 8/27/2010 5 04 PM

Source- building separation, L _T (cm)	Vadose zone soil air-filled porosity, ⊕ _a [∨] (cm³/cm³)	Vadose zone effective total fluid saturation, S _{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k _i (cm ²)	Vadose zone soil relative air permeability, k _{rg} (cm ²)	Vadose zone soil effective vapor permeability, k _v (cm ²)	Thickness of capillary zone, L _{cz} (cm)	Total porosity in capillary zone, n _{cz} (cm ³ /cm ³)	Air-filled porosity in capillary zone, θ _{a.cz} (cm ³ /cm ³)	Water-filled porosity in capillary zone, ^θ w.cz (cm ³ /cm ³)	Floor- wall seam perimeter, X _{crack} (cm)	-
259	0.041	#N/A	#N/A	#N/A	1.00E-08	81.52	0.459	0.047	0.412	4,000]
	1										J
Bldg. ventilation rate,	Area of enclosed space below grade,	Crack- to-total area ratio,	Crack depth below grade,	Enthalpy of vaporization at ave. groundwater temperature,	Henry's law constant at ave. groundwater temperature,	Henry's law constant at ave. groundwater temperature,	Vapor viscosity at ave. soil temperature,	Vadose zone effective diffusion coefficient,	Capillary zone effective diffusion coefficient,	Total overall effective diffusion coefficient,	
Q _{building} (cm ³ /s)	A _B (cm ²)	η (unitless)	Z _{crack} (cm)	∆H _{v.⊺s} (cal/mol)	H _{⊺s} (atm-m³/mol)	Н' _{тs} (unitless)	μ _{TS} (g/cm-s)	D ^{eff} ∨ (cm²/s)	D ^{eff} cz (cm ² /s)	D ^{eff} T (cm ² /s)	
(01170)	(0117)	(unitiess)		(cal/mol)	(unit in sillor)	(unness)	(g/cili-s)	(01173)	(01173)	(011170)	:
3.39E+04	1.00E+06	5.00E-03	15	9,452	1.13E-02	4.62E-01	1.80E-04	1.14E-05	1.46E-05	1.23E-05]
Diffusion	Convection	Source		Average vapor	Crack effective		Exponent of equivalent foundation	Infinite source indoor	Infinite source	Unit	
path	path	∨apor	Crack	flow rate	diffusion	Area of	Peclet	attenuation	bldg.	risk	Reference
length,	Jength,	conc.,	radius,	into bldg.,	coefficient,	crack,	number,	coefficient,	conc.,	factor,	conc.,
La	Lp	Csource	r _{crack}	Qsoil	D ^{crack}	Acrack	exp(Pe')	α	Cbuilding	URF	RfC
(cm)	(cm)	(µg/m³)	(cm)	(cm ³ /s)	(cm²/s)	(cm²)	(unitless)	(unitless)	(µg/m³)	(µg/m ³) ⁻¹	(mg/m ³)
259	15	1.75E+03	1.25	8.33E+01	1.14E-05	5.00E+03	#NUM!	1.40E-06	2.45E-03	NA	1.4E-01

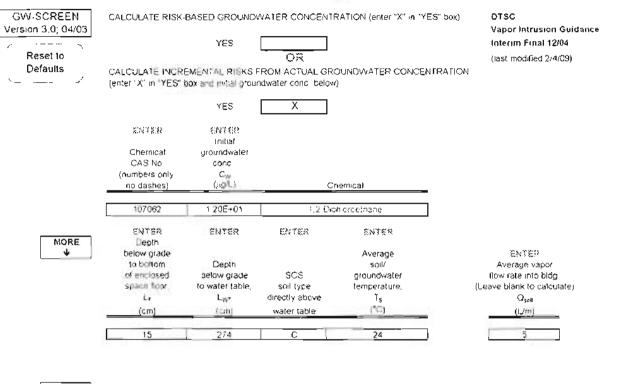
RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

INCREMENTAL RISK CALCULATIONS:

1

=	Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (μg/L)	Final indoor exposure groundwater conc., (μg/L)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
	NA	NA	NA	2.95E+04	NA	NA	1.2E-05

MESSAGE SUMMARY BELOW:



MORE

IIMTOR Vadose zone SCS soit type (used to estimate soit vapor permeability)	QR.	EXYEX User-defined vandose zone soil vapor permeability, k, (cm ²)	ENTER Vadose zone SCS soil type Los up Soil Farmeters	SNTER Vadose zone soil dry bulk density pb ^V (g/cm ³)	ENTER Vadose zone soli total porosity, n ^V (unitless)	ENTER Vadose zone soir water-filled porosity, ଏକ୍ଲୁ (ସ୍ଲୁୁ୍ମ୍ମ)(cଲୁ)
_		1 00E-08	C T	1 53	0 428	0 387

MORE

RNTER Target risk for carcinogens TR (unitless)	ENT SP Target hazard quotient for noncarcinogens THQ (unitiess)	ED YER Averaging time for carcinogens. AT _c (yrs)	ENTER Averaging time for noncarcinogens, AT _{NC} (yrs)	Exposure duration ED (yrs)	Exposure frequency EF (dovs/yr)
1 0E-06	1	70	25	25	250

Source- building separation, L _T (cm)	Vadose zone soil air-filled porosity, ⊕ _a [∨] (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S _{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k, (cm ²)	Vadose zone soil relative air permeability, k _{rg} (cm ²)	Vadose zone soil effective vapor permeability, k _v (cm ²)	Thickness of capillary zone, L _{cz} (cm)	Total porosity in capillary zone, n _{cz} (cm ³ /cm ³)	Air-filled porosity in capillary zone, θ _{a.cz} (cm ³ /cm ³)	Water-filled porosity in capillary zone, $ heta_{w.cz}$ (cm ³ /cm ³)	Floor- wall seam perimeter, X _{crack} (cm)	
259	0.041	#N/A	#N/A	#N/A	1.00E-08	81.52	0.459	0.047	0.412	4.000	
					1.002 00					.,	I
Bldg. ventilation rate,	Area of enclosed space below grade,	Crack- to-total area ratio,	Crack depth below grade,	Enthalpy of vaporization at ave. groundwater temperature,	Henry's law constant at ave. groundwater temperature,	Henry's law constant at ave. groundwater temperature,	Vapor viscosity at ave. soil temperature,	Vadose zone effective diffusion coefficient,	Capillary zone effective diffusion coefficient,	Total overall effective diffusion coefficient,	
Qbuilding	AB	η	Zcrack	$\Delta H_{v,TS}$	H _{TS}	H' _{TS}	μ _{ts}	D ^{eff} ∨	D ^{eff} cz	D ^{eff} _T	
(cm ³ /s)	(cm ²)	(unitless)	(cm)	(cal/mol)	(atm-m ³ /mol)	(unitless)	(g/cm-s)	(cm²/s)	(cm²/s)	(cm²/s)	
3.39E+04	1.00E+06	5.00E-03	15	8,368	9.31E-04	3.82E-02	1.80E-04	7.36E-05	8.30E-05	7.63E-05	l
0.032104	1.002+00	5.00L-03	15	6,306	9.312-04	5.822-02	1.002-04	7.302-03	0.502-05	1.052-05	
Diffusion	Convection	Source		Average vapor	Crack effective		Exponent of equivalent foundation	Infinite source indoor	Infinite source	Unit	
path	path	vapor	Crack	flow rate	diffusion	Area of	Peclet	attenuation	bldg.	rís k	Reference
length,	length,	conc.,	radius,	into bldg.,	coefficient,	crack,	number,	coefficient,	conc.,	factor,	conc.,
La	Lp	Csource	Г _{сгаск}	Q _{soil}	D ^{crack}	Acrack	exp(Pe ^r)	α	Cbuilding	URF	RfC
(cm)	(cm)	(µg/m³)	(cm)	(cm³/s)	(cm²/s)	(cm ²)	(unitless)	(unitless)	(µg/m ³)	(µg/m³) ⁻¹	(mg/m ³)
								· · ·			
259	15	4.58E+02	1.25	8.33E+01	7.36E-05	5.00E+03	#NUM!	8.67E-06	3.97E-03	2.1E-05	4.0E-01

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

INCREMENTAL RISK CALCULATIONS:

]

Indoor exposure groundwater conc., carcinogen (μg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (μg/L)	Final indoor exposure groundwater conc., (µg/L)		Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA	NA	8.52E+06	NA] [2.0E-08	6.8E-06

MESSAGE SUMMARY BELOW:

GW-SCREEN Version 3.0; 04/03 Reset to Defaults		YES EMENTAL RISKS F	OR ROM ACTUAL GR	RATION (enter "X" in "YE ROUNDWATER CONCEN w)	Vapor Intrusion Guidance Interim Final 12/04 (last modified 2/4/09)
		YES	X		
	HMTHR Chemical CAS No. (numbers only	Initial groundwater conc ^C w			
	no dashes)	(µg/L)		Chemical	
	98828	4.00E+01		Dumene	
MORE	ENTER Depth	ENTER	ENTER	ENTER	
¥	below grade to bottom of enclosed space floor,	Depth below grade to water table,	SCS soil type	Average soil/ groundwater temperature.	েয়েলেয়ে Average vapor flow rate into bidg (Leave blank to calculate)
	L _F	Lwr	directly above	Τ _s	Q _{sol}
	(cm)	(cm)	water table	(°C)	(L/m)
	15	274	с	24	5

MORE ↓

€:KYE:R Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	User-defined vandose zone soil vapor permeability. k, (cm²)	ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density. P₅ ^V (g/cm ³)	E⊰∢TER Vadose zone soil total porosity. n ^v (unitless)	ENTER Vadose zone soi! water-filled porosity e _w ^V (cm³/cm³)
		1 00E-08	С	1.53	0.428	0.387

MORE ↓

IIN YIIIX Target risk for carcinogens TR (unitless)	₩Y₩X Target hazard quotient for noncarcinogens, THQ (unitless)	INTER Exeraging time for carcinogens AT _c (yrs)	IINYIIIR Averaging time for noncarcinogens. AT _{Nc} (yrs)	Exposure duration. ED (yrs)	Exposure frequency EF (days/yr)
1 0E-06	1	70	25	25	250

Source- building separation, L _T (cm)	Vadose zone soil air-filled porosity, θ _a ^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S _{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k _i (cm ²)	Vadose zone soil relative air permeability, k _{rg} (cm ²)	Vadose zone soil effective vapor permeability, k _v (cm ²)	Thickness of capillary zone, L _{cz} (cm)	Total porosity in capillary zone, n _{cz} (cm ³ /cm ³)	Air-filled porosity in capillary zone, ⁰ a.cz (cm ³ /cm ³)	Water-filled porosity in capillary zone, θ _{w.cz} (cm ³ /cm ³)	Floor- wall seam perimeter, X _{crack} (cm)	·
259	0.041	#N/A	#N/A	#N/A	1.00E-08	81.52	0.459	0.047	0,412	4,000	
Bldg. ventilation rate,	Area of enclosed space below grade,	Crack- to-total area ratio,	Crack depth below grade,	Enthalpy of vaporization at ave. groundwater temperature,	Henry's law constant at ave. groundwater temperature,	Henry's law constant at ave. groundwater temperature,	Vapor viscosity at ave. soil temperature,	Vadose zone effective diffusion coefficient,	Capillary zone effective diffusion coefficient,	Total overall effective diffusion coefficient,	
Q _{building}	A _B	η	Zcrack	$\Delta H_{v.TS}$	H _{TS}	H' _{TS}	μ _{ts}	D ^{eff} _V	D ^{eff} cz	D _{ell} ^t	
(cm ³ /s)	(cm ²)	(unitless)	(cm)	(cal/mol)	(atm-m ³ /mol)	(unitless)	(g/cm-s)	(cm²/s)	(cm²/s)	(cm²/s)	1
3.39E+04	1.00E+06	5.00E-03	15	12,447	1.08E+00	4.42E+01	1.80E-04	8,56E-06	1,18E-05	9.38E-06	1
0.09L+04	1.002+00		15	12,447	1.000-00	4.422+01	1.002-04	0,002-00	1.102-00	9.562-66	
Diffusion	Convection	Source		Average vapor	Crack effective		Exponent of equivalent foundation	Infinite source indoor	Infinite source	Unit	
path	path	vapor	Crack	flow rate	diffusion	Area of	Peclet	attenuation	bldg.	risk	Reference
length,	length,	conc.,	radius,	into bldg.,	coefficient,	crack,	number,	coefficient,	conc.,	factor,	conc.,
La	Lp	Csource	Γ _{crack}	Qsoil	D ^{crack}	Acrack	exp(Pe')	α	Cbuilding	URF	RſC
(cm)	(cm)	(µg/m³)	(cm)	(cm³/s)	(cm²/s)	(cm²)	(unitless)	(unitless)	(µg/m³)	(µg/m³) ⁻¹	(mg/m ³)
259	15	1.77E+06	1.25	8.33E+01	8.56E-06	5.00E+03	#NUM!	1.07E-06	1.89E+00	NA	4.0E-01

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

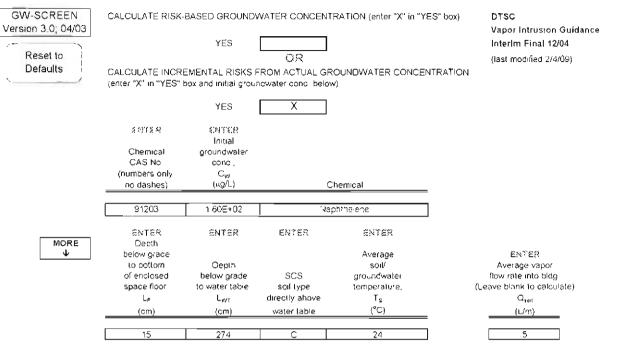
INCREMENTAL RISK CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)	Incrementa risk from vapor intrusion to indoor air, carcinoger (unitless)	quotient from vapor intrusion to indoor air,
NA	NA	NA	6.13E+04	NA	NA	3.2E-03

MESSAGE SUMMARY BELOW

END

.



MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	QP	ERYER User-defined vandose zone soil vapor permeability, k, (cm ²)	ENTER Vadose zone SCS soil type Lookup Soil Parametors	ENTER Vadose zone soil dry pulk densily, pb ^V (g/cm ³)	ENTER Vadose zone soil total porosity, n ^v (unilless)	ENTEP Vadose zone soit water-filled porosity. ಆ್ಲ್ (cm³/cm³)
		1 00E-08	С	1 53	0 428	0 387

MORE ↓

Target risk for carcinogens, TR (unitless)	Target hazard quotient for noncarcinogens THQ (unitless)	Averaging time for carcinogens AT _c (yrs)	Averaging time for noncarcinogens AT _{NC} (yrs)	Exposure duration ED (yrs)	Exoosure frequency EF (days/yr)
1 0E-06	1	70	25	25	250

Unclassified Soil Screening Model

Source- building separation, L _T (cm)	Vadose zone soil air-filled porosity, ⊕a [∨] (cm³/cm³)	Vadose zone effective total fluid saturation, S _{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k _i (cm ²)	Vadose zone soil relative air permeability, k _{rg} (cm ²)	Vadose zone soil effective vapor permeability, k _v (cm ²)	Thickness of capillary zone, L _{cz} (cm)	Total porosity in capillary zone, n _{cz} (cm ³ /cm ³)	Air-filled porosity in capillary zone, ^{θ_{a.c2} (cm³/cm³)}	Water-filled porosity in capillary zone, ^θ w.cz (cm ³ /cm ³)	Floor- wall seam perimeter, X _{crack} (cm)	
259	0.041	#N/A	#N/A	#N/A	1.00E-08	81.52	0.459	0.047	0.412	4,000]
L		_				1	I	<u>. </u>			1
Bldg. ventilation rate,	Area of enclosed space below grade,	Crack- to-total area ratio,	Crack depth below grade,	Enthalpy of vaporization at ave. groundwater temperature,	Henry's law constant at ave. groundwater temperature,	Henry's law constant at ave. groundwater temperature,	Vapor viscosity at ave. soil temperature,	Vadose zone effective diffusion coefficient,	Capillary zone effective diffusion coefficient,	Total overall effective diffusion coefficient,	
Qbuilding	AB	η	Z_{crack}	$\Delta H_{v,TS}$	H _{TS}	H' _{TS}	μ _{TS}	D ^{eff} v	D ^{eff}	D ^{eff} T	
(cm ³ /s)	(cm²)	(unitless)	(cm)	(cal/mol)	(atm-m ³ /mol)	(unitless)	(g/cm-s)	(cm²/s)	(cm²/s)	(cm ² /s)	
3.39E+04	1.00E+06	5.00E-03	15	12,768	4.48E-04	1.84E-02	1.80E-04	1.02E-04	1.12E-04	1.05E-04]
Diffusion	Convection	Source		Average vapor	Crack effective		Exponent of equivalent foundation	Infinite source indoor	Infinite source	Unit	
path	path	vapor	Crack	flow rate	diffusion	Area of	Peclet	attenuation	bldg.	risk	Reference
length,	length,	conc.,	radius,	into bldg.,	coefficient,	crack,	number,	coefficient,	conc.,	factor,	conc.,
L _d	Lp	Csource	Г _{сгаск}	Q _{soil}	D ^{crack}	Acrack	exp(Pe ^f)	α	Cbuilding	URF	RfC
(cm)	(cm)	$(\mu g/m^3)$	(cm)	(cm ³ /s)	(cm²/s)	(cm²)	(unitless)	(unitless)	(µg/m³)	(µg/m ³) ⁻¹	(mg/m ³)
259	15	2.94E+03	1.25	8.33E+01	1.02E-04	5.00E+03	#NUM!	1.19E-05	3.50E-02	3.4E-05	3.0E-03

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

INCREMENTAL RISK CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (μg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (μg/L)	Final indoor exposure groundwater conc., (µg/L)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA	NA	3.10E+04	NA	2.9E-07	8.0E-03

MESSAGE SUMMARY BELOW:

GW-SCREEN Version 3 0, 04/03 Reset to Defaults	CALCULATE INCR	YES EMENTAL RISKS	OR	RATION (enter "X" in "YE DUNDWATER CONCEN)	Vapor Intrusion Guidance Interim Final 12/04 (last modified 2/4/09)
		YES	Х		
	&NTER Chemical CAS No	SIN'I SIR Initial groundwater conc.			
	(numbers only, no dashes)	C _w (µg/L)	Cł	iemical	
	103651	8 40E+01	ror ۲۵۲۴-۰۰	sibenzene	
MORE	ENTER	enter	ENTER	ENTER	
$\mathbf{+}$	below grade to bottom	Depth		Average soil/	ENTER
	of enclosed	below grade	SCS	groundwater	Average vapor flow rate into bidg
	space floor,	to water table	soil type	temperature.	(Leave blank to calculate)
	Le	Lwr	directly above	T _s	Q _{sci}
	(cm)	(cm)	water table	(°C)	(L/m)
	`````				
	15	274	С	24	5

MORE ↓

(INTER Vadose zone SCS soil (ype (Used to estimate soil vapor permeability)	4.R	EXTEX User-defined vandose zone soil vapor permeability k _v (cm ² )	ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk densily p _b ^V (g/cm ³ )	ENTER Vadose zone soit total porosity, n ^V (Unitiess)	ENTER Vadose zone soil water-filled porosily ^V (cm ³ /cm ³ )
		1 00E-08	С	1 53	0 428	0 387

MORE  $\mathbf{\Psi}$ 

2012 8 Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (uniliess)	ENVIEP Averaging time for carcinogens, AT _c (yrs)	201188 Averaging time for noncarcinogens AT _{NC} (vrs)	ENTER Exposure duration ED (yrs)	ENTEP Exposure frequency EF (days/yr)
		•			(days/yr)
1 0E-06		70	25	25	250

Unclassified Soil Screening Model

Source- building separation, L _T (cm)	Vadose zone soil air-filled porosity, $\theta_a^V$ (cm ³ /cm ³ )	Vadose zone effective total fluid saturation, S _{te} (cm ³ /cm ³ )	Vadose zone soil intrinsic permeability, k _i (cm ² )	Vadose zone soil relative air permeability, k _{rg} (cm ² )	Vadose zone soil effective vapor permeability, k _v (cm ² )	Thickness of capillary zone, L _{cz} (cm)	Total porosity in capillary zone, n _{cz} (cm ³ /cm ³ )	Air-filled porosity in capillary zone, θ _{a.cz} (cm ³ /cm ³ )	Water-filled porosity in capillary zone, $ heta_{w.cz}$ (cm ³ /cm ³ )	Floor- wall seam perimeter, X _{crack} (cm)	
259	0.041	#N/A	#N/A	#N/A	1.00E-08	81.52	0.459	0.047	0.412	4,000	]
							I	1		,	1
Bldg. ventilation rate,	Area of enclosed space below grade,	Crack- to-total area ratio,	Crack depth below grade,	Enthalpy of vaporization at ave. groundwater temperature,	Henry's law constant at ave. groundwater temperature,	Henry's law constant at ave. groundwater temperature,	Vapor viscosity at ave. soil temperature,	Vadose zone effective diffusion coefficient,	Capillary zone effective diffusion coefficient,	Total overall effective diffusion coefficient,	
Qbuilding	AB	η	Zcrack	$\Delta H_{v,TS}$	H _{TS}	H' _{⊺S}	$\mu_{TS}$	D ^{eff} _V	D ^{eff} cz	D ^{eff} T	
(cm³/s)	(cm²)	(unitless)	(cm)	(cal/mol)	(atm-m³/mol)	(unitless)	(g/cm-s)	(cm²/s)	(cm²/s)	(cm ² /s)	
3.39E+04	1.00E+06	5.00E-03	15	11,186	1.00E-02	4.10E-01	1.80E-04	1.23E-05	1.56E-05	1.32E-05	1
0.002	1.002.00	0.002.00	10	11,100	1.002-02	4.102 01	1.002-04	1.202.00	1.002 00	1.02E 00	]
Diffusion	Convection	Source		Average vapor	Crack effective		Exponent of equivalent foundation	Infinite source indoor	Infinite source	Unit	
path	path	vapor	Crack	flow rate	diffusion	Area of	Peclet	attenuation	bldg.	risk	Reference
length,	length,	conc.,	radius,	into bldg.,	coefficient,	crack,	number,	coefficient,	conc.,	factor,	conc.,
L _d	Lp	Csource	Fcrack	Qsoil	D ^{crack}	Acrack	exp(Pe ^f )	α	Cbuilding	URF	RfC
<u>(</u> cm)	(cm)	(µg/m³)	(cm)	(cm³/s)	(cm²/s)	(cm²)	(unitless)	(unitless)	(μg/m ³ )	(µg/m ³ ) ⁻¹	(mg/m ³ )
	<b></b>										=
259	15	3.44E+04	1.25	8.33E+01	1.23E-05	5.00E+03	#NUM!	1.50E-06	5.17E <u>-02</u>	NA	1.4E-01

-

#### RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS: INCRE

#### INCREMENTAL RISK CALCULATIONS:

]

Indoor exposure groundwater conc., carcinogen (μg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (μg/L)	Final indoor exposure groundwater conc., (µg/L)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA	NA	6.00E+04	NA	NA	2.5E-04

MESSAGE SUMMARY BELOW:

GW-SCREEN Version 3.0, 04/03	CALCULATÉ RISK-	BASED GROUND		RATION (enter "X" in "YES	i" box) DTSC Vapor Intrusion Guidance
Reset to Defaults		• • • • • •	OR ROM ACTUAL GRO notwater conditional	DUNDWATER CONCENT	Interim Final 12/04 (last modified 2/4/09) RATION
		YES	X		
	Chemical	HNYHK Initial groundwater			
	CAS No (numbers < - y, no das	Conc Cyu (ug/L)	<u> </u>	iemical	
	95636	1 00E+03	1,2 4 1 pm	rethysterizane	
MORE	ENTER Depth	SNTER	SNTER	SNTER	
↓	below grace 10 bottom of enclosed space floar	Depth below grade to water table,	SCS soil type	Average soll/ groundwater femperature	운간가영국 Average vapor flow rate into bidg, (Leave blank to calculate)
	L; (cm)	Lwr (pm)	directly above water table	ז _s (℃)	Q _{soll} 0,400
	15	274	C	24	5

MORE

2.0122 Vadosci zone SCS soil type (used to estimate soil valior permettant)	сж.	User-defined vandose zone soil vapor permeability k. (cm ² )	ENTER Vadose zone SCS Sol Type Lookup Sol Parameters	ENTER Vadose zone sci dry bulk density (alem ³ )	ENTER Vadose zone soil total porosity n ^V junitless)	ENTEX Vadose zone soit water-filled porosity, 0 _w V (cm³/cm³)
		1 00 = 08	С	1 53	0.428	C 387

MORE ↓

IN STATE Target risk for caronogens TR (Unitiess)	INTIN Farget hazard quotient for noncarcinogens THQ (unitioss)	€R(T & Averaging time for carcinogens, AT _c (yrs)	III:NT(IIR Averaging time for noncarcinogens, AT _{NC}	Exposure duration ED (yrs)	EXTEX Exposure frequency EF (days/yt)
1.05-06	I	70	25	25	250
0.000	ulate nsk-based concentration	DTSC Indoor Air	Guidance		

Unclassified Soil Screening Model

Source- building separation, L _T (cm)	Vadose zone soil air-filled porosity, ⊕a [∨] (cm ³ /cm ³ )	Vadose zone effective total fluid saturation, S _{te} (cm ³ /cm ³ )	Vadose zone soil intrinsic permeability, k _i (cm ² )	Vadose zone soil relative air permeability, k _{rg} (cm ² )	Vadose zone soil effective vapor permeability, k _v (cm ² )	Thickness of capillary zone, L _{cz} (cm)	Total porosity in capillary zone, n _{cz} (cm ³ /cm ³ )	Air-filled porosity in capillary zone, θ _{a,cz} (cm ³ /cm ³ )	Water-filled porosity in capillary zone, $ heta_{w,cz}$ (cm ³ /cm ³ )	Floor- wall seam perimeter, X _{crack} (cm)	
259	0.041	#N/A	#N/A	#N/A	1.00E-08	81.52	0.459	0.047	0.412	4,000	]
Bldg. ventilation rate, Q _{butdmg} (cm ³ /s)	Area of enclosed space below grade, A _B (cm ² )	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z _{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, ∆H _{v.Ts} (cal/mol)	Henry's law constant at ave. groundwater temperature, H _{τs} (atm-m ³ /mol)	Henry's law constant at ave. groundwater temperature, H' _{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ _{Ts} (g/cm-s)	Vadose zone effective diffusion coefficient, D ^{erf} v (cm ² /s)	Capillary zone effective diffusion coefficient, D ^{eff} cz (cm ² /s)	Total overall effective diffusion coefficient, D ^{eff} T (cm ² /s)	
3.39E+04	1.00E+06	5.00E-03	15	11,516	5.76E-03	2.36E-01	1.80E-04	1.57E-05	1.93E-05	1.67E-05	
Diffusion path	Convection	Source vapor	Crack	Average vapor flow rate	Crack effective diffusion	Area of	Exponent of equivalent foundation Peclet	Infinite source indoor attenuation	Infinite source bldg.	Unit risk	Reference
length,	length,	conc.,	radius,	into bldg.,	coefficient,	crack,	number,	coefficient,	conc.,	factor,	conc.,
La	L _p	Csource	r _{crack}	Q _{soil}	D ^{crack}	Acrack	exp(Pe ^r )	α	Chuilding	URF	RfC
(cm)	(cm)	(μg/m ³ )	(cm)	(cm ³ /s)	(cm²/s)	(cm ² )	(unitless)	(unitless)	- σα//ang (μg/m ³ )	(µg/m ³ ) ⁻¹	(mg/m ³ )
					· · · · · ·		· · · · /	/	· · · · ·		
259	15	2.36E+05	1.25	8.33E+01	1.57E-05	5.00E+03	#NUM!	1.90E-06	4.48E-01	NA	7.0E-03

#### RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

### INCREMENTAL RISK CALCULATIONS:

Indoor	Indoor	Risk-based	Pure	Final	Increm risk fr		Hazard quotient
exposure	exposure	indoor	component	indoor	vap		from vapor
groundwater	groundwater	exposure	water	exposure	intrusi		intrusion to
conc.,	conc.,	groundwater	solubility, S	groundwater	indoor	,	indoor air,
carcinogen (µg/L)	noncarcinogen (µg/L)	conc., (μg/L)	(μg/L)	conc., (µg/L)	carcin (unitle	0	noncarcinogen (unitless)
(µg/L)	(µg, Ľ)	(rig/c)	(µg/c)	(µg/Ľ)	(unite	555)	(unitiess)
NA	NA	NA	5.70E+04	NA	NA	1	4.4E-02

MESSAGE SUMMARY BELOW:

GW-SCREEN ersion 3.0; 04/03 Reset to Defaults	CALCULATE RISK CALCULATE INCR (enter "X" in "YES"	Vapor Intrusion Guidanc Interim Final 12/04 (last modified 2/4/09)			
		YES	X		
	ENTER	ENTER			
	Cnemica!	Initial groundwater			
	CAS No	conc			
	(numbers only	C _w			
	no dashes)	(µg/L)	Cr	emical	
	108675	1 90E+02	1 - \$-7ma	tothylbenzens	
	ENTER	ENTER	ENTER	enter	
MORE	Depth				
↓	below grade	<b>0</b>		Average	ENTER
	to bottom	Depth		SOIV	Average vapor
	of enclosed space floor,	below grade to water table.	SCS soittype	groundwater temperature	flow rate into bldg (Leave blank to calculate)
	Space noor, Ly	Lowaler lable.	directly above	T _s	
	(cm)		-	( ^{2°} )	
	(Sun)	(cm)	water table		<u>    (L/m)     </u>
		274	<u> </u>	24	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor commetables)	On	(ii) i(ii) User-defined vandose zone soil vapor permeab/iily k, (cm ² )	ENTER Vadose zone SCC lype Lookup Soil Pii meters	SNTER Vadose zone soil dry bulk density p ^N (g/cm ³ )	ENTER Vadose zone soil total porosity n*	ERTER Vadose zone soil water-filled corosity H _w ^V
bennierowsky)		* CGE-08		1.53	0.428	0.387

MORE ↓

Target risk for caroinogens, FR (unitless)	Target hazaro quotient for noncarcinogens, THQ (unitiess)	Averaging time for carcinogens, AT _c (yrs)	Averaging time for noncarcinogens, AT _{NC} (yrs)	Exposure duration, ED (yrs)	Exposure frequency EF (days/yr)
1.0E-05	1	70	25	25	250

OTSC/ HERD Last Updale: 1 1/1/03

Source- building separation, L _T (cm)	Vadose zone soil air-filled porosity, ⊕a [∨] (cm³/cm³)	Vadose zone effective total fluid saturation, S _{te} (cm ³ /cm ³ )	Vadose zone soil intrinsic permeability, k _i (cm ² )	Vadose zone soil relative air permeability, k _{rg} (cm ² )	Vadose zone soil effective vapor permeability, k _v (cm ² )	Thickness of capillary zone, L _{cz} (cm)	Total porosity in capillary zone, n _{cz} (cm ³ /cm ³ )	Air-filled porosity in capillary zone, θ _{a.cz} (cm ³ /cm ³ )	Water-filled porosity in capillary zone, $ heta_{w,cz}$ (cm ³ /cm ³ )	Floor- wall seam perimeter, X _{crack} (cm)	-
259	0.041	#N/A	#N/A	#N/A	1.00E-08	81.52	0.459	0.047	0.412	4,000	]
Bldg. ventilation rate, Q _{butding} (cm ³ /s)	Area of enclosed space below grade, A _B (cm ² )	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z _{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, ∆H _{v.⊺s} (cal/mol)	Henry's law constant at ave. groundwater temperature, H _{īs} (atm-m ³ /mol)	Henry's law constant at ave. groundwater temperature, H' _{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ _{Ts} (g/cm-s)	Vadose zone effective diffusion coefficient, D ^{eff} v (cm ² /s)	Capillary zone effective diffusion coefficient, D ^{eff} cz (cm ² /s)	Total overall effective diffusion coefficient, D ^{eff} _T (cm ² /s)	
3.39E+04	1.00E+06	5.00E-03	15	11,495	5.50E-03	2.25E-01	1.80E-04	1.68E-05	2.04E-05	1,78E-05	1
Diffusion path length, L _d (cm)	Convection path length, L _p (cm)	Source vapor conc., C _{source} (μg/m ³ )	Crack radius, r _{crack} (cm)	Average vapor flow rate into bldg., Q _{soil} (cm ³ /s)	Crack effective diffusion coefficient, D ^{crack} (cm ² /s)	Area of crack, A _{crack} (cm ² )	Exponent of equivalent foundation Peclet number, exp(Pe ^f ) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., C _{building} (μg/m ³ )	Unit risk factor, URF (μg/m ³ ) ⁻¹	Reference conc., RfC (mg/m³)
259	15	4.28E+04	1.25	8.33E+01	1.68E-05	5.00E+03	#NUM!	2.03E-06	8.67E-02	NA	6.0E-03

#### RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

#### INCREMENTAL RISK CALCULATIONS:

_	Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (μg/L)	Final indoor exposure groundwater conc., (µg/L)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
	NA	NA	NA	2.00E+03	NA	NA	1.0E-02

MESSAGE SUMMARY SELOW: